INCORPORATING RELEVANT SOCIAL DETERMINANTS OF HEALTH INTO CHBRP BENEFIT MANDATE ANALYSES

In 2015, the California Health Benefits Review Program (CHBRP) was reauthorized[1] by the California Legislature (via Senate Bill 125), and CHBRP's authorizing statute was expanded to include consideration of social determinants of health (SDoH). Starting in 2016, CHBRP analyses will address: "the impact on the health of the community, including diseases and conditions where disparities in outcomes associated with the social determinants of health as well as gender, race, sexual orientation, or gender identity are established in peer-reviewed scientific and medical literature."[2]

This document provides a brief overview of the SDoH and presents a working definition of SDoH for CHBRP. We describe how CHBRP analyses previously considered SDoH and present an initial approach to broader consideration of SDoH in CHBRP analyses of health insurance topics for 2016.

What Are SDoH?

The basic concept underlying SDoH is that many factors outside of genetics and the delivery of medical care have a substantial influence on health and mortality. A large body of evidence[3] from the past 2 decades suggests that determinants such as education, economic factors (e.g., income stability, employment, wealth), social context (e.g., race/ethnicity, discrimination), physical environment (e.g., quality of air, water, and food, neighborhood, housing, transportation, etc.), and behaviors (e.g., nutrition, smoking, physical activity, etc.) exert a significant influence on health conditions and health outcomes,[4] and contribute to health disparities among various populations. Experts differ on theoretical frameworks (e.g., social disadvantage, life course, health equity, and governance approaches[5]) and

[1] Available at:www.chbrp.org/docs/CHBRP_authorizing_statute_071915.pdf.

[2] Available at: www.chbrp.org/docs/CHBRP_authorizing_statute_071915.pdf.

[3] CHBRP reviewed national and global health-related organization websites to find the SDOH definition most relevant to CHBRP's task of estimating health insurance benefit mandate impacts. The majority of organizations have adopted variations of SDoH definitions in line with either the World Health Organization (WHO) or Healthy People 2020 (HP 2020). CHBRP reviewed definitions from well-respected bodies such as WHO, U.S. Office of Disease Prevention and Health Promotion (HealthyPeople 2020), Centers for Disease Control and Prevention, Institute of Medicine, Kaiser Family Foundation, American Public Health Association, American Medical Association, and the Robert Wood Johnson Foundation whose definitions overlap considerably.

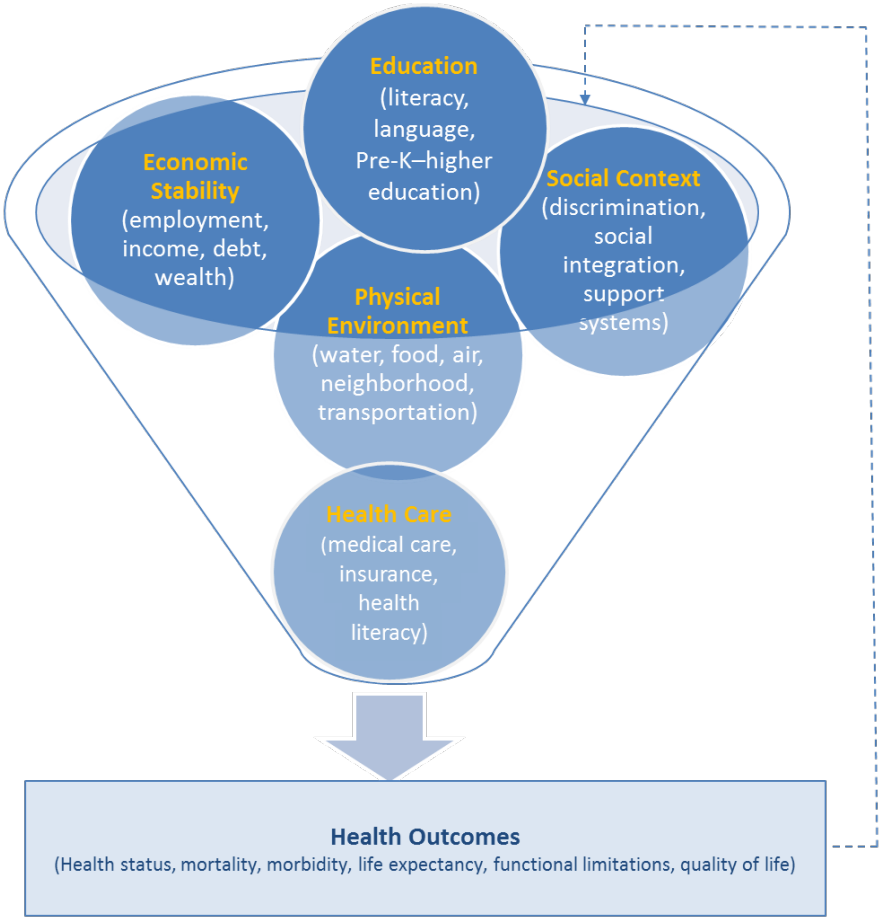
[4] Braverman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. *Public Health Reports*. 2014;129 Suppl 2:19-31.

