RISK ADJUSTMENT'S NEW FRONTIER:
Social Determinants of Health

April 2017 v.1

Introduction

MassHealth is incorporating social determinants of health (SDOH) into the risk adjustment methodology used to determine payment to Accountable Care Organizations (ACOs) and Managed Care Organizations (MCOs) in the Commonwealth. While algorithms used in actuarial science and applied to healthcare financing can seem very esoteric to most people, this MassHealth step is a significant innovation that is highly relevant to patients, healthcare providers, payers, public health practitioners, and social services providers alike. MassHealth's new risk adjustment method is part of an important shift toward recognizing and ultimately addressing behavioral risk factors and social determinants of health.[1]

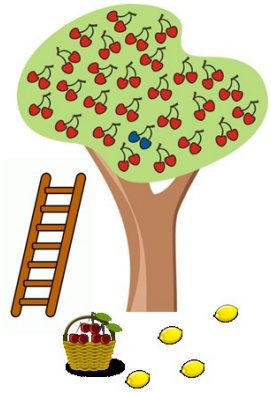
This short brief seeks to articulate why this development, albeit nuanced and complex, offers substantial promise. We also will attempt to demystify risk adjustment for non-experts, and lay a foundation on which the following questions later can be explored:

- Can risk adjustment methods geared to support the sustainability of healthcare delivery systems[2] evolve to incorporate a health equity lens on risk factors?
- Can new risk assessment methods that account for SDOH risk factors play a role in reducing health disparities, thereby better meeting both sustainability (cost) and equity (outcome) goals?

Risk Assessment and Risk Adjustment: The Basics

Risk adjustment is not new. It's a process widely used by Medicare and Medicaid – as well as other governmental programs and some private plans – to determine the size of payments made to risk-bearing entities (such as health plans) based on the relative health risk of covered populations.[3] Risk adjustment can help ensure appropriate compensation in situations where insurers are limited in how much they can vary premiums based on risk factors – as is common in healthcare. In this way, risk adjustment can help to:

- align incentives between government programs and risk-bearing entities;
- improve access to care for higher-risk individuals (by shifting dollars from entities that intentionally attract lower-cost members – "cherry picking" – or deter enrollment of high-cost members – "lemon dropping"); and
- protect the solvency of risk-bearing entities.



[1] Executive Office of Health & Human Services. (October 14, 2016). *MassHealth Risk Adjustment Model Social Determinants of Health*. [PowerPoint Slides]. Retrieved from http://www.mass.gov/eohhs/docs/eohhs/healthcare-reform/masshealth-innovations/1610-risk-adjustment-open-public-meeting.pdf

[2] We are aware that in the healthcare industry, to some sustainability means profitability and to others the concept means mere solvency. For purposes of this brief, we will consider both of those scenarios to fall under the "sustainability" umbrella.

[3] *Risk Assessment and Risk Adjustment.* American Academy of Actuaries Issue Brief. May 2010. https://www.actuary.org/pdf/health/Risk_Adjustment_Issue_Brief_Final_5-26-10.pdf

A well-designed risk adjustment method also will limit gaming by avoiding the use of risk factors that can be influenced by a risk-bearing entity.[4]

Risk adjusting relies on risk assessment to evaluate the relative risk of individuals and populations.[5] Risk assessment is an objective, mathematical process for measuring the deviation of specific individuals or populations from the average. Those who are projected to incur higher healthcare costs are considered higher risk, and payments are made to risk-bearing entities based on relative risk. Most often, risk assessment is based upon age, sex, other demographic factors, coverage eligibility categories (e.g., enrollment in Medicaid, type of disability) and medical conditions identified from diagnosis codes or drugs prescribed.[6] Risk adjusting payments is typically budget-neutral, shifting money between participating organizations, rather than changing total payments. Health insurance plans or contracts with a disproportionate share of higher-risk members receive higher, risk-adjusted payments; those with a disproportionate share of lower-risk enrollees receive lower payments.[7]

Medicaid and Risk

MassHealth is a significant component of the Massachusetts safety net, and like other state Medicaid agencies, must strive to operate within an annual budget (including federal match). Medicaid's budget does not change based on the assessed risk of a population, making risk adjustment an important component of ensuring members are adequately covered. Medicaid patients often present the highest risks, and become eligible for Medicaid coverage *because* of their high level of need, or their specific medical conditions. Risk adjustment in the Medicaid context is high-stakes; as of 2016, it was estimated that about half of state Medicaid programs risk-adjust payments to MCOs.[8]

