

Life Course Indicator: States with P-20W Longitudinal Data Sets

The Life Course Metrics Project

As MCH programs begin to develop new programming guided by a life course framework, measures are needed to determine the success of their approaches. In response to the need for standardized metrics for the life course approach, AMCHP launched a project designed to identify and promote a set of indicators that can be used to measure progress using the life course approach to improve maternal and child health. This project was funded with support from the [W.K. Kellogg Foundation](#).

Using an RFA process, AMCHP selected seven state teams, Florida, Iowa, Louisiana, Massachusetts, Michigan, Nebraska and North Carolina, to propose, screen, select and develop potential life course indicators across four domains: Capacity, Outcomes, Services, and Risk. The first round of indicators, proposed both by the teams and members of the public included 413 indicators for consideration. The teams distilled the 413 proposed indicators down to 104 indicators that were written up according to three data and five life course criteria for final selection.

In June of 2013, state teams selected 59 indicators for the final set. The indicators were put out for public comment in July 2013, and the final set was released in the Fall of 2013.

Basic Indicator Information

Name of indicator: States with P-20W Longitudinal Data Sets (LC-48)

Brief description: States with P-20W longitudinal data systems. A P-20W is a data system where policies and standards are aligned to link student data for specified purposes across the education continuum, from early childhood through K12, postsecondary and the workforce.

Indicator category: Organizational Measurement Capacity

Indicator domain: Service/Capacity

Numerator: Number of states, territories, and jurisdictions that completed 8 or more essential actions of fully functional P-20/workforce longitudinal data system (P for preschool).

Denominator: Total number of states, territories, and jurisdictions

Potential modifiers: None

Data source: The Data Quality Campaign (DQC)

Notes on calculation: None

Similar measures in other indicator sets: None

Life Course Criteria

Introduction

On an individual level, education is a powerful social determinant of overall health and well-being. Educational attainment is associated with both health behaviors and health outcomes, including heart disease, cancer, stroke, diabetes, drinking, smoking, and exercise (Cutler and Lleras-Muney 2006). Education also is associated with birth outcomes; among births experiencing uncompromised fetal growth, birthweight increases with educational attainment (Gage et al 2012). Woolf et al postulate that if everyone had “the health of the educated,” the mortality averted would be eight deaths for every one death averted by medical advances (Woolf et al 2007) and concluded that spending on medical advances to the detriment of social change actually jeopardizes health. However, the ability of public health alone to bring about the type of social change needed to positively impact health is somewhat limited.

A P-20W linkage means data from early childhood, elementary, secondary, postsecondary, and workforce sources are linked in a way that is secure, useful, and appropriately accessible. There is a governance structure that allows appropriate access to data and works to build the capacity of stakeholders to use it. The issues such a linkage can explore include the educational experience a child needs to successfully pursue his or her desired career, the alignment of high school prep programs with employer needs, whether children have access to high quality early care and education programs, and whether the expectations of K-12 and postsecondary education systems are aligned (DQC fact sheets). P-20W systems link and track data at the student level and allow for tracking of teachers, schools and school districts.

While health data are not currently included in the linkage, the existence of a robust P-20W linkage in your state means there is a framework for inclusion of health data in the future, allowing health and education to work together to ensure that the children with the most need or the most risk have the opportunity to succeed.

As state public health agencies work to advance health through a life course perspective, the capacity and integration of data systems to help measure health across the life course trajectory are important measures of larger organizational and community level capacity to address health through a life course perspective. As a life course indicator, the presence of a functioning P-20W longitudinal data system is a measure of public health capacity to address life course.

Implications for equity

The establishment of a P-20W longitudinal data system will allow users to examine equity issues across the educational continuum. If health data can be included, the complex interplay between access to quality education, educational attainment, and health can be more thoroughly explored. There are disparities in key educational markers explored elsewhere in the life course indicators, including fourth grade proficiency, high school graduation rates, and maternal education when examined by race/ethnicity and economic status. These indicators of education disparities, however, are not derived from linked data systems, making them inherently cross-sectional measures of equity. With the establishment of P-20W data systems, the capacity of the education and public health systems to examine and address issues of equity will become more advanced, allowing for examination of the cumulative burden of inequity, its impacts on the education and health trajectories of students, and the design of strategies to restore equity.

