



# HEALTH *for* **Every Mother**



## A Maternal Health Resource and Planning Guide for States

SPRING 2015



ASSOCIATION OF MATERNAL & CHILD HEALTH PROGRAMS

2030 M STREET, NW | SUITE 350 | WASHINGTON, DC 20036  
PHONE: (202) 775-0436 | FAX: (202) 775-0061



## ABOUT AMCHP

The Association of Maternal & Child Health Programs (AMCHP) is a national resource, partner, and advocate for state public health leaders and others working to improve the health of women, children, youth, and families, including those with special health care needs.

AMCHP supports state maternal and child health (MCH) programs and provides national leadership on issues affecting women and children. We work with partners at the national, state, and local levels to expand medical homes, provide and promote family-centered, community-based, coordinated care for children with special health care needs and facilitate the development of community-based systems of services for children and their families.



# Table of Contents

A Message to Our Members .....	4
An Invitation to Our Partners .....	5
Where is the M in MCH? .....	6
What’s Inside .....	8
How to Use the Maternal Health Resource and Planning Guide .....	10
A Useful Framework .....	11
A Note on Equity .....	11
<b>PART 1</b> INFRASTRUCTURE ELEMENTS .....	13
<b>Element 1   Strengthen Maternal Data Systems</b> .....	14
Strategy 1 - Build capacity to learn from each maternal death .....	16
Strategy 2 - Use administrative data to monitor performance and outcomes .....	21
Strategy 3 - Apply data from surveys and qualitative sources .....	23
<b>Element 2   Increase the Value of an Investment in Maternal Health</b> .....	27
Strategy 1 - Convene and mobilize maternal health partnerships .....	29
Strategy 2 - Demonstrate impact and share what works .....	34
<b>Part 1 Planning Tools</b> .....	37
<b>PART 2</b> ACTION ELEMENTS .....	43
<b>Element 3   Enable Healthy Living</b> .....	44
Strategy 1 - Address underlying social determinants of health .....	46
Strategy 2 - Build environments that support healthy and active living .....	48
Strategy 3 - Implement community-based health promotion efforts .....	51
<b>Element 4   Improve Access to Care</b> .....	57
Strategy 1 - Promote comprehensive health coverage .....	59
Strategy 2 - Improve the availability and acceptability of services .....	62
<b>Element 5   Ensure High Quality Health Care for Women</b> .....	68
Strategy 1 - Support provider capacity to deliver high quality well-woman care .....	70
Strategy 2 - Support provider capacity to deliver high quality, routine maternity care .....	75
Strategy 3 - Promote coordinated systems across the care continuum .....	84
<b>Element 6   Ensure Readiness and Response to Obstetric Emergencies</b> .....	89
Strategy 1 - Ensure facility readiness for obstetric complications .....	90
Strategy 2 - Improve clinical recognition and response to adverse events .....	93
<b>Part 2 Planning Tools</b> .....	98
Appendix A: Source Documents .....	109
Appendix B: Index of Resources Included in the Guide .....	111
Acknowledgements .....	113
Works Cited .....	114

# A Message to Our Members



Thanks to you, millions of U.S. women are served each year by the Title V Maternal and Child Health Services Block Grant. With transformation of the block grant in 2015, even greater potential exists to achieve measurable, lasting improvements in the health of women and mothers across the country. At the same time, we know that funds are limited. We also know that a tremendous amount of complementary work is happening just outside our door.

Making limited dollars count will require that we take time to review our current activities and those of our partners. To this end, AMCHP is pleased to share with you *Health for Every Mother: a Maternal Health Resource and Planning Guide for States*. A framework for synergistic thinking, the guide presents possible strategies across six core elements that – when addressed collectively – may ensure the greatest impact for moms.

We hope this guide helps you to explore new resources, initiate or engage new partnerships, and take steps toward a comprehensive maternal health initiative in your state. Please know that we are excited and ready to support you in your efforts.

Warmly,

A handwritten signature in black ink that reads "Lori Tremmel-Freeman". The signature is fluid and cursive.

Lori Tremmel-Freeman  
Chief Executive Officer

# An Invitation to Our Partners



Maternal and child health programs funded through Title V are charged with improving the health status of women, children and families in their states. While each state is given flexibility to address its unique needs and priorities, all are held accountable for certain outcomes, including maternal health.

At the same time, we know that we are not alone in our efforts – we share our commitment with partners from fields as varied as public health, medicine, dentistry, social work and violence prevention. The content in Health for Every Mother represents a synthesis of recommendations from white papers, consensus statements, and reports, many of which reflect the participation of clinical and advocacy partners at the national and state levels.

Because the presence of partners is vital as we look toward the future of maternal health, we invite you to join us in a conversation about the work currently underway and new opportunities to align our efforts. AMCHP staff are happy to assist in connecting you with state Title V leadership. I encourage you to contact AMCHP if you have an interest in greater partnership. Together, our collective efforts can have the greatest impact.

Sincerely,

A handwritten signature in black ink that reads "Sam B. Cooper III". The signature is fluid and cursive, with a horizontal line extending to the right.

Sam Cooper III, LMSW-IPR  
AMCHP President  
Director, Specialized Health Services Section  
Family and Community Health Services Division  
Texas Department of State Health Services

# “Where is the M in MCH?”

While this question is not new,<sup>1</sup> it is certainly pertinent to current MCH efforts, as considerable national momentum refocuses our collective attention on the health of mothers – for women’s sake.

Approximately 62 million women ages 15-44 live in the United States.<sup>2</sup> Of these, more than six million become pregnant and around four million give birth each year.<sup>3</sup> While pregnancy should be an exciting time in the life of women, their families, and their communities, too often it can be a time of substantial loss. In 2010, pregnancy-related complications were the 10th leading cause of death among women of reproductive age.<sup>4</sup> Though the pregnancy-related mortality rate among U.S. women has dropped dramatically since the early 1900s, it has risen again in recent years from 7.2 deaths per 100,000 live births in 1987 to 17.8 deaths per 100,000 live births in 2011 (an estimated 700 pregnancy-related deaths per year).<sup>5-6</sup> Improved maternal death surveillance may account for some of this rise, though this does not diminish the need for action.<sup>7</sup> Persistent racial disparities place African American women at three to four times the risk of dying during pregnancy or by their child’s first birthday when compared to their non-Hispanic, white counterparts.<sup>6</sup>

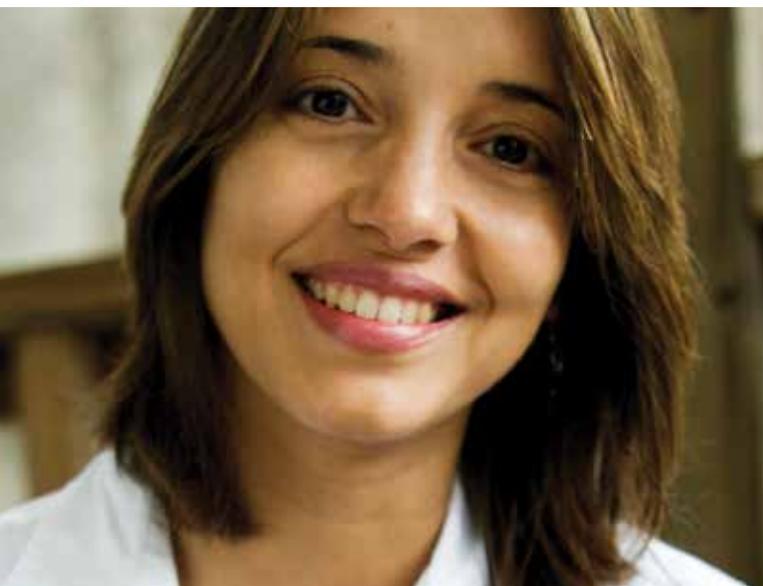
Other poor pregnancy outcomes occur far more frequently than deaths. An estimated 52,000 severe complications occur in the United States each year, and this number appears to be rising too, with women experiencing increasing rates of blood transfusions, acute renal failure, shock, respiratory distress,

and cardiac complications due to pregnancy or underlying conditions exacerbated by pregnancy.<sup>8</sup> In addition to the emotional and physical costs associated with morbidities, there are substantial financial costs to families, communities, and the U.S. health care system. Annually, the United States spends an estimated \$48 billion on maternal hospital stays for pregnancy and delivery alone.<sup>9</sup> Medicaid pays roughly 45 percent of these expenses, signaling opportunities for substantial public cost savings with appropriate systems improvements.<sup>10</sup>

Because of current trends, a groundswell of national interest in maternal health has emerged. Calls for national action have been advanced by multiple public health and clinical stakeholders.<sup>11-16</sup> As well, learning collaboratives have formed to improve maternal death surveillance and public financing of women’s health care, among others, and national initiatives have convened around preconception health and the need for improved patient safety in maternity care delivery.

While not exhaustive, key national efforts include:

- **Alliance for Innovation on Maternal Health (AIM)** – a national strategic initiative to reduce maternal morbidity and mortality and their associated adverse pregnancy outcomes. Beginning in 2015, the American Congress of Obstetricians and Gynecologists (ACOG), AMCHP, and other members of the alliance will launch maternal safety and interconception care efforts under this initiative with funding from the Health Resources and Services Administration (HRSA).<sup>17</sup>
- **Council on Patient Safety in Women’s Health Care** – a multi-stakeholder consensus effort established to drive culture change for improved patient safety.<sup>18</sup> Chief among its efforts, the council is developing a set of safety bundles to promote facility readiness for obstetric hemorrhage, severe hypertension, venous thromboembolism, and other adverse events. It also acts as a catalyst for related practice standards and tools. Members of the council are core partners engaged in AIM.



- **Every Mother Initiative, AMCHP** – The AMCHP Every Mother Initiative launched in 2013 to build state capacity for maternal morbidity and mortality surveillance and support states in using data to take policy and program action. With financial support from Merck for Mothers, AMCHP provides technical assistance, develops resources, and engages states in learning collaboratives to strengthen maternal mortality review activities and seed sustainable translation efforts.
- **Maternity Action Team, National Quality Forum (NQF)** – a multi-stakeholder group first convened in 2012 to articulate shared goals and align strategies to improve maternal health.<sup>19</sup> The team was reconvened in 2014 to leverage its collective resources to reduce early elective deliveries. Ongoing efforts are supported through the NQF Partnership for Patients Initiative.
- **Maternal and Infant Health Initiative, Centers for Medicare and Medicaid Services (CMS)** – a national initiative launched in July 2014 to improve the rate and content of postpartum visits and increase the number of births that are intended.<sup>10</sup> The initiative evolved from an expert panel convened in 2012 to explore policies and reimbursement opportunities that promote better care, improved birth outcomes, and reduced cost of care for mothers and infants with public health coverage through Medicaid and the Children’s Health Insurance Program (CHIP). It builds on related CMS initiatives, such as Strong Start for Mothers and Newborns.
- **Maternal Mortality Review Data System (MMRDS), Centers for Disease Control and Prevention (CDC)** – a standardized data system that builds internal state capacity for maternal death case abstraction, review, and analysis. Set to launch in 2015, design and rollout of the MMRDS emerged as a priority among needs identified through the CDC-led Maternal Mortality Initiative in 2012, which convened state teams to develop recommendations for strengthening maternal mortality surveillance.
- **Merck for Mothers** – a 10-year, \$500 million initiative focused on creating a world where no woman dies giving life.<sup>20</sup> Merck is committed to using its business and scientific expertise to improve maternal health in more than 30 countries, including the United States. Through Merck for Mothers, Merck currently provides financial support in the United States to a number of not-for-profit organizations, including AMCHP, ACOG District II, the

Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN), and the California Maternal Quality Care Collaborative (CMQCC) in their work to reduce maternal mortality and advance patient safety.

- **National Preconception Health and Health Care Initiative** – convened in 2006 to develop and implement clinical, public health, consumer, policy, and surveillance and research recommendations to advance the health of women and men before, between, and beyond pregnancy.<sup>21</sup> The national initiative is guided by a 40-member leadership committee comprised of partners from federal, national, state, and local organizations along with academics, clinicians, researchers, and community leaders.
- **Safety Program for Perinatal Care, Agency for Healthcare Research and Quality (AHRQ)** – an ongoing project to improve patient safety, team communication, and quality care for mothers and newborns in labor and delivery units.<sup>22</sup> Coordinated by RTI International, experts on the national project team support participating hospitals and the development of patient safety bundles, i.e., small packages typically of three to five evidence-based care practices that have been shown to improve patient outcomes when performed collectively and reliably.<sup>23</sup>

In addition, expert panels have formed around optimal postpartum care and the role of nursing practice in reducing maternal mortality and morbidity; a federal workgroup has convened to coordinate maternal health activities across government agencies; and a number of national partners have launched their own initiatives, which are highlighted as resources throughout this compendium. Complementary birth outcomes initiatives, such as the HRSA-funded Collaborative Innovation and Improvement Network (CoIIN) to Reduce Infant Mortality, also seek to advance strategies aimed at improved health among reproductive-age women.<sup>24</sup>

Indeed, the breadth and extent of national momentum is encouraging. In order to achieve the Institute for Healthcare Improvement (IHI) Triple Aim of better care, improved health, and lower costs, a comprehensive, coordinated approach is needed at the state level too.<sup>25</sup> State Title V maternal and child health (MCH) programs are well positioned to play a lead role in convening, mobilizing, and implementing comprehensive maternal health initiatives,

and recent transformation of the Title V MCH Services Block Grant (MCH Block Grant) may help to facilitate this work.

Released in January 2015, revised guidance for the MCH Block Grant represents one of the most significant transformations of this program since its conversion to a block grant in 1981. Changes reflect a growing awareness of emerging opportunities to improve maternal health, as well as the need to demonstrate impact and accountability for investments by the federal government and states. In their annual applications, states will now organize a discussion of their activities by population group in the context of six population health domains: Women's and Maternal Health; Perinatal/Infant Health; Child Health; Adolescent Health; Children and Youth with Special Health Care Needs (CYSHCN); and Cross-cutting, or Life Course.

Under the guidance, states must select a minimum of eight National Performance Measures (NPMs) that align with findings from their five-year needs assessment, including at least one NPM from each domain. Two of 15 NPMs fall into the new, population-based domain of Women's and Maternal Health:

- (1) Percent of women with a past year preventive visit (NPM-1)
- (2) Percent of cesarean deliveries among low-risk first births (NPM-2)

NPMs in other domains include adolescent well visits and smoking during pregnancy. State work on each of these NPMs, supported by complementary State Performance Measures, is intended to foster population-level improvements in the following National Outcome Measures (NOMs):

- (1) Severe maternal morbidity rate per 10,000 delivery hospitalizations (NOM-2)
- (2) Maternal mortality rate per 100,000 live births (NOM-3)

Many states already use Title V resources to support a continuum of health services for women.<sup>26</sup> With its transformation, the MCH Block Grant offers new opportunities to leverage Title V funding to improve women's and maternal health, in conjunction with related work by partners. AMCHP hopes that this resource guide will serve as a useful planning tool as states approach these important efforts.

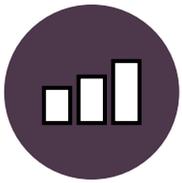
## What's Inside

AMCHP identified recommendations from more than 35 consensus statements, white papers, and reports published by states and national partners (Appendix A). For inclusion, each had to address poor maternal health outcomes or their known risk factors and include recommendations for action by or in partnership with state MCH programs in the United States. The strategies presented in this guide represent a synthesis of the recommendations identified during the review process. While they are supported by varying levels of evidence, AMCHP presents them as ideas, innovations, and resources as you explore your own maternal health efforts. Key themes that emerged from the AMCHP review of recommendations have become the six core elements of a comprehensive maternal health initiative (figure 1).

National resources and examples from the field accompany many strategies in order to highlight specific, actionable ways that states can choose to address them. Examples



**FIGURE 1** Six Core Elements of a Comprehensive Maternal Health Initiative



**Element 1| Strengthen Maternal Data Systems** – The strategies and resources in this section address state capacity for surveillance and performance monitoring, key to guiding program decisions and resource allocation. Among them are opportunities to strengthen maternal death review, improve the use of other data sources, and more fully engage women’s voices to guide program design and delivery.



**Element 2| Increase the Value of Investments in Maternal Health** – This section explores strategies and resources for partner mobilization to achieve collective impact, as well as opportunities to assess and communicate value for sustainability. Attention also is given to the importance of expanding available evidence for effective practice



**Element 3| Enable Healthy Living** – This section explores strategies and resources for partner mobilization to achieve collective impact, as well as opportunities to assess and communicate value for sustainability. Attention also is given to the importance of expanding available evidence for effective practice.



**Element 4| Improve Access to Care** – These strategies address women’s access to health services. Activities address improved public and private health coverage, as well as enhance the availability and acceptability of services through provider recruitment and retention, culturally competent service delivery, and the use of patient- and family-centered approaches.



**Element 5| Ensure High Quality Health Care for Women** – This section addresses the quality of health care women receive throughout their lives. It includes strategies and resources to improve well-visits for all women of reproductive age, routine obstetric care during pregnancy and the postpartum period, and coordinated service delivery systems across the care continuum.



**Element 6| Ensure Readiness and Response to Obstetric Emergencies** – This section identifies opportunities to promote a culture of patient safety across maternity care systems in a state. Strategies might include risk-appropriate levels of care; facilitated adoption of maternal early warning criteria and safety bundles by state facilities;<sup>16</sup> or team-based simulation trainings.

were collected through several mechanisms, including the Title V Information System (TVIS), AMCHP Innovation Station, practices highlighted at the AMCHP annual conference, a review of state and national websites, and communication with Title V directors. Regardless of where they have been included, many of the examples in this guide combine cross-cutting strategies and represent an integrated approach.

Examples marked with the AMCHP Innovation Station icon () are available in more detail in the AMCHP searchable database of emerging, promising, and best practices in MCH at: <http://www.amchp.org/programsandtopics/BestPractices/InnovationStation>. Likewise, if your state has an emerging, promising, or best practice in maternal health that you would like to share, visit this website for information on how to complete a submission.

# How to Use the Maternal Health Resource and Planning Guide

This guide is intended for use by MCH programs and their partners and was compiled to support comprehensive state planning efforts. It provides a synthesis of current program and policy recommendations and offers a framework to support states in identifying next steps. To facilitate state planning, the guide is organized in two, mutually-reinforcing parts and includes tools to support planning discussions with Title V MCH staff and partners:

## PART 1: Infrastructure Elements

The first two elements of a comprehensive maternal health initiative address the public health systems needed at the state or local level to launch and sustain effective maternal health efforts. These strategies make the selection and implementation of strategies in Part 2 possible. Employ them in conjunction with ongoing needs assessment activities to ensure that planning for a comprehensive maternal health initiative aligns with other Title V-supported activities.



## PART 2: Action Elements

The remaining four elements of a comprehensive maternal health initiative comprise a set of program and policy strategies for action. Essentially a menu of options, this section should be reviewed in the context of existing state infrastructure so that maternal health initiatives are effective, workable, and responsive to the unique needs of your population.



## Tips to help you get the most out of this guide:



- Familiarize yourself with the six core elements of a comprehensive maternal health initiative. Review the opportunities, suggested strategies, and “ideas to consider” for ways you might maximize maternal health in your state.
- Begin with Part 1. Use the planning worksheets provided to complete an assessment of current state infrastructure and capacity to support a comprehensive maternal health initiative. Explore the partners you have at the table and those you could invite.
- Convene state and local partners to complete an assessment of elements in Part 2, using the planning worksheets provided. Try to include all current policies and program initiatives in your state that support improvements in maternal health outcomes.
- Look for opportunities to integrate these activities with ongoing needs assessment efforts.
- Where you identify gaps or opportunities, return to specific elements to explore available resources and state examples. Look for new strategies to address any barriers you have identified during your assessment.
- You may wish to use the results of this process to guide the development of evidence-based or informed strategies that support your MCH Block Grant performance measures within the women’s and maternal health domain.
- Remember, this is a planning tool. While it contains a wealth of ideas and resources, this guide is not intended to serve as an exhaustive volume of best practices in maternal health. Various repositories maintain public health strategies and clinical practice guidelines with proven effectiveness. We encourage you to use these in tandem with this guide.

# A Useful Framework for Action and Synergy

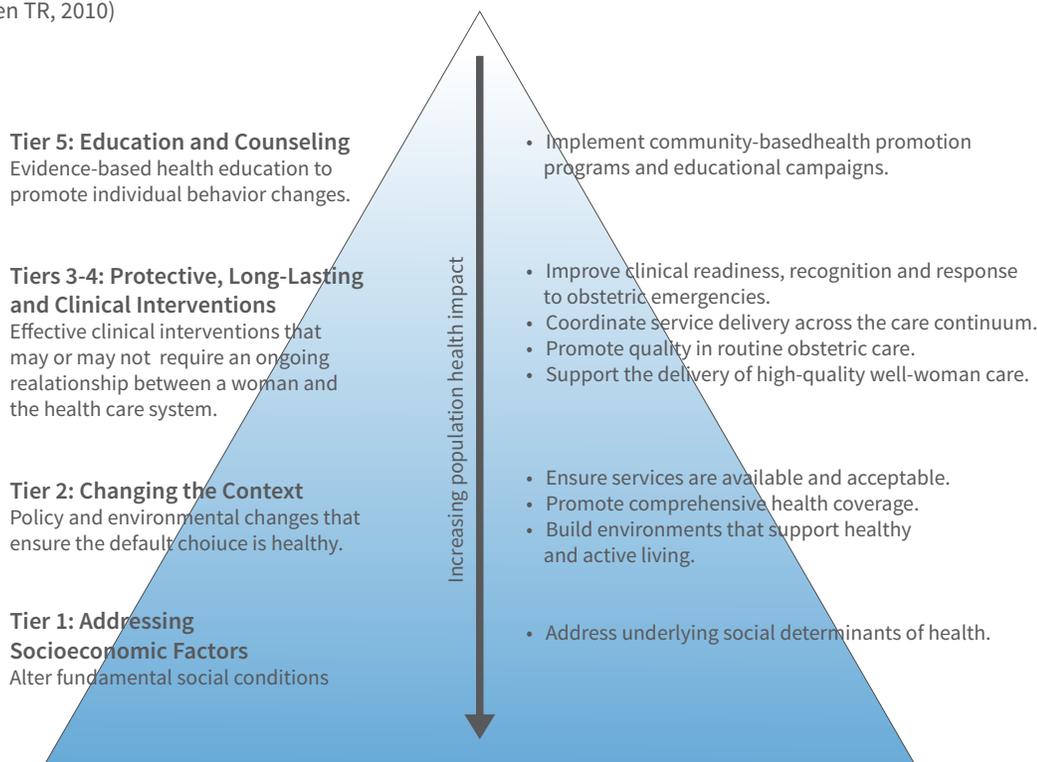
In 2010, Dr. Thomas Frieden outlined a five-tiered pyramid that may be useful when considering a comprehensive public health initiative to improve maternal health.<sup>27</sup> Figure 2, below, aligns the strategies found in this action guide (right side) with the tiers of the Health Impact Pyramid (left side).

Notice that the Health Impact Pyramid organizes health interventions along a continuum of increasing population health impact. In other words, strategies that address social

determinants of health, such as poverty, have the greatest potential public health benefit.<sup>27</sup> It is important to remember, however, the synergistic relationship between interventions at different levels of the pyramid. For example, strategies that address broad social conditions or a woman's environment can make quality care more accessible and education more effective. The Health Impact Pyramid offers a useful framework to consider the action elements described in Part 2 of this guide in a more comprehensive way.

**FIGURE 2: Opportunities to improve maternal health aligned with the Health Impact Pyramid.**

(Adapted from Frieden TR, 2010)



## A Note on Equity

Title V MCH programs are accountable for improvements in the population-based health status of all women and mothers. To truly impact the poor outcomes we seek to address, we recognize that a comprehensive maternal health initiative must address persistent disparities and enable equitable environments, access to services, and quality care for those most vulnerable. In this action guide,

you will not find a dedicated section on opportunities to reduce disparities, because we have chosen to embed them throughout each of the six core elements described. In the same way, we strongly encourage you to embed an equity lens throughout all programs and policies you choose to implement.



# PART 1 |

## INFRASTRUCTURE ELEMENTS

### State Infrastructure for Improved Maternal Health

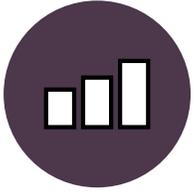
Title V MCH programs play an important role in building the infrastructure necessary to implement and sustain effective maternal health programs. Before program and policy solutions are implemented, consideration should be given to strengthening maternal data systems and capacity for sustained, collective action. In this section, you will find strategies and resources to address the following elements of a comprehensive maternal health initiative:



#### **Element 1: Strengthen Maternal Data Systems**



#### **Element 2: Increase the Value of Investments in Maternal Health**



# Element 1 | Strengthen Maternal Data Systems

## SNAPSHOT

Timely and accurate data is of critical importance to state planning efforts. It enables the monitoring of current health status, assessment of disparities in maternal health outcomes, and supports decision-making regarding the allocation of resources. This section is organized around the following opportunities for action and related strategies:

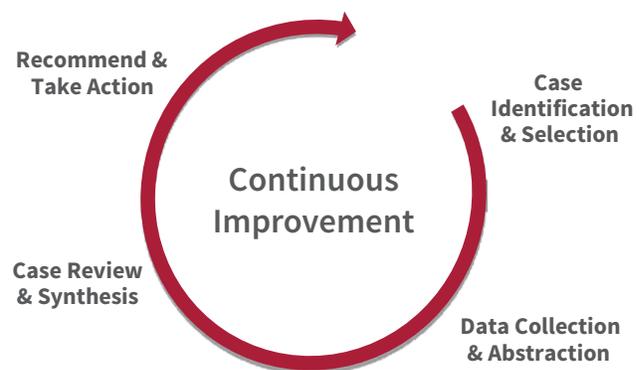
- Build capacity to learn from each maternal death.
- Use administrative data and surveys to monitor outcomes and performance.
- Apply data from surveys and other qualitative sources.

This element addresses actions states can take to enhance maternal health surveillance activities in order to guide action. Maternal deaths, though rare, are sensitive markers of the health status of reproductive-aged women. They are sentinel events that can teach us about the needs of vulnerable women and where resources might best be allocated to improve population health outcomes. A standardized maternal mortality review (MMR) or pregnancy-associated mortality review (PAMR) process remains the gold standard for understanding the magnitude and disparities in pregnancy-related deaths, as well as their leading causes and drivers.<sup>28</sup> The review process offers states a unique depth of information related to deaths on which to base decisions. A growing body of resources is available to assist those interested in starting or strengthening a state-level review.<sup>29-33</sup>

Reviews generally follow a cyclical process in which maternal deaths are identified, case data is obtained, each case is discussed, and aggregate findings are used to inform a public health and clinical response, as well as future surveillance efforts (Figure 3).<sup>31</sup> In states with a large number of annual deaths, a representative sample or subset (e.g., cardiovascular deaths, homicide deaths) may be reviewed in a given year. Other states choose to coordinate with regional centers or networks to expedite and improve the case data they receive for discussion and action at the state level. While the current count is dynamic and new reviews are emerging in several states, it is estimated that just over half of all U.S. states have some form of MMR or PAMR committee in place.

**FIGURE 3: Maternal Mortality Review Action Cycle**

(Adapted from Berg CJ, 2012)



Importantly, the absence of a formal death review process should not prevent MCH programs from developing a comprehensive maternal health initiative focused on translating data to action. Vital statistics and administrative data sets can provide states with a rich set of information with which to guide decision making. The U.S. standard death certificate, for example, can be used to identify pregnancy-associated deaths (deaths occurring within 364 days of pregnancy), documented cause and manner of death, conditions that may have contributed to the death, and related demographic information. The current death certificate, last revised in 2003, includes a standard question regarding pregnancy status at the time of death in order to improve the identification of maternal deaths. Several states have undertaken efforts to assess and improve the quality



### KEY TERMS

**Pregnancy-associated death (ACOG/CDC):** The death of a woman while pregnant or within one year of termination of pregnancy, due to any cause.<sup>29</sup> Pregnancy-associated cases include deaths that are pregnancy-related and not pregnancy-related.

**Pregnancy-related death (ACOG/CDC):** The death of a woman while pregnant or within one year of termination of pregnancy, regardless of the duration or site of pregnancy, due to a cause related to or aggravated by her pregnancy or its management.<sup>29</sup> To decide if a death is pregnancy-related, ask: *“If she had not been pregnant, would she have died?”*

**Not pregnancy-related death (ACOG/CDC):** The death of a woman while pregnant or within one year of termination of pregnancy, due to a cause unrelated to pregnancy or its management.<sup>29</sup>

**Maternal death (ICD-9 and ICD-10):** The death of a woman while pregnant or within 42 days of the termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by pregnancy or its management but not from accidental or incidental causes.<sup>29</sup> Maternal deaths are used to calculate maternal mortality ratios per 100,000 live births.

of this data, and linkage to other data sets is common. State hospital discharge files also can prove useful in condition- or outcome-specific analyses and performance monitoring.

Population-based surveys offer further opportunities to understand the needs of reproductive-age women and plan accordingly to address those needs. Forty states and New York City currently participate in the Pregnancy Risk Assessment Monitoring System (PRAMS), which collects state-specific data on maternal attitudes and experiences before, during, and shortly after pregnancy. Other states have developed similar, state-supported surveys. The Behavioral Risk Factor Surveillance System (BRFSS) is a national telephone survey that collects data on adult health risk behaviors in all 50 states and U.S. territories. Together, PRAMS and BRFSS surveys inform 41 of the 45 core state preconception health indicators identified by national consensus in 2007 (Box 1.6).

Many options exist to strengthen current maternal health surveillance efforts. Strategies to consider include the following.





## STRATEGY 1: BUILD CAPACITY TO LEARN FROM EACH MATERNAL DEATH

Though it requires an investment of time and resources, a structured death review process at the state level can reveal individual, clinical, or system-wide factors contributing to poor maternal outcomes and support recommendations for change. Consider these strategies based on what is feasible in your state.

### A. Convene a Statewide Maternal Mortality Review Committee.

A multidisciplinary committee is convened to discuss individual cases of maternal death and opportunities for systems change. The recruitment of a diverse set of experts in maternity care, pathology, and specialty disciplines, as well as patient advocates and social service providers may help to clarify circumstances surrounding cases in order to identify factors driving poor outcomes.



#### IDEAS TO CONSIDER:

- Make staff time available to coordinate MMR Committee activities and administrative aspects of the review process, such as member recruitment, support, and communications.
- Review current MMR Committee composition and identify opportunities to diversify (figure 4). Discuss gaps in standing membership and the process for engaging ad hoc members. Explore the need for multiple teams comprised of specific expertise.
- If not already in place, explore legislation that protects MMR Committee members and findings from legal action and provides the MMR Committee with statutory authority to access case records. Identify a legislative champion, such as a provider association state chapter.
- Invite representatives from organizations serving women of reproductive age who can be instrumental in developing, vetting, and implementing review team recommendations.

FIGURE 4: Possible Committee Membership

Organizations	Core Disciplines	Specialty Disciplines
<input type="checkbox"/> Academic Institutions	<input type="checkbox"/> Anesthesiology	<input type="checkbox"/> Cardiology
<input type="checkbox"/> Behavioral Health Agencies	<input type="checkbox"/> Family Medicine	<input type="checkbox"/> Clergy
<input type="checkbox"/> Blood Banks	<input type="checkbox"/> Forensic Pathology	<input type="checkbox"/> Community Leadership
<input type="checkbox"/> Consumer Advocacy	<input type="checkbox"/> Maternal Fetal Medicine/ Perinatology	<input type="checkbox"/> Critical Care Medicine
<input type="checkbox"/> Federally Qualified Health Centers	<input type="checkbox"/> Nurse Midwifery	<input type="checkbox"/> Nutrition
<input type="checkbox"/> Fetal and Infant Mortality Review (FIMR) Programs	<input type="checkbox"/> Obstetrics and Gynecology	<input type="checkbox"/> Emergency Response
<input type="checkbox"/> Healthy Start Agencies	<input type="checkbox"/> Patient Safety	<input type="checkbox"/> Epidemiology
<input type="checkbox"/> Homeless Services	<input type="checkbox"/> Perinatal Nursing	<input type="checkbox"/> Genetics
<input type="checkbox"/> Hospitals/Hospital Associations	<input type="checkbox"/> Psychiatry	<input type="checkbox"/> Home Nursing
<input type="checkbox"/> Private and Public Insurers	<input type="checkbox"/> Public Health	<input type="checkbox"/> Law Enforcement
<input type="checkbox"/> Professional Assoc. State Chapters	<input type="checkbox"/> Social Work	<input type="checkbox"/> Mental Health Provider
<input type="checkbox"/> Rural Health Associations		<input type="checkbox"/> Pharmacy
<input type="checkbox"/> State Medical Society		<input type="checkbox"/> Public Health Nursing
<input type="checkbox"/> State Medicaid Agency		<input type="checkbox"/> Quality/Risk Management
<input type="checkbox"/> State Title V Program		<input type="checkbox"/> Substance Abuse Counseling
<input type="checkbox"/> Tribal Organizations		
<input type="checkbox"/> Violence Prevention Agencies		



## Element 1 | Strengthen Maternal Data Systems *continued*

### B. Explore new ways to identify cases for review.

State capacity to identify pregnancy-related deaths can improve confidence in the review process and its learnings. To improve case finding, a growing number of states choose to identify all pregnancy-associated deaths, including injury deaths due to violence, drug overdose, or motor vehicle accidents, which may be determined pregnancy-related upon review. While the majority of deaths may be found through vital records, it can be useful to employ multiple strategies to ensure all cases are identified.



#### IDEAS TO CONSIDER:

- Explore opportunities to strengthen case identification using vital records. If currently using the death certificate alone, determine whether it may be feasible to link death certificates with birth and fetal death certificates and hospital discharge data to identify additional cases.
- Assess the quality of data obtained through the pregnancy checkbox on the 2003 standard death certificate. Determine the nature and degree of misclassification of pregnancy-associated deaths, and take steps to improve.
- Develop a standard maternal death reporting process. Ensure that reporting systems are non-punitive and confidential, and explore opportunities to implement statewide mandatory reporting of maternal deaths to at least 42 days postpartum.
- Establish a prospective agreement with state medical examiners for notification of deaths to women of reproductive age that may be pregnancy-related.
- Incorporate non-traditional sources into a standard case finding protocol, such as manual or automated searches of online newspapers, obituaries, funeral home websites, and court records. Engage local health and social service agencies that work with pregnant women, such as federal Healthy Start Programs and evidence-based home visiting programs.

### Box 1.1: CDC Resources for Maternal Death Reviews

#### Maternal Mortality Review Data System (MMRDS)

Developed by the CDC Division of Reproductive Health with substantial state input, the MMRDS has advanced steps toward improved state data system capacity and more standardized information collection by maternal death reviews while leaving maternal death data in the hands of states. Set to launch in 2015, the MMRDS utilizes a free software package (Epi Info) that is easily adapted by reviews and offers strong user support. It defines a core set of information that all users collect, serves as a data abstraction tool, aids in case summary development, provides a platform for documenting committee findings and recommendations, and supports analysis. Contact AMCHP for more information.

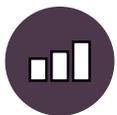
#### National Violent Death Reporting System (NVDRS)

<http://www.cdc.gov/violenceprevention/nvdrs>

The NVDRS provides states with a more complete picture of violent deaths, including those occurring among women who were pregnant or recently pregnant. It collects data about the same incident from four major sources, including death certificates, coroner and medical examiner reports, law enforcement reports, and crime laboratories. Thirty-two states currently participate in NVDRS. States may submit a request to CDC for use of its Restricted Access Database, enabling them to obtain case-level data during the abstraction process.