---

[4] *Accounting for Social Risk Factors in Medicare Payment: Criteria, Factors, and Methods*. Committee on Accounting for Socioeconomic Status in Medicare Payment Programs; Board on Population Health and Public Health Practice; Board on Health Care Services; Health and Medicine Division; National Academies of Sciences, Engineering, and Medicine. Washington (DC): National Academies Press (US); 2016 Jul 13. *See* Table S-1. https://www.nap.edu/catalog/23513/accounting-for-social-risk-factors-in-medicare-payment-criteria-factors

[5] For a helpful description of risk adjustment as applied to children and youth with special healthcare needs, *see*: Tobias C, et al. *Risk Adjustment and Other Financial Protections for Children and Youth with Special Health Care Needs in Our Evolving Health Care System*. Catalyst Center. May 2012. http://cahpp.org/wp-content/uploads/2015/04/risk-adjustment.pdf

[6] Schone E, et al. *Risk Adjustment: What is the current state of the art and how can it be improved?* Robert Wood Johnson Foundation, The Synthesis Project Policy Brief, No. 25. July 2013. http://www.rwjf.org/content/dam/farm/reports/reports/2013/rwjf407046/subassets/rwjf407046_1

[7] *Risk Assessment and Risk Adjustment.* American Academy of Actuaries Issue Brief. May 2010. https://www.actuary.org/pdf/health/Risk_Adjustment_Issue_Brief_Final_5-26-10.pdf

[8] *Risk Adjustment in Medicaid*. Mile High Healthcare Analytics. March 2016. https://www.healthcareanalytics.expert/risk-adjustment-medicaid/

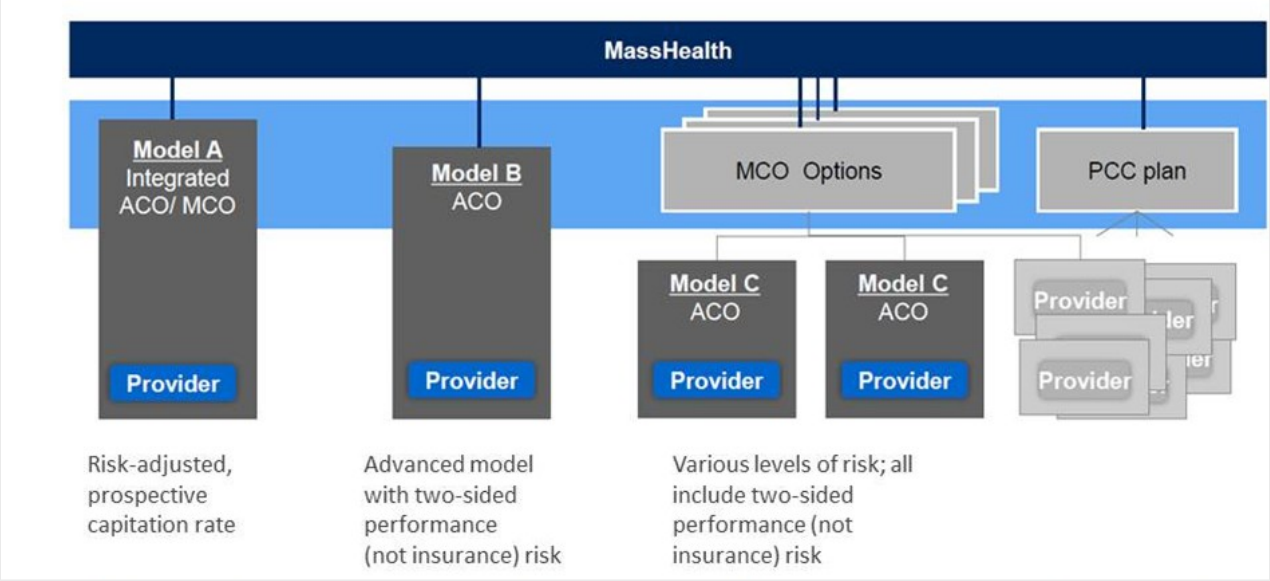
Risk Transfer: From Medicaid to MCOs and ACOs

In contracting with Medicaid, MCOs and ACOs want to assure that their members' risk profile is fairly reflected in the Medicaid payment. Thoughtful risk assessment and corresponding risk-adjusted payments determine whether an MCO or ACO will have the resources it needs to invest in interventions that mitigate a risk where possible or that address the unavoidable consequences of a given risk.

