CHARTING NEW TERRAIN IN SOCIAL HEALTH

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Somewhere in America, a boy is born. Because his parents don't make much money, Medicaid pays for his birth and for visits to a pediatrician. When he's diagnosed with asthma at age five, Medicaid pays for his inhaler, but not for the cleaning service that would remove the aggravating mold from the house where he lives. Every time the spores overwhelm his weak lungs, Medicaid pays for his trip to the emergency room. By the time he's 18, he has dropped out of school because of too many missed days. Inactivity due to the asthma leaves him overweight. When he develops diabetes at age 25, Medicaid pays for his insulin, too, but not for the dietary education that would help him control his blood sugar, or for the training that might help him find a job. By the time he hits 50, Medicaid has funded the amputation of three toes and treatment of extensive ulcers on his lower extremities. Then his kidneys begin to fail, and despite dialysis (also paid by Medicaid), his health steeply declines. By the time he dies at just 60 years old, Medicaid has invested more than half a million dollars in clinical care. For this patient, that investment kept him alive through acute illness but never truly stabilized or improved his health. Multiply that number by the thousands of Americans for whom this story plays out, and we see how the United States spends trillions of dollars every year on health care while millions of our citizens see their futures stripped away by poor health.

Investing in clinical care alone is bankrupting our country and leaving Americans with poorer health than our peer nations. Yet we continue to concentrate our efforts within the narrow space of clinical needs because that approach is simpler and more direct than the poorly defined, unbounded, and complex space of social needs. We can map human anatomy, and even the human genome. But we have not yet been able to map the multitude of interacting contextual factors that shape health over the human lifespan. To solve the dual disaster of unsustainable health spending and endemic poor health in America, the health care sector must be willing to step outside the controlled space of the clinic and into the uncharted territories of the social contexts that create, support, or destroy health. We must apply the resources and innovative spirit present in the health care sector to develop systems capable of sensing, analyzing, and addressing complex social contexts that generate poor health. To be sustainable, these care models will require value-oriented financial contracts that incentivize collaboration between the health care and social sectors.

In communities across the country, local entrepreneurs with one hand in each sector are already showing us how building these integrative care models can create and support health. In Dallas, Ruben Amarasingham and Anand Shah at Parkland Health and Hospital System have led a multidisciplinary team to create software capable of uniting data from clinical health records and community-based social service providers, called Pieces. This innovative combination of data sources enables proactive identification of individuals at risk of a health crisis. For example, a patient who shows up in the emergency room week after week in urgent need of thyroid medication might also be living at the Salvation Army homeless shelter across the street. If the shelter and the hospital are connected via Pieces, the emergency room physician can, with the click of a button, notify Salvation Army staff about the dollar-a-day medication that keeps the patient healthy. When the charity is able to provide the medication, his health stabilizes. He stops coming to the emergency room and can focus on finding more permanent housing. The key is to put all the "pieces" of the puzzle—clinical and social—together in one place to achieve a better health outcome.

Another example is City Health Works, an organization in New York City that matches patients with high health care utilization to health coaches. Health coaches are selected for their ability to listen empathetically. They are trained in motivational interviewing to help patients understand how their health conditions intersect with their personal goals, such as attending a grandchild's graduation or maintaining their independence. By building a trusting relationship with patients, the health coach serves as a bridge between the community and the clinic. An important part of the role is knowing when to "escalate"—or communicate significant changes or needs in a patient's life to the clinical care team, helping the patient reach the appropriate point of care. This essential exchange of information is enabled by mobile communications technologies that allow health coaches to record

and share key data points such as changes in patient health status, or challenges and successes in compliance with care team instructions.

New financial partnerships must underpin collaborations between the health care and social sectors. For both Pieces and City Health Works, the final barrier to achieving impact at scale is achieving sustainable financing. Both organizations relied on short-term philanthropic funds to stand up operations and provide services to an initial set of clients. Having demonstrated positive impacts on health outcomes, both now seek to develop new financing models based on the value they provide to health and social sector clients. Capturing the value created by improved health outcomes—being able to assign it a dollar amount and demonstrate to whom it accrues—is perhaps the single largest barrier to transformative innovations bridging the gap between health and social needs.

A significant portion of that challenge derives from a mismatch in the organizational tendencies of the health and social sectors. Health systems represent massive accumulations of capital, which must now be infused into the social sector. But from the perspective of a health system leader, the social sector is something of a black box: a diffuse network of organizations hugely diverse in terms of size, mission, and capabilities. To create sustainable partnerships, both health systems and social sector organizations will need to be educated in the workings of the other sector and be given guidance to become reliable partners in value-driven arrangements. The forcing function of these new partnerships will likely serve to make each partner more efficient and effective, sharpening the focus on delivery of services that directly support health and wellbeing.

One strength of this approach is that it makes health equity not only attainable but essential. It focuses our efforts on the human, rather than on a false delineation between clinical and "other" factors. This approach also encodes the absolute importance of matching every individual with the resources best able to meet his or her needs, whether those needs arise from geography, socioeconomic circumstances, racial or cultural factors, or gender.

The orientation toward value can also drive the health care and social sectors toward greater efficiency, as we redeploy limited resources into interventions that truly support health. Ultimately, by coordinating health care and social sector services to meet patient needs, we can improve health while meeting the core business needs of a health care system increasingly held financially responsible for the health outcomes of the patients it serves.

Although pioneers in this area are already demonstrating its promise, we still have much to learn about how social and environmental factors interact over time to create health outcomes at the individual and community or population levels. Although the scientific literature currently reflects concrete links between a list of discrete factors and specific health outcomes—for example, mold in housing and uncontrolled asthma—we are not yet able to paint a functional picture of the full terrain of social health. Charting this terrain requires that we apply new advances in data analytics to help us understand how the interplay of a seemingly infinite number of factors over the lifetimes of not only individuals, but communities, create patterns of health and disease, opportunity and limitation. Exploration of this new frontier can be launched only from bright spots of work, like those in Dallas and New York.

Despite its underlying promise, the integration of health and social care toward a common goal of healthier lives faces great challenges from the status quo. Federal and state regulatory barriers function to sequester health care dollars in clinical care, preventing the funds allocated for America's safety-net insurance systems of Medicare and Medicaid from fully collaborating with the social systems their beneficiaries commonly need. The federal and state governments have opportunities to remove those barriers—to advance the health of our nation, they must. Even when those walls do fall, we will need motivated innovators across technical and social disciplines to invent and implement new people-centered information and analytics technologies capable of fully supporting the integrated system of health and social care we imagine. Ultimately, this transformation will require a massive cultural shift within both medicine and the social service sector, away from old thinking that segregated clinical and social needs and toward a new understanding of the human whole.

As our nation's health care sector works its way through the ongoing shift toward value-based care, we already see health systems across the country expressing hunger for opportunities to address a fuller range of their

patients' needs through strategic partnership with social service providers. Fully realizing this new approach requires that innovators across sectors come together to generate new care models, technologies, and financial arrangements. Old barriers persist, and the path ahead remains uncertain. But in working to get this transformation right, we have the opportunity to revolutionize the efficiency and efficacy of our health care and social sectors—and, ultimately, the health of our nation.

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