### C. Seek rich case data from a variety of sources.

Before cases of maternal death are presented to review committees for discussion, data are abstracted from available records and compiled in a detailed case summary to support a more efficient and directed discussion of the death and its causal relationship to pregnancy. Because data gathering and case abstraction can require significant resources, several important decisions must be made regarding the number and types of cases to be reviewed before starting this process.



## Element 1 | Strengthen Maternal Data Systems *continued*



### IDEAS TO CONSIDER:

- Adopt a statewide data system to capture consistent and timely information on the characteristics and causes of maternal deaths (Box 1.1).
- Hire or contract with a case abstractor. Determine which cases will be abstracted for review based on available funding and staff resources (i.e., all cases, those likely to be pregnancy-related, or a smaller subset).
- Establish a standard process to expedite the request of medical records from known providers (e.g., form letters, record sharing agreements), or explore statutory authority to obtain this information. Consider inclusion of other records (e.g., criminal justice, social service) that may be needed for injury cases.
- Supplement medical record review with clinician or social service provider interviews. Explore means of inviting women or their families to contribute a natural history, either written or oral, to understand the context of their care and the health care decisions they made.
- Look for the option to participate in the CDC-sponsored National Violent Death Reporting System (NVDRS) in order to expedite access to information on violent deaths, and to identify deaths missed through traditional case finding methods (Box 1.1).

### D. Strengthen state autopsy practices.

Autopsy findings can provide accurate and detailed information on cause of death and contributing factors. In the absence of an autopsy investigation, gaps in case information can prevent consensus during the case review process. Even if autopsy results are available, inconsistent documentation may limit their usefulness during the review if committee members feel information is missing or unclear.



### IDEAS TO CONSIDER:

- Partner with the state medical examiner to develop specific guidelines for maternal autopsy content (e.g., standardized toxicology screening) and to discuss the cases to which the guidelines apply (e.g., women who die within one year of pregnancy or a subset of these women, such as those with cardiovascular conditions or complicated sepsis).
- Establish processes for amending cause of death on the death certificate after results of autopsy become available.
- Meet with medical examiners and coroners to communicate the value of autopsies in pregnancy-related cases and the role they play in preventing future maternal deaths.

### Box 1.2: CDC Directory of State Medical Examiners and Coroners Organizations

[http://www.cdc.gov/nchs/nvss/medical\\_examiners\\_and\\_coroners.htm](http://www.cdc.gov/nchs/nvss/medical_examiners_and_coroners.htm)

The CDC has compiled contact information and links to state-level offices and professional associations for forensic pathologists, medical examiners, and coroners. A 2003 CDC handbook for medical examiners and coroners supports consistent registration of deaths and can be accessed online, here:

[http://www.cdc.gov/nchs/data/misc/hb\\_me.pdf](http://www.cdc.gov/nchs/data/misc/hb_me.pdf).

### E. Take steps to maximize learnings from each case.

The case review process can look very different across states. Some states choose to convene their review board bimonthly, others quarterly. Depending on the number of deaths to be reviewed, some meet for two hours, while others convene for a full day. Regardless of format, the process serves several common purposes, including determination of each death's causal relationship to pregnancy and opportunities to alter the outcome. Supporting this process lays the foundation for informed action.



## Element 1 | Strengthen Maternal Data Systems *continued*



### IDEAS TO CONSIDER:

- Adopt the CDC pregnancy-related mortality cause of death classification system. This clinically-based system better informs action than the International Classification of Diseases (ICD) codes listed on the death certificate, which were developed for statistical purposes.<sup>31</sup>
- Adopt a standardized case review form to facilitate MMR Committee discussion of medical and non-medical (e.g., economic, legal, social, or cultural) factors contributing to deaths. Engage members in a discussion of how contributing factors will be documented to facilitate later use.
- Consider modifications that may be needed for the review of pregnancy-associated injury deaths. Establish standards for making pregnancy-related determinations when women die as a result of homicide, suicide, motor vehicle, and other injury-related causes.

### Box 1.3: AMCHP Every Mother Initiative

<http://bit.ly/EveryMotherInitiative>

With funding from Merck for Mothers, the AMCHP Every Mother Initiative was launched in 2013 with goals to enhance maternal morbidity and mortality surveillance systems and support states in using this data to inform action. States participating in Every Mother Initiative action learning collaboratives have produced a wealth of insight into the process of strengthening case reviews and translating data into action. Visit the program website for access to resources developed through this initiative.

### F. Make and act on case-informed recommendations.

Once reviewed, case findings are aggregated for analysis, and data are used to inform program and policy recommendations. Approached differently across reviews, each state must determine which deaths will be included in analysis. For example, a state might report findings for its pregnancy-related cases, a subset of these, or all pregnancy-associated cases, given that pregnancy is a time of close contact with the health care system and possible intervention points. This also is an important time to share recommendations with birthing facilities, professional organizations, perinatal collaboratives, and other stakeholders able and encouraged to take action.



### IDEAS TO CONSIDER:

- Analyze cause-specific increases in maternal death. Aggregate contributing factors and recommendations within standard categories (e.g., factors, clinical care, health system factors) and examine for leading causes of death.
- As appropriate based on annual deaths, stratify findings by demographic characteristics, such as race, ethnicity, geography, insurance status, or age to better understand disparities. Engage stakeholders to discuss why disparities might exist.
- Develop composite case scenarios to facilitate the discussion of common contributing factors and strategies to prevent future deaths. Composite vignettes can be drawn from two or more cases with key information changed to protect the identities of patients and providers.
- Geocode cases of maternal death and conduct spatial analysis. Include neighborhood-level data in order to explore social, environmental, and access issues.
- Perform special analyses to understand the contribution of specific comorbidities to maternal deaths, such as obesity, respiratory conditions, diabetes, or genetic disorders.



### EXAMPLES FROM THE FIELD:

#### Maternal Mortality Review Legislation (Georgia)

<http://www.legis.ga.gov/Legislation/en-US/display/20132014/SB/273>

Following the dissolution of two prior review committees informally convened, the Georgia General Assembly enacted legislation in 2014 that formalizes maternal mortality review in the state. The legislation (SB 273) aimed to provide committee member protections, ensure confidentiality of the review process, and establish the necessary authority to collect data for case review. Its success underscores the importance of engaging provider partners in advocacy efforts. The Georgia Department of Public Health contracts with the Georgia Ob-Gyn Society, the state ACOG affiliate, to coordinate its state review. Education and advocacy by the Georgia Ob-Gyn Society was a critical success factor in passage of this comprehensive legislation.

#### Michigan Maternal Mortality Surveillance System

<http://www.michigan.gov/mchepi>

First organized in Detroit area hospitals in 1950 by the Michigan Society of Ob-Gyn (MSOG) and the Committee on Maternal and Perinatal Health of the Michigan State Medical Society (MSMS), statewide maternal mortality surveillance has since grown into a collaboration between the Michigan Department of Community Health (MDCH), MSMS, and the chairs of the Departments of Obstetrics and Gynecology of Michigan medical schools. Volunteer committee members review pregnancy-related deaths and make recommendations for prevention. To identify cases, the Michigan Maternal Mortality Surveillance System employs the use of pregnancy-related cause of death codes on death certificates, pregnancy check boxes on death certificates, vital records linkage, and voluntary provider reporting. In addition to a Medical Review Committee, broadened surveillance of non-medical pregnancy associated cases led to the formation of an Injury Committee in 2004. Concurrently, a third, Interdisciplinary Committee was formed to review and prioritize recommendations from the Medical and Injury Committees and suggests further actions.

#### Colorado Violent Death Reporting System

<http://www.chd.dphe.state.co.us>

Colorado utilizes data from the NVDRS to improve maternal death case abstraction for non-hospital deaths due to homicide, suicide and substance overdose. The NVDRS provides the Colorado review committee with information needed to assess whether cases are pregnancy-related and how future deaths might be prevented. In addition to cause and manner of death, data includes current medication

use and toxicology screening results, summaries of law enforcement and coroner reports describing circumstances surrounding the death, and in some cases, information on intimate partner violence. Access to Colorado NVDRS staff and data expedites the case abstraction process, reducing redundant requests for law enforcement, coroner, and autopsy reports, and improving the efficiency and effectiveness of maternal mortality review in Colorado.

#### Innovation in Maternal Death Identification (Illinois)

<http://www.astho.org/Press-Room/ASTHO-Announces-2013-Vision-Award-Winners/9-20-13>

In Illinois, the 10 administrative perinatal centers conduct primary review of maternal deaths occurring within their network hospitals, and a statewide MMR committee was formed in 2000 to augment these regional reviews. The MMR committee meets quarterly to conduct case reviews and identify opportunities for statewide program and policy change. Though maternal death reporting has been mandated in Illinois since 1982, the MMR committee found that some deaths remained uncounted. In 2013, the state was honored for its innovative approach to improving its identification of maternal deaths, a project led by the Office of Policy Planning and Statistics. In collaboration with the MMR committee, a standardized investigative protocol was developed that utilizes nontraditional resources to identify maternal deaths, such as online newspaper reports, obituaries, search engines, and online funeral home websites. In addition, a checklist was developed to ensure that proper documentation reaches the MMR committee for complete case preparation and review.





### **STRATEGY 2: USE ADMINISTRATIVE DATA TO MONITOR PERFORMANCE AND OUTCOMES**

Complementary to maternal mortality review or in the absence of such a process, administrative data systems and facility-reported measures allow MCH programs to assess maternal health status, risk factors, and services obtained by women of reproductive-age in order to guide action.

#### **A. Engage in population-based surveillance of severe maternal morbidities.**

For every woman who dies during pregnancy, childbirth, or the postpartum period, more than 50 experience severe complications that can result in significant disability and increased costs to the woman, her family and society.<sup>8</sup> Since these cases occur with greater frequency, they also serve as more sensitive markers for serious social and care quality issues complicating the health status of U.S. mothers.<sup>34</sup> A significant body of work is advancing state efforts to validate administrative data and clinical criteria needed to assess such outcomes.<sup>8, 34-35</sup>



#### **IDEAS TO CONSIDER:**

- Partner with the state hospital association to access hospital discharge information. In the absence of access, explore data availability through the AHRQ Healthcare Cost and Utilization Project (HCUP) (Box 1.4).<sup>36</sup>
- Analyze state-level data on severe maternal morbidities and complications, and develop related recommendations for action.<sup>8</sup>
- If the state has a low annual number of pregnancy-related deaths, explore the feasibility of including cases of severe morbidity in ongoing maternal mortality review processes. Or, select one category of severe morbidity for review.
- Promote capacity for severe maternal morbidity review by facilities or regional networks. If possible, aggregate and analyze de-identified data at the state level to inform system improvements.<sup>26</sup> Refer to Element 6, page 89, for strategies to support facility-based reviews.

### **Box 1.4: Morbidity Surveillance Resources**

#### **Severe Maternal Morbidity (SMM) Indicators**

<http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/SevereMaternalMorbidity.html>

The CDC defines severe maternal morbidity based on a published algorithm that includes 25 diagnosis and procedure codes from the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM).<sup>8</sup> The codes included capture indicators of organ-system failure that likely represent specific, well-defined severe events. Regardless of pregnancy outcome, women who have any ICD-9-CM code indicative of a potentially severe event are designated as having SMM.

#### **Healthcare Cost and Utilization Project (HCUP) State Inpatient Database**

<http://www.hcup-us.ahrq.gov>

In lieu of state hospital discharge files, the HCUP State Inpatient Database (SID) may provide access to data needed for morbidity analyses. Forty-seven states, representing 97 percent of all U.S. community hospital discharges, now participate.<sup>36</sup> The SID contains a core set of clinical and nonclinical information on all patients, including uninsured individuals and those covered by Medicaid or private insurance. The data include principal and secondary diagnoses and procedure codes, admission and discharge status, patient demographics characteristics (e.g., age, race), expected payment source, total charges, and length of stay. An interactive, Web-based tool, HCUPnet, can be queried for specific ICD-9 codes.



## Element 1 | Strengthen Maternal Data Systems *continued*

### B. Monitor service delivery, performance, and care quality.

Timely, reliable data on maternity care in the United States can be used to allocate resources, drive quality improvement efforts, monitor impact, and ensure that maternal health remains a priority for policymakers. Aggregating information about care processes also can support development of state evidence-based or evidence-informed strategies, reported for the MCH Block Grant.



#### IDEAS TO CONSIDER:

- Improve access to administrative billing data used to measure quality of care. Use these data to monitor trends in specific services and associated maternal health outcomes, e.g., vaginal births after cesarean (VBAC).
- Ensure broad stakeholder participation in the development of state performance measures and evidence-informed strategy measures.
- Stratify maternal health measures by demographic characteristics, and engage stakeholders in conversations about the disparities identified.
- Build capacity to link vital records, Medicaid claims, hospital discharge records, and surveys to collect and report on key quality measures. Test ways to optimize integration of available data sets and health IT systems for performance measurement.
- Establish uniform reporting requirements for providers, facilities, and payers, and monitor reporting burden. Develop a user-friendly portal that makes performance results accessible by these groups to support quality improvement.

### Box 1.5: Select Performance and Quality Measure Sets

#### NQF-Endorsed® Measures

[http://www.qualityforum.org/Field\\_Guide](http://www.qualityforum.org/Field_Guide)

NQF, a nonprofit organization, works to catalyze health care improvements by endorsing consensus standards for performance measurement and ensuring that consistent, high-quality performance information is publicly available. Measures endorsed by NQF are evidence-based and have proven validity. There are currently 22 NQF-endorsed® measures specific to perinatal and reproductive health and more than 500 related to National Quality Strategic Priorities of affordable care, effective communication and care coordination, healthy living, patient safety, person- and family-centered care, and prevention and treatment practices for leading causes of death. The NQF Quality Positioning System (QPS) is a Web-based tool developed to help users more easily select and utilize NQF-endorsed® measures.

#### Joint Commission Core Perinatal Care Set

[http://www.jointcommission.org/core\\_measure\\_sets.aspx](http://www.jointcommission.org/core_measure_sets.aspx)

In February 2009, a Joint Commission technical advisory panel of experts in perinatal care convened to select a core set of evidenced-based Perinatal Care measures from among those endorsed for use by NQF. The selected set has five measures, including Elective Delivery (PC-01), C-Section (PC-02), and Exclusive Breast Milk Feeding (PC-05). Hospital data collection began with April 2010 discharges, and all measures were re-endorsed by NQF in March 2012. Since January 2014, the Joint Commission has mandated that facilities with 1,100 or more births collect and report on the core indicator set.<sup>37</sup>

#### Women's Health and Perinatal Nursing Care Quality Measures

[https://www.awhonn.org/awhonn/content.do?name=02\\_PracticeResources/02\\_perinatalqualitymeasures.htm](https://www.awhonn.org/awhonn/content.do?name=02_PracticeResources/02_perinatalqualitymeasures.htm)

In 2012, the Women's Health and Perinatal Nursing Care Quality Measures Advisory Panel, convened by AWHONN, developed a proposed set of nursing care quality measures. Included are measures of mother-initiated, spontaneous labor and labor support, enhanced breastfeeding support, and women's health and wellness coordination throughout the life span (i.e., receipt and quality of well visits). Following a public comment period held in April 2013, measures were refined and will now be tested for feasibility, validity and reliability.<sup>38</sup> In later phases, the tested measures will be submitted to NQF for possible endorsement, and stakeholders will make needed adjustments to electronic health records and procedure codes.



## Element 1 | Strengthen Maternal Data Systems *continued*

### EXAMPLES FROM THE FIELD:

#### Maternal Data Center (California)

[https://www.cmqcc.org/california\\_maternal\\_data\\_center\\_cmdc](https://www.cmqcc.org/california_maternal_data_center_cmdc)

The California Maternal Data Center is an online resource that links clinical providers and public health departments with easy access to maternity care metrics to support rapid-cycle quality improvement and performance management activities. Participating hospitals submit patient discharge data to a secure, Web-based tool, which can automatically generate a wide range of perinatal performance metrics and patient-level information. The tool is designed to provide low burden, low cost, and high value data support to administrators and service-line management. The Data Center is administered by a multi-stakeholder Steering Committee, composed of clinicians, hospitals, payers, purchasers, consumer organizations and state agencies. Current quality metrics are available on the Center website.

#### States Monitoring Assisted Reproductive Technology (SMART) Collaborative (Multiple)

<http://www.cdc.gov/art/smart>

This collaborative project between CDC and state health departments in Connecticut, Florida, Massachusetts, and

Michigan links data from the National Assisted Reproductive Technology Surveillance System (NASS) to vital records, hospital discharge data, birth defects registries, cancer registries, and other state-level surveillance systems. NASS collects data from fertility clinics to monitor the safety and effectiveness of assisted reproductive technology (ART) procedures in the United States, given the associated risk for multiple births.<sup>39</sup>

#### Postpartum Hemorrhage Project Data Portal (Multiple)

The AWHONN Postpartum Hemorrhage Project Data Portal is a secure online tool that assists leaders at participating hospitals in Georgia, New Jersey, and the District of Columbia with monitoring of their quality improvement activities. Data is collected on maternal outcomes, key clinician and nurse behavior changes, hospital structural changes (education and drills), and level of administrative support provided. Easy-to-read graphs and data tables are available to assist hospital leaders in communicating project status to their colleagues. A hospital-based preparedness survey allows hospitals to compare their number of preparedness elements to others in their state and the nation. For more information about the data portal and preparedness survey, please contact [hemorrhage@awhonn.org](mailto:hemorrhage@awhonn.org).

### STRATEGY 3: APPLY DATA FROM SURVEYS AND QUALITATIVE SOURCES

A range of needs assessment data can be used to inform maternal health efforts, whether population-based surveys, input from stakeholder forums, focus group data, or information obtained through surveys of birthing facilities. Consider the following recommendations to improve your understanding of the health status and needs of women in your state.

#### A. Monitor women's health and pregnancy risk factors through population-based surveys.

Population-based surveys and indicators derived from them allow states to monitor changes in maternal health risk and protective factors, self-reported service utilization, and morbidity outcomes over time.



#### IDEAS TO CONSIDER:

- Enhance and expand the use of existing surveys and surveillance systems, such as PRAMS and Listening to Mothers surveys (box 1.6), to monitor women's health and health care experiences.
- Promote awareness and use of the core preconception health indicator set (box 1.6). Use the preconception health indicators to monitor risk factors known to impact maternal outcomes, such as smoking cessation, alcohol misuse, diabetes, and obesity.



### Box 1.6: Population-based Surveys and Indicator Sets

#### **Pregnancy Risk Assessment Monitoring System (PRAMS)**

<http://www.cdc.gov/prams>

PRAMS is a joint surveillance project between state health departments and the Division of Reproductive Health at the CDC. In participating states, PRAMS surveys are sent to a stratified, systematic sample of 100 to 250 new mothers every month from a frame of eligible birth certificates, with oversampling available for special populations. Questions address pre-pregnancy health status and behaviors, pregnancy intendedness, and women's experiences during the prenatal and early postpartum periods. An online data system, PRAMStat, enables public access to more than 250 indicators.

#### **Listening to Mothers Surveys**

<http://www.childbirthconnection.org/listeningtomothers>

Childbirth Connection is a core program of the National Partnership for Women and Families. Its national Listening to Mothers surveys are valuable resources for understanding and improving women's childbearing experiences. The surveys address pregnancy planning through the postpartum period and shed light on the attitudes, beliefs, knowledge, and preferences of women, as well as maternity care practices and personal characteristics. All Listening to Mothers datasets are freely available in a public data repository maintained by the Odum Institute at the University of North Carolina.

#### **Core Preconception Health Indicators**

<http://www.cste.org/?PreconIndicators>

In 2007, the national Preconception Health and Health Care Initiative Steering Committee convened a work group of MCH program managers, epidemiologists, and data managers from seven states to propose measurable preconception health indicators for use at the state level. Representatives from California, Delaware, Florida, Michigan, North Carolina, Texas, and Utah developed a final list of 45 Core State Preconception Health and Health Care Indicators across 11 domains. These indicators allow states to uniformly define, collect, and report on data relevant to the health status of women ages of 18 to 44 years. Forty-one indicators (>90 percent) are obtained through PRAMS or BRFSS.

### B. Engage women to improve well-care and maternity systems.

Title V MCH programs are well aware that consumer voices are an important element of ongoing needs assessment activities. When program and policy decisions are based on the experiences of women, the delivery and impact of these initiatives improves.



#### **IDEAS TO CONSIDER:**

- Use qualitative methods to understand the experiences of women when receiving preventive health and maternity care. Implement maternity adaptations of the generic Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys to seek consumer feedback on experiences with routine obstetric and well care.
- Seek opportunities to hear from disproportionately impacted communities, such as women of color, and engage them in systems transformation. Examine drivers for variations in social determinants of health (e.g., education, finances) and use of pre- and interconception care.
- Explore options to partner with Maternal, Infant, and Early Childhood Home Visiting (MIECHV) and Healthy Start service providers or local MCH councils to coordinate maternal health focus group discussions and minimize the burden on consumers.
- Work with consumer organizations that operate patient registries to examine information that has come directly from the women themselves (Box 1.7).



### Box 1.7: Preeclampsia Registry

<http://preeclampsiaregistry.org>

Operated by the Preeclampsia Foundation, the Preeclampsia Registry is a “living database” that fosters the collection of medical records, family history, and other information for women experiencing hypertensive disorders of pregnancy, such as preeclampsia, eclampsia, or HELLP syndrome. Once access is granted, de-identified data can be sorted by state for state-specific analyses. A similar registry is maintained by the Amniotic Fluid Embolism Foundation in partnership with Baylor College of Medicine (<http://afesupport.org>).

### EXAMPLES FROM THE FIELD:

#### Engaging Women’s Voices to Address Substance Use and Violence (Colorado)

<https://www.colorado.gov/cdphe/maternal-mortality>

In 2013, guided by findings from its statewide Maternal Mortality Review, the Colorado Department of Public Health and Environment (CDPHE) partnered with the Colorado Pregnancy-Related Depression State Advisory Committee to design a qualitative study addressing opportunities to better support women experiencing a “near miss” event related to substance overdose, suicide or intimate partner violence (IPV). With funding from the AMCHP Every Mother Initiative, CDPHE contracted with two clinical psychologists to provide technical expertise and conduct exploratory qualitative work with women who were at high risk for overdose or violent death during pregnancy and the postpartum period. Semi-structured interviews resulted in an improved understanding of the unique needs of these women, as well as system barriers to adequate support. Findings also informed the Colorado Title V needs assessment and a number of recommendations slated for statewide implementation in coming years.

#### Preconception and Pregnancy Health Focus Groups (Oklahoma)

[http://www.ok.gov/health2/documents/PCC\\_focus\\_groups\\_2011.pdf](http://www.ok.gov/health2/documents/PCC_focus_groups_2011.pdf)

As part of a broader birth outcomes initiative in Oklahoma, Preparing for a Lifetime, a Preconception and Interconception Care and Education Workgroup was convened and charged with understanding women’s perceptions of health before, during, and after pregnancy. Focus groups were conducted in the fall of 2009 through the summer of 2010 to assess what women know and how they learn about pregnancy-related health during their reproductive years. The information gathered in these focus groups helped Oklahoma State Department of Health programs and partner agencies understand how to provide services and interventions in effective, culturally appropriate ways.

#### Pregnancy Risk Assessment Monitoring System (Hawaii)

<http://health.hawaii.gov/mchb/home/hawaii-pregnancy-risk-assessment-monitoring-system-prams>

PRAMS was first implemented in Hawaii in 2000. In 2010, the Department of Health published its first State of Hawaii PRAMS Trends Report, which analyzed trends in 16 maternal and child health indicators based on 2000-2008 PRAMS data. The Department of Health also published manuscripts and numerous fact sheets on indicators informed by PRAMS including preconception obesity, preconception alcohol use, breastfeeding, and postpartum depression. These products have been used to increase awareness of the indicators, promote use of surveillance data, and to inform program, planning, and policy. In addition to reports and fact sheets, updated PRAMS data are publicly available at the Hawaii Health Data Warehouse (<http://www.hhdw.org>) and the Hawaii Health Matters (<http://www.hawaiihealthmatters.org/>) websites.

#### Pregnancy Risk Assessment Monitoring System (South Carolina)

<http://www.cdc.gov/prams/state-ss/southcarolina.html>

In 2008, South Carolina PRAMS data indicated that 48 percent of live births were the result of unintended pregnancies, either mistimed or unwanted. Among women with live births who were not trying to get pregnant, more than half (56 percent) were not using birth control. In response, PRAMS staff initiated a partnership with the South Carolina Chapter of March of Dimes, physicians, and hospital staff from across the state to launch the Every Woman South Carolina campaign and coordinated preconception health messaging. In order to build local infrastructure, preconception health coalitions were established in each of the four South Carolina perinatal regions. By leveraging PRAMS data, resources were successfully prioritized to support reproductive life planning and family planning access in the interconception period. This work has since evolved into broad-based, statewide efforts to improve access to long-acting reversible contraception (LARC) as part of the South Carolina Birth Outcomes Initiative.



## Element 1 | Strengthen Maternal Data Systems *continued*

### Tracking Core State Indicators of Preconception Health and Health Care (North Carolina)

<http://www.schs.state.nc.us/data/preconception>

On an annual basis, the North Carolina Department of Health and Human Services (NCDHHS) measures and tracks available Core State Preconception Health and Health Care Indicators, as recommended in 2006 by a work group of the national Preconception Health and Health Care Initiative Steering Committee. Data for the comprehensive set of preconception health indicators are analyzed each year and made available on the North Carolina State Center for Health Statistics Tracking Preconception Health website. The site contains data from as early as 2004. The state also produces fact sheets, which summarize major preconception health data and trends, and uses the data to guide statewide strategic planning efforts around preconception and interconception health.

### Every Woman Southeast Women's Voices Survey (Multiple)

<http://www.everywomansoutheast.org>

Every Woman Southeast (EWSE) is a coalition comprised of stakeholders from the nine southeastern states of Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. Its 2013 Southeastern Women's Voices Survey was designed to explore the barriers women face in accessing health care services, the services and screenings that could benefit women in the southeast region, and ways that EWSE could reach women with information about the Affordable Care Act and key preventive health services. Key findings have been used to shape subsequent coalition efforts.





# Element 2 | Increase the Value of Investments in Maternal Health

## SNAPSHOT

When allocating limited resources, the “how” can be as important as the “what.” MCH programs can position themselves for long-term sustainability by aligning the activities of multiple, cross-sector partners, utilizing evidence, and clearly communicating the impact of programs and policies implemented. This section is organized around the following strategies:

- Participate in maternal and women’s health partnerships.
- Demonstrate impact and share what works.

While the transformation of the MCH Block Grant brings new opportunities for state programs, it also signifies the heightened level of scrutiny under which publicly funded programs now operate. Maximizing – and demonstrating – value per dollar investment is critical to sustaining a comprehensive, statewide maternal health initiative.

Significant opportunities exist in the formation of effective partnerships. Successful partnerships expand the scale of impact, and in doing so, have great potential to maximize value.<sup>40</sup> An important type of partnership, Perinatal Quality Collaboratives (PQCs) are networks of perinatal care providers and public health professionals working to improve pregnancy outcomes by advancing evidence-based clinical practices and processes.<sup>41</sup> CDC currently supports state PQCs in California, Illinois, Massachusetts, New York, North Carolina, and Ohio. More than 25 states currently have a PQC or plans to launch one (box 2.5).

Partnerships also include public-private councils, interagency workgroups, or consortia of multidisciplinary partners committed to the health and well-being of women and infants. They may be tasked with improving surveillance quality, launching patient safety initiatives in response to maternal health and mortality surveillance, or addressing access to care barriers and coordinated delivery systems. Many of the

activities described in Part 2 of this guide may be implemented in conjunction with such collaboratives.

A collective impact framework can help to maximize partner engagement and successful collaboration.<sup>42</sup> It includes the following key elements:

- 1. Common agenda** – a shared vision for change that includes a common understanding of the problem and agreed upon actions to address it.
- 2. Shared measurement systems** – mutually agreed upon data and systems by which success will be measured and reported.
- 3. Mutually reinforcing activities** – a specific set of activities undertaken by partners in areas where they are apt to excel, which align with an overarching, coordinated plan of action.
- 4. Continuous communications** – a common vocabulary and regular meetings, which promote trust and recognition of shared motives.
- 5. Backbone organizational support** – the commitment of dedicated staff to support planning and management of the initiative.

State MCH programs are well-positioned to serve as backbone organizations for comprehensive maternal health initiatives in their state. However, the engagement of clinical,



## Element 2 | Increase the Value of Investments in Maternal Health *continued*

### Box 2.1: The Collective Impact Forum

<http://collectiveimpactforum.org>

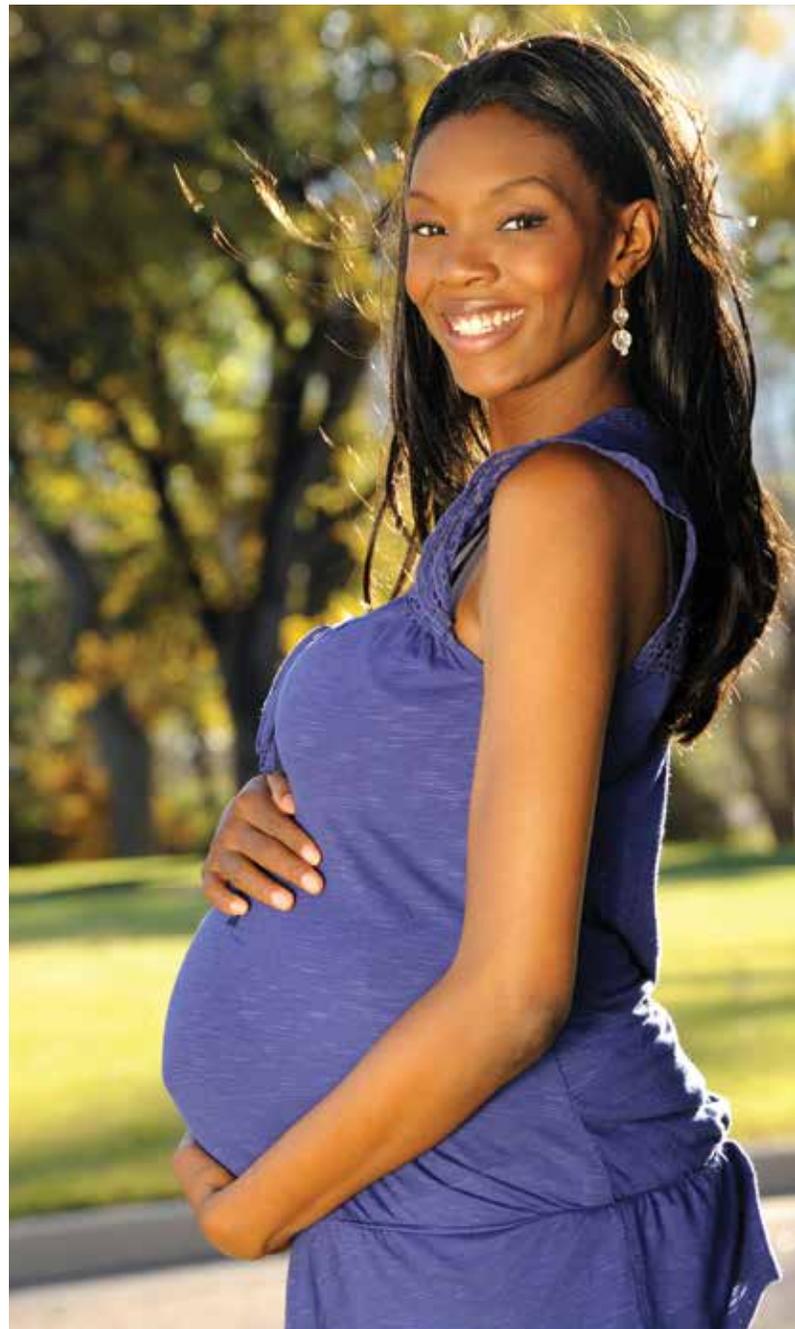
The Aspen Institute and FSG, Inc. launched the Collective Impact Forum in 2014 to support the efforts of those practicing collective impact in the field. On their website, states can access a self assessment, find local success stories, and connect with peers in virtual communities tailored to their role (backbone organization, partner, or funder). The forum also curates and makes freely available a wealth of resources contributed by practitioners with real-world experience, known as Co-Catalysts. Visit the site to find case studies, videos, podcasts, and more.

social service and a wide range of other partners will be critical to establishing a common agenda and the alignment of activities needed to achieve it. When defining the scope of work for any partnership, the type and nature of activities considered depends on what has been deemed effective in the target population or setting.

There is general consensus around the importance of implementing evidence-based approaches to increase the value of prevention strategies. However, applying this wisdom can be difficult in practice. Health scientists at CDC have defined evidence as, “information that is systematically obtained in a manner that is replicable, observable, creditable, and verifiable for use in making decisions.”<sup>42</sup> They identify three types of evidence useful in guiding decision making and that apply to maternal health initiatives:

- **Experiential evidence** includes learnings derived over time through practice (i.e., historical or participatory knowledge). It includes the knowledge of subject matter experts and may be elicited through consensus processes, communities of practice, or expert panels.
- **Contextual evidence** considers indicators of community need and preference to determine whether a strategy will be effective and feasible in the target population or setting. This type of evidence includes focus groups, population-based surveys, census, or administrative data (e.g., health care, education, or law enforcement).
- **Best available research evidence** is derived from scientific inquiry and rigorous evaluation of outcomes. It is most commonly associated with the term “best practice.”

For each of the above types of evidence, the degree of strength can inform the selection of maternal health improvement strategies that maximize limited resources.





## Element 2 | Increase the Value of Investments in Maternal Health *continued*

### STRATEGY 1: PARTICIPATE IN MATERNAL AND WOMEN'S HEALTH PARTNERSHIPS

The presence of high-functioning, statewide partnerships has augmented maternal health efforts in a number of states. Explore the following options to expand valuable relationships within yours.

#### A. Align the work of state government offices and programs.

It may be helpful to begin by completing a scan of women's and maternal health initiatives implemented across your state by other public agencies and programs. Doing so may reveal untapped opportunities for cross-agency partnership. Reach out and strengthen these relationships to leverage limited dollars, reduce duplication, and improve consistency of health promotion messaging.



#### IDEAS TO CONSIDER:

- Formalize partnerships with public programs that address the health of reproductive-age women, such as Medicaid, Title X, WIC, violence and injury prevention, home visitation, chronic disease prevention, or substance abuse treatment programs. Convene an ad hoc task force or permanent committee to support ongoing coordination across programs and agencies.
- Engage with other public agencies (e.g., public safety, criminal justice, agriculture extension, education, housing, natural resources, transportation) to address social conditions that impact the health of reproductive-age women.
- Meet with state Medicaid leaders to discuss the inclusion of maternal health performance improvement projects in Managed Care contracts.

#### B. Convene public health and advocacy partners for strategic thinking and action.

At the start of the planning process, it may be helpful to take inventory of existing partnerships and stakeholders yet to be engaged. Women's and maternal health issues are important to a diverse set of potential partners, and Title V programs may be well positioned to bring these groups together.