In Massachusetts, MCOs and ACOs will functionally be risk-bearing entities, taking on the risk that their costs will exceed Medicaid payments, as well as the potential to share the financial benefit of savings. In this way, incentives are aligned because MCOs and ACOs become financially motivated to make innovations in care delivery that meet or exceed cost and quality objectives.

The financial impact of risk contracts on the MCO or ACO will depend on whether the pool of Medicaid members has higher or lower overall healthcare costs that year and how the risk for total cost of care has been transferred. Historically, MassHealth has risk-adjusted its payments using a Diagnostic Cost Group-Hierarchical Condition Categories (DxCG-HCC) risk model that is licensed from Verscend Technologies (formerly Verisk Health). Under MassHealth's current DSRIP[9] waiver, there will be a continuum of risk transfer. This visual illustrates the continuum of MassHealth MCO/ACO models and their relationship to risk transfer:

Figure 1:
MassHealth Payment Framework[10]



Integrated MCO/ACOs in Model A will receive prospective payments and will absorb the full loss or gain, while Model B and C entities with two-sided performance risk will not absorb the full impact.

[9] Delivery System Reform Incentive Payment Program.

[10] *Adapted from* Executive Office of Health & Human Services. (April 14, 2016). *MassHealth Delivery System Restructuring: Overview.* [PowerPoint Slides]. Retrieved from http://www.mass.gov/eohhs/docs/eohhs/healthcare-reform/masshealth-innovations/mass-health-restructuring-overview-document.pdf

MassHealth in the Vanguard: SDOH Risk Factors Deployed in Risk Adjustment

As Medicaid ACOs and MCOs take on risk, it is critical that MassHealth make payments that are adjusted for the level of risk associated with a given population. And risk of higher-than-average medical utilization is not the only risk that matters for health outcomes and costs. There are some strong data about the relationship between certain SDOH and health costs.[11] At the same time, a growing number of programs are rising to the challenge of developing innovative interventions that address costly SDOH.[12]

Figure 2:
Social Determinants of Health[13]

Economic Stability	**Neighborhood and Physical Environment**	**Education**	**Food**	**Community and Social Context**	**Health Care System**
Employment Income Expenses Debt Medical bills Support	Housing Transportation Safety Parks Playgrounds Walkability	Literacy Language Early childhood education Vocational training Higher education	Hunger Access to healthy options	Social integration Support systems Community engagement Discrimination	Health coverage Provider availability Provider linguistic and cultural competency Quality of care

At this critical juncture in Medicaid payment transformation, MassHealth is piloting an SDOH risk adjustment framework that aims to better account for the correlation between social context and health status.[14]

[11] McGovern, L., Miller, G., Hughes-Cromwick, P. (2014). Health Policy Brief: The Relative Contribution of Multiple Determinants to Health Outcomes. *Health Affairs.* Retrieved from http://healthaffairs.org/healthpolicybriefs/brief_pdfs/healthpolicybrief_123.pdf

[12] Taylor, L., et al. (2015). Leveraging the Social Determinants of Health: What Works? *Blue Cross Blue Shield of Massachusetts Foundation and Yale Global Health Leadership Institute*. Retrieved from http://bluecrossmafoundation.org/sites/default/files/download/publication/Social_Equity_Report_Final.pdf

[13] *Adapted from* Heiman, H. and Artiga, S. (2015). *Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity.* The Henry J. Kaiser Family Foundation. Retrieved from http://kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/

[14] Executive Office of Health & Human Services. (October 14, 2016). *MassHealth Risk Adjustment Model Social Determinants of Health*. [PowerPoint Slides]. Retrieved from http://www.mass.gov/eohhs/docs/eohhs/healthcare-reform/masshealth-innovations/1610-risk-adjustment-open-public-meeting.pdf

