

## The JAMA Forum

# Population Health Management: Saving Lives and Saving Money?

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Over the last decade, the idea of population health management (PHM) has become increasingly embraced among US health care leaders and policy makers. By encouraging multisectoral collaboration, coordination with community services, and nonclinical interventions, many policy makers believe that we can both save money and save lives.

This belief makes sense: we know that the United States spends much more than other countries on health care but achieves worse population health outcomes. Experts have concluded that we need to shift our focus upstream, preventing diseases before they occur. Beyond standard notions of prevention (with such measures as vaccinations and early screening), PHM focuses on social determinants of health, encouraging healthier lifestyles and chronic disease management.

The notion is that if PHM is successful, it should lead to a population that is healthier, reducing health care utilization and saving money. This idea has become so popular that an analysis of trends from Google shows searches for the term *population health management* rising nearly 4-fold from 2009 to 2015 alone.

## No Common Definition

What exactly is *population health management*? Despite the term's widespread use,

there is no single, clear, agreed-upon definition. In 2015, the leadership of the Centers for Medicare & Medicaid Services (CMS) described PHM as "both a clinical perspective focused on delivering care to groups enrolled in a health system and a broader perspective that focuses on the health of all people in a given geographic area and emphasizes multi-sector approaches and incorporation of nonclinical interventions to address social determinants of health."

The term used in its clinical sense typically refers to a set of activities that are seen as very much within the purview of the health care delivery system, such as ensuring that all patients with diabetes who regularly receive care in that system have been adequately screened for retinopathy. The broader vision described by the definition suggests an approach that is more focused on social services and may include ensuring adequate housing and food.

The approaches that health care systems are taking are indeed varied. A survey of health care executives and clinicians showed that most viewed investment in behavioral health, use of interdisciplinary teams, and creating community partnerships as the most important clinical practice changes for population health. Many academic medical centers have built

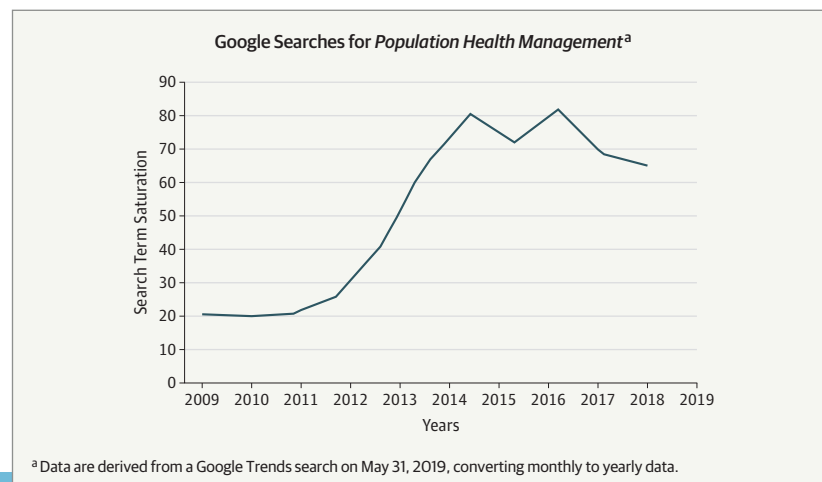
population health initiatives to enable these approaches.

One particularly holistic approach to PHM is happening in the United Kingdom. There, the Greater Manchester region has pooled its funds across a set of social and health care services to redefine investments that will maximize health, even if those investments leave less money for the health care sector. Whether approaches like this will work or not is unclear (it's too early to tell in Manchester), but lessons from this and similar efforts will surely hold lessons for all of us.

## The Link to Payment

One area of common misconception is that PHM is somehow intrinsically linked to risk-based contracting, such as capitation. Payment of services influences the kind of care that is delivered, of course, but some have assumed that PHM can only be delivered in the context of a payment system where the clinician practice, hospital, or health care system is responsible for the full costs of clinical care. This is largely incorrect. Although risk-based contracting can be a part of a PHM strategy, there is no evidence that putting financial risk on providers leads to better health outcomes for patients. It is possible to promote PHM using other payment models, even the much-reviled fee-for-service.