### Box 2.2: Women's Health Advocacy Partners

#### Every Woman Preconception Health Partnerships

Preconception health partnerships have launched in several states, including:

- Every Woman California, <http://www.everywomancalifornia.org>
- Every Woman North Carolina, <http://everywomannc.com>
- Every Woman Wisconsin, <http://www.everywomanwi.org>
- Every Woman Southeast, <http://everywomansoutheast.org>

#### Healthy Mothers, Healthy Babies State and Local Chapters

<http://www.hmhb.org/about-us/our-programs/state-local-hmhb-coalitions>

#### March of Dimes State Chapters

<http://www.marchofdimes.org/contact-us.aspx>

#### National Healthy Start Association Project Directory

[http://www.nationalhealthystart.org/healthy\\_start\\_initiative/project\\_directory](http://www.nationalhealthystart.org/healthy_start_initiative/project_directory)

#### National Network to End Domestic Violence State and Territorial Coalitions

<http://nnedv.org/resources/coalitions.html>



## Element 2 | Increase the Value of Investments in Maternal Health *continued*



### IDEAS TO CONSIDER:

- Explore the partnership work happening in other states. Identify agencies and organizations in your state that may be needed around the table to launch similar efforts (box 2.2).
- If not already doing so, engage state chapters of national perinatal resource and advocacy groups or similar local entities focused on the health of women and mothers (Box 2.2).
- Support community-based planning processes that result in strong, local referral systems for women identified through screening programs.

### C. Engage clinicians as partners.

Providers and state professional affiliates offer valuable expertise in the development of care guidelines, and their partnership can bolster statewide adoption and adherence with new recommendations and standards. State hospital associations and facilities also bring significant weight to discussions around comprehensive, integrated care systems and access barriers. Each group offers linkages to a wide network, and this reach will be invaluable as maternal health efforts take shape.



### IDEAS TO CONSIDER:

- Engage professional and regulatory communities in open dialogue on previously uncoordinated efforts to reduce maternal morbidity and mortality.
- Plan a meeting with state hospital systems to understand their priorities, objectives and past accomplishments. Offer to partner with 501(c)(3) nonprofit hospitals in developing implementation strategies that address identified community health needs, per ACA provisions.
- Establish relationships with state clinical advisory committees. Regularly share findings from maternal mortality and morbidity surveillance activities to ensure that updates to practice guidelines and perinatal system standards incorporate recommendations.
- Engage professional organizations as key partners in surveillance, advocacy, provider training, and dissemination of clinical tools and resources. Provide them with the opportunity to offer input on proposed maternal mortality recommendations to improve participation and buy-in.

### D. Engage collaboratives to improve maternal health and health care quality.

Once you take inventory of existing and untapped clinical partners, look for opportunities to engage them through maternal health care quality collaboratives. If a formal collaborative does not exist in your state, there may be local partnerships or hospital consortia that convene to support improved practice and uptake of quality care guidelines. Assessing your current quality environment can be an important step toward cross-sector collaboration to advance clinical practice and systems change.



### IDEAS TO CONSIDER:

- Utilize a learning collaborative or innovation model to engage statewide partners in population-based maternal health improvement efforts.
- Convene or take part in health reform collaboratives that engage the state Medicaid agency, private insurers, and providers to test alternative payment models, establish indicators for new initiatives, and design appropriate incentives to help providers meet established targets. Refer to Element 5 for additional ideas.
- Join a PQC or similar entity to improve the quality of obstetric care across birth settings. Bring together public health practitioners, public and private insurers, hospital and out-of-hospital providers, and consumers to establish an agenda, pilot systems-based initiatives, develop standard protocols and guidelines, and carry out quality improvement efforts.



## Element 2 | Increase the Value of Investments in Maternal Health *continued*

### Box 2.3: The Practical Playbook

<https://practicalplaybook.org>

A joint venture among the de Beaumont Foundation, Duke University Department of Community and Family Medicine, and the CDC, the Practical Playbook aims to integrate the work of primary care and public health groups. The initiative website serves as a platform for gathering and sharing tools to guide public health-clinical collaboration across a variety of public health topics, including MCH. State and community indicator sets, success stories, integration guidance, and external resources are searchable by geographic location, population size, and disease-specific or cross-cutting topic, such as health care reform, health information technology, Medicaid, and social determinants of health.

### EXAMPLES FROM THE FIELD:

#### California Maternal Quality Care Collaborative

<https://www.cmqcc.org>

The California Maternal Quality Care Collaborative (CMQCC) was founded in 2006 with a mission to end preventable morbidity, mortality and racial disparities in California maternity care. The CMQCC represents a partnership of more than 40 public and private agencies, programs, professional groups, health systems, and universities. It currently receives funding from the California HealthCare Foundation and CDC. Its structure includes an executive committee, policy and operational units, the California Pregnancy Associated Mortality Review Committee, and the state Maternal Data Center. It also includes funded quality improvement projects at the community and facility levels and taskforces convened to respond to leading causes of maternal morbidity and mortality, including obstetric hemorrhage, preeclampsia, and cardiovascular disease in pregnancy. In addition to quality improvement activities, the CMQCC has advanced standard performance measures and a public agenda in key areas of maternity care practice.

#### Delaware Healthy Mother and Infant Consortium, Perinatal Cooperative

<http://dethrives.com/dhmic/perinatal-cooperative>

The Perinatal Cooperative was established in 2005 to promote quality assurance and enhance communication and collaboration across birth hospitals in the state. A medical director provides oversight for the Perinatal Cooperative, and member organizations agree to collect and report specific data elements relevant to the clinical priorities selected by an Advisory Board. The Division of Public Health Center for Family Health Research and Epidemiology receives selected data indicators, compiles and analyzes data by site, and regularly shares data with members in a nonpunitive manner. In this way, all members of the Perinatal Collaborative have free access to current data for use in benchmarking and continuous quality improvement (CQI). Best practices in clinical care are made available to member hospitals through Web-based

continuing education and discussion forums, and an education coordinator offers onsite technical assistance.

#### Every Woman Southeast

<http://everywomansoutheast.org>

Every Woman Southeast is a coalition of partners in nine states (Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee) focused on building and sustaining an equity-focused, life course approach to women's wellness. Since 2010, this coalition has connected partners with common interests, provided resources and trainings through a variety of platforms, conducted research, and supported a number of key projects focused on preconception health and reproductive life planning. The coalition is focused on supporting "grass-tips" leaders across the southeast and works to elevate women's voices into program and policy discussions and decisions. The coalition has several working groups, connects ideas and organizations via its website, supports active social media, and produces a monthly newsletter, available for download on its website or by email subscription. Membership is free and partnership is encouraged.

#### Every Woman Wisconsin

[www.everywomanwi.org](http://www.everywomanwi.org)

Every Woman Wisconsin, also known as the Wisconsin Healthiest Women Initiative, is a statewide, system-level collaboration to improve the health and well-being of women and men of reproductive age and eliminate racial and ethnic disparities in birth outcomes. With support from the Wisconsin MCH program, the partnership seeks to strengthen community capacity to understand and address determinants of health during childbearing years; expand access to affordable, high-quality health care services and socioeconomic supports; and monitor performance and quality. The evolution of the partnership and its activities are documented on its website. Recent efforts include collaboration with Wisconsin Medicaid to increase postpartum visit rates through an Obstetric Medical Home pilot project and pay-for-performance initiatives; broad,



## Element 2 | Increase the Value of Investments in Maternal Health *continued*

### Box 2.4: State Affiliate Directories for Public Health-Clinical Partnership

#### FOR PUBLIC HEALTH PROFESSIONALS: PROVIDER ORGANIZATION STATE CHAPTERS

**American Academy of Family Physicians**

<https://nf.aafp.org/MyAcademy/contactmychapter/Index/ChapterDirectory>

**American Academy of Nurse Practitioners**

<http://www.aanp.org/about-aanp/regions>

**American Academy of Pediatrics**

<http://www.aap.org/en-us/about-the-aap/chapters-and-districts>

**American College of Emergency Physicians**

<http://www.acep.org/chapters>

**American College of Nurse Midwives**

<http://www.midwife.org/Affiliates>

**American College of Obstetricians and Gynecologists**

<http://www.acog.org/About-ACOG/ACOG-Districts>

**Association of Women's Health, Obstetric and Neonatal Nurses**

<https://www.awhonn.org/awhonn/view.all.sections.do>

#### FOR CLINICAL PROVIDERS: STATE PUBLIC HEALTH PARTNERS

**State Title V Maternal and Child Health Directors (State Profiles)**

<http://www.amchp.org/Policy-Advocacy/MCHAdvocacy/Pages/StateProfiles.aspx>

**Office of Women's Health State and Territorial Liaisons**

<http://womenshealth.gov/about-us/who-we-are/state-offices>

partner engagement around adolescent well-visit quality; and establishment of a new Wisconsin Perinatal Quality Collaborative.

**Florida Perinatal Quality Collaborative**

<http://health.usf.edu/publichealth/chiles/fpqc>

The Florida Perinatal Quality Collaborative (FPQC) was established in 2010 to improve maternal and infant health outcomes through the delivery of high-quality, evidence-based perinatal care. The FPQC represents a rich partnership of perinatal organizations, individuals, health professionals, advocates, policymakers, hospitals, and payers. It seeks to create an inclusive culture of cooperation and transparency across perinatal specialties, and it encourages policymakers, payers, and other professionals invested in perinatal health to communicate their distinct perspectives. Through teamwork, information sharing, and diversity across disciplines and professions, the FPQC supports data-driven quality improvement processes that address the state's most critical perinatal issues.

**MCH Family Council (Illinois)**

Through a partnership with EverThrive of Illinois, the state Title V program developed infrastructure for a MCH Family Council comprised of Title V consumers from the five population domains. The MCH Family Council will provide input to ensure that MCH programming remains relevant and meets the needs of Illinois mothers, infants, children, and adolescents. Recruitment efforts began in the East St. Louis area through contact with Healthy Start partners. The recruitment process ensures that committee members represent the appropriate skill sets, perspective, and expertise to benefit the MCH program. Steps also are taken to ensure appropriate demographic representation across the state (e.g., by race and ethnicity, population domain, and geographic area).

**Louisiana Birth Outcomes Initiative**

<http://dhh.louisiana.gov/index.cfm/subhome/27>

The Louisiana Birth Outcomes Initiative (BOI) launched in 2010 with goals to foster a population of healthier women,



## Element 2 | Increase the Value of Investments in Maternal Health *continued*

### Box 2.5: Health Care Quality Collaborative Resources

#### Maternal and Perinatal Care Quality Collaboratives Directory

<http://transform.childbirthconnection.org/resources/collaboratives>

Childbirth Connection, a core program of the National Partnership for Women and Families, has prepared a directory of collaboratives focused specifically on maternal or perinatal care quality. If your state has experienced challenges in maintaining this type of partnership, reach out to contacts on this list to seek technical assistance and consultation from neighboring states.

#### Perinatal Quality Collaborative Directory and Resources

<http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PQC.htm>

CDC provides funding to a limited number of states through a State-Based Perinatal Quality Collaboratives Cooperative Agreement. Webinars and other resources are produced by CDC in conjunction with funded PQC. These tools are designed to foster the sharing of knowledge and expertise by current PQC to facilitate new and enhanced collaboratives in other states. A complete list of state PQC links is available.

#### Regional Health Improvement Collaboratives

<http://www.nrhi.org/about-collaboratives>

The Network for Regional Healthcare Improvement (NRHI) provides resources for Regional Health Improvement Collaboratives, defined by NRHI as independent, nonprofit organizations comprised of multiple stakeholders (providers, payers, purchasers, and consumers) who come together to improve health and health care. Links to more than 30 member collaboratives are available on the site. Regional collaboratives may offer opportunities to improve maternal care, though this is not their sole focus.

fewer premature births, reduced utilization of Neonatal Intensive Care Units (NICU), and a culture of quality improvement and safety in Louisiana birthing hospitals. The initiative convened statewide “Action Teams” that included quality and measurement experts, hospitals, health system leaders, health plans, clinicians, consumers, and community partners committed to improving the health of women and infants in Louisiana. Priorities identified by these stakeholders complement priorities identified through the statewide Title V needs assessment process. Currently housed under state Medicaid, a quality collaborative on maternity care has launched, among other activities, and BOI successes include a greater than 80 percent drop in the rate of non-medically indicated elective deliveries prior to 39 weeks.

#### Massachusetts Perinatal Quality Collaborative

<http://www.mapqc.org>

Formed in 2011 with a goal to improve perinatal outcomes for women and newborns, the Massachusetts Perinatal Quality Collaborative (MPQC) is a voluntary, cooperative program whose membership represents each of the 48 birthing facilities in the Commonwealth. Convened to promote the sharing of best practices in perinatal care, the MPQC also engaged key public health and clinical stakeholders from the Massachusetts Department of Public Health, ACOG, AWHONN, the American College of Nurse-Midwives (ACNM), American Academy of Pediatrics (AAP), and March of Dimes.

Current initiatives include efforts to develop perinatal care guidelines; improve recognition and management of maternal hemorrhage through universal adoption of clinical guidelines; increase the rate of women returning for a postpartum visit; and reduce the number of scheduled, induced deliveries or cesarean sections that occur for no medical reason before 39 weeks (early elective deliveries). Due in part to the work of the MPQC, the rate of early elective deliveries has declined from 15 percent in 2010 to just over 1 percent in 2014.

#### New York State Perinatal Quality Collaborative

<http://www.nyspqc.org>

One of six state partnerships currently funded by CDC, the New York State Perinatal Quality Collaborative (NYS PQC) operates under the leadership of the New York State Department of Health, with an aim to improve the safety and quality of care for women and infants in the state. Among its current priorities are efforts to reduce labor inductions and cesarean deliveries performed before 39 weeks without medical indication. To take action, the Department of Health began collaborating with regional perinatal centers in the state in 2010 to implement an Obstetrical Improvement Project, aligning with the New York State Partnership for Patients in 2012 to engage all Level I, II, and III birthing hospitals. To date, nearly all hospitals across the state have engaged in one or more collaborative learning networks through the NYS PQC.



## Element 2 | Increase the Value of Investments in Maternal Health *continued*

### Oklahoma Perinatal Advisory Task Force <http://www.okhca.org/about.aspx?id=2973>

In 2005, the Oklahoma Title V MCH program and the state Medicaid agency, Oklahoma Health Care Authority, joined forces to establish the Perinatal Advisory Task Force to assist both agencies in improving policies and services for low-income Oklahoma women. Comprised of providers, hospitals, payers, universities, and families, the task force has been instrumental in improving services for women enrolled in the state Medicaid program, SoonerCare, including reimbursement for prenatal risk assessments, first trimester ultrasounds, high-risk obstetric care, dental care, and tobacco use cessation counseling. With expanded support, leaders from partnering agencies and physician champions are now guiding the transition of this group from task force to the Oklahoma Perinatal Quality Improvement Collaborative. A medical director provides leadership for the collaborative and serves as a liaison between health care providers and policymakers to further strengthen community partnerships.

### Women’s Health Workgroup (Washington)

The Women’s Health Workgroup in the Washington Office of Healthy Communities offers a cross-program forum for input and response to women’s health issues and service gaps. The group is comprised of representatives from many departmental programs in the Prevention and Community Health Division that touch the lives of women of reproductive age, including the Office of Nutrition Services, Office of Immunization and Child Profile, Family Planning Reproductive Health (Title X), Perinatal and Women’s health, Healthy Eating Active Living, Tobacco, and Breast, Cervical and Colon Cancer Program. Currently convened by the Access, Systems and Coordination Section, the group provides a space to exchange data, enhance referrals, coordinate resources, and leverage cross-program expertise for initiatives aimed at improving the health of women and mothers. Most recently, the group has explored cross-program collaboration and integrated approaches in areas such as gestational diabetes, weight gain in pregnancy, breastfeeding promotion, and preconception health, among other topics.

## STRATEGY 2: DEMONSTRATE IMPACT AND SHARE WHAT WORKS

An abundance of resources exists to facilitate sharing of evidence-informed strategies. Several, made available by expert panels, national organizations, and federal agencies, are described in Box 2.6. Others are included as resources throughout this guide. While the body of evidence for effective maternal health interventions continues to expand, there is a need to address the gaps that still exist while assessing and communicating the value of programs and policies in place.

### A. Build program and policy evaluation capacity.

MCH programs are committed to the use of evidence-informed strategies to improve the health of women and mothers in their state. Yet, in some settings and among special populations, available evidence of program and policy effectiveness may be weak, allowing disparities to persist. MCH programs can build knowledge of effective interventions by embedding program and policy evaluation capacity throughout all programs serving women of reproductive potential, especially those impacting women of color and other disproportionately impacted communities. A strong evaluation infrastructure also drives continuous improvement, increasing value over time.



#### IDEAS TO CONSIDER:

- Develop capacity for economic analysis. Design and conduct cost-benefit and cost-effectiveness analyses to establish return on program and policy investments.
- Work with others in the state to establish a Center for Health Equity that can support evaluation and quality improvement efforts for programs and policies intended to reduce disparities.
- Provide evaluation training and support to local grantees and contractors. Review evaluation requirements and opportunities to strengthen deliverables in grantee contracts.



## Element 2 | Increase the Value of Investments in Maternal Health *continued*

### B. Participate in activities that expand the existing evidence base.

In the absence of proven tools and practices, MCH programs can further strengthen existing evidence through new funding mechanisms and state and community-based research and evaluation partnerships. As discussed previously, these activities will depend on strong data capacity and systems.



#### IDEAS TO CONSIDER:

- Support demonstration projects or fund the scale up of interventions where evidence of effectiveness is promising, but limited (e.g., scope, population, setting). Encourage replication and ongoing evaluation of promising or effective approaches.
- Evaluate the impact of policies that promote access to expanded levels of care and support, such as payment for interventions not typically covered by insurance (e.g., language translation, care coordination, lactation support, nurse home visitation, doula support).
- Employ community-based participatory research and qualitative methods to expand knowledge of preconception and maternal health protective factors and effective interventions.
- Collaborate with academic and non-traditional partners in biomedicine, immunology, medical anthropology and sociology to better understand the social determinants of disease in women. Review promising policy and practice to generate a research agenda.

### C. Communicate the value of maternal health initiatives.

Advancing the maternal quality agenda will require both a commitment to implementing high-quality, high-value interventions and MCH program capacity to effectively communicate this commitment, along with program and policy impact and the need for continued investments. Decision makers also must understand the importance of translating research findings into action at the clinical and community levels. Public education and engagement can develop critical enabling factors and conditions needed for successful policy change as well.



#### IDEAS TO CONSIDER:

- Include maternal health performance measures in the annual MCH Block Grant and other MCH program proposals, and report on the impacts achieved.
- Submit promising and effective practices for inclusion in the AMCHP Innovation Station. Encourage partners throughout the state to utilize and contribute to this resource.
- Provide decision makers and partners with evaluation findings for initiatives that have demonstrated impact in achieving improved maternal health outcomes and reduced disparities. Develop media kits containing key messages for education by local health departments and other state affiliates.
- Use social media platforms to reach consumer audiences. Leverage the influence and reach of parents who blog and other high-traffic consumer sites by educating and partnering with this community to share the importance of statewide maternal health efforts.

### EXAMPLES FROM THE FIELD:

#### Kentucky Homeplace Program – Demonstrating Return on Investment

<http://ruralhealth.med.uky.edu/cerh-homeplace>

Implemented since 1990 by the University of Kentucky Center for Excellence in Rural Health, Kentucky Homeplace is a community health worker (CHW) initiative funded by the state to address rural health disparities. Through CHW outreach and a chronic disease self-management model, the program addresses lifestyle choices, environmental factors, health system navigation, and coverage barriers in order to improve rates of obesity and related conditions. In 2009, the

state cut the Kentucky Homeplace budget by 38 percent, which might have ended the program. However, the program tabulates return on investment (ROI) annually based on the value of a broad range of medical, social, and environmental services, as well as medications accessed by CHWs on behalf of the client. Data from 2007-2008 showed a return of \$13.73 for every dollar invested.<sup>43</sup> The program was able to communicate these findings and received full funding the following year. It has since expanded to offer new services, including health coaching and care coordination. Beginning in 2015, quarterly program reports will include specific health measures and health outcomes to aid in assessing and communicating the impact of CHWs.



## Element 2 | Increase the Value of Investments in Maternal Health *continued*

### Communicating Cost-Savings from the Maternal Infant Health Program (Michigan)

<http://www.michigan.gov/mihp>

In 2014, Michigan was among four states to participate in a Return on Investment Analytic Action Learning Collaborative (ROI Analytic ALC), convened by AMCHP with support from the W.K. Kellogg Foundation. The ROI Analytic ALC offered accelerated assistance in developing and completing an ROI analysis, culminating in a communications product in February 2015. The Michigan team used this opportunity to

evaluate the ROI from its Maternal Infant Health Program (MIHP), a supplemental benefit to Medicaid-eligible women that provides care coordination and intervention services during pregnancy and the postpartum period. An analysis of 2010 data revealed that for every \$1 spent on prenatal services for MIHP participant mothers, Medicaid saved \$1.38 in costs associated with preterm birth in the first month of life, a total net savings to Medicaid of \$1.2 million. A fact sheet was developed to share these important findings with policymakers.

### Box 2.6: Best Practice Repositories

#### AMCHP Innovation Station

<http://www.amchp.org/programsandtopics/BestPractices>

AMCHP Innovation Station is a searchable database of MCH practices that represent a continuum of evidence. The database includes women's and maternal health initiatives across the United States that have incorporated a strong evaluation design and undergone review by a panel of peers to assess for measurable impact or potential for impact. Replication support may be available.

#### The Community Guide

<http://www.thecommunityguide.org>

The Community Preventive Services Task Force is an independent, non-federal panel of public health and prevention experts that provides evidence-based findings and recommendations about community preventive services, programs, and policies to improve population health. The Community Guide is a website that houses the official collection of all Task Force findings and the systematic reviews on which they are based. It provides information on interventions that have and have not worked; expected returns on investment in interventions; the populations and settings in which interventions have demonstrated effectiveness; the known benefits and harms of interventions undergoing systematic review; and where further research is still needed.

#### NACCHO Model Practices Database

<http://www.naccho.org/topics/modelpractices>

The National Association of City and County Health Officials (NACCHO) Model Practices Database is an online, searchable collection of effective practices shared by local health departments and their community partners. The site allows users to identify and replicate effective, community-level strategies that improve women's and maternal health. Practices in this database undergo peer review based on collaboration, innovation, responsiveness, and impact.

#### SAMHSA National Registry of Evidence-based Programs and Practices (NREPP)

<http://www.nrepp.samhsa.gov/>

The Substance Abuse and Mental Health Administration (SAMHSA) NREPP is a searchable online database of mental health and substance abuse interventions. All interventions in the registry met the NREPP minimum requirements for review and were independently assessed and rated for Quality of Research and Readiness for Dissemination. Interventions can be filtered by topic, gender, age, race and ethnicity, geography, and setting. In addition to search functions and intervention summaries, a tool is available for download to facilitate conversations with developers.

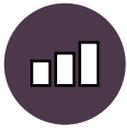
#### U.S. Preventive Services Task Force

<http://www.uspreventiveservicestaskforce.org>

The U.S. Preventive Services Task Force is an independent panel of experts in primary care and prevention who systematically review the evidence of effectiveness and develop recommendations for clinical preventive services. Recommendations for preventive services, such as screenings, counseling services, and preventive medications, receive a letter grade based on the strength of the evidence and balance of benefits and harms. The U.S. Agency for Healthcare Research and Quality (AHRQ) convenes the task force and provides ongoing administrative and dissemination support.

# Planning Tools

## **PART 1** | Infrastructure Elements



Date Completed: \_\_\_\_\_

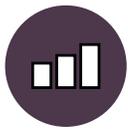
**Strategy 1.1: Build capacity to learn from each maternal death.**

<b>Current Activities in Support of this Strategy (Existing Strengths)</b>	<b>Lead Staff</b>	<b>Status/Deliverables</b>
e.g., convening of a statewide maternal mortality review; case identification methods; reporting practices.		
<b>Untapped Resources, Partners, and Other Assets (Opportunities)</b>	<b>Potential Barriers or Threats</b>	
See pages 16-20 for ideas to consider.		
<b>Action Needed/By Whom</b>		



**Strategy 1.2: Use administrative data to monitor performance and outcomes.**

<b>Current Activities in Support of this Strategy (Existing Strengths)</b>		<b>Lead Staff</b>	<b>Status/Deliverables</b>
e.g., morbidity surveillance; steps taken to improve access to administrative data; consumer engagement in performance measure selection.			
<b>Untapped Resources, Partners, and Other Assets (Opportunities)</b>		<b>Potential Barriers or Threats</b>	
See pages 21-23 for ideas to consider.			
<b>Action Needed/By Whom</b>			



**Strategy 1.3: Apply data from surveys and qualitative sources.**

<b>Current Activities in Support of this Strategy (Existing Strengths)</b>	<b>Lead Staff</b>	<b>Status/Deliverables</b>
e.g., use of data from statewide women’s health focus groups, consumer registries, or the Pregnancy Risk Assessment Monitoring System (PRAMS).		
<b>Untapped Resources, Partners, and Other Assets (Opportunities)</b>	<b>Potential Barriers or Threats</b>	
See pages 13-26 for ideas to consider.		
<b>Action Needed/By Whom</b>		



**PLANNING TOOL**

**Element 2 | Increase the Value of Investments in Maternal Health**

Date Completed: \_\_\_\_\_

**Strategy 2.1: Participate in maternal and women’s health partnerships.**

Current Activities in Support of this Strategy (Existing Strengths)	Lead Staff	Status/Deliverables
e.g., participation in preconception health partnerships or perinatal care quality collaboratives.		
Untapped Resources, Partners, and Other Assets (Opportunities)	Potential Barriers or Threats	
See pages 29-34 for ideas to consider.		
Action Needed/By Whom		



**PLANNING TOOL**

**Element 2 | Increase the Value of Investments in Maternal Health**

**Strategy 2.2: Demonstrate impact and share what works.**

Current Activities in Support of this Strategy (Existing Strengths)		Lead Staff	Status/Deliverables
e.g., activities to strengthen staff evaluation capacity; communication products developed to promote value of investments in maternal health.			
Untapped Resources, Partners, and Other Assets (Opportunities)		Potential Barriers or Threats	
See pages 34-36 for ideas to consider.			
Action Needed/By Whom			

# PART 2 |

## ACTION ELEMENTS

# Policy and Program Strategies to Improve Maternal Health

The translation of data to program and policy solutions can be challenging, because it requires an awareness of the strategies and approaches employed successfully in states and communities across the country. This part of the guide offers a menu of strategies organized within the four remaining elements of a comprehensive maternal health initiative:



### **Element 3: Enable Healthy Living**



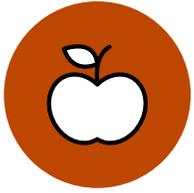
### **Element 4: Improve Access to Care**



### **Element 5: Ensure High Quality Health Care for Women of Childbearing Age**



### **Element 6: Ensure Readiness and Response to Obstetric Emergencies**



# Element 3 | Enable Healthy Living

## SNAPSHOT

Strengthening women's knowledge and capacity to make healthy choices can reduce their risk for chronic health conditions and harmful exposures, improving maternal outcomes if and when they become pregnant. This section is organized around the following population-based strategies:

- Address underlying social determinants of health.
- Build environments that support healthy and active living.
- Implement community-based health promotion efforts.

Recent national initiatives highlight the importance of women's health and health care in reducing infant mortality and other poor birth outcomes, such as preterm birth and low birth weight. Indeed, a substantial and growing body of evidence links the health of mothers and infants.<sup>45</sup> For example, maternal obesity is associated with increased risk for preterm birth, obstructed labor, birth injuries, neonatal respiratory distress, metabolic conditions, and decreased rates of breastfeeding.<sup>46-48</sup> The effects of maternal smoking, alcohol, and other drug use during pregnancy further demonstrate the impact that women's health can have on infant health outcomes ranging from neonatal abstinence syndrome to sudden unexpected infant death (SUID).<sup>49-51</sup>

While of critical importance to infant health, women's health still matters foremost for women. In the United States, nearly half of all pregnancies are unplanned, and declining health status of women during their reproductive years due to chronic health conditions can place them at risk for a number of poor maternal outcomes.<sup>52-53</sup> Obesity, in particular, is associated with a number of conditions that increase risk for pregnancy-related death and severe morbidity, such as cardiovascular disease, hypertensive disorders, type 2 diabetes, gestational diabetes, venous thromboembolism (blood clot complications), obstetric hemorrhage (heavy bleeding), and infection, among others.<sup>47,54-55</sup> Risks for labor induction, cesarean delivery, and lactation delay also are elevated among obese women, as are use of health care services (e.g., greater need for medications and longer hospital stays).<sup>47,56</sup>

According to the CDC, nearly 60 percent of U.S. women enter pregnancy overweight or obese.<sup>57</sup> While clinical services, such as routine well-woman and maternity care, offer significant health benefits for women before, during, and between pregnancies (See Element 5), health occurs over a lifetime as a result of a complex set of social and behavioral factors. Life course theory is a place-based conceptual framework that highlights the economic, environmental, and social factors influencing persistent health inequalities across populations and over time.<sup>58</sup> In the context of state planning, it highlights the need to explore new ways to promote women's health throughout their lives, regardless of childbearing intent.

### Key Life Course Concepts:

Adapted from, *Rethinking MCH: The Life Course Model as an Organizing Framework*, HRSA, 2010.

- **Timeline:** The experiences and exposures of today influence the health of tomorrow, and health trajectories are built over time as a result of a continuum of cumulative exposures.
- **Timing:** Health trajectories are particularly affected during critical or sensitive periods.
- **Environment:** A woman's environment (biological, physical and social) includes risk and protective factors that strongly affect her capacity to be healthy.
- **Equity:** While genes can protect or increase risk for disease conditions, inequality in health reflects more than genetics and personal choice.



## Element 3 | Enable Healthy Living *continued*

A related concept, social determinants of health are defined as the circumstances in which people are born, live, and work that are shaped by a wider set of economic, social, and political forces.<sup>59</sup> Impacting women's health status over the course of her life, public health leaders believe interventions to address social determinants like poverty, unstable housing, or lack of social networks may offer the greatest chance to effect changes in disparate health outcomes.<sup>59-62</sup> In 2003, the Task Force on Community Preventive Services (Community Guide) identified a number of recommendations to promote healthy social environments, among them, tenant-based rental assistance programs.<sup>63</sup> In a similar vein, the body of evidence continues to grow around the long-term effects of adverse childhood experiences (ACEs) on the health of women and men of reproductive age, as well as the long-term effects of toxic environmental exposures.<sup>64-65</sup> Several states have developed recommendations and affirmed the role of MCH programs in addressing social determinants of health.<sup>66-69</sup> Clinical partners, too, have challenged their members to address the social determinants of reproductive health within their practices.<sup>60,70</sup>

Common to both life course and social determinants theories are the importance of policies that promote healthier and more active living environments. Such policies influence health outcomes among women of childbearing age by influencing their capacity for healthy behaviors.<sup>71</sup> For example, the price of fresh vegetables relative to less healthy foods or the proximity of grocery stores to a woman's home are important factors impacting her purchasing decisions. Similarly, the condition of sidewalks or perceptions of personal safety might influence the choices a woman makes about when and where to walk or otherwise be active. Community Guide recommendations also highlight key opportunities to shape women's environments to ensure that default choices are healthy, in partnership with local communities and other state agencies.<sup>72-75</sup> According to one economic analysis, for every dollar invested to address physical inactivity, poor nutrition, and smoking, \$5.60 is saved.<sup>76</sup> This means that a \$10 investment per person could yield \$16 billion in savings for the United States. In conjunction with supportive environments, a number of community-based health promotion efforts can effectively inform and motivate women and men of childbearing potential to make choices that optimize their health.<sup>77-81</sup>

Collectively, fundamental social conditions, the environment in which a woman lives and works, and the information available to her shape the choices she makes over the course of her reproductive years. Strategies states can take to address these include the following.





### STRATEGY 1: ADDRESS UNDERLYING SOCIAL DETERMINANTS OF HEALTH

Poverty, social isolation, racism, domestic and community violence exposures, adverse childhood experiences and trauma, chronic unemployment, low educational attainment, unstable housing, and other stressful life events are among the social determinants impacting disparate maternal health outcomes. Addressing these fundamental social conditions will require complex, long-term solutions and a commitment to achieving equity.



#### IDEAS TO CONSIDER:

- Partner with local health and social service agencies to identify innovative, community-based economic strategies that address the social and financial concerns of reproductive-age women, such as rental assistance programs.<sup>63</sup>
- Examine current parental leave coverage policies and opportunities to extend the duration of leave allowed. Consider new social insurance and cash benefit programs that provide income replacement during the leave period.
- Encourage local grantees to partner with school districts to implement strategies that foster student health and connectedness in education settings in order to improve long-term academic success and retention.<sup>82</sup>
- Partner with intimate partner violence agencies to identify opportunities to address the social barriers for women who remain in violent situations, including economic instability and social isolation. Train staff in trauma-informed approaches to service delivery (Box 3.1).
- Adopt a *Health in All Policies* approach at the agency level (Box 3.1).<sup>83-84</sup> Conduct health impact assessments, examine structural inequities in state health department policies, and encourage other state agencies to do the same.

### Box 3.1: Resources to Address Social Determinants of Health

#### Health in all Policies – A Guide for State and Local Governments

<http://www.apha.org/topics-and-issues/healthy-communities/health-in-all-policies>

The American Public Health Association, Public Health Institute, and California Department of Public Health developed a resource guide in response to growing interest in ways to embed health and equity considerations within decision-making processes.<sup>68</sup> The guide is based heavily on the experiences of the California Health in All Policies Task Force, incorporating information from published literature and interviews with experts across the country.

#### Trauma-Informed Care for Organizations

[http://www.familyhomelessness.org/tic\\_curriculum.php?p=ss](http://www.familyhomelessness.org/tic_curriculum.php?p=ss)

A library of toolkits is available through the National Center on Family Homelessness to support the agency wide adoption of trauma-informed approaches. One such resource, the *Trauma-Informed Organizational Toolkit for Homeless Services*, provides organizations and community-based service providers with a self-assessment tool for evaluating current practices and capacity to respond to the needs of women and families affected by trauma. It includes a user guide and a how-to manual for identifying concrete action steps on the path to organizational change.

#### REACH U.S.

<http://www.cdc.gov/reach>

Racial and Ethnic Approaches to Community Health across the United States (REACH U.S.) is a national program funded by CDC to eliminate racial and ethnic health disparities in communities across the country. REACH provides funding awards and expertise to state and local health departments, tribes, universities, and community-based organizations. Awardees use these funds to build strong partnerships to guide and support program work. Demonstration project summaries and additional resources are available on the REACH U.S. website.



### EXAMPLES FROM THE FIELD:

#### Healthy Minnesota Partnership

<http://www.health.state.mn.us/healthymnpartnership>

The Healthy Minnesota Partnership brings community partners and the Minnesota Department of Health (MDH) together to make an impact on the policies that shape the health and quality of life of individuals, families, and communities in Minnesota. Members of the Healthy Minnesota Partnership come from rural, suburban, and urban communities; from hospitals, health plans and public health departments; from business and government agencies; and from faith-based, advocacy, and community organizations. Convened by the Commissioner of Health, the partnership identifies and acts on strategic opportunities to link social and economic conditions, which are shaped by policy decisions, to health outcomes. Healthy Minnesota 2020, available on the partnership website, provides the framework for its activities, which to-date have included developing new ways to talk about and advocate for health in public policy discussions around income (e.g., minimum wage), workplace benefits, and transportation, i.e., health in all policies.

