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Exploring the Promise of Population Health Management Programs to Improve Health

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The concept of population health management (PHM)—programs targeted to a defined population that use a variety of individual, organizational, and societal interventions to improve health outcomes—is increasingly being looked on by employers, health plans, and others as a promising practice for helping to improve health outcomes and "bend" the health care cost curve. Improving population health by attacking "the upstream causes of so much of our ill health," such as poor nutrition, physical inactivity, and substance abuse, is also a core goal of the triple aim for improving health and health care in this nation, articulated by Donald Berwick, administrator of the Centers for Medicare & Medicaid Services. Despite the concept's growing prominence and interest, there is little understanding of the prevalence of and evidence base behind PHM programs. This issue brief looks at the state of PHM, highlights the evidence related to PHM programs, examines desirable features, and explores the potential future of PHM in the United States.

The Concept of Population Health Management

PHM programs are a set of interventions designed to maintain and improve people's health across the full continuum of care—from low-risk, healthy individuals to high-risk individuals with one or more chronic conditions. PHM has elements in common with disease management, preventive services, and health promotion, but differs in both the scope of services and definition of target populations. PHM programs typically are developed to address the needs of insured population subgroups for which an employer, health plan, or other purchaser bears responsibility. Populations targeted by PHM are often delineated by health benefit source rather than geography. However, some proponents argue that because improving population health is a national goal, a target population can also be identified broadly, as in "all citizens of the United States," as well as narrowly, as in "all people who call Dr. Jones their doctor" (Berwick et al. 2008).

Figure 1 shows a conceptual framework for PHM adopted by the Care Continuum Alliance (CCA), an industry trade group of stakeholders that provides services aimed at improving population health. Although not the only such model, it conveys many concepts shared broadly by those involved in PHM.

The CCA framework embeds two key points:

1. Population health is person-centered; organizational interventions are tailored to the individual and community resources are targeted to individuals. Individuals are evaluated to identify their place on a continuum of health risks, from no or low risk to high risk. Specific interventions, such as health promotion and wellness, risk management, care coordination/advocacy, and disease/case management, are targeted to people based on where they fall on the continuum of risk/care.

2. Operational measures and program outcomes help improve the interventions and refine the "assessment" portion of the program that places individuals on the continuum of risk/care and determines what interventions they are eligible to receive.

To ensure that a PHM program is tailored to the needs of those it is designed to help, analysis of key demographic and health data on the target population is important.