The new MassHealth methodology specifically targets **housing instability** and **neighborhood stress** as variables affecting how much it pays to MCO/ACOs. These SDOH risk factors sit alongside other disability- and behavioral health-related risk factors that are central to this innovative framework.[15]

MassHealth's housing and neighborhood stress risk adjustments will serve to more effectively redistribute payments based on member risk. An *increased* payment will accrue for those members with an elevated housing instability score. This means that a *lower* payment amount will be available to serve the rest of the member pool, who, it is projected, will accrue less overall costs of care because they live in healthier housing and neighborhood conditions. In addition to serving as payers, ACOs are aligned with providers, and support innovation through analytics and care delivery models. This alignment will give them the financial incentive to invest some of the increased payment in services that might produce downstream savings, such as housing stabilization services. While risk adjustment does not in itself create this incentive, the combination of adequate payment through risk adjustment and risk transfer through the MCO/ACO does.

Risk adjusting for housing instability and neighborhood stress is a major innovation. At the same time, it remains to be seen exactly how ACOs will invest in appropriate "treatment" in connection with these adjustments. Will the modest increase in payment — derived from the SDOH risk adjustment — primarily be used to offset predictable, downstream costs for people experiencing housing instability or neighborhood stress? If so, how can investment in prevention be encouraged, particularly given that some outcomes (and cost savings) will take much longer than a few fiscal quarters to realize?

Proof of Concept: How will SDOH risk adjustment impact payments to providers and ultimately care and outcomes for people?

While MassHealth is taking an important step in assessing risk in innovative ways, it will be critical to see the impact of these changes.

Why think *now* about the next SDOH-based risk factors that might inform future risk adjustment methods?

Bolstering provider organizations' ability to serve patients

In the absence of risk adjustment that explicitly accounts for SDOH, provider organizations may be reluctant to enter into risk-bearing arrangements for populations disproportionately burdened by SDOH and resulting health disparities. Accordingly, risk assessment models that explicitly incorporate SDOH may be essential to effectively inform and engage providers in taking innovative measures to prevent the need for costly care, and to equitably improve the quality

[15] Specifically: (1) Department of Mental Health client; (2) Department of Developmental Services client; (3) All other disabilities that trigger Medicaid eligibility; (4) Serious Mental Illness; and (5) Substance Use Disorder.

of care. In some domains, more research may be needed to understand how SDOH impact health costs and what "treatments" are needed to address SDOH. This information can boost providers' confidence in entering into risk-bearing arrangements and investing in programs (or purchasing preventive services) that can address SDOH and improve population health.

For example, providers are increasingly being held accountable for avoidable readmission rates through quality-based payments or penalties. An NIH report demonstrated that risk adjustment for SDOH can account for substantial variation in readmission rates.[16] Specifically, incorporating census tract-level socioeconomic data such as poverty rate, educational attainment, and housing vacancy into the risk assessment helped to explain a substantial amount of the variation in hospital readmission rates for patients admitted with acute myocardial infarction, heart failure, and pneumonia. This builds the evidence base that adjusting quality measures for underlying SDOH will more fairly reflect the value added by the healthcare system.

Source: : http://drawingchange.com/wp-content/uploads/2013/11/GW6-Social-Determinants-closeup.jpg

To be clear, the quality framework noted above reflects a different, "back-end" type of risk adjustment in the quality payment context. Separate from risk adjusting to inform up-front global payments,[17] this mitigation of potential penalties is intended to recognize that some providers serve populations at higher-than-average risk for poor outcomes — in other words, relaxing the risk transfer to providers when they serve a disproportionate share of at-risk patients. While risk-adjusted fee-for-service models may simply increase the pot of money to spend on downstream interventions for at-risk populations, new global payment models might create a better incentive for upstream investments.

Strengthening regional health coverage

In addition to creating the right incentives, effective SDOH risk assessment can be used to compare utilization and quality measures across diverse populations, including across public and commercial payers, thus accelerating broad-based health reform efforts. As Vermont continues to move toward a coordinated all-payer system, Blueprint for Health has worked in collaboration with BioMed Central to show that risk adjustment methods allow for the use of standard measures across the state. Moreover, they have worked together to support identification of priorities and opportunities for improving care.[18]

[16] Nagasako, E., et al. (2014). Adding Socioeconomic Data to Hospital Readmissions Calculations May Produce More Useful Results. *Health Affairs*, 33(5), 786-791**.** doi: 10.1377/hlthaff.2013.1148.