#### Healthy Start in Housing (Boston, Massachusetts)

<http://www.bphc.org/whatwedo/health-equity-social-justice/how-to-work-with-us>

The Healthy Start in Housing (HSiH) program is an initiative of the Boston Public Health Commission, Office of Racial Equity and Health Improvement that targets underlying social determinants of maternal health. In partnership with the Boston Housing Authority, the HSiH initiative provides stable housing and case management for pregnant women and their families at high risk for homelessness. To qualify, the family must meet at least one of three criteria: 1) the mother has a chronic health condition; 2) the mother has had a previous poor birth outcome, such as pre-term birth or low-birth weight; or 3) the family includes a child under age five with a complex condition requiring specialty care. The HSiH program aims to curb low birth weight and improve the health and well-being of women by addressing homelessness and limited social support as stressors affecting pregnancy outcomes. It is part of a broader Boston effort to reduce persistent racial inequities in the priority areas of low birth weight, obesity, and Chlamydia. More information on the work of the Office of Racial Equity and Health Improvement is available at the website, above.

#### Magnolia Place Community Initiative (California)

<http://www.magnoliaplacela.org>

The Los Angeles-based Magnolia Place Community Initiative evolved from a strategic planning process led by the Children's Bureau of Southern California in 2001. Launched in 2008, the initiative represents a network of community-based, governmental, and academic partners committed to working collectively to create safe and supportive environments for women and their families. Its innovative program model uses the Strengthening Families Protective Factor Framework ([www.strengtheningfamilies.net](http://www.strengtheningfamilies.net)) to improve social connectedness, community mobilization, personal resilience, parenting skills, and access to concrete supports and services in times of need.

#### Pregnant and Parenting Teen Initiative (Massachusetts)

<http://www.mass.gov/eohhs/gov/departments/dph/programs/community-health/primarycare-healthaccess/adolescent-health/mppti.html>

In 2011, Massachusetts Department of Health received a grant from the HHS Office of Adolescent Health (OAH) to create and train multidisciplinary support teams to address the needs of pregnant and parenting teens in five target communities. Projects operate out of schools and community-based organizations to provide wraparound services, including age-appropriate medical care, health education, and social and emotional support services, as well as family support designed to help address concerns in the home environment of teens. Each pregnant or parenting teen is supported in developing an individualized graduation, GED, or alternative education plan. Key areas of focus include infant care, life skills training, workforce development, and financial literacy education.



### STRATEGY 2: BUILD ENVIRONMENTS THAT SUPPORT HEALTHY AND ACTIVE LIVING

The decisions women make regarding exercise and diet are strongly influenced by the world in which they live. When nutritious foods are affordable and readily available, healthy choices are easier to make. In this way, structural and policy changes can transform communities into places where healthy lifestyle choices become the easy choices to make.



#### IDEAS TO CONSIDER:

- Engage chronic disease prevention partners to coordinate messaging on the need for investment in green space and pedestrian infrastructure, as well as policies that promote their use, such as zoning for mixed-use development. Explore statewide initiatives underway to promote personal safety in areas where women are or could be physically active.
- Partner with WIC to implement a Farmers Market Nutrition Program that authorizes farm stands to accept WIC cash value vouchers (Box 3.2). Consider other opportunities to engage chronic disease partners to incentivize healthy food environments in underserved areas of the state.
- Engage chronic disease partners to implement wellness programs for state employees and major private employers.
- Educate policymakers on the impact of environmental toxins and other exposures on reproductive health, and seek legislative protections for women and their families.
- Adapt and disseminate work place resources on accommodations for lactating women. Explore other opportunities to promote breastfeeding through environmental and policy changes.





### Box 3.2: Policy and Environmental Change Resources

#### **CDC Obesity Prevention Resources**

<http://www.cdc.gov/obesity/resources>

The CDC develops resources to help state and local governments address obesity through recommended policy and place-based approaches. Guides available to download from its website describe available interventions to increase rates of breastfeeding, physical activity, and consumption of fruits and vegetables. Each provides states the information needed to select the strategies that best meet their needs, and a related publication offers guidance for implementation and measurement. In addition, state indicator reports are available for physical activity and fruit and vegetable consumption, and the latter is accompanied by state-specific action guides prepared in partnership with the Association of State Public Health Nutritionists.

#### **Community-Based Prevention Marketing for Policy Development**

<http://health.usf.edu/publichealth/prc/policy>

The University of South Florida (USF) Prevention Research Center develops resources to support states interested in applying a Community-Based Prevention Marketing (CBPM) approach to the design and promotion of health policies. The USF framework combines social marketing, community engagement, and policy change strategies to influence the decision makers who determine whether or not a public health issue receives support. CBPM also can be used for the design of programs and health promotion campaigns. The approach is based on the premise that individual behavior change is enhanced by strategies that make it easier, less expensive, and more appealing for individuals to practice healthy behaviors.

#### **WIC Farmers' Market Nutrition Program**

<http://www.fns.usda.gov/fmnp/fmnp-contacts>

The WIC Farmers' Market Nutrition Program was established in 1992 to expand awareness and use of farmers' markets by women, infants (more than four months old), and children eligible to receive WIC benefits. Program coupons can be used to purchase a variety of fresh, nutritious, unprepared, and locally grown fruits, vegetables, and herbs. A list of contacts from participating WIC state agencies is available on the program website.

## EXAMPLES FROM THE FIELD:

### **Physical Activity, Nutrition and Obesity Program (Delaware)**

<http://www.dhss.delaware.gov/dhss/dph/dpc/panohome.html>

The Delaware Physical Activity, Nutrition, and Obesity (PANO) Program within the Department of Public Health seeks to build statewide capacity to implement evidence-based policy, program, environmental, and infrastructure changes that support health. In 2010, the PANO program implemented a statewide initiative, *Healthy Lifestyles Interventions: A Community Cooperative Agreement (CCA)*, funding community-based projects across the three state

counties. All community strategies aimed to eliminate health disparities by focusing on social determinants of health. Also beginning in 2010, the *Municipal Wellness Leadership Project* facilitated community environmental scans and community action plans at the city level. Action plans resulted in the implementation of policy, system, and environmental changes, such as bicycle and pedestrian infrastructure, farmers' market planning, changes to Comprehensive Land Use Plans, Safe Routes to School programs, and activities to increase healthy food options and safe access to parks for all modes of transportation. Though the project ended, it serves as a model for defining proactive efforts to leverage investments outside the health sector to improve health and achieve health equity.



## Element 3 | Enable Healthy Living *continued*

### **Produce Prescription (PRx) (Cuyahoga County, Ohio)**

<http://cccfoodpolicy.org/blog/produce-prescription>

The Cuyahoga County PRx program represents a partnership between farmers' markets, academia, and public health experts to further increase fruit and vegetable consumption among pregnant women and women of childbearing age. It seeks to reduce rates of preventable disease during pregnancy, support local and regional economics, and improve the health of women before, during, and after pregnancy. Participating clinical and home visiting providers enroll eligible women into the program at the start of the market season. After counseling and assessment for additional barriers, women receive \$40 in PRx vouchers each month for four months at their regularly scheduled appointments, in addition to incentive items and health education materials. The program runs through the end of October. PRx is integrated into existing MCH programming and leverages the existing infrastructure of the farmers' market network in Cuyahoga County.

### **Systems and Environmental Changes for Nutrition and Physical Activity Toolkit (California)**

<http://www.cdph.ca.gov/programs/NutritionandPhysicalActivity/Pages/MO-NUPA-SystemsandEnvironmentalChange.aspx>

The purpose of this toolkit is to support optimal nutrition, physical activity, and breastfeeding through fostering partnerships between local health jurisdiction maternal, child, and adolescent health (MCAH) programs and existing organizations to promote healthy environmental changes. The resources that this toolkit links to were chosen as they appear to be feasible projects for MCAH program involvement. This is not intended to be a comprehensive toolkit; however, it does provide concrete examples of environmental change projects that are specific for supporting optimal nutrition, physical activity and breastfeeding within the MCAH population.





### STRATEGY 3: IMPLEMENT COMMUNITY-BASED HEALTH PROMOTION EFFORTS

An important complement to structural and policy change are strategies to build consumer awareness. Comprehensive social marketing campaigns, the use of mobile and Web-based technology, and a variety of other community-based interventions have been used effectively by states to motivate individual behavior changes and promote health among women of reproductive age.

#### A. Educate women about ways to reduce their risk for poor health.

Health promotion efforts targeting women regardless of their childbearing intent can motivate positive behaviors that optimize health during pregnancy and beyond.



#### IDEAS TO CONSIDER:

- Promote tobacco quit lines (Box 3.3), and explore other opportunities to partner with state tobacco prevention and control programs.
- Adopt or develop campaigns that encourage women to seek regular screening and treatment for sexually transmitted infections like Chlamydia and gonorrhea to prevent associated cases of ectopic pregnancy, infertility and chronic pelvic pain.
- Implement a community health worker, promotora, or preconception peer educator program to motivate healthy behaviors. Train educators in motivational interviewing (Box 3.3).<sup>85</sup>
- Partner with chronic disease programs to establish healthy weight, nutrition, and physical activity messaging and education resources for communities and schools.
- Share existing consumer resources on the potential harmful effects of environmental exposures in the home and workplace, as well as ways to prevent these exposures (Box 3.3).

### Box 3.3: Risk Reduction Resources

#### Motivational Interviewing Network of Trainers

[www.motivationalinterviewing.org](http://www.motivationalinterviewing.org)

The Motivational Interviewing Network of Trainers (MINT) provides helpful tools and resources to explore as you consider the use of motivational interviewing within programs in your state.

#### North American Quitline Consortium

<http://www.naquitline.org>

The North American Quitline Consortium (NAQC) promotes evidence-based quitline services and offers a wealth of resources that may be useful as you partner with your state tobacco prevention and control program.

#### UCSF Program on Reproductive Health and the Environment – All That Matters

<http://prhe.ucsf.edu/prhe/allthatmatters.html>

The University of California San Francisco (UCSF) Program on Reproductive Health and the Environment has developed All That Matters, a set of consumer resources on potential environmental exposures and their risks to future reproductive health.



## Element 3 | Enable Healthy Living *continued*

### B. Raise awareness of the importance of reproductive life planning.

Reproductive life planning offers women of childbearing potential the opportunity to consider steps needed to optimize their health before they become pregnant or prevent pregnancy until they choose to have children. Refer to Element 5 for complementary clinical strategies (page 70).



#### IDEAS TO CONSIDER:

- Share reproductive life planning tools for women and men that are culturally, linguistically, and age-appropriate. Ensure that Web-based resources are easy to navigate and visually appealing.
- Invest in targeted social marketing research to design campaigns that promote preconception health knowledge, attitudes, and behaviors among women and men of childbearing potential (Box 3.4). Seek to understand consumer values, identify terms that women understand, and use this information to develop effective messages.<sup>86</sup>
- Make preconception health and family planning resources available where reproductive-age women and men spend time, such as grocery stores, laundromats, schools, and churches.

### Box 3.4: Resources for Successful Social Marketing Efforts

#### CDC Gateway to Health Communication and Social Marketing Practice

<http://www.cdc.gov/healthcommunication>

Social marketing applies commercial marketing techniques to the planning, design, and evaluation of initiatives aimed at influencing behavior change. Through its Web portal, CDC offers a wealth of resources for states seeking to implement social marketing campaigns, including audience segmentation and analysis, channel selection, and evaluation resources.

#### The Show Your Love Campaign

<http://www.cdc.gov/preconception/showyourlove>

Show Your Love is a national preconception health social marketing campaign targeting women of childbearing age (18-44 years). The campaign includes tailored materials for women who are planning a pregnancy and those who are not. Developed by CDC and the National Preconception Health and Health Care Initiative, resources include checklists, podcasts, reproductive life plans and an image library, among other tools. Adaptation of the campaign to fit special populations is encouraged.

### C. Educate women on the importance of immunizations.

Otherwise healthy women are at increased risk for severe complications during pregnancy due to influenza (flu) and other vaccine-preventable diseases.<sup>87-88</sup> Underlying chronic diseases, such as asthma, make some women particularly vulnerable. MCH programs can take steps to raise awareness of immunizations recommended for women of reproductive age.



#### IDEAS TO CONSIDER:

- Develop a social marketing campaign to increase awareness and demand for routine flu vaccination among women of reproductive age. Engage partners to ensure that campaigns reach women with conditions that increase the risk of pregnancy complications due to flu.
- Develop similar campaigns to promote pneumococcal, hepatitis B, and varicella risk screening and vaccination among susceptible women of reproductive age.
- Implement text message interventions and explore other mobile (mHealth) strategies to increase vaccination uptake.<sup>87</sup>



### Box 3.5: Violence Prevention Resources for Home Visiting Programs

<http://www.futureswithoutviolence.org/healthy-moms-happy-babies-train-the-trainers-curriculum/>

Futures Without Violence has developed a number of resources to integrate violence prevention with home visiting services. Its latest resource, *Healthy Moms, Happy Babies: A Train the Trainers Curriculum on Domestic Violence, Reproductive Coercion and Children Exposed*, is intended to support states in developing a domestic violence core competency strategy. Additional resources available include a sample Memorandum of Understanding (MOU) between home visitation and IPV prevention programs and home visitor safety cards.

#### D. Provide women with community-based resources to prevent violence.

Women experiencing IPV and alcohol- or drug-dependence may not have the knowledge or efficacy to seek support. Statewide campaigns and community-based education can raise awareness of available resources for IPV and co-occurring health risks, like substance abuse and depression. See also Element 5, page 72, for related clinical strategies.



#### IDEAS TO CONSIDER:

- Implement social marketing campaigns that raise awareness of family violence and sexual assault hotlines and other resources for survivors of intimate partner violence (Box 3.4).
- Raise IPV awareness through ongoing home visiting services (Box 3.5). Encourage all state programs working with pregnant and postpartum women of reproductive age to integrate universal and routine IPV screening and education resources and information on healthy relationships.
- Partner with criminal justice agencies, social service case management programs, and intimate partner violence organizations to ensure coordinated messaging.
- Partner with state education agencies to implement school-based programs for children and adolescents that address healthy relationships, violence, and personal safety.



## Element 3 | Enable Healthy Living *continued*

### E. Develop educational campaigns for pregnant women and new mothers.

Health promotion efforts targeting women during pregnancy and the postpartum period build the capacity of new mothers to care for themselves and optimize their health for future pregnancies. Health education materials can be developed for multiple audiences, including mothers, partners and grandparents.



#### IDEAS TO CONSIDER:

- Raise awareness of proper seatbelt positioning for pregnant women in conjunction with child passenger safety education. Partner with state transportation agencies to integrate images of pregnant women wearing properly placed seatbelts into ongoing media campaigns, such as “Click it or Ticket.”
- Explore opportunities to provide enhanced Text4baby services (see Box 3.5). Develop targeted, state-customized text messages for pregnant and postpartum women to promote healthy behaviors and care seeking (e.g., postpartum visits, contraceptive services, oral health care).
- Partner with state home visiting and outreach programs to integrate consistent health promotion messages into core training curricula for community health workers, community-based doulas, peer educators, and home visitors.
- Partner with childbirth educators to promote the benefits of spontaneous labor for mothers and newborns by implementing a campaign to educate women on the risks of elective induction of labor prior to 39 weeks. (See also Element 5, pg. 78)

### Box 3.6: Resources to Promote Healthy Choices in Pregnancy

#### Go the Full 40 Campaign

<http://www.health4mom.org/zones/go-the-full-40>

AWHONN launched its Go the Full 40 social marketing campaign to reduce the number of early labor inductions that are scheduled for convenience, rather than medical necessity. An interactive, patient-friendly Zone on the AWHONN consumer magazine site, Healthy Mom&Baby, offers information, advice and resources to support moms-to-be planning for delivery. Campaign resources also are available in Spanish and include posters, tips and tools for sharing, and a provider toolkit with complementary messages.

#### Text4Baby

<https://text4baby.org>

Since its launch in 2010, Text4Baby has reached more than 685,000 individuals and represents the largest national mobile health (mHealth) initiative for pregnant women and new moms. Women self-enroll by texting BABY (English) or BEBE (Spanish) to 511411. Once enrolled, they receive three free text messages per week and can use the service to set free appointment reminders. Messages address a range of prenatal and postpartum topics designed to promote maternal and infant health. States partnering with Text4Baby receive access to the text4baby logo and art files for customized marketing; access to enrollment data by zip code; and free enrollment tools and resources. Through pilot initiatives, select states and local jurisdictions are tailoring the information mothers receive.



### EXAMPLES FROM THE FIELD:

#### Body and Soul: A Faith-based Health Improvement Initiative (Florida)

<http://www.floridahealth.gov/programs-and-services/minority-health/body-and-soul-toolkit/toolkit.html>

In response to the widespread problem of obesity among African American women in Jacksonville, a faith-based partnership of public health, academic and community-based organizations collaborated to design and implement a 12-week education and group support program, *Body and Soul*. The program consisted of weekly meetings with lectures, cooking, and physical activity to improve the health and well-being of overweight African American church members. An additional 12-week phase supported maintenance of healthy weight and sustained healthy behaviors via peer support groups. A local AME Ministers Alliance led church recruitment, WIC staff provided project direction and nutrition expertise, and the University of North Florida led project evaluation. Though the program was suspended due to a lack of funding, the ministerial alliance continues to express interest and pursue funding for an adapted version of the program. An online toolkit containing videos, program guides, templates, evaluation tools, and other resources is freely available.

#### Healthy Weight Program (Massachusetts)

<http://www3.amherst.edu/~ccsp02/programs.html>

Though no longer active, the Healthy Weight Program demonstrated success in achieving weight loss among Latina women ages 18-45 years with a body mass index greater than 25. Using promotoras, the Healthy Weight Program adapted a recognized approach for self-management of diabetes to address weight loss and the promotion of positive lifestyles in general. It used curriculum based on lay health educator materials developed by the National Heart, Blood and Lung

Institute (Your Heart, Your Life), which helped participants build the skills they need to make simple, practical, and lasting changes to address obesity and reduce their risk of heart disease. After clients completed the eight week curriculum, they continued with monthly nutrition visits, weekly support groups, and regular fitness opportunities. A DVD was developed to market the program throughout the state and is available on request.

#### My Life, My Plan (Delaware) <http://dethrives.com/healthy-women>

The Delaware Health and Social Services Division of Public Health and the Delaware Healthy Mother and Infant Consortium (DHMIC) partnered to develop an interactive website and social marketing resources to promote reproductive life planning among women and adolescents, My Life, My Plan: Woman and My Life, My Plan: Teen. Adapting resources from CDC, the state developed successful life planning tools, focusing on motivations and barriers to health and goal setting, tailored to the life stage of the individual. Teen products include a blog, social media platforms, and a teen life plan booklet. Adult products include interactive online quizzes and checklists, “Women with a Plan” videos, and an adult life plan booklet, available in both English and Spanish. From the same site, women also can link to pregnancy resources, and providers can link to care standards, marketing materials, and data reports tailored to their needs.

#### PASOs (South Carolina)

<http://www.scpasos.org>

PASOs (or “steps” in Spanish) aims to improve the health of Latino families in South Carolina through increased access to culturally appropriate education, support, and grassroots leadership development. The program has established a presence in more than 30 counties across the state. It produces local radionovelas (radio dramas) and has trained over 100 community health workers to provide peer navigation support and spread the program’s health messages. Promotoras conduct outreach in the Latino community and deliver free education in community settings on maternal and interconception health topics, parenting, and child health and development. PASOs also offers technical assistance to health care professionals and other providers through educational seminars and trainings to improve cultural competency and awareness of unique access issues facing Latino families and best practices in addressing their needs. The PASOs website contains a reference page with links to Spanish-language partner sites, communications planning resources, and a broad range of Spanish-language tools and supports. The site also includes videos and links to upcoming community events.





### Power Your Life Preconception Health Campaign (Utah)



[www.poweryourlife.org](http://www.poweryourlife.org)

When the Utah Department of Health identified a need for culturally relevant, age-appropriate messaging around preconception health, it contracted with a private marketing firm to develop the statewide Power Your Life campaign. Formative social marketing research was used to gather information about women and teen beliefs, motivations, and preferences in receiving information, and the data was used to guide program design. Early products included brochures in Spanish and English, continuing medical education (CME) training materials, and reproductive life planning magazines, Power Your Life, Power Your Health (women) and Plan Your Health, Live Your Life (teens). Over an initial eight-month period, roughly 10,000 promotional “power bags” were distributed with incentives and resources, and the campaign currently utilizes Facebook, Twitter, and Pinterest social media platforms to provide ongoing preconception health messaging to women of childbearing age. Daily posts promote the Power Your Life website and educational articles, and social media analytics are used to monitor the reach and effectiveness of posts. Ongoing outreach and presentations to community-based organizations, local health departments, and universities also are used to increase awareness of the importance of preconception health, the Power Your Life program, and its Web and social platforms.

### Show Your Heart Some Love Campaign (North Carolina)

<http://whb.ncpublichealth.com/obfuscated/FINAL-ShowYourHeartSomeLoveEnglish-121614.pdf>

Based on a statewide review of maternal deaths, the North Carolina MMR Committee found that cardiovascular conditions were a leading cause of pregnancy-related death in 2013. Recommendations from the MMR Committee led the North Carolina Division of Public Health, Women’s Health Branch (WHB) to explore social marketing strategies aimed at raising awareness of cardiovascular disease and the importance of heart-healthy lifestyle choices among women of reproductive age. To make best use of available resources, WHB staff partnered with staff in the Chronic Disease Section to adapt cardiovascular disease educational content originally designed for older adult populations. New campaign messages also leveraged the highly successful, national preconception health campaign, Show Your Love (Box 3.3). Print materials for the Show Your Heart Some Love campaign can be ordered in both English and Spanish, and electronic versions are available for download from the WHB website.





# Element 4 | Improve Access to Care

## SNAPSHOT

Care seeking is influenced by a number of important factors. To support MCH programs in fostering accessible services, this section is organized around the following strategies:

- Promote comprehensive health coverage.
- Improve the availability and acceptability of services.

Timely access to health care is critical to achieving better health outcomes for women. Research has shown that individuals without health insurance have poorer health outcomes and lower levels of self-reported wellness than those with adequate coverage.<sup>89</sup> Uninsured individuals also are less likely to receive preventive services and more susceptible to developing acute and chronic health conditions. In turn, poor health and increased rates of disability and chronic illness have added economic consequences for families due to lost productivity and greater health care costs.

Despite the importance of access to health care, in 2010, nearly 20 percent or 13 million women of reproductive-age (15-44 years) were uninsured in the United States.<sup>90</sup> Nearly 40 percent of women living below the federal poverty level (FPL) were uninsured during this period. Affordability is a key concern for reproductive-age women, who consistently report cost as a barrier to receiving health care services.<sup>91</sup> In 2010, 48 percent of women ages 19-64 years reported that they chose not to seek treatment for a medical problem, skipped a recommended test, chose not to fill a prescription, or did not see a specialist when needed due to the cost of health care.<sup>92</sup>

Disparities in access to affordable, continuous health care coverage are a significant driver of population health disparities, because the most vulnerable women – those with incomes below 138 percent of FPL – also are the least likely to have health coverage.<sup>91</sup> In 2010, more than half of working-

age women living at or below this income level (\$29,327 for a family of four) were uninsured at some point in the year.<sup>92</sup> Minority women, including Black, Hispanic, Asian American and Pacific Islander, and American Indian and Alaskan Native women lack health insurance coverage at rates up to three times higher than their white counterparts.<sup>93</sup> The 2010 Patient Protection and Affordable Care Act (ACA) provides several opportunities and provisions for improving access to health care (Box 4.1).<sup>94</sup>

Other important barriers diminish women's access to care, including an adequate number of health professionals serving women. The Association of American Medical Colleges reports that nearly 40 percent of physicians are 55 or older, and more than half of the nursing workforce has expressed an intention to retire by 2020.<sup>95</sup> A related study by ACOG found that nearly half of all U.S. counties have no practicing obstetrician-gynecologists, affecting an estimated 10.1 million women.<sup>96</sup> Since health insurance coverage without access is of little help to women in need of services, strategies in this section also address opportunities to consider systems-based approaches that incentivize health care providers to locate in designated shortage areas.

Access also is impacted by a lack of acceptability of services due to inconvenient options, general system complexity, or a lack of racial, ethnic, linguistic, and socioeconomic diversity and cultural competence among the women's health care workforce. Feedback from women illustrates the importance of patient- and family-centered approaches to



## Element 4 | Improve Access to Health Care *continued*

improving the use of care available to women of reproductive age. According to findings from the Childbirth Connection Listening to Mothers surveys, provider trust was lowest among Hispanic women (36 percent versus 51 percent among white, non-Hispanic women), and roughly 20 percent of black and Hispanic women reported poor provider

treatment due to their race, ethnicity, cultural background or language.<sup>97</sup> Reviewing and addressing these important concerns may further improve women's access to the care they need and desire.

### Box 4.1: The 2010 Patient Protection and Affordable Care Act

For the first time, a federal law specifies a package of essential health benefits that must be included in qualified health plans available in individual and small group markets and state and federal exchanges. This package of essential health benefits (EHBs) includes several that are beneficial for women in particular: preventive and wellness services, chronic disease management, mental health and substance abuse services, maternity and newborn care, ambulatory patient services, emergency services, hospitalization, prescription drugs, and laboratory services, among others.

The ACA further establishes provisions for preventive care for non-grandfathered private plans. The law requires coverage without cost sharing for highly effective preventive services with an A or B rating by the U.S. Preventive Services Task Force and immunizations recommended by the Advisory Committee on Immunization Practices (ACIP). Additionally, the ACA allows HRSA to recommend preventive services that should be covered without out-of-pocket costs. This includes a range of services, such as well-woman visits, pap smears, vaccines, intimate partner violence (IPV) screening, behavioral health services, breastfeeding support, including breast pumps and supplies, and contraceptives approved for use by the Food and Drug Administration (FDA), with exceptions.

In addition to the essential health benefits package, the ACA establishes state-based insurance exchanges, or "marketplaces," through which women and families can purchase insurance if they do not have another form of coverage.<sup>91</sup> States choosing not to operate their own exchange must participate in the federal marketplace exchange. Women with incomes between 100 and 400 percent FPL may qualify for subsidies and tax credits in the exchanges, alleviating some individual cost burden. The same is true for small businesses that purchase employee health coverage on the exchanges.

The ACA also expands eligibility for Medicaid to low-income adults with incomes up to 138 percent of the FPL. According to a 2012 ruling by the Supreme Court, Medicaid expansion is optional for states. The Medicaid expansion provides an opportunity for comprehensive health care coverage for lower-income, adult women who were previously ineligible for Medicaid, and states that expand their Medicaid programs are reimbursed no less than 90 percent of their costs by the federal government. As of April 2015, 29 states and the District of Columbia have adopted Medicaid expansion or an alternative expansion plan, such as premium assistance waivers to participate in the private insurance marketplace.<sup>98-99</sup> Sixteen states have chosen not to expand at this time.

Traditionally, Medicaid has covered income-eligible women only during the prenatal and immediate postpartum periods. This situation continues in states that have not expanded their Medicaid programs, leaving many low-income women with fewer resources to seek primary, preconception, and interconception health services or highly effective methods of contraception in order to successfully plan their families. As before the ACA, states have the option to apply for a waiver to Section 1115 of the Social Security Act, which allows them to use Medicaid funds in ways not otherwise allowed. Waivers give states a mechanism for carrying out experimental, pilot, or demonstration projects that expand coverage or provide new services, such as family planning or interconception care.<sup>100</sup> Under the ACA, states also have an option to transition family planning waiver programs into more formal State Plan Amendments (SPAs), which modify state Medicaid plans through approved federal agreements.



### STRATEGY 1: PROMOTE COMPREHENSIVE HEALTH COVERAGE

A lack of comprehensive coverage for preventive services can have an important impact on the health status of reproductive-age women, and gaps in coverage during the prenatal and postpartum periods limit access to timely and appropriate obstetric care.

#### A. Partner with state Medicaid leaders to promote healthy women and pregnancies.

Medicaid is an important source of health coverage for more than 12 million low-income women in the United States, financing roughly 45 percent of births each year.<sup>10</sup> Examining current coverage in partnership with your state Medicaid agency may reveal important ways to improve women's health.<sup>101</sup>



#### IDEAS TO CONSIDER:

- Educate state policymakers about the option to implement Medicaid expansion as a means of eliminating gaps in coverage and ensuring continuity of care for women.
- Discuss opportunities to implement state plan amendments (SPA) to expand Medicaid coverage for low-income, non-pregnant women. Improve the design of family planning SPAs to include interconception risk assessment, counseling, and interventions.
- Partner with the state Medicaid agency to extend time limits for pregnancy-only, emergency Medicaid in the postpartum period to improve access to follow-up care in non-expansion states.
- Explore Medicaid demonstration projects that offer interconception eligibility to women with an adverse outcome in their previous or current pregnancy.
- Ensure that pregnant women have presumptive eligibility for Medicaid while their application for coverage is pending.

#### B. Engage marketplace and employer plans to improve health coverage.

All marketplace plans must follow established limits on cost sharing and ensure coverage of the EHB package, but states operating their own exchange may have additional opportunities to engage their participating payers. In all states, large employers and employer-based health plans may prove valuable partners in improving access to cost-effective services with inadequate coverage.



#### IDEAS TO CONSIDER:

- Engage large employers and employer-based health plans to discuss the benefits of extended postpartum eligibility or an increase in the reimbursable number of postpartum visits.
- Explore policy incentives that expand access to long-acting reversible contraception (LARC).
- Review existing coverage levels for dietary counseling and nutrition therapy. Partner with chronic disease programs and engage employers and employer-based health plans to discuss reimbursement for services that support healthy weight.
- If your state operates its own exchange, explore opportunities to enhance the EHB package afforded under the ACA, based on the unique needs of your population.
- Ensure that pregnancy is a qualifying event for enrollment in state health care exchanges.



### Box 4.2: AMCHP Resources on Health Care Reform

#### **National Center for Health Reform Implementation**

<http://www.amchp.org/Policy-Advocacy/health-reform/resources>

The AMCHP National Center for Health Reform Implementation develops resources to help MCH programs maximize opportunities presented by health reform for women and their families. AMCHP also partners with the University of North Carolina at Chapel Hill and national experts in MCH innovation and quality improvement to implement the National MCH Workforce Development Center, <http://mchwdc.unc.edu>, which provides state and territorial Title V programs with coaching, consultation, and space for collaborative learning in preparation to lead change toward health system transformation.

#### **Opportunities and Strategies for Improving Preconception Health through Health Reform**

<http://www.amchp.org/Transformation-Station/Documents/AMCHP%20Preconception%20Issue%20Brief.pdf>

This AMCHP issue brief on preconception health and health care reform explores opportunities presented by the ACA to improve birth outcomes, particularly by improving access to healthcare for reproductive-age women.

#### **Who Will Be Covered for What in 2015 and Beyond?**

<http://www.amchp.org/Policy-Advocacy/health-reform/resources/Documents/MCHCoverageandBenefitsFINAL.pdf>

Released in January 2015, this policy brief provides state MCH programs with an overview of insurance affordability programs existing prior to or expanded under the ACA. The brief addresses federal minimum eligibility levels for each coverage option and projected minimum or essential health insurance benefits for MCH populations.

#### **State Opportunities and Strategies for Breastfeeding Promotion through the ACA**

<http://www.amchp.org/Transformation-Station/Pages/StateOpportunitiesandStrategiesforBreastfeedingPromotionthroughtheAffordableCareAct.aspx>

This AMCHP issue brief explores how states and communities can capitalize on opportunities presented by the ACA to advance breastfeeding, including financing of breastfeeding support and counseling services, worksite accommodations, and improved referral and tracking in partnership with MIECHV.

### EXAMPLES FROM THE FIELD:

#### **Healthy Women, Healthy Babies Program (Delaware)**

<http://dethrives.com/healthy-women-healthy-babies/providers>

The *Healthy Women, Healthy Babies* program was designed for women with risk factors for poor birth outcomes, such as obesity, chronic disease, self-reported stress, or maternal age under 18 or over 35, regardless of insurance status. The program solicits funding applications from health care organizations and their clinic sites, and awards contracts with the Division of Public Health through a competitive process that prioritizes service delivery in high need geographic areas. Funded services are grouped into four service bundles: preconception care, psychosocial care, prenatal care, and nutrition care. Bundles include enhanced services not fully covered by Medicaid or private insurance (e.g., oral health education and psychosocial risk assessment) and

are delivered to individual women depending on need. In addition to delivery of service bundles, contractors also conduct program outreach and enrollment.

#### **LARC Access Initiative (South Carolina)**

<https://www.scdhhs.gov/organizations/boi>

A coalition of private, clinical, and state government partners, the South Carolina Birth Outcomes Initiative (BOI) meets monthly to collectively pursue efforts that improve the health of women and infants statewide. Among these are initiatives aimed at improving access to long acting reversible contraception (LARC). While birth control is commonly discussed during the first postpartum visit, South Carolina data revealed low postpartum rates, particularly among low-income women. In 2012, to ensure that all women with live births in South Carolina receive access to LARC, the state Medicaid program initiated reimbursement of physicians for the insertion of LARC prior to delivery discharge. The South Carolina BOI continues to roll out this effort and educate



## Element 4 | Improve Access to Health Care *continued*

women's health providers about the LARC policy and safe, postpartum insertion. The first state to implement such efforts, South Carolina provides support to help other states adopt similar policies through their Medicaid programs.

### **Planning for Healthy Babies Family Planning Demonstration Waiver (Georgia)**

<http://www.p4hb.org>

The Georgia Planning for Healthy Babies (P4HB) program is a 1115 family planning demonstration waiver program, offering family planning services to women who are ineligible for other Medicaid benefits. In addition to family planning services, the program provides related services, including immunizations, testing and treatment for sexually transmitted infections, and annual exams. Interconception case management also is available for women with a previous very low birth weight infant. Delivered by trained Resource Mothers, case management includes home visitation services, coordination of care, and linkage to community resources. Federal Medicaid provides 90 percent of the cost of the program, with the remaining 10 percent covered by the state.

### **Oregon Contraceptive Care**

<http://public.health.oregon.gov/HealthyPeopleFamilies/ReproductiveSexualHealth/OregonContraceptiveCare>

Oregon Contraceptive Care (CCare) is a Section 1115 demonstration waiver authorized by the Centers for Medicare and Medicaid Services (CMS) and administered by the Oregon Reproductive Health Program. Oregon CCare provides coverage for contraceptive management services for individuals at or below 250 percent of the FPL and not enrolled in the state Medicaid program, the Oregon Health Plan. Covered services may include contraceptive counseling, a one-year supply of birth control, sexually transmitted disease and HIV screening, cervical cancer screening according to recommended guidelines, and referrals to other health and social services. The program website offers an interactive state map of clinic locations by county, English and Spanish educational materials on available contraceptive options, and links to a wealth of additional resources.





### STRATEGY 2: IMPROVE THE AVAILABILITY AND ACCEPTABILITY OF SERVICES

Women may not utilize needed services if the care available to them is physically inaccessible, perceived as not culturally competent, or overly complex. Additionally, the use of innovative, family centered approaches and the extension of clinical education and services into the home environment can build trust in the health care system and reinforce women as partners in their own health.

#### A. Support statewide efforts to recruit and retain women's primary health care providers.

Without adequate health care providers, women may experience delays in treatment or may opt not to seek preventive care given the distance required to reach a provider in shortage areas (Box 4.3). Title V programs can support workforce assessment and expansion in a number of creative ways to ensure that women receive the care they need, when and where they need it.



#### IDEAS TO CONSIDER:

- Work with your state HRSA-funded Primary Care Office (PCO) to ensure it has timely data from the Title V needs assessment to utilize in its state workforce assessments.
- Work with the appropriate partners to establish state loan repayment programs that encourage women's health professionals to serve in areas with coverage gaps. Expand health professions education funding to include all qualified maternity care providers.
- Partner with the state office of rural health or provider organization state affiliates to explore innovative retention strategies for women's health professions.
- Support early career mentoring and encourage the use of locum (temporary) providers for relief and respite.
- Work with the appropriate partners to establish programs that recruit and train for women's health care professions individuals who live in and belong to communities where shortages exist. Examine and address professional certification barriers.
- Partner with state Medicaid to examine reimbursement rates for a full range of women's primary health professionals, including certified midwives, certified nurse-midwives, doulas, and lactation consultants.