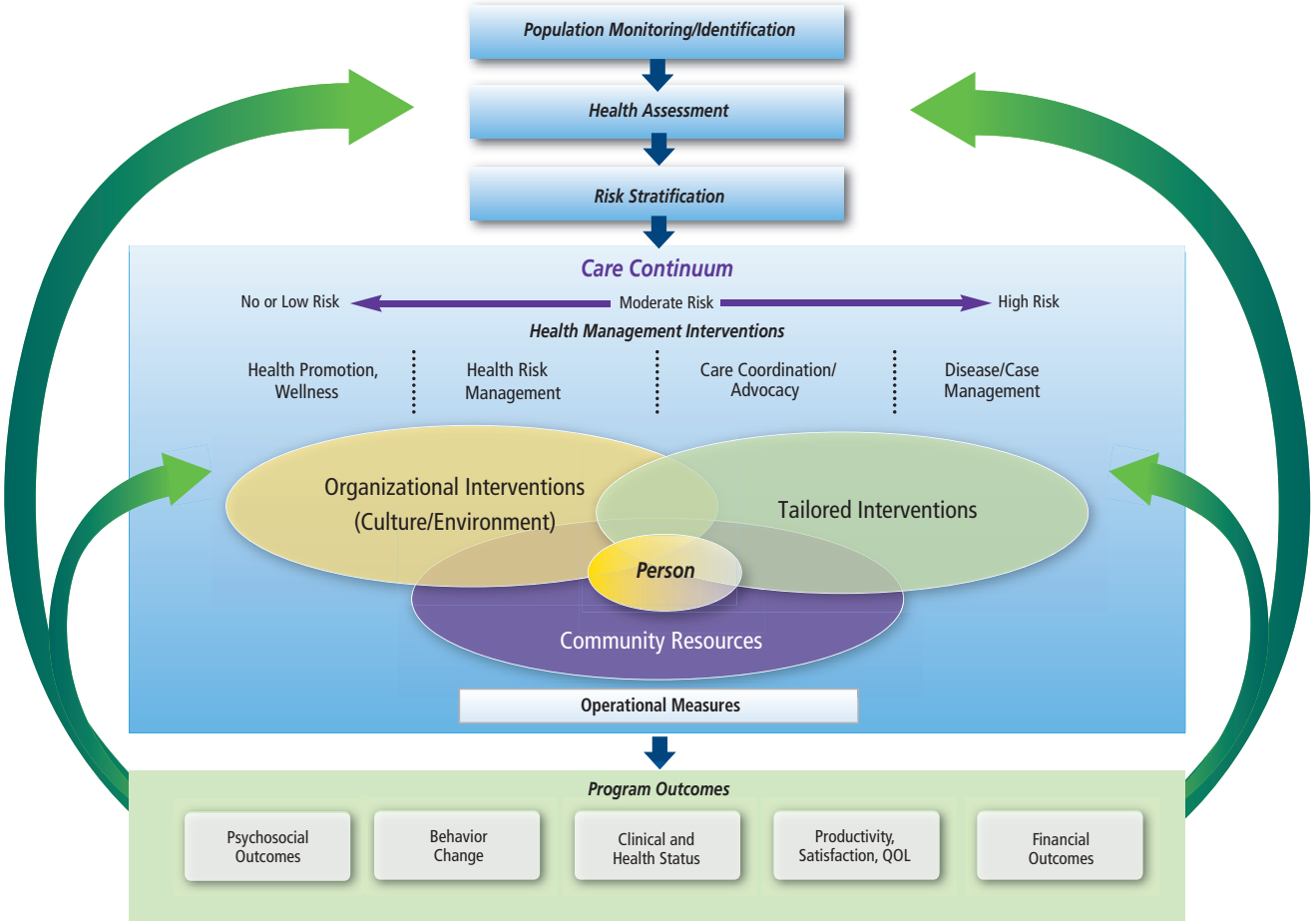
Prevalence of Programs

The Mathematica team conducted an environmental scan of promising PHM practices, finding that these programs have increased in popularity in the past few years. We also found that programs combine tools and modalities to engage and influence individuals to maintain or improve their health.[1] The most recent market survey of purchasers by CCA (conducted in 2009) found that 68 percent of those surveyed (mostly large employers) purchased population health improvement services and 84 percent expected to purchase more in the future (Kelly and Neftzger 2010).

State of the Evidence

Despite the popularity of PHM, the field is still in its infancy and it is not clear whether PHM programs can deliver better health outcomes. Researchers have not yet identified a set of effective methods for improving the health of whole populations, short of carefully designed, community-wide public

Figure 1.
Conceptual PHM Framework



Source: *Outcomes Guidelines Report Volume 5*. (2010). Washington, DC: Care Continuum Alliance. Reprinted with permission.
QOL = quality of life.

health campaigns. This suggests that when large organizations, or a nation, choose to pursue a PHM program, strong monitoring and evaluation will be critical to guide its evolution over time to maximize results.

Many of the individual elements of PHM programs have been separately implemented and studied, as shown in Table 1, but more has to be done to determine how these elements work together. The challenge that PHM brings is to fit these individual pieces together into a patient-centered, evidence-based whole that is more effective than individual elements have proved to date.

There are also broader, related areas in which research is being applied. For example, the Task Force on Community Preventive Services recently reviewed literature on worksite health promotion, defined broadly as using a health risk assessment (HRA) with feedback and follow-up (which varied widely). Health promotion—through the worksite or other venues—is a key part of PHM, as noted previously. The task force concluded that these interventions generally were effective in influencing tobacco and alcohol use, seatbelt nonuse, dietary fat intake, blood pressure, cholesterol, summary health risk estimates, worker absenteeism, and health care service use (Soler et al. 2010). However, most of the studies were not well structured and most of the participants are likely to be the "worried well," or those who are motivated to change their behavior, reducing confidence in this conclusion. Comprehensive research is also being conducted in the fields of care coordination and disease management. Within all these areas it will be important to look at the quality of the research and to better understand how this research applies to PHM.

Evidence suggests that not all PHM programs are equal: a recent survey shows that many large employers—the main customers of PHM programs—do not think their vendors are very effective, whereas a smaller portion do find them effective. For example, 66 percent responded that their vendors are not at all effective or only slightly effective in influencing members to make healthy lifestyle decisions; 51 percent gave the same negative response regarding vendors' effectiveness at encouraging members to comply with preventive care guidelines (Kelley and Neftzger 2010). The difficulty of effectively changing

Table 1.