When building P-20W linkages, a consideration for equity is that the systems that are built are applied equitably across the state and with cross-state linkages. Equitable application would mean that every student, educator, and school is represented in the data; a system that potentially excludes students with the most need, the least access, or the worst health will be biased and unusable.

Public health impact

The creation and use of longitudinal data systems that link across P-20W is one of three overarching “imperatives” to create a culture of effective data use. The others are ensuring data access while protecting privacy, and building capacity of all stakeholders to use data. The DQC posits that effective implementation of these “imperatives” defines a culture where state policy makers not only collect quality data but use them for informed decision making, ultimately resulting in increased student achievement. For example, the DQC (2012) provides the following examples of reports that states can produce using student-level longitudinal data, including:

- Diagnostic reports that can guide efforts by teachers and parents to provide timely and effective help to students and to make sure that the instruction challenges them appropriately;

- Early warning system reports that provide information regarding whether individual students are at risk or in need of extra assistance;
- Readiness reports that can help identify whether and to what extent each elementary, middle and high school student is on track for college and career readiness by high school graduation;
- Predictive reports that use information on the past performance of students to see whether students are likely to reach a particular performance goal.

As the timeliness, predictability and sophistication of reporting develops as a result of the P-20W data system, policy makers can help drive increased academic achievement. Increased academic achievement impacts individuals' lifetime health and well-being, and may ameliorate effects of socioeconomic and familial disadvantage (Wickrama et al., 2012). Also, understanding individual-level educational trajectories will improve research on education and health.

Leverage or realign resources

As a societal factor, education is a powerful predictor of health, but the public health field has very little control over increasing educational attainment. However, working together with the education sector to build data capacity is one way to engage in working to improve the social determinants of health. Both the process of building these longitudinal data systems, and the resulting information from them, can be used to enhance working relationships between public health and education.

Key stakeholders for P-20W linkages include parents, educators, policymakers, system leaders, and community members (DQC Primer, 2012). Because of the connection to what the future workforce looks like (the W in P-20W), employers should be considered key stakeholders in the use of P-20W linkages. A prepared, healthy workforce may mean that employees have higher job satisfaction and take fewer sick days, resulting in increased productivity.

Predict an individual's health and wellness and/or that of their offspring

Research on individual academic achievement and later health status is challenged by questions of causality and directionality. Nonetheless, it is generally accepted that higher levels of education lead to better decision-making around health and health care use (Lleras-Muney 2005; de Walque, 2007; Cutler and Lleras-Muney, 2010; Webbink et al., 2010; Wickrama et al., 2012). Thus, the extent to which the longitudinal systems are used and perform as predicted by the DQC can be considered a (partial) predictor of health status.

Data Criteria

Data availability

The Data Quality Campaign (DQC) "Promotes the development of **state longitudinal data systems** that collect the quality data needed to answer critical questions facing education stakeholders." They annually survey states' progress in building and using longitudinal data systems for education data, with the P-20W linkage system being the first of 10 key "state actions" that DQC has identified as key to both collecting quality data and increasing student achievement. The 2012 data were due from states in August of 2012 and made available in November of 2012, indicating an approximate 3 month delay in releasing the year's data.

The 2012 state analysis is their eighth annual report. Data on each of the state actions are requested from each state's governor's office or their designee to respond to the survey in collaboration with stakeholders. DQC determines whether or not states receive credit for each action based on states' responses (see document "Criteria for the 10 State Actions" at dataqualitycampaign.org/files/DFA2012_Survey_Criteria.pdf).

