

Integrating Social and Medical Care: Could it Worsen Health and Increase Inequity?

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ABSTRACT

As a result of a large and compelling body of evidence documenting the impacts of social determinants, such as income and education, on health outcomes, health care systems are beginning to incorporate social and economic risk data into health care delivery decisions. But there is a risk that some of these efforts could worsen health and widen health inequities. We highlight 3 examples—including recent policy changes in Medicaid, social needs, informed risk prediction models, and advances in precision medicine—where the inclusion of social risk information threatens to reduce care quality or health care access for some groups of patients. A new dialog is needed about both the opportunities and potential consequences of bringing information about patients' social circumstances into a market-based health care system.

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INTRODUCTION

Over the last 2 decades, research has demonstrated repeatedly and consistently that social patterns are translated into biologic risks, and in many cases predict disease better than biology alone.¹⁻⁴ Based on this evidence, a series of high profile reports in the United States and elsewhere have recommended that policy makers pay much closer attention to social determinants of health (SDH), such as income, education, and employment, as a way to improve health and achieve health equity.^{5,6} This sea change in our understanding of health and disease, coupled with a gradual shift from volume to value-based care,⁷⁻¹⁰ has influenced the health care delivery sector, too. More health care systems are actively exploring opportunities to identify and address patients' social and economic needs in clinical settings, including by incorporating more social services staff in care teams and introducing technology tools that include data on social risks and community resources.¹¹⁻¹⁶ This evolution—from recognizing the social patterning of disease to incorporating this recognition into care delivery—is an encouraging example of the (non)bench-to-bedside pathway: the translation of scientific evidence on SDH into changes in clinical practice that might improve health and health equity.

As the links between our understanding of SDH and changes in health care delivery solidify, however, there is a risk that efforts to integrate medical care and social services lose touch with the aim of improving health equity. Other objectives—such as increasing revenues, reducing health care use, and controlling costs—may be given higher priority. To catalyze a more explicit national dialog about the potential consequences of bringing SDH language and initiatives into a market-based health care system, we highlight 3 examples where the intersection of SDH and the health care system threaten to worsen health inequity.

Benefits Eligibility

In January 2018, a CMS letter encouraged states to explore work requirements, vocational training programs, or community service as conditions for Medicaid eligibility.¹⁷ As of June 2018, 11 states have submitted waiv-

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ers (4 of which have been approved) requiring work or vocational training programs for select previously Medicaid-eligible beneficiaries.¹⁸ The rationale provided by CMS points to evidence on the health benefits of work and work promotion.¹⁷ On its face, promoting health by encouraging employment is indeed consistent with findings from large cross-sectional studies on occupation: people who are employed have better health than those who are not.^{19,20}

That said, there are several reasons why these requirements may not actually be health promoting. First, most people on Medicaid are already working or unable to work.²¹ Work requirements are therefore likely to have a small effect on job-seeking behaviors. Instead, the requirements are more likely to reduce access to health care services by adding substantial disincentives to enrollment,²² thereby exacerbating disparities rather than decreasing them. Second, as the British Acheson report²³ highlighted 2 decades ago, health benefits of employment are closely tied to employee prestige, agency, and rewards. Work requirements without labor regulations for low-skilled employees are unlikely to result in significant health benefits. Finally, the health benefits of government assistance itself are less likely to accrue via more restrictive, means-tested programs, and more likely to accrue using entitlement programs.²¹ At the very least, these new programs should be required to examine not only savings from decreased state Medicaid costs, but also the health and utilization costs to those now ineligible for care.

Risk Prediction Modeling

Growing awareness of the impact of SDH also has led to an exploration of how to incorporate social risk factors into disease prediction models.²⁴ Research has centered on whether these data can improve our ability to divine who will get sick, who will respond to treatment, and how many resources each person will consume in the process. A resulting debate relates to whether using social risk data to inform reimbursement and incentives can be done without compromising health care quality.²⁵ The controversy has not been settled, though lessons might be applied from other pay-for-performance models that have successfully combined quality and cost incentives.^{26,27}

Major reports on the topic have noted that data on social risk indicators are relatively sparse.^{28,29} This year, however, marked a potentially major shift in risk modeling opportunities: the commercial market has embraced social data. For-profit data and predictive modeling agencies began marketing purchasable big data on SDH (big data is a term that describes a large volume, velocity, and variety of data that may be used improve decisions and strategic investments),^{30,31}

reporting that they can be used to further improve risk prediction models.^{32,33} These data sets include information about patients' banking history, vehicle ownership, neighborhood, education level, property records, and criminal history—all linked to patient health records. In one advertisement, Carrot Health Insights described:

...it turns out that people who own [a Cutlass Ciera] tend to have poor health. Compared with owners of other vehicles, Cutlass Ciera owners have the ninth-worst rate of high hospital Emergency Department (ED) utilization (24.8%), the third-worst rate of diabetes (22%)... Vehicle ownership is an example of a Social Determinant of Health.³⁴

The introduction of big social data into medical care is an important marker for translational science. It illustrates growing awareness that social risk factors drive health outcomes and inequities, and that these data might be used to help target prevention and intervention initiatives. It also means that big social data can be applied to health care systems—including payers'—decisions about procedures, medications, or enrollment eligibility.³⁵ Is there cause for concern?