#### Box 4.3: Health Professional Shortage Designation (HPSA)

<http://www.hrsa.gov/shortage>

HRSA develops shortage designation criteria for geographic areas, population groups, and medical facilities, determined to have a shortage of health professionals. The National Health Service Corps establishes eligibility based on HPSA scores.

#### B. Locate services and supports where women live.

As an important complement to provider recruitment and retention, MCH programs can seek innovative opportunities to reach women where they live in order to eliminate barriers to accessing care.



## Element 4 | Improve Access to Health Care *continued*



### IDEAS TO CONSIDER:

- Expand the network of safety net providers. Partner with Federally Qualified Health Centers, and seek to expand community health center or mobile clinic programs in underserved areas.
- Coordinate or partner with the state Maternal, Infant and Early Childhood Home Visiting (MIECHV) implementing agency to implement maternal home visitation services. Explore state funding and third party reimbursement options to ensure broader access.
- Employ the use of community health workers (CHWs) to deliver education and services. Establish CHW training and credentialing programs that recruit from women living in underserved communities.
- Encourage the availability of mHealth and telehealth services in underserved areas.<sup>102-103</sup>

### C. Provide navigation services.

Even if women understand the importance of preventive care, they may find it difficult to understand their health coverage, find a provider, or make and keep appointments for preventive visits when faced with complex health systems and vast amounts of information. MCH programs can provide women of reproductive age with the resources needed to effectively interact with the health care system prior to, during, and after pregnancy. They also can support women's access to coordinated systems of care (Refer to Element 5, page 68).



### IDEAS TO CONSIDER:

- Provide accurate and up-to-date information about women's health resources and health care providers through an information assistance line, or coordinate with existing access lines to expand reach. Encourage partner agencies to include contact information on their websites.
- Partner with other state agencies to develop a centralized point of entry or "no wrong door" approach to simplify and expedite access to health and social services.
- Support the use of patient navigators to coordinate access to clinical care during pregnancy and the postpartum and interconception periods.
- Conduct outreach and facilitate enrollment in health coverage available through insurance exchanges. Develop tools to educate consumers about available coverage and eligibility options, and raise awareness of women's preventive benefits accessible without cost sharing.

### Box 4.4: Coverage to Care (C2C) Roadmap

<http://marketplace.cms.gov/c2c>

*From Coverage to Care* is a CMS-led initiative to assist newly covered individuals in navigating access to care. Resources developed through the initiative help states and their partners deliver an eight-step "roadmap" to care. They also include consumer guides and videos in English and Spanish.

### D. Ensure that culturally and linguistically competent care is available to all women.

MCH programs serve an increasingly diverse population of women – from 2010 to 2012, nearly half of all live births were to women of a racial or ethnic minority group. The availability of culturally responsive and acceptable services can influence care seeking and health decisions among pregnant and postpartum women in the state, and a diverse provider community can influence early efforts to promote cultural proficiency of the workforce.



## Element 4 | Improve Access to Health Care *continued*



### IDEAS TO CONSIDER:

- Promote linguistic and cultural competency standards (Box 4.5), and facilitate on-going cultural competency training for state health care providers.
- Review maternal health education materials for language accessibility.
- Ensure access to interpretation services for women of reproductive age with limited English skills to increase their personal engagement in health care decision making.
- Partner with other state entities to explore innovative ways to make primary health care and maternity professions accessible to individuals from underrepresented communities. Explore the use of grants and assistantships, flexible training formats, housing stipends, or child care services to improve recruitment and retention.
- Explore state partnerships that facilitate the inclusion of cultural proficiency within maternity professions curricula, credentialing core competencies, and health professional licensure requirements.

### Box 4.5: National Standards for Culturally and Linguistically Appropriate Services (CLAS) in Health

<https://www.thinkculturalhealth.hhs.gov>

The CLAS standards were developed to advance health equity, improve quality, and help eliminate health care disparities by providing a blueprint for providers and health care organizations to implement culturally and linguistically appropriate services.<sup>104</sup> The HHS Office of Minority Health has developed a website dedicated to supporting adoption of the standards.

### E. Encourage and employ patient-centered approaches.

A woman's decision to seek or return for follow-up care also may be influenced by the way in which health education and clinical care are delivered, as well as by her fears or past experiences within a specific care setting. Poor customer service during a clinical experience or inconvenient services that do not accommodate women's daily realities may cause women to discontinue care. Likewise, a woman's relationship with her care provider and the level of trust established with her care team can greatly impact her return for ongoing preventive care.



### IDEAS TO CONSIDER:

- Explore alternatives to the traditional office-based models of well woman and prenatal care. Identify innovative ways to make care more accessible, affordable, and engaging for women (Box 4.6).
- Partner with health care and social service providers to ensure that substance abuse screening tools and referral resources are family-centered and reflect mothers' concerns for their children. Establish policies and incentives to ensure that residential substance use treatment programs accommodate women with infants.
- Encourage local collaboration with IPV and homelessness organizations to make home visitation and other support services more accessible to women living in shelters or transitional settings.
- Support the availability of child care services in outpatient treatment settings in order to make care more accessible for parenting women.
- Solicit and incorporate patient and community feedback to improve services and access to care. Involve in these discussions the individuals women rely on for health care information outside of professional circles, such as partners and other family members.



### Box 4.6: Patient-Centered Approaches to Care

#### The Centering Healthcare Institute

<http://centeringhealthcare.org>

Centering® is an alternative model of health care, delivered in a group setting and focused on the individuals participating in the care experience. Models include CenteringPregnancy® (prenatal care) and CenteringParenting® (well-woman care). The Centering Healthcare Institute is a 501(c)3 nonprofit whose mission is to improve maternal and child health by transforming care through Centering groups. The Institute has more than a decade of experience assisting practice sites in the system changes needed to move from individual to group health care.

#### Moving Beyond Depression

<http://www.movingbeyonddepression.org>

Maternal depression can impact the effectiveness of home visiting programs, divert attention of home visitors away from important activities required by home visiting models, and lessen the value of public investments in home visiting. Developed by researchers at Every Child Succeeds and designed for use with a variety of home visiting models, Moving Beyond Depression is an evidence-based program that provides in-home cognitive behavioral therapy (IH-CBT) to overcome barriers to treatment and prevent relapse.<sup>105</sup> Several states implement Moving Beyond Depression within their home visiting programs, and an economic analysis in Florida found the potential to save up to \$57.5 million in lifetime costs per 1,000 mothers served.

### EXAMPLES FROM THE FIELD:

#### Baby Love and Baby Love Plus (North Carolina)

<http://www.ncdhhs.gov/dma/services/babylove.htm>; <http://whb.ncpublichealth.com/services.htm>

The North Carolina Medicaid program offers Maternal Support Services, also known as the *Baby Love Program*, to ensure that eligible low-income women receive access to care during pregnancy and the postpartum period. Coordinated through local health departments, pregnant women and their infants have access to maternal care skilled nurse home visits, childbirth education, a home visit for postnatal assessment and follow up, and a home visit for newborn care and assessment. In addition, federal Healthy Start funding supports the North Carolina *Baby Love Plus* initiative. The aim of this program is to improve birth outcomes and the health of women ages 15-44 years by strengthening perinatal systems of care, promoting quality services and family resilience, and building community capacity to address perinatal health disparities. *Baby Love Plus* provides outreach in six counties across the state where these disparities are persistently high, offering perinatal depression screening and referral, health education, support for father involvement, and care coordination for women during the interconceptional period. Two Healthy Start sites provide similar services in one additional county.

#### Healthy Choices for Women and Children (Connecticut)

<http://www.ct.gov/dph/cwp/view.asp?a=3138&Q=387704>

Implemented in the city of Waterbury, this program provides integrated case management and home visiting services to alcohol- or drug-dependent pregnant and parenting women and their partners at high risk for poor birth outcomes. Comprehensive case management services begin during pregnancy or soon after delivery and continue to three years postpartum. Through ongoing screening, assessment, and referral, services are designed to link families with community resources, such as substance abuse treatment, mental health services, nutritional support, housing, and health care. To foster healthy, independent living and strong families, the program also offers evidence-based, individualized parenting education, provides social support, and promotes the development of job skills through continuing education. A licensed substance abuse counselor from the community, known as a fatherhood worker, supports male partners of enrolled women. At least 30 percent of clients served are pregnant or parenting teens, with priority given to those at risk for use of illicit drugs, tobacco or alcohol during pregnancy. All services are family centered, culturally appropriate, and coordinated with other services in the community.



## Element 4 | Improve Access to Health Care *continued*

### Improving Pregnancy Outcomes Project (New Jersey)

<http://www.state.nj.us/health/fhs>

The Improving Pregnancy Outcomes (IPO) Initiative aims to improve specific maternal and infant health outcomes using evidence-based strategies across three key life course stages: preconception, prenatal and postpartum, and interconception health. The IPO initiative also seeks to reduce racial, ethnic, and economic disparities among high-need women and their families through a collaborative, coordinated, and community-driven approach that includes two grant-funded elements. First, select agencies receive funds to implement a CHW model to identify and enroll women and their families into appropriate care. Second, funds are awarded to agencies to implement a Central Intake (CI) system, which employs standard screening tools and offers a single point of entry for referral to necessary medical and social service programs. Funded CHW and CI sites work collaboratively in their counties with oversight from the New Jersey Department of Health, which plans to eventually expand the CI system statewide.

### The JJ Way Model of Maternity Care (Florida)

<http://www.commonsensechildbirth.org/>

Recognizing the need for a new standard of care, midwife Jennie Joseph (JJ), and her birth center team have worked to create a midwifery-based model that is culturally relevant and accessible to low-income women and women of color. The JJ Way™ adapts the Midwives Model of Care to reach populations that do not typically seek midwifery services. The model uses a team approach to care that includes the father, friends and family. Every staff member has a role, from the receptionist who greets each woman to the office manager who knows each client's name, and all staff work to triage barriers to client success. No woman is turned away, and the clinic has built a reputation of accessibility. Education is delivered by peer educators and group learning. Messages are tailored to each client, with a focus on postpartum support. Because short inter-pregnancy intervals are associated with low birth weight and prematurity, women are taught the importance of child spacing and various types of birth control. Labor and delivery can take place where the woman feels most comfortable, and if needed, staff work with hospitals to ensure a smooth transition of care.

### Massachusetts Home Visiting Initiative (Massachusetts)

<http://www.mass.gov/eohhs/gov/departments/dph/programs/family-health>

As part of the Massachusetts Home Visiting Initiative (MHVI), the state is working to develop a central intake and referral system that will provide a universal, one-time nurse home visit to all families up to 8 weeks postpartum. Its pilot

initiative, Welcome Family Massachusetts, has launched in four low-resource communities, with a goal to expand statewide. Visits include clinical assessment, comprehensive risk screening, and referral for unmet needs, and the state is actively pursuing third-party reimbursement to sustain the program. Through a separate initiative, Early Intervention Partnerships Program (EIPP) (  ) at-risk pregnant and postpartum women receive visits from a multidisciplinary team comprised of a maternal and child health nurse, mental health clinical professional, and CHW. Offering in-home assessments and monitoring, health education, and appropriate referrals, the EIPP seeks to improve vulnerable families' access and utilization of health services; improve nutrition, physical activity and breastfeeding rates; and ensure a safe home environment where social, emotional, and physical needs are fully met.

### Maternity Case Management Home Visiting Program (Oregon)

<http://public.health.oregon.gov/HealthyPeopleFamilies/Women/Pregnancy/MaternityCaseManagement>

A strengths-based service, Maternity Case Management (MCM) seeks to reduce a woman's risk for poor pregnancy outcomes by delivering education and support, while offering referrals to community-based resources and prenatal care from a health care provider. Maternity Case Managers are nurses, social workers, and other professionals trained to address the social, economic, health, and nutrition barriers to a healthy pregnancy, labor and delivery. They conduct prenatal and postpartum visits with their clients, usually in client homes, helping women to set goals and achieve personal growth. During visits, they address eight required training topics (alcohol, tobacco, and other drug exposure; maternal oral health; breastfeeding; perinatal mood disorders; prematurity and pre-term births risks; maternal/fetal HIV and Hepatitis B transmission; nutrition, healthy weight, and physical activity; and intimate partner violence). They also offer the "5 A's" brief intervention for tobacco use. Pregnant women with identifiable risk factors are eligible to receive MCM services. For those with incomes up to 185 percent of the FPL, services are covered by the state Medicaid program, the Oregon Health Plan.

### MomCare (Florida)

[www.healthystartflorida.com](http://www.healthystartflorida.com)

MomCare is a Medicaid-funded program authorized by a special waiver from the federal government. MomCare was developed as a partnership between the Florida Association of Healthy Start Coalitions, Florida Department of Health, Florida Agency for Healthcare Administration, and Florida Department of Children and Families. MomCare provides initial outreach to link women with choice counseling for enrollment in a managed care plan. The program is managed



## Element 4 | Improve Access to Health Care *continued*

at the community-level by 32 local Healthy Start Coalitions and identifies at-risk women through the Florida Department of Health universal prenatal risk screening process. Once accepted into the program, clients receive guidance for selecting a prenatal care provider, assistance scheduling initial prenatal visits, and information about state programs for which they may be eligible. Case management is an ongoing process to track client progress, identify client needs, and assist women in accessing services.

### **MOMCare (Washington)**

<http://www.nwcp.org/training/opportunities/webinars/momcare>

Socioeconomically disadvantaged women are at increased risk for perinatal depression and often have difficulty accessing evidence-based depression care. MOMCare is an 18-month, culturally relevant collaborative-care intervention that allows participants to choose brief interpersonal psychotherapy or antidepressants or both. Compared to intensive public health Maternity Support Services (MSS-Plus), MOMCare shows significant, sustained improvement in quality of care and depressive outcomes from before birth to one-year postpartum for socioeconomically disadvantaged women with perinatal depression.

### **New York State Community Health Worker Initiative (New York)**

<http://www.chwnetwork.org>

A statewide partnership between the New York State Health Foundation, the Mailman School of Public Health at Columbia University, the Community Health Worker Network of New York City and other stakeholders, the New York State Community Health Worker Initiative was formed to establish a reimbursable scope of practice for Community Health Workers (CHWs) and a standard set of core competencies to guide their development and work. In 2011, the Initiative published a summary report and recommendations, *Paving a Path to Advance the Community Health Worker Workforce in New York State*. In addition to this report, a number of recent publications, training and event information, and networking resources are made available by project partners.

### **Postpartum Visit Quality Improvement Project (Massachusetts)**

<http://www.mass.gov/eohhs/docs/masshealth/bull-2014/all-247.pdf>

Massachusetts' Medicaid agency, MassHealth, has led a number of activities to improve postpartum visit rates for low-income women in the state, in collaboration with UMass Medical School, the state's Title V program, and other partners. With a portion of a \$1.8 million Adult Medicaid Quality Grant awarded by CMS, MassHealth launched a state version of the national Text4baby program, including a postpartum visit module adapted from CMS pilot projects in California, Ohio, Oklahoma, and Louisiana. The module was coupled with a variety of outreach strategies that have substantially increased enrollment in the Text4baby service. In addition, MassHealth distributed a Provider Bulletin with tips for improving patient engagement, scheduling and follow-up, medical record documentation, and appropriate use of postpartum billing codes. In partnership with the Central Massachusetts Area Health Education Center, MassHealth also offers free trainings for CHWs, improving CHW capacity to coordinate access to postpartum care and empower women to seek and utilize available health and social services.

### **Tampa Bay Doula Program (Florida)**



<http://ucptampa.org/our-programs/doula-program>

The Tampa Bay Doula Program serves more than 550 pregnant women each year in Hillsborough County, Florida. The program recruited and trained local young women so that doula services could be offered in English, Spanish, Creole, Haitian, French and several African and Spanish speaking dialects spoken in the community. While doulas do not provide medical care or advice, they are trained to provide continuous physical, emotional and informational support to women before, during, and after delivery. Services include community-based childbirth education classes, labor and delivery support, breastfeeding instruction and support, and postpartum and interconception support. Women in the program have seen a reduced need for intensive medical interventions and breastfed for an extended duration. The program is enhanced through partnerships to address identified client needs for basic social services, such as lack of food and stable housing.



# Element 5 | Ensure High-Quality Health Care for Women

## SNAPSHOT

High quality health care can minimize risk factors for poor maternal outcomes, especially when received in a timely manner throughout a woman's life. This section is organized around the following provider and health system strategies:

- Support provider capacity to deliver high-quality well-woman care.
- Support provider capacity to deliver high-quality, routine maternity care.
- Promote coordinated systems across the care continuum.

In the absence of access barriers, improved maternal health outcomes still remain influenced by health care quality, especially in regards to the prevention and management of maternal health conditions and other risk factors.

Increasingly prevalent, preexisting chronic health conditions and harmful exposures can place women at significant risk for life-threatening adverse events during pregnancy and the postpartum period.<sup>57,65</sup> The following health conditions and risk factors, among others, can result in significant complications and long-term health impacts for women:

- **Obesity:** Unhealthy weight can elevate women's risk for preeclampsia (severe hypertension), diabetes, thromboembolism (blood clot complications), and cesarean delivery, which is associated with hemorrhage (heavy bleeding) and among the most frequent causes of severe complications.<sup>47-48</sup>
- **Hypertension:** Uncontrolled high blood pressure during pregnancy increases women's risk for preeclampsia, gestational diabetes, and placental abnormalities with resulting hemorrhage. During pregnancy and after delivery, hypertension also increases women's lifetime risk of stroke.<sup>106</sup>
- **Diabetes:** Poorly controlled blood sugar levels place women at increased risk for miscarriage, preeclampsia and early, complicated, or cesarean delivery.<sup>107</sup> For

every 1,000 delivery hospitalizations, an estimated 68 pregnancies are complicated by uncontrolled diabetes.<sup>108</sup>

- **Mental health conditions:** Behavioral health and mood disorders can worsen in the postpartum period, placing women at increased risk for suicide or substance overdose. They can also affect maternal-child bonding and breastfeeding rates.<sup>109-110</sup>
- **Intimate partner violence (IPV):** Exposure to IPV has been linked to increased risk for pregnancy-related homicide and other poor birth outcomes.<sup>111</sup>
- **Chlamydia and gonorrhea:** Untreated infection can result in ectopic pregnancy and infertility.<sup>112</sup>

Regular preventive care, when delivered according to standardized, evidence-informed practice guidelines, can minimize women's risk of developing high risk conditions, promote the management of existing conditions, and greatly improve maternal outcomes. In 2011, the Institute of Medicine (IOM) produced a report on recommended clinical services for women to guide implementation of preventive service provisions under the ACA.<sup>113</sup> Recommendations within the report were based on a review of findings from the U.S. Preventive Services Task Force, AAP, and CDC Advisory Committee on Immunization Practices, among others. More recently, the American College of Obstetricians and Gynecologists (ACOG), along with more than 20 partnering



## Element 5 | Ensure High-Quality Health Care for Women *continued*

professional organizations, released a task force report to clarify practice issues and components of the well-woman visit.<sup>114</sup>

The continuum of women’s health care begins with primary, preventive care and includes a range of services throughout the life course that serve to maximize individual health status, regardless of childbearing intent.<sup>115-117</sup>

As recommended components of well-woman care, preconception health and reproductive life planning services have garnered significant interest for their potential to improve maternal outcomes.

Preconception health services include counseling on family planning options to prevent mistimed or unwanted pregnancies; awareness and management of chronic and behavioral health conditions in women of reproductive age; and other preventive services timed in the immediate pre-pregnancy period to ensure optimal health throughout

pregnancy. First convened in 2005, a CDC Select Panel on Preconception Health produced a set of recommendations to improve preconception health and health care.<sup>118</sup>

It is well-recognized, also, that the prenatal and postpartum periods offer opportune timing for interventions, given the comparatively high level of contact women have with health systems during pregnancy. Standards of care for women will continue to evolve as further evidence of effective prevention and treatment is established. Women’s health care providers play key roles in motivating behavior change, initiating early screening and treatment for known risk factors, and facilitating care decisions. A lack of adequate provider support for adoption and adherence with standards can result in significant missed opportunities for intervention to improve maternal health. The engagement of providers and professional organizations will be a critical success factor in the development of useful clinical resources. *Refer to Element 2 for resources on partner engagement.*





### STRATEGY 1: SUPPORT PROVIDER CAPACITY TO DELIVER HIGH-QUALITY WELL-WOMAN CARE

The content and delivery of primary care play a key role in optimizing women's health prior to and after pregnancy. Title V MCH programs in each state conduct a population-based needs assessment every five years, in part to assess the statewide capacity for preventive and primary care, and a number of options exist to support providers in delivering optimal care.

#### A. Promote adoption of well-woman care standards.

Governmental agencies, professional organizations, and their local affiliates continue to advance evidence-informed standards of preventive care for women of reproductive age.<sup>114</sup> MCH programs can help to ensure these standards are broadly disseminated and adopted throughout their state.



#### IDEAS TO CONSIDER:

- Partner with provider organization state affiliates to coordinate the dissemination of updates to current practice standards.
- Partner with Title X programs to integrate a standard package of well-woman and preconception services into the care delivered at family planning clinics statewide.<sup>119-120</sup>
- Support the development of Web-based modules and grand rounds presentations on current well-woman care standards and opportunities to integrate preconception health services into routine well-woman visits. Provide continuing education credits, if possible.
- Explore mobile platforms for disseminating professional guidelines that define content and timing of preventive medical and dental services for women in primary care settings.
- Improve the rates and content of adolescent well care visits by engaging adolescents, their parents, and physicians to ensure appropriate physical, mental, and reproductive care.

#### Box 5.1: National Preconception Curriculum and Resources Guide for Clinicians

<http://beforeandbeyond.org/toolkit>

The Preconception/Interconception Care Clinical Toolkit was designed to help primary care providers, their colleagues, and practices incorporate preconception health and reproductive life planning into the routine care of women of childbearing age. The goal of the toolkit is to help clinicians and their practices reach every woman with appropriate preconception counseling and services every time she presents for routine primary care. The toolkit provides evidence-based strategies and resources available to help women achieve healthier short and long term personal health outcomes, increase the likelihood that future pregnancies are by choice rather than chance, and decrease the likelihood of complications if a woman does choose to become pregnant. A series of free or low-cost CME/CNE training modules also is available on the site along with access to the National Preconception Health and Health Care e-newsletters and other resources.

#### B. Integrate reproductive life planning in clinical settings.

Women's primary care providers play a key role in counseling their patients on life planning topics, such as goal setting, family planning services, and the importance of pregnancy spacing.<sup>121</sup> They are well positioned to assess current reproductive life goals as a component of routine well-woman care and often reach the greatest number of women of reproductive potential. See also Element 3, page 52, for community-based reproductive life planning promotion.



## Element 5 | Ensure High-Quality Health Care for Women *continued*



### IDEAS TO CONSIDER:

- Link state providers with Web-based clinical decision support tools (Box 5.1). Adapt available tools and resources to support reproductive life planning in multiple clinical care settings.
- Convene leaders from Medicaid, Title X, Federally Qualified Health Centers, and provider groups to discuss opportunities to improve clinician education and support.
- Develop Web-based modules or simulated counseling sessions to improve knowledge and build provider confidence to facilitate reproductive life planning.
- Promote resources to support counseling on all safe and effective methods of contraception.

### C. Encourage clinical counseling on nutrition, physical activity, and healthy weight.

Obesity and overweight increase a woman's risk for chronic conditions, as well as poor maternal outcomes, such as preeclampsia and cesarean delivery. Primary care providers, including gynecologists, nurse practitioners, and family medicine physicians, play a key role in promoting healthy weight among women of childbearing age.



### IDEAS TO CONSIDER:

- Disseminate information on clinical approaches that have demonstrated impact on sustained healthy weight. Develop education modules to support provider counseling on healthy weight.
- Utilize Web-based and mobile platforms to disseminate guidelines for the management of non-pregnant, obese women.
- Develop a systemwide care map for obese patients and women with related risk factors to assist in navigating available weight loss and rehabilitation support services.
- Partner with WIC to disseminate eligibility and referral resources to primary care providers serving women of childbearing potential.

### D. Implement clinical interventions for tobacco cessation.

According to CDC, more than 22 percent of reproductive-age women (18-44 years) reported current smoking in 2006.<sup>122</sup> MCH programs can partner with tobacco control programs to support women's health providers in delivering effective clinical cessation services.



### IDEAS TO CONSIDER:

- Partner with women's health professional organizations to educate providers on safe and effective clinical interventions for tobacco cessation prior to and during pregnancy.<sup>123</sup>
- Develop counseling tools for use by dental hygienists and other oral health providers.
- Encourage the adoption of protocols for the screening of all patients with a history of smoking for relapse or continued smoking in the postpartum period.
- Promote the use of Web-based continuing education modules to educate providers on effective cessation counseling techniques for use with women of childbearing potential and provide continuing education credits (Box 5.2).





### Box 5.2: Smoking Cessation for Pregnancy and Beyond: A Virtual Clinic

<https://www.smokingcessationandpregnancy.org>

CDC hosts a free, virtual training platform for health care professions serving women of reproductive age. The computer-generated learning environment places trainees within a virtual clinic setting that was designed to be intuitive for ease of use. In addition to lectures and resources, participants navigate through simulated patient examinations, observe simulated counseling sessions, and participate in case discussion with experts. The program is designed for use with all health care professionals, including physicians, physician assistants, nurse-midwives, registered nurses, licensed practical nurses, nurse practitioners, certified health educators, pharmacists, health professional students, and other service providers who may interact with pregnant women or women of reproductive age. When successfully completed, participants earn up to 4.5 continuing education units.

#### E. Enhance provider capacity to address the misuse of alcohol and other drugs.

MCH programs can support primary care providers in delivering high quality care for women experiencing substance addiction. Training and tools can facilitate the integration of screening, brief intervention and referral as a routine component of the care for women of reproductive age.



#### IDEAS TO CONSIDER:

- Raise awareness of the need to incorporate children and immediate family members into substance abuse treatment plans for parenting women. Disseminate model protocols and templates, including assurance of confidentiality of any disclosures regarding substance use.
- Help providers understand the connections between alcohol and other substance abuse around the time of and during pregnancy to domestic violence.
- Offer statewide technical assistance and training on substance use/abuse screening, brief intervention and referral, consistent with recognized standards. Explore opportunities to integrate universal screening and brief intervention into Title V-funded clinical services.
- Develop a substance abuse resource list for clinicians and social service providers, including treatment programs, mental health services, national hotlines and support groups for English and non-English speakers. Include a list of substance abuse treatment program coordinators and mental health counselors by jurisdiction to facilitate referral.
- Develop resources for pediatric providers to encourage screening of mothers for substance abuse during well-child visits, given the high risk for relapse after a prior pregnancy.

#### F. Enhance provider capacity to identify and respond to intimate partner violence.

The promotion of screening and referral of women for IPV is an important and emerging topic for discussion within MCH programs. Conversations with providers may involve education on the dynamics of violence; recommended timing and frequency of screening; available screening tools and referral mechanisms; and cultural issues specific to the populations served. See also Element 3, page 53, for home visiting resources that may be adapted for clinical settings (Box 3.5).



## Element 5 | Ensure High-Quality Health Care for Women *continued*



### IDEAS TO CONSIDER:

- Ensure that medical interpreters, community health center staff, and lay health workers have access to intensive, culture-specific training on IPV and referral systems.
- Inventory and adapt existing educational tools, such as relationship safety cards, and disseminate through professional organizations to facilitate patient-provider conversations about IPV and statewide resources.
- Encourage local outreach to providers serving reproductive-age women, such as family planning clinics, WIC offices, sexually transmitted disease clinics, and pediatrician offices. Create a customizable slide set for local use to increase provider awareness of statewide referral systems, violence and sexual assault hotlines, and available legal assistance.
- Partner with provider organizations to disseminate clinical tools that facilitate the inclusion of violence screening within existing health care processes, such as intake and medical history forms.<sup>124</sup>
- Coordinate with partners to develop CME/CNE modules, peer reviewed journal articles, and grand rounds presentations to increase provider awareness of IPV and available clinical interventions.

### G. Promote the effective management of chronic or complex conditions.

Women's health providers play a key role in successful management of chronic health conditions before pregnancy, particularly as chronic disease rates rise among younger women and adolescents and as women continue to delay pregnancy to older ages. In addition, medical advances are extending the lives of women born with congenital health conditions into their reproductive years. Given that nearly half of all U.S. pregnancies are unintended, it has become increasingly important to support providers in delivering quality counseling and support to women with complex and chronic health conditions.<sup>52</sup>



### IDEAS TO CONSIDER:

- Adapt or develop provider quick reference tools to support guidelines-based management of specific chronic conditions, including medication adjustments in preparation for pregnancy.
- Offer continuing medical education modules to improve provider counseling on pregnancy-related risks associated with uncontrolled chronic disease, contraceptive options, and changes in treatment women should expect if they choose to become pregnant.
- Equip providers with complementary patient resources on community-based, self-management options available.
- Encourage HIV antibody testing among reproductive-age women, and coordinate with providers to establish systems that link HIV-infected women with antiretroviral therapy.



### EXAMPLES FROM THE FIELD:

#### Family Planning Referral Pilot (Georgia)

<http://dph.georgia.gov/MCH>

In 2014, the Georgia Maternal Mortality Review identified a number of pregnancy-related deaths among women with poorly controlled chronic or complex conditions. In response, a team of state partners, led by the Georgia Department of Public Health, identified an opportunity to pilot a referral process linking women with chronic diseases to family planning services. To educate patients and providers on the importance of family planning, standard educational presentations were prepared for use with clinical audiences and a number of coordinated patient and provider tools were developed. Produced in Spanish and English, a silent video designed for use in clinic waiting areas highlights the impact of medication adherence and effective family planning among women with chronic illness. In addition, a poster and tip sheets were created to reinforce the video and inform women of specific risks associated with diabetes, cardiac, and sickle cell disease. Attached to the posters, question prompts were printed on tear-off notepads, allowing patients to bring them into their doctor visit as a way to initiate the referral process. This project was supported by the AMCHP Every Mother Initiative. Contact AMCHP for more information.

#### Now and Beyond Preconception Health Program (Nebraska)



<http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/ISDocs/Baby-Blossoms-Preconception-Health.pdf>

As part of its Baby Blossoms Collaborative, in 2005, the Douglas County Health Department received Title V funding to pilot the preconception health program, *Now and Beyond*. The program targeted women of childbearing age who received services at partnering MCH clinical sites. Community trainers and health care professionals were trained to use the *Now and Beyond* toolkit to educate women on healthy lifestyle and reproductive life planning. They also received training on techniques of motivational interviewing and 5 A's brief intervention model. The training toolkit included a CD, educational flip book, a 5 A's reference card, pre- and post-evaluations, accompanying PowerPoint slides, reporting forms, and additional resources. Partnering agencies successfully replicated elements of the program.

#### Safe Transitions: Reproductive Health Program for Incarcerated Women (Illinois)

The Illinois Title X program has funded a demonstration project in coordination with the Cook County Department of Corrections (CCDOC) to integrate family planning services into the existing sexual health services provided at CCDOC. At CCDOC, there are currently three women's divisions and the Sheriff's Female Furlough Program, where women are confined during the day time hours and return home to their communities at night. The new program fills gaps in reproductive health services and complements the health services already in place for incarcerated women. The jail setting is a unique access point for high risk and vulnerable populations. Through this opportunity, reproductive health education, contraception, and STI testing services are made available, improving women's capacity to avoid unwanted pregnancy and STIs upon release.

#### You Quit, Two Quit (North Carolina)

<http://youquittwoquit.com>

You Quit, Two Quit (YQ2Q) is a project of the University of North Carolina Center for Maternal and Infant Health, in partnership with the Women and Tobacco Coalition for Health (WATCH) and the North Carolina Tobacco Prevention and Control Branch. The project focuses on tobacco cessation for women of reproductive age, particularly low-income women, and seeks to ensure a comprehensive system of screening and treatment for tobacco use before, during, and after pregnancy. It is unique in its focus on continuity of care and prevention of relapse in the postpartum period. A resource to health professionals, the YQ2Q project informs providers of available cessation resources and employs a quality improvement approach to increase the number and types of providers who routinely screen for tobacco use, provide evidence-based counseling, and refer women to the state quitline. The WATCH Guide for Counseling Women Who Smoke is available for download from the project website, along with a wealth of professional resources, including an up-to-date clinical practice bulletin, sample 5As documentation, and patient education materials.



## **STRATEGY 2: IMPROVE PROVIDER CAPACITY TO DELIVER QUALITY, ROUTINE MATERNITY CARE**

Adherence with quality care standards can enhance the level of support a woman receives during pregnancy and the postpartum period. At a time of close contact with health care and community providers, MCH programs can play an important role in meeting women’s needs in this period.

### **A. Promote healthy gestational weight gain and management.**

Nearly two-thirds of women who are overweight and half of women who are obese gain more than the recommended weight during pregnancy, resulting in greater weight retention in the postpartum period.<sup>125</sup> Moreover, excess gestational weight gain is significantly associated with weight retention at one year postpartum, placing women at risk for chronic disease later in life and poor maternal outcomes in future pregnancies.<sup>126</sup> MCH programs can take steps to ensure providers are supported in delivering effective education on current weight gain guidelines.



#### **IDEAS TO CONSIDER:**

- Support providers in implementing established practice guidelines for healthy gestational weight gain and postpartum weight loss.<sup>127</sup> Use tools and resources developed by the IOM to educate providers and pregnant women in the state (Box 5.3).
- Partner with professional organizations to establish and disseminate protocols on the specialized level of care required for obese pregnant patients, including counseling and the inclusion of behavioral health as part of a team approach to treatment. Address the use of specialized monitoring and prophylactic treatment.

### **Box 5.3: Institute of Medicine Pregnancy Weight Gain Toolkit**

<http://iom.edu/Activities/Children/PregnancyWeightDissemination/2013-SEP-09/ToolKit.aspx>

The IOM developed a suite of tools to facilitate implementation of the Guidelines on Weight Gain and Pregnancy, published in 2009 with the National Research Council. The virtual toolkit includes links to the guidelines, a provider implementation guide, an interactive website for women who are pregnant or considering a pregnancy, videos, podcasts, a pregnancy weight tracker, postcards and more. Many resources also are available in Spanish.

### **B. Enhance maternal risk screening in clinical settings.**

In the prenatal and postpartum periods, a number of conditions and behaviors can place women at increased risk for pregnancy-related morbidity. For example, substance use can compound existing health conditions, result in overdose, or mask signs of serious mental health or medical complications. Adequate maternal risk screening can identify women in need of treatment services and referrals to more intensive case management or specialty care.



#### **IDEAS TO CONSIDER:**

- Share clinical tools to support the appropriate management of chronic and infectious illnesses in pregnancy, including symptoms and prophylactic treatment options available.
- Encourage providers to screen women early for genetic risk factors, to enable adequate counseling on personal health risk and options for the remainder of the pregnancy.
- Encourage birthing facilities to make pneumatic compression devices and prophylactic treatment available to obese women and post-operative patients following cesarean delivery to reduce their risk for venous thrombosis or pulmonary embolism.



### Box 5.4: SMFM Provider Resource Library

<https://www.smfm.org/providers>

The Society for Maternal-Fetal Medicine (SMFM) maintains an updated repository of recent articles, clinical guidelines and recommendations for women’s health primary care and specialist providers. Publications are viewable by sub-specialty, including anesthesia, family medicine, internal medicine, nursing, nurse midwifery, obstetrics, and radiology.