The ten state actions are as follows:

1. Link state K–12 data systems with early learning, postsecondary education, workforce, social services, and other critical agencies
2. Create stable, sustained support for robust state longitudinal data systems
3. Develop governance structures to guide data collection, sharing, and use
4. Build state data repositories (e.g., data warehouses) that integrate student, staff, financial and facility data
5. Implement systems to provide all stakeholders with timely access to the information they need while protecting student privacy

6. Create progress reports with individual student data that provide information educators, parents and students can use to improve student performance
7. Create reports that include longitudinal statistics on school systems and groups of students to guide school-, district- and state-level improvement efforts
8. Develop a purposeful research agenda and collaborate with universities, researchers and intermediary groups to explore the data for useful information
9. Implement policies and promote practices, including professional development and credentialing, to ensure educators know how to access, analyze, and use data appropriately
10. Promote strategies to raise awareness of available data and ensure that all key stakeholders, including state policymakers, know how to access, analyze, and use the information

The DQC tracks 52 states, territories, and jurisdictions, including the 50 states, the District of Columbia and Puerto Rico. States may access their data in summary form on the website or download their state profile. In addition, the DQC tracks the number of states that have completed each action and reports these by action, as well as a summary of how many states have completed numbers of actions (at least 1 and 8 or more). For 2012, the data are as follows:

Action 1: 14 states

Action 2: 35 states

Action 3: 40 states

Action 4: 45 states

Action 5: 5 states

Action 6: 36 states

Action 7: 42 states

Action 8: 38 states

Action 9: 6 states

Action 10: 26 states

No state has achieved all ten actions; in 2011 four states (Arkansas, Delaware, Florida and Texas) had at least eight actions. In 2012, an additional six states had at least eight actions (Indiana, Louisiana, Maine, North Carolina, Ohio and Oregon) for a total of ten states with at least eight of the ten actions.

State and national data are available on the DQC website and do not require special permission for access. Key overall findings from the 2012 survey can be found here: dataqualitycampaign.org/your-states-progress/executive-summary/

Data quality

Data are based on states' responses to a fairly detailed set of questions ("Criteria for the 10 State Actions"). Although there does not appear to be an independent validation of state responses, the data are closely related to those that states are required to report to the U.S. Department of Education under the 2007 America COMPETES Act, which includes 12 "Required elements of a P-16 Education Data System."

Simplicity of indicator

P-20W data systems may be unfamiliar to those who work with the usual sources of public health data. However, there is essentially no calculation necessary to determine how many actions a state has completed or to determine how many states have completed at least 8 actions. Therefore, the indicator is relatively simple, both for calculation and explanation.

References

- Cutler DM, Lleras-Muney A. 2010. Understanding differences in health behaviors by education. *Journal of Health Economics* 29:1-28. Abstract available at <http://www.ncbi.nlm.nih.gov/pubmed/19963292>. Accessed April 3, 2013.
- Data Quality Campaign Fact Sheet: Postsecondary Education Data Landscape, September 2011.
- Data Quality Campaign Fact Sheet: Workforce Data Landscape, September 2011.
- Data Quality Campaign Fact Sheet: Early Care and Education Data Landscape, September 2011.
- Data Quality Campaign Preparing Every Citizen for the Knowledge Economy: A Primer on Using Early Childhood, K-12, Postsecondary, and Workforce Data. January 2012.
- De Walque D. 2007. Does education affect smoking behaviors? *Journal of Health Economics* 26(5):877-895. Abstract available at <http://www.sciencedirect.com/science/article/pii/S0167629606001457>. Accessed April 3, 2013.
- Gage TB, Fang F, O'Neill E, Dirienzo G. Maternal Education, Birth Weight, and Infant Mortality in the United States. *Demography* 2012.
- Lleras-Muney A. 2005. The relationship between education and adult mortality in the United States. *Review of Economic Studies* 72:189-221.
- Webbink D, Martin NG, Visscher PM. 2010. Does education reduce the probability of being overweight? *Journal of Health Economics* 29:29-38. Abstract available at <http://www.ncbi.nlm.nih.gov/pubmed/20116872>. Accessed April 3, 2013.
- Wickrama KA, Simons LG, Baltimore D. 2012. The influence of ethnicity and adverse life experiences during adolescence on young adult socioeconomic attainment: the moderating role of education. *Journal of Youth and Adolescence* 41(11):1472-1487. Abstract available at <http://www.ncbi.nlm.nih.gov/pubmed/22528370>. Accessed April 3, 2013.

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