[5] Bharmal N, Derose KP, Felician M, Weden MM. *Understanding the Upstream Social Determinants of Health*. WR-1096-RC. May 2015. Santa Monica, CA: RAND Health.

classifications of determinants.[6] Despite the differences in frameworks or classifications, there is consensus that medical care is but one of many factors that influence health status and health outcomes.[7,8]

SDoH interact with each other in complex, nonlinear relationships. The example of a bidirectional relationship between health and education shows chronically ill children who have lower educational attainment due to chronic school absence; their poor health status potentially influences their earning potential.

Figure 1. Simplified Framework of Health Outcomes Affected by Social Determinants of Health



Note: Factors listed are not inclusive, and can interact bidirectionally.
Source: California Health Benefits Review Program, 2016.

[6] Healthy People 2020, 2015. Available at: www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/addressing-determinants.
[7] Braveman P. Defining health disparities and health equity. *Public Health Reports*. 2014:129 Suppl 2;5-8.
[8] Centers for Disease Control and Prevention. Social Determinants of Health: Frequently Asked Questions. Available at: www.cdc.gov/nchhstp/socialdeterminants/faq.html.

A Case Study in SDoH: Flint, Michigan

We can apply this theoretical construct to a current scenario in Flint, Michigan.[9] In 2014, a policy decision was made to change the water source of the city. This decision, driven by budgetary considerations in a largely poor and minority community, resulted in significant lead contamination to the city water supply, and a subsequent doubling of documented cases of lead poisoning among young children in Flint. Childhood lead poisoning can severely inhibit brain development and intellectual attainment in children; hence, the negative impact on these children and on the community will continue for years. The problems in Flint children were first brought to public attention by a pediatrician working in Flint who, after treating symptomatic children, compared lead screening results of young patients before and after the change in water supply. This example illustrates how a utility department's policy change — unrelated to health or health care — affected the physical environment (water pipes and water quality), and produced major negative health impacts in a community. It also demonstrates the important inter-relationships between the health care system and the identification of important harms resulting from public policies.

Interaction Between SDoH and Health Insurance

Health insurance improves access to medical care and, therefore, can be considered a factor that mediates the outcomes of disease and injury. Less commonly, health insurance and medical care may also influence SDoH. For example, evidence shows that nurse home visits to low-income mothers with young children[10,11] can improve their children's educational attainment and lower the mortality attributable to preventable causes.

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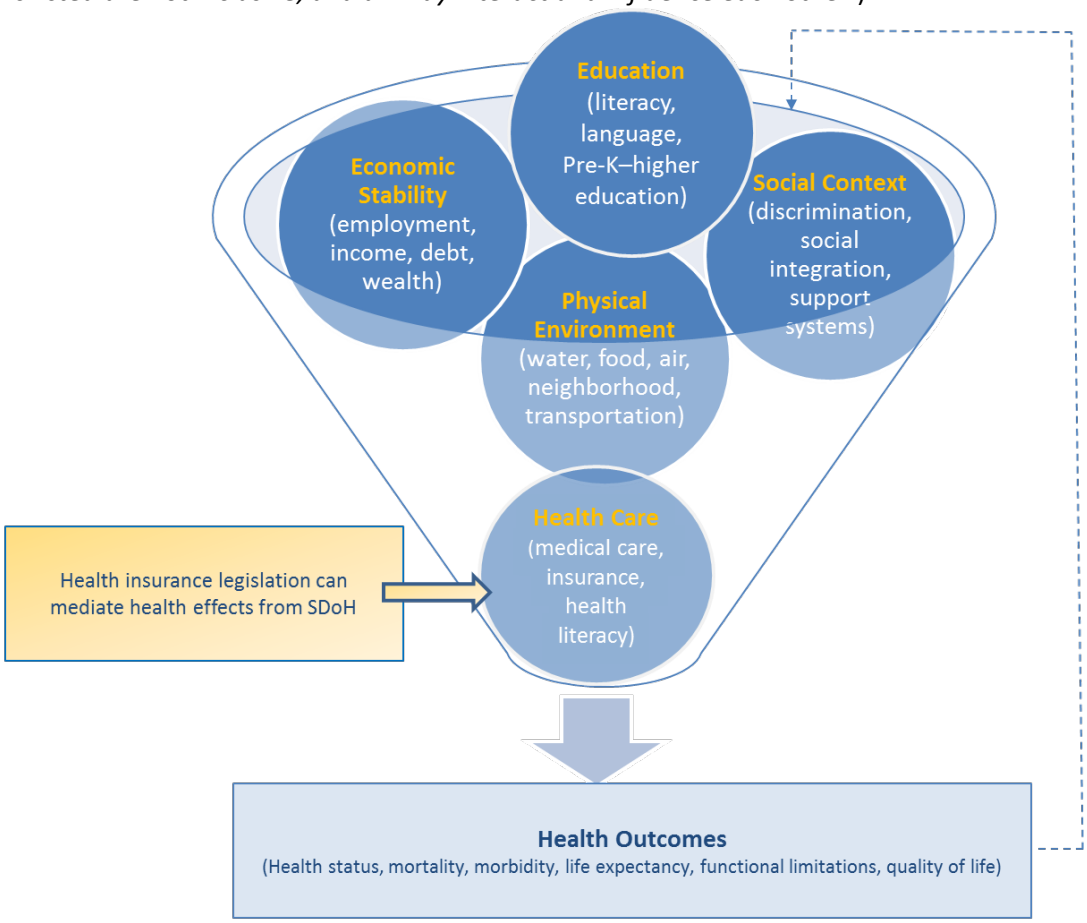
[9] Goodnough A, Davey M, Smith M. When the Water Turned Brown. *The New York Times*. January 23, 2016. Available at: www.nytimes.com/2016/01/24/us/when-the-water-turned-brown.html?_r=0.