#### C. Promote exclusive breastfeeding.

Exclusive breastfeeding confers a range of benefits for women, including postpartum weight loss and return to pre-pregnancy weight.<sup>128</sup> Exclusive breastfeeding also may reduce depression symptoms in the early postpartum period, among other benefits.<sup>110</sup> Engage provider partners to ensure that clinical support is available to new mothers (Box 5.5).



#### IDEAS TO CONSIDER:

- Support birthing facilities in adopting breastfeeding-friendly hospital policies.<sup>129</sup> Review existing state regulations for maternity care facilities to determine whether they reflect evidence-based practices for breastfeeding support.
- Disseminate clinical protocols on breastfeeding support developed by provider organizations, such as the Academy of Breastfeeding Medicine and AWHONN. Coordinate grand rounds and promote access to evidence-based, online training courses for the health care workforce.
- Utilize perinatal depression screening to identify women at risk for early cessation of breastfeeding, and establish systems of additional support for these women.
- Make breast pumps available to nursing mothers at hospital discharge. Collaborate with the state Medicaid agency to supply breast pumps to postpartum women if not provided already.

### Box 5.5: CDC Guide to Strategies to Support Breastfeeding Mothers

<http://www.cdc.gov/breastfeeding/resources/guide.htm>

This guide represents a comprehensive set of strategies found to be effective in the promotion of breastfeeding. It offers program examples and provides state and local communities with the information required to choose breastfeeding interventions that best meet the needs of their population. The complete guide or individual chapters may be downloaded from the CDC website.

#### D. Help providers identify and respond to perinatal mood disorders.

An estimated 9 to 16 percent of women experience postpartum depression.<sup>130</sup> This may impact mother-infant bonding, reduce rates of exclusive breastfeeding, or influence the mother’s risk for suicide and substance overdose.<sup>109-110</sup> Outcomes improve when providers offer routine and repeated screening of women and respond appropriately.



#### IDEAS TO CONSIDER:

- Review and share provider tools available to support screening, counseling, and referral for depression during pregnancy and the postpartum period (Box 5.6).
- Establish a statewide referral system for women at risk for postpartum depression.
- Implement training for maternity care professionals, social service providers, and community-based agencies on recommended screening tools, recognition of risk factors, appropriate interventions, and referral options for the management of at-risk women.
- Implement universal postpartum depression screening prior to hospital discharge. Provide technical assistance to birthing hospitals to support compliance with regulations.



## Element 5 | Ensure High-Quality Health Care for Women *continued*

- Share resources with pediatric providers to encourage screening of mothers for depression during well-child visits.
- Establish systems to ensure that incarcerated pregnant women, including those in the juvenile justice system, receive trauma-informed care and comanagement for underlying conditions and risk factors, such as IPV, substance use, or depression. Examine opportunities to improve transition of care to an accessible health care provider on release.
- Engage out-of-hospital maternity care providers to ensure that women with preexisting and complex conditions have access to specialist consultant networks and hospital referrals.

### Box 5.6: More Than the Blues: A Toolkit for Family Service Providers

<http://store.samhsa.gov/product/Depression-in-Mothers-More-Than-the-Blues/SMA14-4878>

Released in September 2014, this toolkit offers providers information and strategies to support their work with new mothers who may be depressed. It includes links to free screening tools, tips for coordination with other programs serving women and children, consumer resources, and more.

### E. Promote appropriate medication use in pregnancy and the postpartum period.

An increasing number of women enter pregnancy with chronic conditions and use medication to control them.<sup>131</sup> Due to potential safety concerns and physiological changes during pregnancy, women's treatment options may require adjustments. MCH programs can provide credible and reliable information to women's health care providers to support treatment decisions (Box 5.7).



#### IDEAS TO CONSIDER:

- Encourage providers to establish systems for monitoring patient adherence with chronic medication regimes, including mental health treatment. Develop provider tools to support counseling regarding potential drug interactions and toxicity, as well as independent discontinuation of medications prescribed for potentially life threatening conditions.
- Partner with state quality collaboratives or professional organizations to improve provider understanding of the role of psychotropic medications in pregnancy and lactation. Develop tools and algorithms that address their management in pregnant and postpartum women.
- Work with the state drug administration or a similar agency to establish standards for substance abuse treatment during pregnancy, including methadone dosage and weaning. Implement provider education on risks of anesthesia in patients with recent history of methamphetamine use.

### Box 5.7: Resources on Safe Medication Use in Pregnancy and the Postpartum Period

#### Treating for Two

<http://www.cdc.gov/pregnancy/meds/treatingfortwo>

A resource provided by CDC, Treating for Two aims to improve the health of women and their infants by working to identify the safest treatment options for the management of common conditions before, during, and after pregnancy.

#### MotherToBaby

<http://www.mohtertobaby.org>

A service of the Organization of Teratology Information Specialists (OTIS), MotherToBaby is a resource for evidence-based information on medication safety and use during pregnancy and breastfeeding. Many states have an affiliate, available to provide accurate and current information that can assist in the development of clinician resources and tools.



### F. Build health system capacity for shared decision making.

Promotion of shared decision making during pregnancy can help ensure that women are informed and fully empowered to participate in decisions affecting their health, such as the timing and mode of delivery or the ongoing management of chronic health conditions in the interconception period. Decisions related to elective delivery practices are especially consequential given the risks associated with labor induction and cesarean section and the potential to adversely affect maternal-infant contact at birth, women's satisfaction with and feelings about the birth, and their success with breastfeeding.<sup>132</sup>



#### IDEAS TO CONSIDER:

- Support the review and revision of evidence-based decision support tools in accessible formats for diverse populations of women and their partners. Evaluate decision support tools and informed consent standards to ensure they are appropriate for low literacy levels, key language groups, and other special populations.
- Review and disseminate available clinical conversation guides and other provider tools to promote shared decision-making and patient-centered provider interactions (Box 5.8).
- Promote provider counseling resources on the risks and childbirth options for women who are obese or have a chronic illness. Ensure pregnant women are aware and engaged in discussion of plans for the continuing management of preexisting health conditions after delivery.
- Engage clinical leaders and state professional organizations to discuss the need for childbirth decision support tools for women with a prior cesarean delivery.
- Disseminate model policies and templates to promote facility adoption of shared decision-making protocols (Box 5.8). Encourage quality improvement in the documentation of discussions between a woman and her care team.

### G. Confront overuse of induction and cesarean section among low-risk first births.

Induction of labor prior to 39 weeks may increase a woman's risk for obstetric hemorrhage or unplanned cesarean delivery. Cesarean delivery, in turn, can increase her risk for postpartum complications or poor maternal outcomes in future pregnancies. Early elective delivery also may increase risk for neonatal complications that lower rates of breastfeeding. A number of strategies may be explored to promote healthy labor and reduce the overuse of surgical interventions (Box 5.9).



#### IDEAS TO CONSIDER:

- Engage the provider community to discuss the benefits of a state hard stop policy to eliminate elective deliveries prior to 39 weeks unless medically indicated.
- Encourage facilities to review their c-section rates among first time pregnant women with low risk pregnancies, and facilitate discussion regarding underlying policy drivers (e.g., provider awareness, access to pain management options). Promote the sharing of performance data in order to facilitate improved systems of care.
- Work with the state Medicaid agency to evaluate and improve reimbursement for continuous professional labor support, or doula care.
- Encourage discussion of personnel policies to address the overuse of unnecessary interventions (e.g., salaried maternity care providers).
- Partner with the state hospital association to assess birthing hospital capacity to implement standards of practice for promoting spontaneous labor and vaginal birth. Develop responsive learning platforms, such as grand rounds presentations or online training modules, and offer continuing medical and nursing education credits for participation.



### Box 5.8: Shared Decision Making Resources

#### **Baby Basics**

<http://www.whattoexpect.org/what-we-do/baby-basics/program>

Developed by the What to Expect Foundation, Baby Basics serves as a catalyst for family health literacy, empowers underserved parents to become effective users of the healthcare system, and gives women's health care providers health literacy and cultural competency tools to improve patient-provider communication. An online staff orientation training and ongoing coaching enhance the integration of health literacy strategies and Baby Basics resources into existing services delivered in participating health centers, local health agencies, WIC offices, provider practices, and other community-based settings. The program website offers a number of case studies to explore successful implementation across the country.

#### **National Quality Forum Patient Passport**

[http://www.qualityforum.org/Patient\\_Passport.aspx](http://www.qualityforum.org/Patient_Passport.aspx)

Modeled on existing tools used in the United Kingdom and by UCLA, the Patient Passport was developed in 2014 by a multi-stakeholder National Quality Forum Action Team to increase patient and family engagement in healthcare settings and drive systems-level change. Written in the patient voice, the Patient Passport uses pictures and simple language to start conversations and to help providers see their patients as persons with stories beyond their illnesses. The content and style are intended to make frontline staff work simpler and more effective by presenting critical information about the patient – such as their preferences, medications, conditions, and what works or does not work to cope with health conditions – in a concise and meaningful way.

#### **Shared Decision Making National Resource Center at Mayo Clinic**

<http://shareddecisions.mayoclinic.org/>

The Mayo Clinic Shared Decision Making National Resource Center promotes shared decision making through the development and assessment of patient decision aids and engagement techniques. Its website includes a variety of decision aid resources, as well as links to decision aid collections and tools available through other organizations and state collaboratives.





### Box 5.9: Resources for Improved Value in Maternity Care

#### Playbook for the Successful Elimination of Elective Deliveries

[http://www.qualityforum.org/Publications/2014/08/Early\\_Elective\\_Delivery\\_Playbook\\_-\\_Maternity\\_Action\\_Team.aspx](http://www.qualityforum.org/Publications/2014/08/Early_Elective_Delivery_Playbook_-_Maternity_Action_Team.aspx)

In 2014, the National Quality Forum convened a multi-stakeholder Maternity Action Team to focus on improving maternal health through sharing of best practices and alignment of public- and private-sector patient safety efforts. In support of the Partnership for Patients initiative, the Maternity Action Team brings together critical thought leaders to identify goals and key strategies to drive system-level changes needed to achieve a significant and sustainable reduction in early elective deliveries.

#### Transforming Maternity Care Blueprint for Action

<http://transform.childbirthconnection.org/progress>

Led by Childbirth Connection, a program of the National Partnership for Women and Families, the Transforming Maternity Care Blueprint for Action is the product of a consensus process engaging more than 100 maternity care leaders representing clinicians, health professions educators, consumers, health plans, public and private payors, liability insurers, hospitals and other care delivery systems, and measurement and quality experts. The blueprint identifies a comprehensive set of actionable strategies within 11 critical focus areas for change. The full document and major recommendations at-a-glance are available online for state use.

## H. Reform payment incentives

Though not intended to undermine quality care, existing financing mechanisms commonly link provider reimbursement to complications, risk factors, and procedures that can incentivize substandard practice.<sup>132</sup>

Several states are now exploring value-based and alternative purchasing models that link payment to interventions with proven effectiveness. While not a typical role of Title V leaders, engaging in the payment reform process in partnership with Medicaid and other major insurers could result in improved care quality, lower costs, and optimal outcomes for mothers.



#### IDEAS TO CONSIDER:

- Seek opportunities to engage purchasers (patients and employers), payers (Medicaid and private insurers), and providers (women's primary, obstetric and specialty care) for input on the current health care financing system and desired changes.
- Work with the state Medicaid agency and major insurers in the state to explore payment reforms that remove economic incentives for cesarean deliveries (Box 5.9). Explore blended or bundled payments that eliminate extra payments for cesarean delivery and encourage vaginal birth, including VBAC.
- Partner with state Medicaid to implement demonstration projects that pilot innovative health care financing models, such as revenue sharing, episode-based or bundled payment for overutilized services, or unbundling of global fees for underutilized services (e.g., separating payment for postpartum visit to incentivize follow up, or billing for single prenatal visits to allow higher payments for first-trimester care).
- To mitigate unintended impacts of new pay-for-performance models on health disparities in low resource settings, work with state Medicaid or private insurers to refine case-mix adjustments that acknowledge variation in the complexity of patient needs by provider.



## Element 5 | Ensure High-Quality Health Care for Women *continued*

### I. Reduce the practice of defensive medicine.

The current state medical-legal climate may encourage obstetric providers to practice “defensive medicine,” which can become a driver for increased cesarean rates and lower rates of VBAC.<sup>132</sup> While this may be a new role for Title V, partnering to examine the state liability system may help to eliminate incentives for low-value care.



#### IDEAS TO CONSIDER:

- Encourage major medical liability insurers to establish premium reduction incentive programs in exchange for completion of meaningful perinatal safety and quality improvement activities.
- Work with partners to pilot and evaluate “enterprise liability” programs, which relocate responsibility from individuals to systems, or “no-fault” programs, which provide rapid payments to families for health care and special medical needs. Consider similar pilot projects using methods of alternative dispute resolution.
- Work with partners to explore the use of specialized health courts with judges and panels skilled in negligence reviews as an alternative to the current tort system. Examine “safe harbor” reforms for providers following best practice policies and protocols.

### J. Develop or adopt model discharge planning processes.

Timing and content of the discharge planning process offers an opportunity to conduct a comprehensive risk assessment for peripartum complications, such as postpartum preeclampsia, deep vein thrombosis, hemorrhage, pulmonary embolism, and cardiomyopathy, as well as to provide patient-centered education on warning signs for these conditions and promote care seeking in the postpartum period.



#### IDEAS TO CONSIDER:

- As available, promote adoption of model standards for effective postpartum discharge planning.
- If unavailable, engage women of reproductive age, maternity care providers, and birthing facilities to develop a model discharge planning process and tools. Consider recommended risk screening, discharge requirements (e.g., vital sign criteria), referrals, and treatment plans that should be in place prior to discharge.
- Engage consumers and clinical partners to explore ways to improve coordination at time of hospital discharge to ensure that women receive follow-up appointments, know when to seek care (e.g., warning signs), and are empowered to advocate for the care they need.
- Conduct an assessment of birthing facilities in the state to evaluate current use of postpartum discharge instructions and policies.
- Provide technical assistance to birthing facilities to ensure that discharge planning tools are culturally appropriate and clear to populations with low health literacy. Develop patient tools that help women and their family members know where and how to access health care services when they have a concern (Box 5.10).

### Box 5.10: Preeclampsia Patient Education Resources

<http://www.preeclampsia.org/market-place/patient-education-materials>

The Preeclampsia Foundation provides evidence-based and medical board-approved patient education materials in English and Spanish for preeclampsia, HELLP Syndrome, and associated cardiovascular conditions. Tear pads and brochures are available for low health literacy prenatal and discharge education about the warning signs of preeclampsia. Multiple states, including California and New York, have adapted foundation resources for related toolkits. Digital license agreements also are available for facilities wishing to incorporate the tool into electronic medical record systems.



### EXAMPLES FROM THE FIELD:

#### Hard Stop Early Elective Delivery Policy (Minnesota)

<http://www.mnhospitals.org/patient-safety/current-safety-quality-initiatives/obstetrics-newborn>

Since 2012, state Medicaid statute requires hospitals to implement a number of measures designed to significantly reduce the number of planned inductions and primary cesarean deliveries prior to 39 weeks gestation unless medically necessary. Under the legislation, hospitals are strongly incented to implement hard-stop policies restricting non-medically necessary inductions before 39 weeks, which include provisions that require providers to document and share with the patient the estimated date of delivery by 20 weeks gestation. Hospitals are also incented to implement policies on documentation of patient education on elective inductions. The state website offers a toolkit for hospital staff to assist with compliance and quality assurance. To date, more than 60 hospitals across the state have received recognition for their success in reducing rates of early elective delivery, and cumulatively, state facilities have seen a 92 percent decline in these rates since 2010.

#### HEALTHY Beginnings NJ (New Jersey)

<http://www.njha.com/quality-patient-safety/provider-resources/maternalchild-health/supporting-breastfeeding-moms-and-babies/>

The New Jersey Baby-Friendly® Hospital Initiative launched in 2009 as a priority of the New Jersey Department of Health (DOH), Office of Nutrition and Fitness. A steering committee, including partners from the state AAP chapter, New Jersey Hospital Association (NJHA), WIC program, MCH Consortium, and La Leche League, developed a request for applications to fund the work of 10 maternity hospitals toward Baby-Friendly® designation. Partners also developed a facility self-appraisal tool, model policy, and resources to facilitate adoption of the World Health Organization (WHO) Ten Steps to Successful Breastfeeding. In 2010, 46 of 52 maternity hospitals attended the first statewide Mother-Baby Summit; all 52 were represented in 2014. The initiative is now called HEALTHY Beginnings NJ: Supporting Breastfeeding Moms & Babies. With chronic disease prevention funding from CDC, the DOH awarded a grant to NJHA to provide targeted technical assistance to 18 hospitals to help them implement the WHO Ten Steps. As of March 2015, four hospitals had received Baby Friendly-USA designation. A 2014 survey by NJHA found that 22 were on the pathway.

#### Maternity Center Breastfeeding Friendly Designation Programs (North Carolina, Virginia)

<http://www.nutritionnc.com/breastfeeding/breastfeeding-friendly.htm>

<http://www.vdh.virginia.gov/ofhs/dcn/vdhbreastfeeding/VAMCBFD.htm>

Developed in North Carolina and adapted by the Virginia Department of Health, Maternity Center Breastfeeding-Friendly Designation Programs recognize birthing facilities in these states that have taken steps to promote, protect, and support breastfeeding within their organization. In both states, a voluntary, five-star program was established to promote the incremental adoption of best practices in the promotion and support of breastfeeding. A star is awarded to participating facilities for every two steps achieved in the Ten Steps to Successful Breastfeeding, as defined by WHO and Baby Friendly USA. Neither program requires site visits or establishes fees associated with designation, and an expedited application was developed for facilities that receive national Baby-Friendly designation. Additionally, North Carolina has adapted the program for early learning settings in the state, establishing a complementary Breastfeeding-Friendly Childcare Designation.

#### Perinatal Excellence Collaborative PEACE-P Guidelines (Alabama)

<http://apecguidelines.org>

The Alabama Perinatal Excellence Collaborative (APEC) aims to improve pregnancy outcomes by providing obstetric providers with evidence-based practice guidelines and decision trees to assist them in the care of pregnant women. The Web-based system, Pregnancy Education Activation Communication Enhancement for Providers (PEACE-P), provides easy access to the guidelines and direct contact with APEC leaders. Guidelines can be viewed on the PEACE-P website via your personal computer, tablet or smart phone. The app can be downloaded from the collaborative website and is designed for compatibility with iOS, Android, and Windows devices.

#### Prenatal Plus (Colorado)



<https://www.colorado.gov/pacific/hcpf/prenatal-plus-program>

Prenatal Plus is a Medicaid-funded program that provides care coordination, nutrition, and mental health counseling to Medicaid-eligible pregnant women in Colorado with identified risk factors. The program uses client-centered counseling, an approach to working with women that allows both the provider and the woman to focus on and prioritize small goals during each session. Providers are required to assist the client



## Element 5 | Ensure High-Quality Health Care for Women *continued*

in developing a goal during one of the first three visits and then follow up on this goal at subsequent visits. Key areas addressed include healthy weight, tobacco cessation, and perinatal depression. Women are enrolled in the program through a variety of referral sources (Medicaid application sites, WIC, medical providers, community agencies) and screened for risk-based eligibility using an intake questionnaire. Medicaid reimbursement for participating women is structured to incentivize an adequate number of prenatal visits.

### **Public Health Initiative for Perinatal Depression (Oregon)**

<http://public.health.oregon.gov/HealthyPeopleFamilies/Women/MaternalMentalHealth>

Initiatives to address perinatal and postpartum depression emerged as a top priority from the Oregon MCH leadership retreat in 2008. In 2009, the Oregon Legislature passed HB 2666, establishing a Maternal Mental Health Work Group, appointed by the director of the Department of Human Services. Guided by workgroup recommendations, the legislature passed the Oregon Maternal Mental Health Patient and Provider Education Bill in 2011. The Oregon Public Health Division MCH program takes a lead role in implementing the bill by: 1) training home visitors, public health staff, and

other providers on screening and support for women with perinatal depression and anxiety; 2) working with 211info to strengthen the data base and referral system for maternal mental health; and 3) maintaining a website that offers tools and resources for community mobilization, links to public service announcements and policy initiatives, access to helpline information and PSI volunteers, self-care tools for moms, and a repository of provider supports.

### **Shared Decision Making Project (Washington)**

<http://depts.washington.edu/shreddm>

In 2007, Washington became the first state to enact legislation regarding the use of shared decision making and patient decision aids for preference-based treatment decisions that involve elective surgery, such as elective cesarean section. The state legislature noted that the use of high-quality decision aids, which outline the benefits, harms, and uncertainties of various treatment options, improves doctor-patient communication and leads to more fully informed patient decisions. The Shared Decision Making Project (SharedDM) first launched at a demonstration site in 2009 to collaborate with providers and demonstrate the use of patient decision aids. A variety of related tools and resources are available for download from the project website.



### **Sweet Success Guidelines for Care (California)**

<http://www.cdappsweetsuccess.org/Professionals/CDAPPSweetSuccessGuidelinesforCare.aspx>

The California Diabetes and Pregnancy Program developed the Sweet Success Guidelines for Care as a patient management references for health care providers. While the guidelines are supported by science and reflect current care standards, they are considered a resource, not the standard of care for the state of California. Those using the guidelines are advised to adapt them based on their facility level of care and patient populations served. The guidelines are periodically revised by a consensus group of individuals with expertise in the care of women with diabetes during pregnancy. The California Diabetes and Pregnancy Program has also established an online Sweet Success Resource and Training Center to support provider uptake and use of available resources.



### STRATEGY 3: PROMOTE COORDINATED SYSTEMS ACROSS THE CARE CONTINUUM

Maternal health improves with the integration of routine well-woman, prenatal, delivery and postpartum care as part of a seamless continuum of services for women. Consider the following strategies to promote integrated service delivery systems.

#### A. Promote medical home models of care.

A medical home, or health home, offers comprehensive patient and family support, care management, transitional and follow-up care, and referrals to community and social support services. Extending the health care home model to include the full episode of maternity care has important implications for continuity of care before, during and between pregnancies.



#### IDEAS TO CONSIDER:

- Establish programs that link women of reproductive age with a primary care medical home.
- Use the Medicaid state option created under the ACA to finance Medicaid “health homes,” which offer a 90 percent Federal Medical Assistance Percentage match level for women of reproductive age who meet the established criteria for existing chronic conditions.
- Coordinate pregnancy care and services for high-risk women through implementation of a maternity medical home model that fosters continuity of care, prioritizes health promotion, promotes accountability for outcomes, and offers high value for purchasers.
- Provide Federally Qualified Health Centers and other safety net providers with support for health IT infrastructure, training in quality improvement, and team-based care.

#### Box 5.11: CMS Health Home Information Resource Center

<http://www.medicaid.gov/state-resource-center/medicaid-state-technical-assistance/health-homes-technical-assistance/health-home-information-resource-center.html>

Established by CMS, the Health Home Information Resource Center supports state development of health home models that coordinate a full range of medical, behavioral health, and long-term services, required by Medicaid beneficiaries with chronic health needs. Given that states are at various stages in developing health homes, the resource center offers a variety of technical assistance services, as well as a resource library of continuously updated materials. States may use the resource center to request one-on-one technical assistance, access peer-learning opportunities, and find resources to guide their health home development and implementation.

#### B. Strengthen electronic health record systems.

Coordinated health record systems and electronic health information exchange can connect outpatient and inpatient care settings, promote active communication between primary, specialty, and routine obstetrical care providers, improve continuity in emergency situations, and make health records more easily available to women to facilitate understanding of personal risk factors and goal setting.



#### IDEAS TO CONSIDER:

- Explore options to implement interoperable record systems that facilitate the transmittal of information between facilities not in the same health system (i.e., meaningful use). Ensure equitable distribution of health IT to safety net providers caring for low-income women.
- Engage facilities and providers to understand and address electronic medical record limitations for viewing, monitoring, and tracking patient vital signs and care plans, by unit or provider type.



## Element 5 | Ensure High-Quality Health Care for Women *continued*

- Implement quality initiatives to improve accuracy, completeness and consistency of medical record documentation. Examine opportunities to improve documentation of patient education, consent or non-consent for recommended services, use of translation or interpreter services, patient body mass index, referrals, receipt of social services, emergency care, violence disclosure, suspected or disclosed substance abuse, and postpartum psychiatric care received, among other key data.

### C. Coordinate prescribing to prevent misuse.

From 2008-2012, an estimated 28 percent of privately insured and 39 percent of publically insured women ages 15-44 filled a prescription for opioid medications.<sup>134</sup> Without systems to coordinate prescribing by multiple providers, including obstetrics, mental health, substance abuse treatment, and primary care, women are at increased risk for medication misuse and overdose.



#### IDEAS TO CONSIDER:

- Partner with the state injury prevention and control program to implement a Prescription Drug Monitoring Program (PDMP) and provide ongoing training for all prescribers (Box 5.12). Work toward interoperability with neighboring state PDMPs.
- Partner with professional organizations serving prenatal care providers to encourage their members to register with the state PDMP and access profiles on all pregnant patients for awareness of their prescription history as part of a standard substance use screening process.
- Educate providers on appropriate pain management in perinatal settings. Include within PDMP training curricula a module that specifically addresses pain management in pregnant women.
- Establish systems for the treatment of pregnant women on methadone, and ensure care coordination and maintenance of methadone therapy following delivery to decrease the risk of substance use relapse among new moms.

### Box 5.12: Prescription Drug Monitoring Program Training and Technical Assistance

<http://www.pdmpassist.org>

The PDMP Training and Technical Assistance Center was established to support states in planning, implementing, and enhancing PDMPs. It provides states with assistance needed to develop PDMP policy and educational resources, collect and report performance measures, host regional and national conferences, participate in interstate data sharing, and plan and implement new PDMPs. The site houses contact information for existing PDMPs, as well as a library of resources, including model guidelines, data sharing agreements, PDMP status maps, funding opportunities, and more. State profiles provide important facts about each PDMP, such as state pharmacy and practitioner data, drug schedules monitored, patient information data, and legislation dates and citations.

### D. Promote effective comanagement of women during pregnancy.

Additional opportunities may exist to facilitate information sharing and coordination across providers of community-based prevention services and primary care, prenatal care, hospital care, domestic violence advocacy, and postpartum care, especially for high-risk women with high-risk pregnancies.



### IDEAS TO CONSIDER:

- Work with professional organizations to promote models of interdisciplinary care for high-risk pregnant women that may include perinatologists, midwives, clinical nurse specialists, nurse practitioners, or genetic counselors, as appropriate.
- Explore ways to effectively coordinate care and services delivered to high risk women by medical professionals, home visiting programs, Healthy Start providers, and other agencies.
- Remove regulatory restrictions that inhibit communication between obstetric and substance abuse treatment providers. Encourage appropriate planning and referral for aftercare for pregnant and postpartum women leaving in-patient substance abuse treatment.
- Establish systems to ensure that incarcerated pregnant women, including those in the juvenile justice system, receive trauma-informed care and comanagement for underlying conditions and risk factors, such as IPV, substance use, or depression. Examine opportunities to improve transition of care to an accessible health care provider on release.
- Engage out-of-hospital maternity care providers to ensure that women with preexisting and complex conditions have access to specialist consultant networks and hospital referrals.

### E. Ensure postpartum follow up and seamless support for new mothers.

Postpartum visits provide an opportunity to not only assess women's physical recovery from pregnancy and childbirth, but also to address pregnancy spacing and family planning goals, postpartum mental health, and chronic or underlying health conditions. During this period of transition back to primary care, MCH programs can help women optimize their health and prevent unintended pregnancies.



### IDEAS TO CONSIDER:

- Partner with birthing facilities and out-of-hospital providers to establish primary care referral systems for women without an existing medical home.
- As available, promote adoption of redesigned postpartum visit standards. If unavailable, engage women of reproductive age and provider organizations to discuss the redesign of postpartum visits, including content and patient-centered models of delivery.
- Improve postpartum follow up for women who developed diabetes or hypertension in pregnancy (gestational illness), given their increased risk of developing chronic conditions in the future. Fund replication or pilot projects that offer enhanced postpartum and interconception care management for women with chronic or complex conditions.
- Explore opportunities to integrate postpartum risk screening and referral (e.g., substance abuse, depression, IPV or proper seat belt use) into other public health programs serving women in the postpartum period, such as family planning, home visiting, and WIC.
- Develop resources to support postpartum risk screening and referral by pediatric care providers during well-child visits. Up to four well-child visits occur within six weeks postpartum, and women are more likely to seek health care and services for their infants than themselves.

### F. Integrate emergency care into existing care delivery systems.

Maternal deaths frequently occur before a woman arrives at the hospital to give birth or after she gives birth and is discharged. Emergency personnel play a special role in providing care to high-risk pregnant and postpartum women, and states can take steps to fully engage them within integrated care delivery.



## Element 5 | Ensure High-Quality Health Care for Women *continued*



### IDEAS TO CONSIDER:

- Encourage pregnancy testing of reproductive-age women presenting in the emergency room, and support the development of protocols for primary obstetric referral if pregnancy is confirmed.
- Partner to design protocols for flagging pregnant and postpartum women on arrival at the emergency room or other portal of facility entry. Emphasize the possibility that a woman, whatever her presenting symptoms, may be pregnant or may have recently been pregnant.
- Implement emergency personnel training on the signs, symptoms, and appropriate interventions for conditions that may occur in pregnant and postpartum women, such as (pre)eclampsia, cardiomyopathy, infection, and embolus.
- Develop tools and initiatives to enhance communication, cross-training, and collaboration between emergency department, anesthesiology, internal medicine, obstetricians, and labor and delivery personnel.

### EXAMPLES FROM THE FIELD:

#### Healthier Washington (Washington)

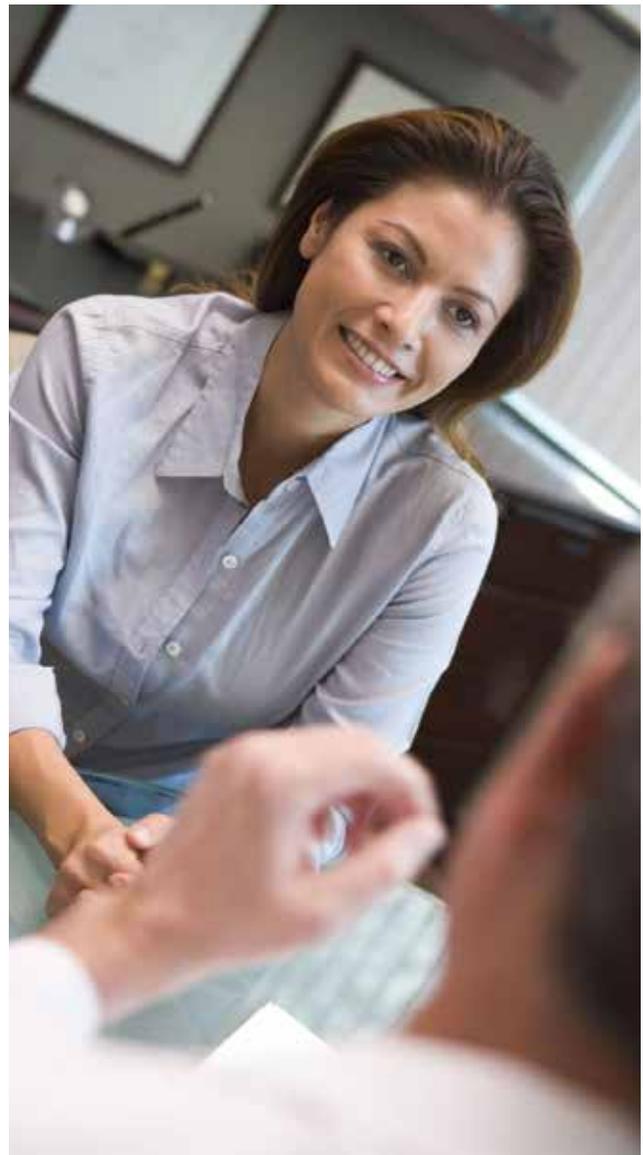
<http://www.hca.wa.gov/hw>

Administered through the state Medicaid agency, Washington Health Care Authority, a 2013 CMS planning grant catalyzed statewide conversations around a framework for health care system transformation, resulting in a five-year Washington State Health Care Innovation Plan. With an aim to achieve a fully integrated managed care system by 2020, the state legislature provided strong bipartisan support for initial plan activities. Efforts have included the design of a health care market assessment of readiness to test value-based models; steps toward an all-payer claims database; development of a statewide core performance measure set; a Prevention Framework; and early design of a patient decision-aid certification process to improve consumer and family engagement. Based on the Innovation Plan, the Healthier Washington initiative proposes to invest in connections and active collaboration with Washington communities and providers to produce better health and better care at lower cost. With a \$65 million award from the Center for Medicare & Medicaid Innovation in December 2014, the initiative will: 1) build healthier communities and people through prevention and early attention to disease; 2) integrate care and social supports for individuals with both physical and behavioral health needs (e.g., chemical dependency and depression); and 3) reward quality health care over quantity, with state government leading by example as the largest purchaser of health care in Washington.

#### Internatal Care Program (Arizona)

<http://mihs.org/services/ob-medical-home>

The Internatal Care Program is a clinic-based program at Maricopa Integrated Health System, a safety-net health system in Phoenix Arizona. From 2007 to 2015, more than a dozen organizations partnered to design the program,





## Element 5 | Ensure High-Quality Health Care for Women *continued*

which seeks to improve the interconception care of women who have experienced a prior poor pregnancy outcome. The program replicates and expands on the Grady Interpregnancy Care Program at Grady Memorial Hospital (Atlanta, Georgia), which paired coordinated primary health care with social support. Participants receive clinical care with an emphasis on continuity of care via a long-term patient partnership in which the same obstetrician-gynecologist provides care from preconception through the postnatal period and subsequent pregnancies. This allows the physician to know the patient history from experience, and promotes integration and decision-making from a whole-patient perspective. Additionally, other health care professionals (including care coordinators and promotoras) provide individualized care coordination and health education during the preconception, prenatal, and postnatal periods. Care coordinators also facilitate community activities including support groups for perinatal mood disorders and domestic violence.

### **Pregnancy Care Management Cardiovascular Risk Criteria Pilot (North Carolina)**

<http://www.ccwjc.com/pregnancy%20medical%20home.asp>

The North Carolina Division of Public Health partners with the North Carolina Division of Medical Assistance and Community Care of North Carolina to implement a Pregnancy Medical Home (PMH) initiative, inclusive of Pregnancy Care Management (OBCM) services. In order to improve quality of maternity care, birth outcomes, and continuity of care for women, the PMH model engages obstetric providers as PMHs and local health departments as providers of OBCM services. Local health departments hire Pregnancy Care Managers who are assigned to a PMH to facilitate individualized

care plans for OBCM-eligible clients. When the state MMR Committee found that cardiovascular disease (CVD) was a leading cause of pregnancy-related deaths, an OBCM pilot was implemented for postpartum women with CVD risk factors. Women meeting risk criteria received additional care management support to reduce their risk for CVD and engage in reproductive life planning. The CVD risk criteria were successfully piloted with providers in an initial Care Network in 2014, and the state plans to apply lessons learned in expansion to additional networks.

### **Women's Health Now and Beyond Pregnancy (Wisconsin)**



<http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/ISDocs/Womens-Health-Now-and-Beyond.pdf>

The Women's Health Now and Beyond Pregnancy Project integrates interconception care into existing public health services and normalizes family planning as a component of public health programming. It enhances Medicaid Prenatal Care Coordination services to include a focus on interconception care before future pregnancies. The project aims to integrate women's health and preconception services into existing public health services; promote ongoing folic acid consumption for women in the postpartum period; promote healthy spacing of pregnancies through life planning; put into practice a standard of care that ensures pregnant women have access to family planning supplies and services prior to delivery; ensure access to a medical home for reproductive health; and support enrollment in the Family Planning Waiver or other Medicaid program, based on eligibility.