Maybe. There are numerous examples in medicine where bias has contributed to care disparities, often in the form of care exclusions.³⁶⁻³⁹ One notable example is from the 19th century, when most life insurance companies refused to insure African American people because of higher mortality rates than white people.⁴⁰ It is not difficult to see how similar exclusions could take shape with access to more nuanced data today. Take the example of bundled payments for hip replacements. If patients who own Cutlass Cieras are more likely to be readmitted post-operatively, potential savings from the bundle may be harder to achieve. A health care system might choose to provide patients with Cutlass Cieras more targeted pre- or post-operative care to help reduce the likelihood of readmission. Alternatively, they might discourage the patient from undergoing a hip replacement surgery at all, or refer them to delivery sites not enrolled in a bundled payment program. This kind of exclusion is unacceptable by race, religion, or sex. But is it unacceptable by vehicle ownership? What if vehicle ownership is associated with race? If the potential for bias based on social data goes unchecked, the result could be an inequitable deescalation of care for specific groups of patients.

Advances in Precision Medicine

A third example stems from advances in biotechnology and genetics science that have contributed to a wave of enthusiasm around precision medicine, which has centered on better applying genomic data to identify patients that will respond to specific treatments.

Precision medicine also has been influenced by our growing awareness of SDH.⁴¹ It is well established that social deprivation, like poverty, is associated with developmental, neuroendocrine, and immunologic perturbances.^{3,42} We can now pinpoint more specifically how social deprivation changes gene expression, which shifts biologic susceptibility to both mental and physical illness. The list of epigenetic changes linking social deprivation and biology is long, and includes changes to telomere length,⁴³ the stress reactivity pathway,^{44,45} immune system protein expression,⁴⁶ and child and adult hippocampal, cingulate cortex, and caudate volume.⁴⁷⁻⁴⁹

An outstanding question is what will be done with our awareness that environments—including prenatal, childhood, and adult—influence biology. Some advocates suggest this newfound knowledge will help us target prevention and treatment efforts for individuals. As one example, the ability to identify biologic changes in the poverty-to-stress-to-cardiomyopathy pathway may present new opportunities for pharmaceutical interventions that block those cardiac effects, which could in turn help us reduce heart disease disparities. Using these data to learn how to block the cascade of health consequences resulting from poverty is important—it may be the future of medicine.

As our understanding of the connections between biology and SDH develops, however, one unintended consequence could be increased focus on individualized medical interventions rather than societal ones. Even when SDH are incorporated into genomics, they are unlikely to lead to sweeping changes in population health insofar as the focus is limited to individual patients.⁵⁰ Medicalizing⁵¹ the stress pathway has the potential to lead to more downstream interventions to mitigate the impact of poverty rather than upstream ones that seek to eliminate it. If we had a pill to improve the health consequences of living in unhealthy living environments, would health care leaders and policy makers care less about changing those environments? One threat of introducing social biomarkers is sacrificing a discussion about how health inequity is part of a larger frame of social inequity.

CONCLUSION

The links between social circumstances and health have become impossible to ignore. Health care systems and professional medical organizations—including family medicine⁵²—across the United States are increasingly enthusiastic about new interventions to address patients' social and economic needs.⁵³ Cross-sector partnerships are emerging between health care and social service organizations. And a wave of health

policy reforms, both at state and federal levels, seek to better incorporate knowledge about SDH into health care payment and delivery. To help guide these initiatives, there is a need for an intentional, national dialog about the potential unintended consequences⁵⁴ of bringing knowledge and data related to SDH into a market-based health care system, and what can be done to prevent them.

For researchers, a first step is ensuring that evaluations of health care initiatives in this area explicitly assess the impact of interventions on equity, measuring both the gap and gradient in health outcomes between patient groups and how these change over time. Existing data on the effectiveness of interventions to address social needs in clinical settings are limited¹¹—and we know even less about their impact on health and health care disparities.¹¹ Policy makers also will need to prioritize health equity improvements as a core measure of success for health care payment and delivery system reforms—as has been done, for example, by Medicaid leaders in Oregon.⁵⁵ Doing so is particularly important given that existing payment reforms can penalize providers serving more disadvantaged patient populations.⁵⁶ For regulators, the challenge will be ensuring that data on patients' social risk factors are not used (intentionally or unintentionally) in ways that lead to a lower standard of care for some patient groups. Given recent efforts to reduce consumer protections introduced under the Affordable Care Act, there is a legitimate concern that health plans could even use social data to discriminate against socially disadvantaged patients through pricing and coverage decisions.⁵⁷ Though the historic push for SDH-related interventions in health care settings has been closely connected to an interest in improving health and decreasing health inequities, a more critical lens now needs to be applied when examining how current activities affect health and equity.

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