[10] Olds DL, Kitzman H, Knudtson MD, Anson E, Smith JA, Cole R. Effect of home visiting by nurses on maternal and child mortality: results of a 2-decade follow-up of a randomized clinical trial. *JAMA Pediatrics*. 2014;168:800-806.

[11] Miller TR. Projected outcomes of Nurse-Family Partnership home visitation during 1996-2013, USA. *Prevention Science*. 2015;16:765-777.

Figure 2. How Health Insurance Interacts With Social Determinants of Health
(Factors listed are not inclusive, and all may interact and influence each other.)



Note: Factors listed are not inclusive, and can interact bidirectionally.
Source: California Health Benefits Review Program, 2016.

CHBRP Case Study: AB 264: Pediatric Asthma Self-Management Education

In 2006, CHBRP analyzed AB 264,[12] a proposed insurance mandate for asthma management education for children. CHBRP estimated that the bill would reduce school absences for California children with asthma by 40,500 days per school year (across 10,000 schools) .[13] Evidence suggests that attendance is closely linked with educational success, not only for those with the chronic condition, but for their peers who experience curriculum delay due to too many classmates missing class.[14] Additionally, a reduction in school day absences could improve school budgets through recovery of payments through increases

[12] See CHBRP's report *Analysis of Assembly Bill 264: Pediatric Asthma Self-Management Training and Education Services*. Available at: http://chbrp.org/completed_analyses/index.php.
[13] California Department of Education. Enrollment/Number of Schools by GradeSpan and Type – CalEdFacts 2013-2014. Available at: www.cde.ca.gov/ds/sd/cb/cefenrollgradetype.asp. Accessed February 2016.
[14] Balfanz R, Byrnes V. (Chronic Absenteeism: Summarizing What We Know From Nationally Available Data. Baltimore, MD: Johns Hopkins University Center for Social Organization of Schools, 2012. Available at: http://new.every1graduates.org/wp-content/uploads/2012/05/FINALChronicAbsenteeismReport_May16.pdf. Accessed February 2016.

in average daily attendance. Furthermore, although environmental causes of asthma may not be eliminated through this health benefit mandate, it appears that this mandate could mediate the negative environmental determinants by helping children manage their disease.

Working Definition of SDoH for CHBRP Analyses

CHBRP adapted two definitions of SDoH, from Healthy People 2020 and the Centers for Disease Control (CDC), to develop its own working definition of SDoH in CHBRP's bill analyses:

> *Social determinants of health are conditions in which people are born, grow, live, work, learn, and age. These social determinants of health (economic factors, social factors, education, physical environment) are shaped by the distribution of money, power, and resources and impacted by policy.*

Inclusion of SDoH in CHBRP Analyses

Since its inception, CHBRP has addressed several SDoH consistently in bill analyses. Most notable is the effect of health insurance legislation on health care access (gaining/losing insurance coverage) for California enrollees with health insurance regulated by the California Department of Insurance and the California Department of Managed Health Care. Likewise, CHBRP has consistently integrated discussion of racial/ethnic and gender disparities into analyses, and, when relevant, discussed some mandate interactions with determinants such as education (SB 1239 School Nurses [Wolk]), transportation (SB 289 Telehealth [Mitchell]; AB 502 Dental Hygienists [Chau]), employment (SB 189 Employer Wellness Programs [Monning]), and discrimination (AB 460 Infertility [Ammiano]).