# Element 6 | Ensure Readiness and Response to Obstetric Emergencies

## SNAPSHOT

State MCH programs play an important role in promoting a culture of patient safety at the provider, facility and health system levels. This section is organized around the following strategies to improve health outcomes for women experiencing obstetrical adverse events:

- Promote facility readiness for obstetric complications.
- Improve clinical recognition and response to adverse obstetric events.

Recognizing that maternal health and safety are best achieved through quality care over the course of pregnancy and the postpartum period, the health systems that serve pregnant women also must be capable of effective response to adverse obstetric events. Pregnancy is a time of increased risk for disease and disability among women. The CDC estimates that 52,000 U.S. women experience severe pregnancy complications each year – more than 140 women every day.<sup>8</sup>

Though rates vary by state, the CDC identified the following conditions as among leading causes of maternal death in the United States in 2011.<sup>6</sup> These conditions also are associated with substantial morbidity:

- **Cardiovascular diseases and myopathy (heart failure):** An estimated 15.1 percent of pregnancy-related deaths were reportedly due to cardiovascular disease, or diseases of the heart and blood vessels. An additional 10.1 percent of pregnancy-related deaths were attributed to cardiomyopathy.
- **Sepsis (infection):** Infection accounted for an estimated 14 percent of pregnancy-related deaths, as well as a substantial number of complicated pregnancies each year.<sup>6, 108</sup>
- **Obstetrical hemorrhage (heavy bleeding):** Hemorrhage was responsible for an estimated 11.3 percent of pregnancy-related deaths.<sup>6</sup> Also, for every 1,000

deliveries, 19 women experience hemorrhage during pregnancy, and 30 experience postpartum hemorrhage. Heavy bleeding also complicates nearly 25,000 non-delivery hospital stays among pregnant women each year.<sup>108</sup>

- **Venous Thromboembolism (VTE) (blood clots):** Complications due to blocked arteries in the lungs resulted in 9.8 percent of pregnancy-related deaths.<sup>6</sup> Surgery (e.g., cesarean section) increases women’s risk for VTE.
- **Hypertensive disorders of pregnancy (high blood pressure):** An estimated 8.4 percent of pregnancy-related deaths are due to severe hypertension, including pre-eclampsia and eclampsia, which complicate 94 per every 1,000 deliveries and 53,000 non-delivery hospital stays among pregnant women each year.<sup>6, 108</sup> ACOG released consensus recommendations for prevention and treatment in 2013.<sup>135</sup>
- **Amniotic fluid embolism:** Responsible for 5.6 percent of pregnancy-related deaths, amniotic fluid embolism occurs when amniotic fluid or fetal material enters a woman’s blood stream. It is poorly understood, difficult to diagnose, and requires immediate treatment.

When adverse obstetric events do occur, their appropriate clinical management can prevent the escalation of outcomes to a severe morbidity, “near miss,” or death. However, because these serious events are relatively rare, women’s



## Element 6 | Ensure Readiness and Response to Obstetric Emergencies

*continued*

obstetric providers and nurses may be less familiar with their presentation and warning signs or the appropriate course of action. Systems also may not exist to enable an effective response. To improve readiness, recognition, and response to obstetric emergencies, clinical leaders from more than 15 professional organizations have convened around a

common agenda to promote patient safety in maternity care settings (Box 6.1). In partnership with clinical leaders and their respective networks, Title V MCH programs across the country have a unique opportunity to facilitate the successful statewide rollout of an unprecedented maternal safety initiative.

### Box 6.1: National Partnership for Maternal Safety – Organizational Partners

<http://www.safehealthcareforeverywoman.org/maternal-safety-overview.html>

American Academy of Family Physicians  
 American Association of Birth Centers  
 American Association of Blood Banks  
 American College of Nurse-Midwives  
 American College of Osteopathic Obstetricians and Gynecologists  
 American Congress of Obstetricians and Gynecologists  
 American Hospital Association  
 Association of Maternal & Child Health Programs  
 Association of State and Territorial Health Officials  
 Association of Women’s Health, Obstetric and Neonatal Nurses  
 Center for Medicare and Medicaid Innovation  
 California Maternal Quality Care Collaborative  
 Joint Commission  
 National Association of Nurse Practitioners in Women’s Health  
 Society for Maternal Fetal Medicine  
 Society of Obstetric Anesthesia and Perinatology  
 Voluntary Hospital Association

### STRATEGY 1: PROMOTE FACILITY READINESS FOR OBSTETRIC COMPLICATIONS

System-level readiness enables an effective, efficient response to obstetric emergencies. Select one or more strategies in this section to support facilities and providers in preparation for emergent events.

#### A. Establish risk-appropriate levels of maternal care.

Timely access to risk-appropriate obstetric care can reduce perinatal mortality and improve outcomes for high-risk obstetric patients.<sup>136</sup> While neonatal care levels exist in many states, few states have established similar or coordinated systems for at-risk women. The maternal levels of care designation process defines the minimum required equipment, personnel, and capabilities for standard care levels to ensure women deliver in facilities able to meet their needs.



#### IDEAS TO CONSIDER:

- Adopt a consensus-based classification system for levels of maternity care designation that apply to all birthing facilities in the state, from basic to regional tertiary care centers (Box 6.2). Create a Levels of Care certification program for state birthing facilities.
- Integrate criteria for designation with emergency response systems to ensure the appropriate personnel, physical space, equipment, and technology are available to achieve optimal outcomes for all mothers.
- Assess the geographic distribution of higher-level facilities to identify gaps in access and the need to provide supplemental support to rural and lower-level facilities.



### Box 6.2: Obstetric Consensus Statement on Levels of Maternal Care

<http://www.acog.org/Resources-And-Publications/Obstetric-Care-Consensus-Series/Levels-of-Maternal-Care>

In February 2015, ACOG and the Society for Maternal Fetal Medicine released a joint consensus statement introducing designation levels for maternity care facilities in the United States.<sup>135</sup> This document seeks to introduce uniform, national designations for levels of care that are complementary but distinct from neonatal levels of care. The statement also provides a standardized vocabulary for facilities that provide each level of care, while offering consistent guidelines of service, by level, for use in quality improvement.

#### B. Design maternal transport systems to improve patient transfer.

Women experiencing pregnancy complications benefit from systems that facilitate their timely transfer to a facility with an appropriate level of care, whether between hospitals or from home birth locations and birthing centers to regional birthing facilities. MCH programs can partner to establish these systems.



##### IDEAS TO CONSIDER:

- Collaborate with tertiary care centers and lower-level facilities to develop coordinated maternal and neonatal transport plans and cooperative agreements to assure successful transfers when women develop complications.
- Ensure facilities have protocols in place with a well-defined threshold for transfer of women to a higher level of care. Ensure receiving hospitals have protocols in place to accept transfers.
- Develop training modules for each care level to improve staff understanding of their facility capability to handle increasingly complex levels of maternal care. Design communication tools to facilitate the transfer of women to higher levels of care when appropriate.
- Encourage multidisciplinary, periodic review of all transfers and complications from community facilities to higher levels of care. Engage team members at all levels of care to jointly improve care coordination and quality.
- Engage out-of-hospital providers to develop and disseminate procedures for the transfer of high-risk pregnant women from home or birth center to higher levels of care, if needed.

#### C. Build awareness of the need for critical care protocols.

Regular review of special protocols may help facilities align emergency response with current care standards and meet the needs of women.



##### IDEAS TO CONSIDER:

- Share model protocols on the resuscitation of pregnant women, including perimortem cesarean delivery, in the event of maternal cardiac arrest after 20 weeks gestation.
- Promote the adoption of accelerated response protocols for complications with rapid patient decline, such as amniotic fluid embolism or ruptured ectopic pregnancy.
- Address the availability of blood products, “stat” laboratory studies, advanced cardiovascular life support, and rapid mobilization of appropriate intensive care personnel.



## Element 6 | Ensure Readiness and Response to Obstetric Emergencies

*continued*

### D. Implement maternity care bundles for obstetrical adverse events.

While important, individual policies and protocols alone do not ensure adherence with recommended care standards. First introduced by the Institute for Healthcare Improvement (IHI), “bundles” are small sets of three to five evidence-based interventions (elements) developed for a defined patient population and care setting that result in improved outcomes when implemented together.<sup>23</sup> Elements are descriptive, rather than prescriptive, to allow for adaptation by multidisciplinary care teams in health systems and facilities. Compliance is based on an “all or nothing” implementation of bundle elements.



#### IDEAS TO CONSIDER:

- Conduct a statewide hospital or birthing center assessment to understand current capacity to adapt and implement bundles on leading causes of maternal death and severe morbidity.
- Encourage facilities to adapt available bundles, and partner with professional associations to make technical assistance available (Box 6.3).
- Sponsor statewide learning collaboratives for birthing hospitals to promote adoption of patient safety bundles based on successful models employed in other facilities.

### Box 6.3: Bundles and Change Packages

#### Hospital Engagement Network Obstetrical Harm Change Package

<http://www.hret-hen.org>

The American Hospital Association and Health Research and Education Trust were funded by CMS from 2011-2014 to develop and support a Hospital Engagement Network. Resources and tools produced through the project are freely available on the website. Among these, an Obstetric Harm Change package offers evidence-based practice resources for obstetric adverse events, including obstetric hemorrhage, severe pre-eclampsia, VTE, and oxytocin use.<sup>137</sup>

#### IHI Care Bundles

<http://www.ihl.org>

IHI originally coined the term “care bundle,” and has since developed a number of related resources to support birthing facilities.<sup>23</sup> Its how-to guide on the prevention of obstetrical adverse events includes bundles to address elective induction and augmentation, as well as guidance for teams and support for the development of outcome and process measures to track performance.<sup>138</sup> The IHI site also offers access to a white paper on the development of safety bundles and their design concepts.<sup>139</sup>

#### Maternity Care Patient Safety Bundles

<http://www.safehealthcareforeverywoman.org/maternal-safety.html>

Led by the National Partnership for Maternal Safety, a consensus-driven set of patient safety bundles is in development and will be widely available for adaptation and adoption in facilities across the United States. As they are developed, safety bundles will be available for download from the Council on Patient Safety in Women’s Health Care website.



## Element 6 | Ensure Readiness and Response to Obstetric Emergencies

*continued*

### STRATEGY 2: IMPROVE CLINICAL RECOGNITION AND RESPONSE TO ADVERSE EVENTS

Once protocols and plans are in place, ongoing training and support can improve awareness of care standards in emergencies; ensure that systems designed to promote situational awareness of patient conditions are appropriately employed; and build provider confidence and care team effectiveness in high stress situations, ensuring that the best response is instinctive when faced with a deteriorating patient or obstetric emergency.

#### A. Improve the quantification of blood loss.

Visual estimation of the blood volume lost during labor can be very inaccurate, which may delay recognition and response to obstetric hemorrhage. Quantification methods may trigger more timely clinical management of hemorrhage.<sup>140</sup> A significant number of hemorrhage deaths may be preventable if effective interventions are initiated in a timely manner.<sup>141</sup>



#### IDEAS TO CONSIDER IN PARTNERSHIP WITH YOUR STATE HOSPITAL ASSOCIATION:

- Promote facility adoption of model policies regarding the quantification of blood loss. Encourage facilities to educate their maternity care team about these methods.
- Encourage statewide birthing facilities to assess the availability of equipment needed to accurately quantify blood loss, such as under-buttocks drapes and scales.
- Provide birthing facilities with laminated dry weight cards that can be attached to scales used to weigh newborns.
- Encourage facilities to insert formulas into their electronic charting system to automatically calculate blood loss based on wet weights entered.

### Box 6.4: AWHONN Postpartum Hemorrhage Project

[www.pphproject.org](http://www.pphproject.org)

AWHONN launched its Postpartum Hemorrhage Project to reduce the number of women who bleed to death during pregnancy or after childbirth through improved clinical management of obstetric hemorrhage. The initiative engages hospital leaders from 58 facilities in two states (Georgia, New Jersey) and the District of Columbia in an 18-month, multi-hospital learning collaborative. In May 2014, AWHONN also released clinical management guidelines on the Quantification of Blood Loss, recommending blood loss be formally measured after every birth. A video, recorded webinars, and other resources are available on the project website to support facility-level initiatives in your state.

#### B. Promote the use of early warning criteria and scoring systems.

Early warning signs are clinical triggers that signal the need to increase monitoring or call for additional assistance (e.g., changes in vital signs, such as heart and respiratory rates, or changes in mental status). Because normal physiology changes during pregnancy and adverse events are relatively rare, members of the woman's care team may miss early warning signs present or misunderstand their significance. The Joint Commission requires hospitals to establish written criteria for observed changes in patient condition and provider response.<sup>142</sup> MCH programs can partner to ensure a coordinated state approach.



#### IDEAS TO CONSIDER:

- Partner with professional organizations to conduct a review of existing early warning systems in the state. Support facilities in developing effective escalation policies based on current early warning criteria.
- Establish statewide demonstration projects on the implementation of maternal early warning systems by facilities. Explore opportunities to engage home birth professionals.
- Encourage hospitals and birthing facilities to develop Rapid Response or Adverse Event Teams to deploy when early signs of critical illness are flagged.



## Element 6 | Ensure Readiness and Response to Obstetric Emergencies

*continued*

### C. Develop clinical posters, quick reference tools, and checklists.

Checklists, order sets and other provider quick reference tools facilitate the consistent application of care standards, guiding providers through evidence-based strategies that improve maternal health and care delivery.



#### IDEAS TO CONSIDER:

- Survey birthing hospitals or a subset of hospitals by maternity or perinatal designation to assess the perceived training and skills-building needs of staff. Conduct an assessment of existing checklists and order sets used in facilities across the state.
- Work with professional organizations to design checklists and quick reference guides that are based on current practice guidelines and responsive to the needs identified by birthing facilities and providers.
- Disseminate posters and other tools within priority and low-resource settings, such as hospital emergency rooms and rural facilities across the state.
- Assess hospital adoption and appropriate staff use of checklists, and provide technical assistance or revised tools as needed.

### D. Implement simulation exercises and drills.

Simulations are interdisciplinary team trainings and drills, intended to promote adherence with clinical standards, improve care team communication and teamwork, enhance situational awareness, and reduce medical errors in high stress emergency situations. Simulations also offer a valuable opportunity to test bundle implementation and refine facility adaptations.



#### IDEAS TO CONSIDER:

- Identify obstetric simulation centers located in the state, or partner with schools of medicine to identify necessary training equipment and supplies. Seek resources or experts available to inform scenario development for simulation exercises.
- Partner with regional perinatal centers to offer team-based simulation trainings for facilities. Utilize hospital surveys to target the content of simulation exercises.
- Identify and partner with facility champions to implement periodic unit drills for priority conditions and obstetric events, such as preeclampsia, hemorrhage, or cardiac disorders.
- Develop facilitation and evaluation resources to support pre-simulation briefing, reflective learning, debriefing, and quality improvement activities.

### Box 6.5: Communication Resources for Obstetric Care Teams

#### SBAR Technique for Communication

<http://www.ihl.org/resources/Pages/Tools>

Developed by Michael Leonard, MD, and colleagues at Kaiser Permanente of Colorado, the SBAR technique provides a framework for communication between members of the health care team about patient condition. SBAR is an easy-to-remember, concrete mechanism useful for framing critical conversations requiring a immediate clinician attention and action. Download the SBAR guidelines and worksheet from the Institute for Healthcare Improvement website.

#### TeamSTEPPS

<http://teamstepps.ahrq.gov>

Developed by the U.S. Agency for Healthcare Research and Quality, TeamSTEPPS is a curriculum and training system designed to support team building in health care delivery settings. TeamSTEPPS is designed to produce highly effective medical teams that optimize the use of information, people, and resources to achieve the best clinical outcomes for patients. Visit the website to complete a readiness assessment, register for an upcoming training event, order TeamSTEPPS materials, or locate one of eight Regional Training Centers.



## Element 6 | Ensure Readiness and Response to Obstetric Emergencies

*continued*

### E. Promote care team communication.

Staffing rotations, shift changes, and cultural hierarchies can cause a breakdown in team-based care delivery. Strong, interdisciplinary team dynamics are even more critical in the care of pregnant and postpartum women at-risk for potential complications.



#### IDEAS TO CONSIDER:

- Encourage facilities to adopt standard communication tools, such as Situation-Background-Assessment-Recommendation (SBAR) (Box 6.5).
- Develop training modules for all members of the care team that address principles of crew resource management, shared decision making, and cultural hierarchies between physicians and nurses that create barriers to critical communication.
- Encourage birth facilities to utilize organized board rounds, huddles, structured handoffs, and bedside rounds to facilitate cross-departmental sharing of resources and expertise.

### F. Encourage facility-based reviews and systems for continuous improvement.

Recent changes to the Joint Commission Sentinel Event Policy require facilities to complete an investigation, or root cause analysis, and action plan for all maternal deaths and cases of severe maternal morbidity that result in permanent harm or severe temporary harm. In addition, multidisciplinary peer review is recommended for all adverse events for the purpose of continuous quality improvement.<sup>142</sup>



#### IDEAS TO CONSIDER:

- Assess the degree to which maternity care data are currently tracked, benchmarked and used for quality improvement purposes within statewide birthing facilities. Support facilities in developing methods to systematically track and evaluate care processes and outcomes.
- Establish facility learning networks to improve adverse outcome surveillance and care quality (e.g. severe morbidity case review; maternal death certificate completion).
- Provide model forms and training for the facility-based review of cases of severe maternal morbidity. Encourage facility reviews or debriefing processes for adverse outcomes while information is fresh in the minds of staff and motivation for system change is high.
- Work with Regional Perinatal Center leadership on quality improvement activities within their network (e.g., review of adverse events in affiliate hospitals; simulations and trainings). Ensure adequate technical assistance is available, and explore policy levers to formalize this role.

### Box 6.6: Tools to Support Facility-based Review of Severe Maternal Morbidities

<http://www.safehealthcareforeverywoman.org/maternal-safety.html>

Adapted from forms used by the California Pregnancy-Associated Mortality Review (CA-PAMR), the Council on Patient Safety in Women's Health Care makes severe maternal morbidity reporting forms and related guidance freely available for download from their website. The forms are intended for use by facilities in the multidisciplinary review of cases in which women received four or more units of blood products or an ICU admission. Facilities also can utilize the tool for other obstetric events.



### EXAMPLES FROM THE FIELD:

#### Obstetric Simulation Training (Ohio)

<http://medicine.osu.edu/orgs/clinicalskills>

In 2014, the Ohio Department of Health (ODH) and The Ohio State University (OSU) partnered to bring high-fidelity, mannequin-based simulation training to obstetric providers in three communities in rural Ohio. Simulation scenarios were developed based on the results of a statewide birthing hospital survey, which gathered information on existing patient safety initiatives at the facility level and self-identified training needs of hospital staff. Designed to engage members of the care team in labor and delivery and postpartum units, three clinical scenarios were prepared for the management of postpartum hemorrhage, cardiomyopathy, and preeclampsia. Pilot trainings were coadministered by ODH with technical support from staff at the Clinical Skills Education and Assessment Center in the OSU College of Medicine. In total, 92 health care professionals representing nine Level I (8) and Level II (1) hospitals participated in the trainings. Based on evaluation results, overall participant knowledge of obstetric complications significantly increased, and the “hands-on” training methods improved self-efficacy and confidence levels to appropriately manage obstetric emergencies.

#### Hypertensive Disorders of Pregnancy Guidelines and Toolkit (New York State)

[http://www.albany.edu/sph/cphce/mch\\_nyspqc.shtml](http://www.albany.edu/sph/cphce/mch_nyspqc.shtml)

Based on findings from the statewide Maternal Mortality Review Initiative (MMRI), in May 2013, the New York State Department of Health released a set of guidelines for the appropriate diagnosis, evaluation and management of Hypertensive Disorders of Pregnancy. Accompanied by a set of recommendations for their dissemination and adoption in clinical practice, the guidelines were the result of an extensive review by a multidisciplinary hypertension subcommittee convened by the MMRI Expert Review Committee. In 2014, with funding from the AMCHP Every Mother Initiative, a state team developed a suite of tools to support their adoption. Resources include an educational clinic poster and provider mini card illustrating accurate blood pressure measurement techniques; a clinical algorithm and Preeclampsia Early Recognition Tool adapted from California; a customizable webinar presentation for pre-hospital, hospital and emergency room providers and staff; and patient education materials to improve the recognition of signs and symptoms of preeclampsia, developed in collaboration with the Preeclampsia Foundation.

#### Mandatory Provider Training on Obstetric Hemorrhage (Illinois)

<http://isahq.org/Portals/0/community/docs/IDPHOBproject.pdf>

The Illinois Maternal Mortality Review Committee (MMRC) reporting structure allows its recommendations to be efficiently processed and actions taken to improve the health of mothers. In 2009, as a result of MMRC findings and with input from obstetric providers, anesthesiologists, and perinatal nurses, the Obstetric Hemorrhage Education Project was mandated by state statute for all hospitals providing maternity services in Illinois. Implementation in facilities includes pretesting (benchmark assessment), a didactic lecture, skills stations with training on estimation of blood loss, and multi-disciplinary simulation drills with debriefing. In addition, the regulation requires hospitals to establish a Rapid Response Team inclusive of maternity services. Guidelines for team composition, sample order sets, contents of hemorrhage supply kits, and code flow sheets are available as a component of the teaching materials developed for the course.

#### Obstetric Hemorrhage & Preeclampsia Toolkits (California)

[http://www.cmqcc.org/ob\\_hemorrhage](http://www.cmqcc.org/ob_hemorrhage)

[https://cmqcc.org/preeclampsia\\_toolkit](https://cmqcc.org/preeclampsia_toolkit)

The California Maternal Quality Care Collaborative (CMQCC) develops a number of resources to improve the health care response to leading causes of death among women. In July of 2010, it released an Obstetric (OB) Hemorrhage toolkit, which includes a compendium of best practice tools and articles, care guidelines in multiple formats (checklist, flow chart), a hospital-level implementation guide, and a slide set for professional education. A 2015 update to the toolkit is in development. In January 2014, CMQCC published a Preeclampsia Toolkit to address high rates of hypertension disorders of pregnancy, featuring consensus-based best practices for the early recognition, diagnosis, treatment and management of preeclampsia. In addition to care guidelines slide sets and resources to support patient and provider education, the toolkit includes clinical warning signs to prompt action (“triggers”). As with the OB Hemorrhage toolkit, a collaborative was launched to implement the toolkit; 25 California hospitals participated, and a Web-based platform was established to facilitate access to shared documents, links and meeting information. All of these resources and more can be accessed from the CMQCC website.



## Element 6 | Ensure Readiness and Response to Obstetric Emergencies

*continued*

### Safe Motherhood Initiative (New York State)

<http://www.acog.org/About-ACOG/ACOG-Districts/District-II/Safe-Motherhood-Initiative>

Led by ACOG District II (New York), the Safe Motherhood Initiative launched in May 2013 to develop a comprehensive maternal safety bundle toolkit to address leading obstetric emergencies in the state, including obstetric hemorrhage, venous thromboembolism, and severe hypertension in pregnancy. For each condition, a standardized care management plan or “bundle” was developed. The toolkit includes education in the form of PowerPoint presentations, laminated posters for the obstetric unit, algorithms, checklists, Web-based applications and reference guides. The toolkit supports obstetrician-gynecologists, nursing, midwives, multi-disciplinary clinical staff and all birthing facilities in the regional implementation of obstetric bundles. The free toolkit can be accessed on the initiative website.



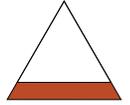
# Planning Tools

## **PART 2** | Action Elements



Agencies/partners completing this tool:

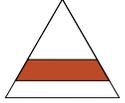
**Strategy 3.1: Address underlying social determinants of health.**  
*Change the economic and social circumstances that affect women’s health.*



Current Activities in Support of this Strategy (Existing Strengths)	Lead Agency/Partners	Crosswalk to Performance Standards (All Partners)
e.g., rental assistance programs, parental leave policies.		
Untapped Resources, Partners, and Other Assets (Opportunities)	Potential Barriers or Threats	
See pages 46-47 for ideas to consider.		
Action Needed/By Whom		



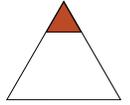
**Strategy 3.2: Build environments that support healthy and active living.**  
*Change the physical and policy context so that healthy decisions are the easy decisions to make.*



Current Activities in Support of this Strategy (Existing Strengths)	Lead Agency/Partners	Crosswalk to Performance Standards (All Partners)
<p>e.g., farmer’s market nutrition programs; other specific activities in collaboration with WIC or chronic disease programs.</p>		
Untapped Resources, Partners, and Other Assets (Opportunities)	Potential Barriers or Threats	
<p>See pages 48-50 for ideas to consider.</p>		
Action Needed/By Whom		



**Strategy 3.3: Implement community-based health promotion efforts.**  
*Give women and families the information they need to make healthy decisions.*



Current Activities in Support of this Strategy (Existing Strengths)	Lead Agency/Partners	Crosswalk to Performance Standards (All Partners)
e.g., social marketing campaigns; training community health workers in motivational interviewing; Web-based reproductive life planning tools.		
Untapped Resources, Partners, and Other Assets (Opportunities)		Potential Barriers or Threats
See pages 51-56 for ideas to consider.		
Action Needed/By Whom		

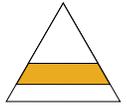


**PLANNING TOOL**

**Element 4 | Improve Access to Health Care**

Agencies/partners completing this tool:

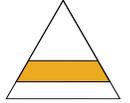
**Strategy 4.1: Promote comprehensive health coverage.**  
*Remove coverage barriers to timely and appropriate care.*



Current Activities in Support of this Strategy (Existing Strengths)	Lead Agency/Partners	Crosswalk to Performance Standards (All Partners)
e.g., state plan amendments or waivers, enhancements to the essential health benefits package.		
Untapped Resources, Partners, and Other Assets (Opportunities)		Potential Barriers or Threats
See pages 59-61 for ideas to consider.		
Action Needed/By Whom		



**Strategy 4.2: Improve the availability and acceptability of services.**  
*Remove physical and psychosocial barriers to care.*

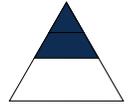


Current Activities in Support of this Strategy (Existing Strengths)	Lead Agency/Partners	Crosswalk to Performance Standards (All Partners)
<p>e.g., women’s health care workforce recruitment and retention activities; expanded home visiting services; provider cultural competency training.</p>		
Untapped Resources, Partners, and Other Assets (Opportunities)	Potential Barriers or Threats	
<p>See pages 62-67 for ideas to consider.</p>		
Action Needed/By Whom		



Agencies/partners completing this tool:

**Strategy 5.1: Support provider capacity to deliver high-quality well-woman care.**  
*Women need high quality health care throughout their reproductive years, regardless of childbearing intent.*

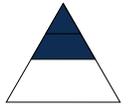


<b>Current Activities in Support of this Strategy (Existing Strengths)</b>	<b>Lead Agency/Partners</b>	<b>Crosswalk to Performance Standards (All Partners)</b>
e.g., women’s health care workforce recruitment and retention activities; expanded home visiting services; provider cultural competency training.		
<b>Untapped Resources, Partners, and Other Assets (Opportunities)</b>		<b>Potential Barriers or Threats</b>
See pages 70-74 for ideas to consider.		
<b>Action Needed/By Whom</b>		



**Strategy 5.2: Improve provider capacity to deliver quality, routine maternity care.**

*Enhance the level of care women receive during pregnancy and the postpartum period.*

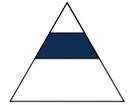


Current Activities in Support of this Strategy (Existing Strengths)	Lead Agency/Partners	Crosswalk to Performance Standards (All Partners)
e.g., dissemination of provider tools to facilitate shared decision making; payment reform demonstration projects; hard stop policies for early elective delivery.		
Untapped Resources, Partners, and Other Assets (Opportunities)	Potential Barriers or Threats	
See pages 75-83 for ideas to consider.		
Action Needed/By Whom		



**Strategy 5.3: Promote coordinated systems along the care continuum.**

*Women receive the best care in integrated service delivery systems.*



<b>Current Activities in Support of this Strategy (Existing Strengths)</b>	<b>Lead Agency/Partners</b>	<b>Crosswalk to Performance Standards (All Partners)</b>
<p>e.g., health home initiatives, electronic health record systems, prescription drug monitoring program; activities to facilitate postpartum transition.</p>		
<b>Untapped Resources, Partners, and Other Assets (Opportunities)</b>		<b>Potential Barriers or Threats</b>
<p>See pages 84-88 for ideas to consider.</p>		
<b>Action Needed/By Whom</b>		



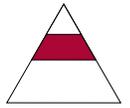
**PLANNING TOOL**

**Element 6 | Ensure Readiness and Response to Obstetric Emergencies**

Agencies/partners completing this tool:

**Strategy 6.1: Promote facility readiness for obstetric complications.**

*System-level readiness ensures women deliver in facilities that are risk-appropriate and prepared.*



Current Activities in Support of this Strategy (Existing Strengths)	Lead Agency/Partners	Crosswalk to Performance Standards (All Partners)
e.g., certification system for standard maternity levels of care, partnering to improve emergency transport systems, statewide facility adoption of maternal safety bundles.		
Untapped Resources, Partners, and Other Assets (Opportunities)	Potential Barriers or Threats	
See pages 90-92 for ideas to consider.		
Action Needed/By Whom		

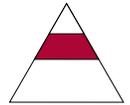


**PLANNING TOOL**

**Element 6 | Ensure Readiness and Response to Obstetric Emergencies**

**Strategy 6.2: Improve clinical recognition and response to adverse events.**

*Training and support for care teams can facilitate early identification of warning signs and an effective response.*



<b>Current Activities in Support of this Strategy (Existing Strengths)</b>	<b>Lead Agency/Partners</b>	<b>Crosswalk to Performance Standards (All Partners)</b>
<p>e.g., regional simulation exercises or team training; technical assistance for facility-based morbidity review.</p>		
<b>Untapped Resources, Partners, and Other Assets (Opportunities)</b>		<b>Potential Barriers or Threats</b>
<p>See pages 93-97 for ideas to consider.</p>		
<b>Action Needed/By Whom</b>		

# APPENDIX A |

## Primary Source Documents

The following documents were reviewed for key recommendations for improved maternal health. Emerging themes informed the organization of this resource and planning guide.

### National Source Documents

**Playbook for the successful elimination of early elective deliveries (2014)**  
National Quality Forum, Maternity Action Team  
Washington, DC

**Improving Maternal and Infant Health Outcomes in Medicaid and CHIP (2013)**  
Centers for Medicare and Medicaid Services, Center for Medicaid and CHIP Services  
Washington, DC

**Position Statement: Depression in Women (2013)**  
American College of Nurse Midwives, Clinical Standards and Documents Section  
Silver Spring, MD

**Addressing Women's Health Needs and Improving Birth Outcomes: Results from a Peer-to-Peer State Medicaid Learning Project (2012)**  
The Commonwealth Fund  
New York, NY

**Reducing US Maternal Mortality as a Human Right (policy no. 201114) (2011)**  
American Public Health Association  
Washington, DC

**Blueprint for Action: Steps Toward a High-Quality, High-Value Maternity Care System (2010)**  
Transforming Maternity Care Symposium Steering Committee  
Washington, DC

**Deadly Delivery: the Maternal Health Care Crisis in the USA (2010)**  
Amnesty International Secretariat  
London, United Kingdom

**Evidence-based Maternity Care: What it is and What it Can Achieve (2008)**  
Milbank Memorial Foundation, Childbirth Connection, and Reforming States Group  
New York, NY

**NIH State-of-the-Science Conference Statement on Cesarean Delivery on Maternal Request (2006)**  
National Institutes of Health  
Kensington, MD

**Recommendations to Improve Preconception Health and Health Care – United States (2006)**  
CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care  
Atlanta, GA

### State Source Documents

**MMR Panel Findings and Recommendations: Report to the Vermont Legislature (2014)**  
Vermont Department of Health  
Burlington, VT

**Motor Vehicle Collisions: The Leading Cause of Pregnancy-Associated Death in Virginia (2014)**  
Office of the Chief Medical Examiner, Virginia Department of Health  
Richmond, VA

**2013 Annual Report to the Legislature (2013)**  
Maine Center for Disease Control and Prevention  
Augusta, ME

**Arizona Maternal Mortality Review Program Brief (2013)**  
Office of Injury Prevention, Arizona Department of Health Services  
Phoenix, AZ

**Maryland Maternal Mortality Review, 2013 Annual Report (2013)**  
Maryland Department of Health and Mental Hygiene  
Annapolis, MD

**Pregnancy-Associated Mortality in Alaska, 2000-2011 (2013)**  
Epidemiology Section, Alaska Department of Health and Social Services  
Anchorage, AK

**Pregnancy-Related Mortality in Alaska, 2000-2011 (2013)**  
Epidemiology Section, Alaska Department of Health and Social Services  
Anchorage, AK

**West Virginia Infant and Maternal Mortality Review Panel: Annual Report 2011 (2013)**  
West Virginia Department of Health and Human Resources  
Charleston, WV

**Florida's Pregnancy-Associated Mortality Review, 2011 Update (2012)**  
Florida Department of Health  
Tallahassee, FL

**Louisiana Pregnancy-Associated Mortality Review, 2008 report (2012)**  
Louisiana Department of Health and Hospitals  
New Orleans, LA

**Maryland Maternal Mortality Review, 2012 Annual Report (2012)**  
Maryland Department of Health and Mental Hygiene  
Annapolis, MD

**Pregnancy-Associated Deaths from Heart Disorders and Related Conditions in Virginia, 1999-2004 (2012)**  
Office of the Chief Medical Examiner, Virginia Department of Health  
Richmond, VA

**Pregnancy-Related Deaths During the Postpartum Period, 1999-2011 (2012)**  
Florida Department of Health  
Tallahassee, FL

**Recommendations from the New Jersey Maternal Mortality Review Team, 2006-2008 Deaths (2012)**  
Reproductive and Perinatal Health Services, New Jersey Department of Health  
Trenton, NJ

**West Virginia Infant and Maternal Mortality Review (2012)**  
West Virginia Department of Health and Human Resources  
Charleston, WV

**Maternal Mortality in New York: A Call to Action (2011)**  
New York Academy of Medicine  
New York, NY

**Oklahoma Preconception and Preg. Health Focus Groups: Summary Report and Recommendations (2011)**  
Oklahoma State Department of Health  
Oklahoma City, OK

**1999-2008 Florida Pregnancy-Related Mortality Report: Why are FL Mothers Continuing to Die? (2010)**  
Florida Department of Health  
Tallahassee, FL

**Maternal Mortality in New Jersey, 2002-2005: Findings of the New Jersey MMR (2010)**  
New Jersey Department of Health and Senior Services  
Trenton, NJ

**Pregnancy-Associated Mortality, New York City, 2001-2005 (2010)**  
New York City Department of Health and Mental Hygiene  
New York, NY

**Pregnancy Related Death in Virginia, 1999-2003 (2010)**  
Office of the Chief Medical Examiner, Virginia Department of Health  
Richmond, VA

**Obesity and Maternal Death in Virginia, 1999-2002 (2009)**  
Office of the Chief Medical Examiner, Virginia Department of Health  
Richmond, VA

**Maternal mortality in Wisconsin, 1998-2005 (2008)**  
Wisconsin Association for Perinatal Care  
Madison, WI

**Maternal Mortality in New Jersey, 1999-2001 (2005)**  
Division of Family Health Services,  
New Jersey Department of Health and Senior Services  
Trenton, NJ

**Pregnancy-Associated Injury Deaths: Violence, Substance Abuse, and MV Collisions, 1990-1999 (2002)**  
Massachusetts Department of Public Health  
Boston, MA

# APPENDIX B |

## Index of Resources Included in the Guide

### Element 1 | Strengthen Maternal Data Systems

Box 1.1: CDC Resources for Maternal Death Reviews.....	17
Box 1.2: CDC Directory of State Medical Examiners and Coroners Organizations.....	18
Box 1.3: AMCHP Every Mother Initiative.....	19
Box 1.4: Morbidity Surveillance Resources.....	21
Box 1.5: Select Performance and Quality Measure Sets.....	22
Box 1.6: Population-based Surveys and Indicator Sets.....	24
Box 1.7: Preeclampsia Registry.....	25

### Element 2 | Increase the Value of an Investment in Maternal Health

Box 2.1: The Collective Impact Forum.....	28
Box 2.2: Women's Health Advocacy Partners.....	29
Box 2.3: The Practical Playbook.....	31
Box 2.4: State Affiliate Directories for Public Health-Clinical Partnership.....	32
Box 2.5: Health Care Quality Collaborative Resources.....	33
Box 2.6: Best Practice Repositories.....	36

### Element 3 | Enable Healthy Living

Box 3.1: Resources to Address Social Determinants of Health.....	46
Box 3.2: Policy and Environmental Change Resources.....	49
Box 3.3: Risk Reduction Resources.....	51
Box 3.4: Resources for Successful Social Marketing Efforts.....	52
Box 3.5: Violence Prevention Resources for Home Visiting Programs.....	53
Box 3.6: Resources to Promote Healthy Choices in Pregnancy.....	54

### Element 4 | Improve Access to Care

Box 4.1: The 2010 Patient Protection and Affordable Care Act.....	58
Box 4.2: AMCHP Resources on Health Care Reform.....	60
Box 4.3: Health Professional Shortage Designation (HPSA).....	62
Box 4.4: Coverage to Care (C2C) Roadmap.....	63
Box 4.5: National Standards for Culturally and Linguistically Appropriate Services (CLAS) in Health.....	64
Box 4.6: Patient-Centered Approaches to Care.....	65

# APPENDIX B |

## Index of Resources Included in the Guide continued

### Element 5 | Ensure High Quality Health Care for Women

Box 5.1: National Preconception Curriculum and Resources Guide for Clinicians.....	70
Box 5.2: Smoking Cessation for Pregnancy and Beyond: A Virtual Clinic.....	72
Box 5.3: Institute of Medicine Pregnancy Weight Gain Toolkit.....	75
Box 5.4: SMFM Provider Resource Library.....	76
Box 5.5: CDC Guide to Strategies to Support Breastfeeding Mothers.....	76
Box 5.6: More Than the Blues: A Toolkit for Family Service Providers.....	77
Box 5.7: Resources on Safe Medication Use in Pregnancy and the Postpartum Period.....	77
Box 5.8: Shared Decision Making Resources.....	79
Box 5.9: Resources for Improved Value in Maternity Care.....	80
Box 5.10: Preeclampsia Patient Education Resources.....	81
Box 5.11: CMS Health Home Information Resource Center.....	84
Box 5.12: Prescription Drug Monitoring Program Training and Technical Assistance.....	85

### Element 6 | Ensure Readiness and Response to Obstetric Emergencies

Box 6.1: National Partnership for Maternal Safety – Organizational Partners.....	90
Box 6.2: Obstetric Consensus Statement on Levels of Maternal Care.....	91
Box 6.3: Bundles and Change Packages.....	92
Box 6.4: AWHONN Postpartum Hemorrhage Project.....	93
Box 6.5: Communication Resources for Obstetric Care Teams.....	94
Box 6.6: Tools to Support Facility-based Review of Severe Maternal Morbidities.....	95

# ACKNOWLEDGEMENTS

The content in this guide has benefited greatly from insightful review and contributions by numerous practitioners and experts in the field of maternal health. AMCHP would like to thank the following members and partners for their time and expertise in the review of this guide.