[17] One payment per member per year.

[18] Finison, K.,et al. (2017). Risk-adjustment methods for all-payer comparative performance reporting in Vermont. *BMC Health Services Research, 17(58). doi: 10.1186/s12913-017-2010-0*.

Aligning long-standing disparities science with mechanisms (like risk adjustment) that impact resource allocation

Skeptics of risk adjustment for SDOH might note that poverty and structural racism cannot be eliminated by the healthcare sector's budget alone. Of course, risk adjustment in the Medicaid context is not a panacea. However, risk adjustment is a powerful lever in that it can be used to assess risk factors that are tied to both untenable disparities in health outcomes and untenable costs to systems, and make those risk factors more objectively visible to policy makers. Actuarial assessment of population-specific risk factors and the role these factors play in producing health disparities — robustly documented in social epidemiology and disparities science scholarship — could trigger more thorough and objective evaluation of the value of addressing those factors, and ultimately lead to very promising improvements in "treating" costly challenges.

Consider the following:

> Massachusetts has the lowest documented overall infant mortality rate in the U.S., yet the rate for Black infants in the Commonwealth is twice the rate for White infants.[19]

> Massachusetts has the sixth-lowest adult obesity rate in the U.S., yet compared with the obesity rate for White residents of the Commonwealth, Black and Latino residents' rates are over 50% and over 40% higher, respectively.[20]

> Massachusetts has the 16th lowest adult diabetes rate among states, yet the rate among Latino residents' (11.7%) exceeds the national average for Latinos (10.3%).[21]

These troubling statistics beg the question of whether healthcare services must not just be supplemented — but rather transformed — for members who are among disparity populations.

---

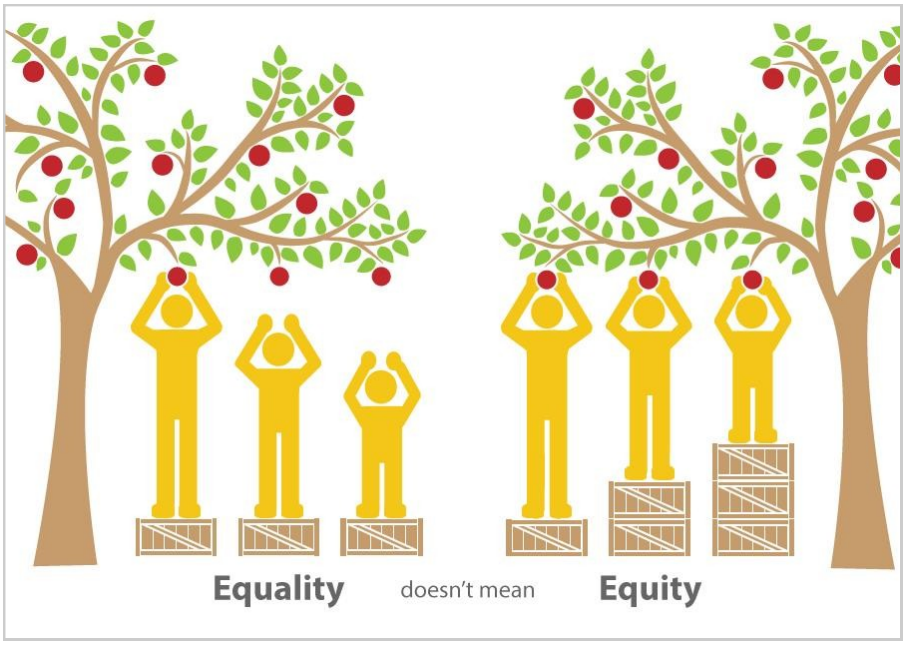
[19] *Infant Mortality Statistics From the 2013 Period Linked Birth/Infant Death Data Set*. National Vital Statistics Reports. Vol. 64, No. 9 (August 6, 2015). Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_09.pdf; Massachusetts Department of Public Health (April 14, 2017). *What Will it Take to Make you Healthy?* [PowerPoint]. Retrieved from http://www.massmed.org/Continuing-Education-and-Events/Conference-Proceeding-Archive/13th-Public-Health-Forum-2017---Monica-Bharel,-MD/