The *Background* section of each CHBRP analysis will include contextual information about race/ethnicity, income, gender, sexual orientation, gender identify, and and any other bill-relevant determinants (e.g., transportation, education, discrimination, employment, etc.) that may affect who benefits from or is harmed by the health insurance legislation. In the *Public Health* sections of each report, CHBRP will also estimate the impacts of health insurance legislation on disparities correlated with or caused by SDoH.

Estimating a Mandate's Public Health Impact on Disparities Correlated With or Caused by SDoH

CHBRP analyses have been limited to the insured population according to state statute. Coverage disparities can exist within the insured population and may contribute to gaps in health care access and/or utilization among those with coverage (Kirby et al., 2006[15]; Lille-Blanton and Hoffman, 2005[16]).

[15] Kirby, James B., Gregg Taliaferro, and Samuel H. Zuvekas. "Explaining racial and ethnic disparities in health care." *Medical care* 44.5 (2006): I-64.

[16] Lillie-Blanton, Marsha, and Catherine Hoffman. "The role of health insurance coverage in reducing racial/ethnic disparities in health care." *Health Affairs*24.2 (2005): 398-408.

When possible, CHBRP will project impacts related to the following SDoH:

- *Race/ethnicity:* To the extent that racial/ethnic groups are disproportionately distributed among plans and policies with more or less coverage, an insurance mandate bringing all plans/policies to parity may impact an existing disparity. Similarly, health insurance legislation targeting a specific condition in which certain racial/ethnic groups experience a greater burden may impact a disparity. However, historically, the CHBRP analytic model has been constrained by the lack of baseline data describing the racial/ethnic composition among enrollees in plans and policies subject to health insurance mandates.

  To meet this challenge, CHBRP analyzed the California Health Interview Survey (CHIS) data and estimated the racial/ethnic composition of those that are Medi-Cal beneficiaries and those that are enrolled in privately funded insurance. CHBRP used the resulting distribution to estimate the racial/ethnic composition of the California population whose insurance can be subject to mandate legislation — the population included in all CHBRP analyses. Exempting one category of insurance (Medi-Cal or privately funded) from a benefit mandate could create, exacerbate, or improve racial/ethnic disparities in access to care or health outcomes because the racial and ethnic composition of Medi-Cal beneficiaries differs from that of enrollees in privately funded insurance (see CHBRP's methodology paper[17] (citation and hyperlink in footnotes) for detailed explanation).

- *Income*: Using the approach outlined for the analysis of racial/ethnic disparities, CHBRP analyses will be able to estimate, broadly, the potential impacts for those above and below 138% of the federal poverty line for bills that exempt Medi-Cal, in addition to considering impacts on lost productivity and out-of-pocket costs.

- *Gender and age*: Using the approach outlined in the race/ethnicity category, CHBRP analyses will be able to estimate, broadly, the potential impacts by gender and/or age for bills that exempt either Medi-Cal or privately funded insurance. For bills that address conditions or treatments focused on women or children (e.g., mammography screening or vaccinations), exempting one type of insurance from a mandate could create, exacerbate, or reduce disparities within these populations.

- *Gender identity/sexual orientation*: When evidence is available, CHBRP will discuss the interaction between the benefit mandate and gender identity and sexual orientation.

[17] See CHBRP Analysis Methodology Paper "Estimating Potential Impacts of Health Insurance Benefit Mandates on Racial/Ethnic Disparities Attribution to Disproportionate Benefit Coverage". Available at: http://www.chbrp.org/analysis_methodology/docs/Estimating%20Impacts%20on%20Racial%20and%20Ethnic%20Disparities%20FINAL.pdf.

- *Other bill-relevant determinants:* For bills in which data on nontraditional health outcomes are cited (e.g., work days lost, school absence, increased appointments, specific denials of care), CHBRP will seek to identify evidence about the possible impacts on corresponding determinants such as employment, education, transportation, or discrimination.

In summary, evidence shows that SDoH (e.g., race, gender, income, discrimination, education, neighborhood, etc.) strongly influence health outcomes (including health care access and health status). However, these determinants are more frequently influenced by systemic social policy, and less commonly by specific health insurance legislation. However, health outcomes may also affect SDoH. Under specific circumstances, health insurance legislation may have direct effects on specific SDoH, in addition to affecting health outcomes. CHBRP is committed to providing careful analysis of how proposed health insurance legislation may interact with or attenuate disparities associated with SDoH when relevant to the bill subject and where evidence is available.