Kris-Tena Albers, ARNP, CNM, Florida Department of Health

Hani Atrash, MD, MPH, Health Resources and Services Administration

Krista Beckwith, MSPH, Colorado Access

Debra Bingham, DrPH, RN, FAAN, Association of Women's Health, Obstetric and Neonatal Nurses

Stephanie Birch, RNC, MPH, MS, FNP, Alaska Division of Public Health

William Callaghan, MD, MPH, Centers for Disease Control and Prevention

Jeanne Conry, MD, PhD, Kaiser Permanente, ACOG (Immediate Past President)

Seema Csukas, MD, PhD, Georgia Department of Public Health

Lekisha Daniel-Robinson, MSPH, Centers for Medicare and Medicaid Services

Dave Goodman, MS, PhD, Centers for Disease Control and Prevention

Brenda Jones, DHSc, RN, MSN, CCHC, WHNP-BC, Illinois Department of Public Health

Marilyn Kacica, MD, MPH, New York State Department of Health

Victoria Kavanaugh, RN, PhD, Virginia Department of Health

Charlan Kroelinger, PhD, Centers for Disease Control and Prevention

Rebecca Levenson, MA, Futures Without Violence

Beth Meeks, MS, Louisiana Coalition Against Domestic Violence

Donna Montalto, MPP, ACOG District II

Christine Morton, PhD, California Maternal Quality Care Collaborative

Carol Sakala, PhD, MSPH, National Partnership for Women and Families

Kisha Semenuk, MSN, American Congress of Obstetricians and Gynecologists

Cynthia Shellhaas, MD, MPH, Ohio Department of Health

Nan Streeter, MS, RN, Utah Department of Health (retired)

Kai Tao, ND, MPH, CNM, American College of Nurse-Midwives

Nicole Terwilliger, CNM, on behalf of American College of Nurse-Midwives

Karen Trierweiler, MS, CNM, Colorado Department of Public Health and Environment

Eleni Tsigas, Preeclampsia Foundation

Sarah Verbiest, DrPH, MSW, MPH, UNC Center for Maternal and Infant Health

# WORKS CITED

1. Rosenfield A, Maine D. 1985. Maternal mortality—a neglected tragedy: where is the M in MCH? *Lancet*; 326:83-5.
2. U.S. Department of Health and Human Services (DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS). 2009. Bridged-Race Population Estimates, DC WONDER On-line Database. Accessed at <http://wonder.cdc.gov/bridged-race-v2009.html>.
3. Curtin SC, Abma JC, Ventura SJ, and Henshaw SK. *Pregnancy rates for U.S. women continue to drop*. NCHS data brief, no 136. Hyattsville, MD: National Center for Health Statistics (NCHS).
4. U.S. DHHS, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). 2013. *Women's Health USA 2013*. Rockville, Maryland: HRSA.
5. Hoyert DL. 2007. Maternal mortality and related concepts. *Vital Health Stat*; 3(33). Rockville, MD: National Center for Health Statistics.
6. U.S. DHHS, CDC, National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Division of Reproductive Health (DRH). 2014. *Pregnancy Mortality Surveillance System* [webpage]. Accessed at: <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PMSS.html>.
7. Horon IL. 2005. Underreporting of maternal deaths on death certificates and the magnitude of the problem of maternal mortality. *Am J Public Health*; 95:478–82.
8. Callaghan WM, Creanga AA, Kuklina EV. 2012. Severe maternal morbidity among delivery and postpartum hospitalizations in the United States. *Obstet Gynecol*; 120:1029–36.
9. Andrews, R.M. 2008. *The National Hospital Bill: The Most Expensive Conditions by Payer, 2006*. HCUP Statistical Brief #59. Rockville, MD: Agency for Healthcare Research and Quality (AHRQ). Accessed at: <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb59.pdf>.
10. U.S. DHHS, Centers for Medicare and Medicaid Services (CMS). 2015. Maternal and Infant Health Care Quality [webpage]. Accessed at: <http://www.medicare.gov/Medicaid-CHIP-Program-Information/By-Topics/Quality-of-Care/Maternal-and-Infant-Health-Care-Quality.html>.
11. Bingham D, Strauss N, and Coeytaux F. 2011. Maternal mortality in the United States: a human rights failure. *Contraception*; 83: 189-193.
12. Lawrence HC 3rd, Copel JA, O’Keeffe DF, Bradford WC, Scarrow PK, Kennedy HP, Grobman W, Johnson MC, Simson KR, Lyndon A, Wade K, Peddicord K, Bingham D and Olden CR. 2012. Quality patient care in labor and delivery: a call to action. *Am J Obstet Gynecol*; 207(3): 147-8.
13. Conry JA. 2013. Every woman, every time. *Obstetrics and Gynecology*, 122(1): 3-6.
14. D’Alton ME, Bonanno CA, Berkowitz RL, Brown HL, Copel JA, Cunningham FG, Garite TJ...and Spong CY. 2013. Putting the “M” back in maternal-fetal medicine. *AJOG*; 442-448.
15. Main EK and Menard MK. 2013. Maternal mortality: Time for national action. *Am J Public Health*; 122(4):735-736.
16. Lu MC, Highsmith K, de la Cruz D, Atrash HK. 2015. Putting the “M” back in the Maternal and Child Health Bureau: Reducing maternal mortality and morbidity. *Matern Child Health J*.
17. Council on Patient Safety in Women’s Health Care. 2015. *Alliance for Innovation on Maternal Health* [webpage]. Accessed at: <http://www.safehealthcareforeverywoman.org/aim.html>.
18. Council on Patient Safety in Women’s Health Care. 2015. *About us* [webpage]. Accessed at: <http://www.safehealthcareforeverywoman.org/about.html>.
19. National Quality Forum. 2015. *Patient Safety Collaboration* [webpage]. Accessed at: [http://www.qualityforum.org/Project\\_Pages/Patient\\_Safety\\_Collaboration.aspx](http://www.qualityforum.org/Project_Pages/Patient_Safety_Collaboration.aspx).
20. Merck for Mothers. 2015. *Our work in the United States* [webpage]. Accessed at: <http://merckformothers.com/index.html>.
21. U.S. DHHS, CDC. 2014. *Preconception Health and Health Care* [webpage]. Accessed at: <http://www.cdc.gov/preconception/index.html>.
22. U.S. DHHS, AHRQ. 2014. *AHRQ Safety Program for Perinatal Care* [webpage]. Accessed at: <http://www.ahrq.gov/professionals/quality-patient-safety/hais/tools/perinatal-care/index.html>
23. Institute for Healthcare Improvement (IHI). 2015. *Evidence-based care bundles* [webpage]. Accessed at: <http://www.ihl.org/topics/Bundles>.
24. National Institute for Children’s Health Quality (NICHQ). 2015. *Collaborative Improvement and Innovation Network (CoIIN) to Reduce Infant Mortality* [webpage]. Accessed at: <http://www.nichq.org/childrens-health/infant-health/coiin-to-reduce-infant-mortality>.
25. IHI. 2015. *IHI Triple Aim Initiative: Better care for individuals, better health for populations, and lower per capita costs* [webpage]. Accessed at: <http://www.ihl.org/Engage/Initiatives/TripleAim>.
26. Kent H and Streeter N. 2008. Title V strategies to ensure a continuum of women’s health services. *Women’s Health Issues*, 18S: S67-S73.
27. Frieden TR. 2010. A framework for public health action: The health impact pyramid. *Am J Public Health*; 100(4): 590-595.
28. Centre for Maternal and Child Enquiries (CMACE). 2011. Saving mothers’ lives: Reviewing maternal deaths to make motherhood safer: 2006-2008. The Eighth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom. *BJOG*; 118(Suppl 1):1-203.
29. Berg CJ, Danel I, Atrash H, Zane S, Bartlett L (editors). 2001. *Strategies to reduce pregnancy-related deaths: From identification and review to action*. Atlanta, GA: CDC.
30. Bacak SJ, Berg CJ, Desmarais J, Hutchins E, and Locke E (editors). 2006. *State maternal mortality review: Accomplishments of nine states*. Atlanta, GA: CDC.

31. Berg CJ. 2012. From identification and review to action—Maternal mortality review in the United States. *Semin Perinatol*, 36; 7-13.
32. Main EK. 2012. Decisions required for operating a maternal mortality review committee: the California experience. *Semin Perinatol*, 36: 37-41.
33. Burch D, Noell D, Hill WC, and Delke I. 2012. Pregnancy-associated mortality review: the Florida experience. *Semin Perinatol*, 36: 31-36.
34. Creanga AA, Berg CJ, Ko JY, Farr SL, Tong VT, Bruce FC, and Callaghan WM. 2014. Maternal mortality and morbidity in the United States: Where are we now? *J Women's Health*; 23(1): 3-9.
35. Kilpatrick SJ, Berg C, Bernstein P, Bingham D, Delgado A, Callaghan WM, Harris K, Lanni S, Mahoney J, Main E, Nacht A, Schellpfeffer M, Westover T, and Harper M. 2014. Standardized severe maternal morbidity review: rationale and process. *Obstet Gynecol*, 124(2 Pt 1):361-6.
36. U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality (AHRQ). 2010. HCUPnet, Healthcare Cost and Utilization Project. Rockville, MD: AHRQ. Available at: <http://hcupnet.ahrq.gov>.
37. The Joint Commission. 2013. Questions and answers: the Perinatal Care Core Measure Set. *Joint Commission Perspectives*; 33(11): 12-14. Accessed at: <http://www.jointcommission.org/assets/1/6/S11.pdf>
38. Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN). 2014. *Women's Health and Perinatal Nursing Care Quality Refined Draft Measures Specification*. Washington, DC: AWHONN. Accessed at: [https://www.awhonn.org/awhonn/content.do?name=02\\_PracticeResources/02\\_perinatalqualitymeasures.htm](https://www.awhonn.org/awhonn/content.do?name=02_PracticeResources/02_perinatalqualitymeasures.htm).
39. U.S. DHHS, CDC, NCCDPHP, DRH. 2014. *National ART Surveillance* [webpage]. Accessed at: <http://www.cdc.gov/art/nas>.
40. Bisognano M. 2011. *Each of you, all of us*. 23rd Annual National Forum on Quality Improvement in Health Care (keynote address). Orlando, FL: IHI.
41. U.S. DHHS, CDC, NCCDPHP, DRH. 2015. *Perinatal Quality Collaboratives* [webpage]. Accessed at: <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PQC.htm>.
42. Turner S, Merchant K, Kania J and Martin E. 2012. *Understanding the value of backbone organizations in collective impact*. Stanford, CA: Stanford Social Innovation Review. Accessed at: <http://www.ssireview.org>.
43. Puddy RW and Wilkins N. 2011. *Understanding Evidence Part 1: Best Available Research Evidence. A Guide to the Continuum of Evidence of Effectiveness*. Atlanta, GA: CDC.
44. Association of State and Territorial Health Officials (ASTHO). 2010. *Making the case for maternal and child health programs: Kentucky Homeplace, University of Kentucky Center for Rural Health*. Washington, DC: ASTHO.
45. Hod M and Lieberman N. 2014. Maternal-fetal medicine – How can we practically connect the “M” to the “F”? *Best Pract Res Clin Obstet Gynaecol*.
46. Johansson S, Villamor E, Altman M, Edstedt Bonamy AK, Granath F, and Cnattingius S. 2014. Maternal overweight and obesity in early pregnancy and risk of infant mortality: a population based study in Sweden. *BMJ*; 349:g6572.
47. Rowlands I, Graves N, de Jersey S, McIntyre HD, and Callaway L. 2010. Obesity in pregnancy: outcomes and economics. *Semin Fetal Neonatal Med*; 15: 94-99.
48. Vasudevan C, Renfrew M, and McGuire W. 2010. Fetal and perinatal consequences of maternal obesity. *Arch Dis Child Fetal Neonatal Ed*; 96: F378-F382.
49. Hakeem GF, Oddy L, Holcroft CA, and Abenham HA. 2015. Incidence and determinants of sudden infant death syndrome: a population-based study on 37 million births. *World J Pediatr*; 11(1): 41-47.
50. Narkowicz S, Plotka J, Polkowska Z, Biziuk M, and Namiesnik J. 2013. Prenatal exposure to substance of abuse: A worldwide problem. *Environ Int*; 54: 141-163.
51. Pinto SM, Dodd S, Walkinshaw SA, Siney C, Kakkar P, and Mousa HA. 2010. Substance abuse during pregnancy: effect on pregnancy outcomes. *Eur J Obstet Gynecol Reprod Biol*; 150: 137-41.
52. Finer LB and Zolna MR. 2011. Unintended pregnancy in the United States: Incidence and disparities, 2006. *Contraception*; 84(5): 478-485.
53. Barfield WD and Warner L. 2012. Preventing chronic disease in women of reproductive age: opportunities for health promotion and preventive services. *Prev Chronic Dis*; 9: E34.
54. Heyl PS, Sappenfield WM, Burch D, Hernandez LE, Kavanaugh VM, Hill WC. 2013. Pregnancy-related deaths due to pulmonary embolism: Findings from two state-based mortality reviews. *Matern Child Health J*; 17: 1230-1235.
55. Huda SS, Brodie LE, and Sattar N. 2010. Obesity in pregnancy: Prevalence and metabolic consequences. *Semin Fetal Neonatal Med*; 15: 70-76.
56. Chu SY, Bachman DJ, Callaghan WM, Whitlock EP, Dietz PM, Berg CJ, O'Keefe-Rosetti M, Bruce FC, and Hornbrook MC. 2008. Association between obesity during pregnancy and increased use of health care. *N Engl J Med*; 358: 1444-53.
57. U.S. DHHS, CDC, NCCDPHP, DRH. 2014. *Pregnancy Complications* [webpage]. Accessed at: <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PregComplications.htm>.
58. U.S. DHHS, HRSA, MCHB. 2010. *Rethinking MCH: The life course model as an organizing framework*. Rockville, MD: HRSA.
59. Callaghan WM. 2014. Geographic variation of reproductive health indicators and outcomes in the United States: Place matters. *Am J Obstet Gynecol*; 278-284.
60. Iams JD. 2014. American Gynecological and Obstetrical Society 2013: Social determinants of reproductive health. *AJOG*; 271-274.
61. Bermudez-Millan A, Damio G, Cruz J, D'Angelo K, Segura-Perez S, Hromi-Fiedler A, and Perez-Escamilla R. 2011. Stress and the social determinants of maternal health among Puerto Rican women: A CBPR approach. *J Health Care Poor Underserved*; 22(4): 1315-1330.
62. Sumner LA, Valentine J, Eisenman D, Ahmed S, Myers H, Wyatt G, Liu H, Zhang M, and Rodriguez MA. 2011. The influence of prenatal trauma, stress, social support, and years of residency in the US on postpartum maternal health status among low-income Latinas. *Matern Child Health J*; 15: 1046-1054.

## WORKS CITED continued

63. Task Force on Community Preventive Services. 2003. Recommendations to promote healthy social environments. *Am J Prev Med*; 24(3S): 21-24.
64. Nurius PS, Green S, Logan-Greene P, Borja S. 2015. Life course pathways of adverse childhood experiences toward adult psychological well-being: A stress process analysis. *Child Abuse Negl*.
65. American College of Obstetricians and Gynecologists (ACOG). 2013. Exposure to toxic environmental agents. Committee Opinion No. 575. *Obstet Gynecol*; 122: 931-935.
66. California Pregnancy-Associated Mortality Review. 2011. *Report from 2002 and 2003 maternal death reviews*. Sacramento, CA: California Department of Public Health, Maternal Child and Adolescent Health Division.
67. Gell J, Grigorescu V, Killilea N, and Moore J (eds.). 2006. *Michigan maternal mortality surveillance, 1999-2004 report*. Lansing, MI: Michigan Department of Community Health.
68. Burnet JE. 2005. *Women's health: Attitudes and practices in North Carolina*. Raleigh, NC: North Carolina Healthy Start Foundation.
69. Nannini A, Oelschig C, and Weiss J. 2002. Pregnancy-associated injury deaths: Violence, substance abuse and motor vehicle collisions, 1990-1999. *Maternal Mortality and Morbidity Review in Massachusetts, no. 2*.
70. Lathrop B. 2013. Nursing leadership in addressing the social determinants of health. *Policy Politics Nursing Practice*; 14(1): 41-47.
71. Keener D, Goodman K, Lowry A, Zaro S, and Kettel Khan L. 2009. *Recommended community strategies and measurements to prevent obesity in the United States: Implementation and measurement guide*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.
72. Guide to Community Preventive Services. 2012. *Reducing tobacco use and secondhand smoke exposure: Interventions to increase the unit price for tobacco products*. Accessed at: <http://www.thecommunityguide.org/tobacco/RRincreasingunitprice.html>.
73. Guide to Community Preventive Services. 2012. *Reducing tobacco use and secondhand smoke exposure: Smoke-free policies*. Accessed at: <http://www.thecommunityguide.org/tobacco/smokefreepolicies.html>.
74. Task Force on Community Preventive Services. 2010. Recommendation for use of point-of-decision prompts to increase stair use in communities. *Am J Prev Med*; 38(2S): S290-S291.
75. Task Force on Community Preventive Services. 2002. Recommendations to increase physical activity in communities. *Am J Prev Med*; 22(4S): 67-72.
76. Trust for America's Health. 2009. *Prevention for a healthier America: investments in disease prevention yield significant savings, stronger communities*. Washington, D.C.: Trust for America's Health. Accessed at: <http://healthyamericans.org/reports/prevention08/Prevention08.pdf>.
77. Task Force on Community Preventive Services. 2014. Combination of mass media health campaigns and health-related product distribution is recommended to improve healthy behaviors. *Am J Prev Med*; 47(3): 372-374.
78. Guide to Community Preventive Services. 2014. *Diabetes prevention and control: Combined diet and physical activity promotion programs to prevent type 2 diabetes among people at increased risk*. Accessed at: <http://www.thecommunityguide.org/diabetes/combineddietandpa.html>.
79. Guide to Community Preventive Services. 2013. *Reducing tobacco use and secondhand smoke exposure: Mass-Reach Health Communication Interventions*. Accessed at: <http://www.thecommunityguide.org/tobacco/massreach.html>.
80. Guide to Community Preventive Services. 2010. *Increasing appropriate vaccination: Community-based interventions implemented in combination*. Accessed at: <http://www.thecommunityguide.org/vaccines/communityinterventions.html>.
81. Task Force on Community Preventive Services. 2009. A recommendation to improve employee weight status through worksite health promotion programs targeting nutrition, physical activity, or both. *Am J Prev Med*; 37(4): 358-359.
82. U.S. DHHS, CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. 2009. *Fostering school connectedness: Improving student health and academic achievement*. Atlanta, GA: CDC. Accessed at: [http://www.cdc.gov/healthyyouth/protective/pdf/connectedness\\_administrators.pdf](http://www.cdc.gov/healthyyouth/protective/pdf/connectedness_administrators.pdf).
83. Rudolph L, Caplan J, Ben-Moshe K, and Dillon L. 2013. *Health in all policies: A guide for state and local governments*. Washington, DC and Oakland, CA: American Public Health Association (APHA) and Public Health Institute (PHI).
84. Collins J and Koplan JP. 2009. Health impact assessment: A step toward health in all policies. *JAMA*; 302(3): 315-317.
85. U.S. DHHS, Substance Abuse and Mental Health Services Administration (SAMHSA). 2013. Motivational Interviewing [webpage]. Accessed at: <http://nrepp.samhsa.gov/MotivationalInterviewing.aspx>.
86. U.S. DHHS, CDC. 2015. Gateway to Health Communications & Social Marketing Practice [webpage]. Accessed at: <http://www.cdc.gov/healthcommunication>.
87. Kharbanda EO. 2015. Helping mothers to get the message about influenza: are texts the future for increased immunization? *Expert Rev Vaccines*; 14(3): 333-335.
88. Bhatt B, Jindal H, Malik JS, Choudhry S. 2014. Vaccination for pregnant women: need to address. *Hum Vaccin Immunother*; 10(12): 3627-8.
89. Bernstein J, Chollet D, and Peterson S. 2010. *How does insurance coverage improve health outcomes?* Princeton, NJ: Mathematica Policy Research, Inc.
90. Guttmacher Institute. 2013. *Almost 13 million women of reproductive age were uninsured in 2012*. Accessed at: <https://guttacher.org/media/inthenews/2013/09/20/index.html>
91. Henry J. Kaiser Family Foundation (KFF). 2013. *Health reform: Implications for women's access to coverage and care*. Issue Brief. Menlo Park, CA: KFF.

92. Robertson R and Collins SR. 2011. *Women at risk: Why increasing numbers of women are failing to get the health care they need and how the Affordable Care Act will help*. New York, NY: The Commonwealth Fund.
93. James CV, Salganicoff A, Thomas M, Ranji U, Lillie-Blanton M, and Wyn R. 2009. *Putting women's health care disparities on the map: Examining racial and ethnic disparities at the state level*. Menlo Park, CA: KFF.
94. Alliance for a Just Society. 2014. *The promise of quality, affordable health care for women: Are states delivering?* Seattle, WA: Alliance for a Just Society.
95. National Family Planning and Reproductive Health Association (NFPFRA). 2010. Policy brief: *Addressing the health care workforce shortage*. Washington, DC: NFPFRA.
96. Rayburn WF, Klagholz JC, Murray-Krezan C, Dowell LE and Strunk AL. 2012. Distribution of American Congress of Obstetricians and Gynecologists Fellows and Junior Fellows in practice in the United States. *Obstet Gynecol*; 119(5): 1017-1022.
97. Declercq ER, Sakala C, Corry MP, Applebaum S, and Herrlich A. 2013. *Listening to Mothers™ III: Pregnancy and Birth*. New York: Childbirth Connections.
98. KFF. 2015. *Status of state action on the Medicaid expansion decision*. KFF State Health Facts [webpage]. Accessed at: <http://kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act>.
99. Crawford M and McMahon SM. 2014. *Alternative Medicaid expansion models: Exploring state options*. Hamilton, NJ: Center for Health Care Strategies, Inc.
100. Benson Gold R and Alrich C. 2008. Role of Medicaid family planning waivers and Title X in enhancing access to preconception care. *Women's Health Issues*; 18(6 Suppl):S47-51.
101. Markus AR and Rosenbaum S. 2010. The role of Medicaid in promoting access to high-quality, high-value maternity care. *Women's Health Issues*; 20: S67-S78.
102. American Telemedicine Association (ATA). 2014. *State Medicaid Best Practice: Telehealth for High-risk Pregnancy*. Washington, DC: ATA. Accessed at: <http://www.americantelemed.org/docs/default-source/policy/state-medicaid-best-practice---telehealth-for-high-risk-pregnancy.pdf>.
103. Peragallo Urrutia R, Berger AA, Ivins AA, Beckham AJ, Thorp JM Jr, Nicholson WK. 2015. Internet use and access among pregnant women via computer and mobile phone: Implications for delivery of perinatal care. *JMIR Mhealth Uhealth*; 3(1): e25.
104. U.S. DHHS, Office of Minority Health (OMH). 2013. *National Standards for Culturally and Linguistically Appropriate Services in Health Care: A Blueprint for Advancing and Sustaining CLAS Policy and Practice*. Rockville, MD: U.S. Department of Health and Human Services, Office of Minority Health.
105. Ammerman RT, Putnam FW, Altaye M, Stevens J, Teeters AR, and Van Ginkel JB. 2013. A clinical trial of in-home CBT for depressed mothers in home visitation. *Behav Ther*; 44(3): 359-72.
106. Leffert LR, Clancy CR, Bateman BT, Bryant AS, and Kuklina EV. 2015. Hypertensive disorders and pregnancy-related stroke: frequency, trends, risk factors, and outcomes. *Obstet Gynecol*; 125(1): 124-31.
107. Gizzo S, Patrelli TS, Rossanese M, Noventa M, Berretta R, DiGangi S, Bertin M, Gangemi M, and Battista Nardelli G. 2013. An update on diabetic women obstetrical outcomes linked to preconception and pregnancy glycemic profile: A systematic literature review. *Scientific World Journal*; 2013:254901.
108. Elixhauser A and Wier LM. 2011. Statistical Brief #113: *Complicating conditions of pregnancy and childbirth, 2008*. Rockville, MD: U.S. Agency for Healthcare Research and Quality.
109. Dubber S, Reck C, Muller M and Gawlik S. 2014. Postpartum bonding: the role of perinatal depression, anxiety and maternal-fetal bonding during pregnancy. *Arch Women's Mental Health*; 1.
110. Figueiredo B, Canario C and Field T. 2014. Breastfeeding is negatively affected by prenatal depression and reduces postpartum depression. *Psychological Medicine*; 44(5): 927-36.
111. Alhusen JL, Ray E, Sharps P, Bullock L. 2015. Intimate partner violence during pregnancy: Maternal and neonatal outcomes. *J Womens Health*; 24(1): 100-106.
112. Mishori R, McClaskey EL, and Winklerprins VJ. 2012. Chlamydia Trachomatis infections: Screening, diagnosis, and management. *Am Fam Physician*; 86(12): 1127-1132.
113. IOM, Committee on Preventive Services for Women. 2011. *Clinical preventive services for women: closing the gaps*. Washington, DC: The National Academies Press.
114. Conry J, Brown H, Alderman EM, Bendetto C, Brewer M, Cannon O, Chelmsow D...and McFarren TC. 2014. *Well-Woman Task Force: Final Report*. Washington, DC: ACOG.
115. Wise PH. 2008. Transforming preconceptional, prenatal, and interconceptional care into a comprehensive commitment to women's health. *Women's Health Issues*, 18S: S13-S18.
116. Shores SE and Bailey T. 2009. Recommendations for women of reproductive age. *NC Med J*; 70(5): 432-8.
117. Safe Motherhood Initiative. 2013. *Preconception care: a guide for optimizing pregnancy outcomes*. Albany, NY: The American College of Obstetricians and Gynecologists, District II/NY.
118. U.S. DHHS, CDC. 2006. Recommendations to improve preconception health and health care – United States: a report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care. *MMWR*, 55(No. RR-6).
119. Kavanaugh ML and Anderson RM. 2013. *Contraception and beyond: the health benefits of services provided at family planning centers*. New York, NY: Guttmacher Institute. Accessed at: <http://www.guttmacher.org/pubs/health-benefits.pdf>.
120. Cheng D and Patel P. 2011. Optimizing women's health in a Title X family planning program, Baltimore County, Maryland, 2001-2004. *Prev Chronic Dis*; 8(6):A126.
121. Malnory ME and Johnson TS. 2011. The reproductive life plan as a strategy to decrease poor birth outcomes. *JOGNN*; 40: 109-121.
122. U.S. DHHS, CDC. 2008. Smoking prevalence among women of reproductive age—United States, 2006. *MMWR*; 57(31): 849-852.
123. ACOG. 2011. Tobacco use and women's health. Committee Opinion No. 503. *Obstet Gynecol*; 118: 746-50. Accessed at: <http://www.acog>.

## WORKS CITED continued

- org/Resources-And-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Tobacco-Use-and-Womens-Health.
124. ACOG. 2013. Reproductive and sexual coercion. Committee Opinion No. 554. *Obstet Gynecol*; 121(2 Pt 1): 411-15. Accessed at: <http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Reproductive-and-Sexual-Coercion>.
125. Brown Rodgers A and Yaktine AL (Ed). 2013. *Leveraging Action to Support Dissemination of Pregnancy Weight Gain Guidelines: Workshop Summary*. Washington, DC: National Academies Press.
126. He X, Hu C, Chen L, Wang Q, Qin F. 2014. The association between gestational weight gain and substantial weight retention 1-year postpartum. *Arch of Gynecology and Obstetrics*; 290(3): 493-499.
127. Institute of Medicine (IOM), Committee on Implementation of the IOM Pregnancy Weight Gain Guidelines. 2013. *Leveraging Action to Support Dissemination of Pregnancy Weight Gain Guidelines: Workshop Summary*. Washington, DC: The National Academies Press.
128. Jarlenski MP, Bennet WL, Bleich SN, Barry CL and Stuart EA. 2014. Effects of breastfeeding on postpartum weight loss among U.S. women. *Prev Medicine*; 69: 146-50.
129. U.S. DHHS, CDC. 2013. *Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Support Breastfeeding Mothers and Babies*. Atlanta: CDC.
130. American Psychological Association (APA). 2015. *Postpartum depression*. Accessed at: <http://www.apa.org/pi/women/programs/depression/postpartum.aspx>.
131. Mitchell AA, Gilboa SM, Werler MM, Kelley KE, Louik C, Hernandez-Diaz S. 2011. National Birth Defects Prevention Study. Medication use during pregnancy, with particular focus on prescription drugs: 1976-2008. *Am J Obstet Gynecol*; 205(1):51.e1-8.
132. Main EK, Morton CH, Hopkins D, Giuliani G, Melsop K, and Gould JB. 2011. *Cesarean deliveries, outcomes, and opportunities for change in California: Toward a public agenda for maternity care safety and quality*. Palo Alto, CA: California Maternal Quality Care Collaborative.
133. Angood PB, Armstrong EM, Ashton D, Burstin H, Corry M, Delbanco SF, Fildes B....and Salganicoff A. 2010. Blueprint for action: Steps toward a high-quality, high-value maternity care system. *Women's Health Issues*, 20: S18-S49.
134. Ailes EC, Dawson AL, Lind JN, Gilboa SM, Frey MT, Broussard, and Honein MA. 2015. Opioid prescription claims among women of reproductive age – United States, 2008-2012. *MMWR*; 64(2): 37-41.
135. Task Force on Hypertension in Pregnancy. 2013. *Hypertension in pregnancy*. Washington, DC: American College of Obstetricians and Gynecologists (ACOG).
136. ACOG. 2015. Obstetric Care Consensus No. 2: Levels of maternal care. *Obstet Gynecol*; 125: 502-15.
137. American Hospital Association (AHA), Hospital Engagement Network. 2014. *Obstetrical harm change package: Recognition and prevention of obstetrical related events and harm*. Chicago, IL: Health Research and Educational Trust.
138. Institute for Healthcare Improvement (IHI). 2012. *How-to guide: Prevent obstetrical adverse events*. Cambridge, MA: Institute for Healthcare Improvement.
139. Resar R, Griffin FA, Haraden C, and Nolan TW. 2012. *Using Care Bundles to Improve Health Care Quality*. IHI Innovation Series white paper. Cambridge, Massachusetts: Institute for Healthcare Improvement.
140. Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). 2014. Quantification of blood loss. *Clinical Management Guidelines for Women's Health and Perinatal Nurses*, no. 1.
141. Della Torre M, Kilpatrick SJ, Hibbard JU, Simonson L, Scott S, Koch A, Schy D, and Geller SE. 2011. Assessing preventability for obstetric hemorrhage. *Am J Perinatal*; 28(10): 753-60.
142. Joint Commission. 2010. *Preventing maternal deaths*. Sentinel Event Alert; 44. Accessed at: [http://www.jointcommission.org/sentinel\\_event\\_alert\\_issue\\_44\\_preventing\\_maternal\\_death](http://www.jointcommission.org/sentinel_event_alert_issue_44_preventing_maternal_death).
143. Joint Commission. 2015. Sentinel Events. *Advanced disease-specific care certification manual*. Accessed at: [http://www.jointcommission.org/assets/1/6/DSC\\_05\\_SE\\_update\\_CURRENT.pdf](http://www.jointcommission.org/assets/1/6/DSC_05_SE_update_CURRENT.pdf)





ASSOCIATION OF MATERNAL & CHILD HEALTH PROGRAMS

2030 M STREET, NW | SUITE 350 | WASHINGTON, DC 20036  
PHONE: (202) 775-0436 | FAX: (202) 775-0061