One could easily imagine a payer choosing to pay, even generously, for a set of services that promote population health. For example, clinicians and health care systems could be rewarded for ensuring that patients at risk of chronic disease get their full set of preventive services, or payers could encourage a focus on the social determinants of health by awarding a bonus for each eligible patient whom providers are able to connect to housing. The CMS, by allowing for additional payments for care coordination, has signaled that it is willing to use the fee-for-service architecture to promote PHM activities.



### Evidence of Effectiveness

Is there evidence that PHM interventions are working? There have been surprisingly few carefully done assessments of the impact of PHM interventions on health outcomes. The evidence that does exist is somewhat mixed but leans toward these interventions being beneficial.

One [systematic review](#) found that more studies show positive health effects than not, although the size of these benefits varies widely, and one would worry about publication bias. Research on [Housing First](#) interventions, where housing is provided without prerequisites of sobriety in patients with substance use disorders, shows some improvement in HIV-related and alcohol control measures. Other housing programs have also found benefits for chronic conditions. An [analysis](#) of the Comprehensive Primary Care Initiative, a new payment and delivery model that aimed to, in part, increase access, prevention, and coordination, found small benefits on health care quality. Some types of interventions seem to have greater health impacts when they focus primarily on specific vulnerable groups.

Although the literature leans toward health benefits of PHM interventions, there is little to no evidence that PHM actually

reduces total spending. Although some interventions may be cost-effective, they are [almost never cost-saving](#). For example, a [study](#) of a diabetes prevention program found that the program was effective in reducing the incidence of diabetes but added about \$143 000 in medical costs per healthy year added. Additionally, [analyses](#) of Housing First programs show that while they do often lead to decreased health expenditure, the savings do not offset the costs of the program. The [Comprehensive Primary Care Initiative](#) mentioned above failed to reduce Medicare expenditures enough to offset the cost of the care management fees. Thus, although PHM is often touted as a solution to our high health care spending, the link between investment in social determinants and cost savings is weak.

Does this mean that pursuit of PHM isn't useful? Not at all. The notion of taking a population-based approach to chronic disease management just makes sense. For many conditions, waiting for a physician or hospital visit to manage chronic disease is unlikely to be as useful as proactively engaging patients to ensure they are getting the care they need. Focusing on social determinants and taking a multisectoral collaborative approach makes sense as

well. Many of the factors that influence health are not areas where clinicians necessarily have expertise, and engaging others, from social workers to housing experts, is critically important.

The challenge is that many advocates of PHM have suggested that it is a solution to our high health care expenditure, with little or no supporting evidence. As health care organizations and policy makers continue to invest in PHM, they should do it for the health benefits, not because it will save money. Beyond a few rare cases, it almost never does. ■

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### Bench to Bedside

## New Target for Pancreatic Cancer Treatment Shows Potential

Tracy Hampton, PhD

**P**ancreatic cancer's poor prognosis can be attributed in part to its treatment resistance due to the dense stroma that surrounds and shields tumor cells. New [research](#) in *Nature* identifies a protein critical for stromal and pancreatic cancer cell communication that when blocked slowed cancer progression and improved treatment efficacy in mouse models of pancreatic cancer.

Previous [work](#) had shown that communication between pancreatic stellate cells—which are typically dormant in normal tissue—and pancreatic cancer cells enhances tumor progression and sustains stellate cell activation, causing the cells to secrete proteins that form a shell around the tumor.

"A massive fibrotic response generating a very dense stroma, medically termed *desmoplasia*, is pancreatic cancer's prominent feature accounting for many aspects of its malignancy," said senior author Tony Hunter, PhD, of the Salk Institute for Biological Studies in La Jolla, California. "Around 8 years ago when we started to conceive the study, the pancreatic stellate cell was emerging as a rising star in the field, and a reciprocal interaction between stellate cells and cancer cells to form a vicious cycle was proposed, but little was known about the detailed mechanisms. We thought the time was ripe to comprehensively investigate the molecular mechanisms underlying the interaction."

By conducting a systematic investigation of secreted proteins from stellate cells that interact with pancreatic cancer cells, lead author Yu Shi, PhD, and colleagues uncovered an important role for a signaling protein called leukemia inhibitory factor (LIF). LIF is a cytokine involved in embryonic development and was [previously](#) identified as a potential anticancer target in glioblastoma based on its role in cancer stem cell biology.

Shi and colleagues found both pharmacological LIF blockade and genetic *Lifr* gene deletion slowed tumor progression and improved the efficacy of chemotherapy, leading to prolonged survival in mouse models of pancreatic cancer.

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