[20] The State of Obesity in Massachusetts. Trust for America's Health, Robert Wood Johnson Foundation. Sep. 2016. Retrieved from http://stateofobesity.org/states/ma/

[21] Trend: Diabetes, Massachusetts, United States. *America's Health Rankings*. United Health Foundation. 2016. Retrieved from http://www.americashealthrankings.org/explore/2016-annual-report/measure/Diabetes/state/MA

As reflected in this apple picking-themed image, experts in risk assessment methods have a critical role to play in determining what sustainable investments can be made to produce positive health outcomes for all.

Figure 3:
Equality Versus Equity[22]



Conclusion

For stakeholders who envision a healthcare system that effectively rewards positive health outcomes — in addition to reduced costs — there are many challenging questions:

- How can we best assign a standard risk measurement to any SDOH?
- How can we predict what SDOH "treatments" (or, better yet, "vaccinations") will cost?
- How many covered lives can benefit from such interventions given known costs?
- How will these investments impact downstream medical costs?
- What new providers need to be integrated into delivery and payment systems to accomplish these interventions?

Risk adjustment models based upon medical claims are widely accepted within the healthcare industry, but it is worth revisiting the data that "matters" for risk adjustment. Risk adjustment models do not currently directly incorporate SDOH, but doing so likely would more accurately reflect the role of social needs in avoidable costs and poor health outcomes, including documented health disparities. Could SDOH-risk adjusted payments and risk assessment methods enable providers to serve more patients and provide appropriate "treatments" that expand what is defined as healthcare? Could this in turn, reduce the total cost of care while improving quality of life and health outcomes? Certainly, more research is needed to answer these questions. Massachusetts can contribute to the body of knowledge that will make SDOH risk adjustment a future industry-accepted standard practice.

[22] http://www.maine.gov/dhhs/mecdc/health-equity/

Acknowledgments

We are especially grateful to **Susan G. Anderson, JD, MPA**, a Fellow partnered with MLPB this year through the **Access to Justice Fellows Program** (www.lawyersclearinghouse.org/access-to-justice-fellows/) for her substantial contributions to the conceptualization, drafting and editing of this brief.

The authors also wish to recognize the thoughtful input supplied by the following colleagues:

- **Barrie Baker, MD, MBA** - Chief Medical Officer, Tufts Health Public Plans
- **Tony Dreyfus, MCP**
- **Paul A. Hattis, MD, JD, MPH** - Sr. Assoc. Dir., MPH Program, Tufts Univ. Medical School
- **Katharine London, MS** - Principal, Center for Health Law and Economics
- **Alan Sager, PhD** - Boston University School of Public Health

Authors

John Snow, Inc. (JSI) is a public health research and consulting organization committed to improving the health of individuals and communities in the United States and worldwide. JSI works in partnership with both public and private entities, including hospitals, governments, and other organizations, to improve quality, access, and equity of health systems. JSI staff have worked with clients in Massachusetts and throughout the nation to develop, implement, and evaluate multi-factoral approaches, including population-focused strategies to address determinants of health and individual-focused behavioral change strategies to improve population health. JSI also has expertise in health research; policy, environmental and systems change; program evaluation; quality assurance and improvement; capacity building; and training. Founded in 1978, JSI is headquartered in Boston and has eight offices across the United States.

JSI • 44 Farnsworth Street • Boston • MA • 02210 • www.jsi.com

MLPB equips healthcare and human services teams with upstream problem-solving strategies that address people's health-related social needs (HRSN). MLPB works with over 25 organizations — including ACOs, hospitals, health centers, and human services programs — in co-designing HRSN care management systems; assessing workforce readiness for HRSN problem-solving; training and coaching care team members in problem-solving best practices; and facilitating safe hand-offs for people with complex HRSN requiring legal representation. MLPB is refining and scaling the evidence-based DULCE model and at the forefront of HRSN intervention research through participation in several randomized controlled trials. Through this cross-sector, interdisciplinary approach, MLPB advances health equity for individuals, families, and communities.

MLPB • 75 Arlington Street • Suite 500 • Boston • MA • 02116 • www.mlpboston.org