PHM PROGRAM COMPONENTS

Program Component	Advantages	Disadvantages
Means of Targeting Interventions to Population's Needs		
Health risk appraisals (HRAs)	HRAs have demonstrated health benefits when combined with programs to address identified needs (Shekelle et al. 2003; Soler et al. 2010)	Percentage of target population that completes HRAs is typically low, leading to underestimation of problems (National Business Coalition on Health [NBCH] and eValue8 Health Care 2010)
Claims/lab/electronic health record (EHR) data used to identify appropriate level of intervention	These sources provide additional information, compared with using HRAs alone	There is a time lag for claims data; a variety of methods are used, but the best approach is unknown
Data on racial, cultural, language, and socioeconomic factors used to indicate best ways to reach subpopulations	Using these data is considered a promising practice by NBCH	The best approach is not known; this method is not widely used at present
Policy and Program Design Tools		
Coverage and cost-sharing policy/value-based insurance design	Cost-sharing for medications is associated with rates of treatment and adherence (Goldman et al. 2007); logically, coverage should support lifestyle changes (e.g., tobacco and alcohol cessation) as such changes are usually a goal of the overall program	Rewarding the use of high-value services is increasingly popular, but the research base for effectiveness is weak except for medication cost-sharing (Choudhry et al. 2010)
Opt-out program design	More of the relevant members are included in the program	Might not lessen the challenge of engaging members meaningfully
Incentives		
Incentives to individuals for participation in PHM program	"Incentives for participants" was one of the top-ranked changes that program operators believed could improve results, according to a recent survey (Disease Management Association of America [DMAA] 2010) Incentives, including cash, gift cards, and merchandise, are common	The research base is weak; offering incentives is worth it only if the program is successful for those who were enticed to participate
Provider incentives	Aligning incentives with goals of better health care is widely accepted as helpful; the most promising types of incentives appear to be (1) use of a shared savings model, when possible (with larger groups); (2) additional payment for desired care coordination or medical home services; and (3) incentives to support EHR adoption and use (as a foundation for quality improvement and PHM)	Annual, bonus-type pay-for-performance programs have not been shown to be very effective (Christianson et al. 2007; Rosenthal et al. 2007)
Provider Support		
Feedback to providers on gaps in the care of specific patients	Many primary care providers will follow up on patients identified by health plans as potentially needing services (such as chronically ill patients who need routine monitoring tests) (Felt-Lisk et al. 2009)	The cost of producing and distributing this information could be significant, particularly at the start of such an effort when data might not be as clean as anticipated. The overall effectiveness is not proven; the cost benefit is not established
Consumer Engagement and Interventions		
Heavy overall program emphasis on this component	Large majority of program operators cite consumer engagement and interventions as a critical program component (DMAA 2010)	Costs will increase with heavy emphasis on this component; the cost benefit is not established
Common program components that are included in NCQA's Wellness and Health Promotion accreditation program standards: • Reminders to patients for preventive services • Educational resources and self-management tools • Linking enrollees to other resources • Health coaching	Inclusion of these program components in NCQA standards reflects a general consensus that programs should include them	The research base is generally weak
Social networking	A recent study of veterans showed strong effectiveness of monthly telephone calls between matched diabetic patients (Heisler et al. 2010) Blue Cross Blue Shield Association has begun a major new program (Blue365 Online Community) and was a 2010 finalist in NBCH's Health Innovation awards	A 2004 literature review did not show evidence that online peer support is effective (Eysenbach et al. 2004)

patients' behavior has also been evident from the lack of success of two population-based disease management programs within Medicare—the Medicare Health Support program, which ran from 2005 to 2008, and the LifeMasters Supported SelfCare Demonstration (Cromwell et al. 2008; Esposito et al. 2008).

Current Thinking About Desirable Program Features

To identify potentially desirable features of a PHM program, recognizing that a set of desirable features has not been proven, we looked at promising practices (identified by researchers through a systematic process), new accreditation standards, and research on typical program components (Goetzel et al. 2007; NCQA 2011).[2] Desirable features may include the following:

1. Integrating the PHM program into benefit design and financial incentives, including compensation practices when the sponsoring organization is also an employer
2. Using a combination of initiatives and tools that address the full continuum of care
3. Providing incentives for eligible individuals to participate based on a clear understanding of what they find meaningful
4. Tailoring programs to individual needs—for example, allowing participants to obtain services through multiple modalities, such as the internet, telephone, and printed materials
5. Fulfilling NCQA's Wellness and Health Promotion accreditation standards, which represent recent consensus among experts on the components of a strong program

In keeping with these promising practices, PHM programs often include the components listed in Table 1, which describes what we know and do not yet know about the advantages and disadvantages of each of these elements of PHM programs.

The Future of PHM Programs

If improving population health continues to be a national goal, will it occur through organized PHM programs? If so, how many PHM programs will there be and who will run them? Many large employers and public and private payers responsible for large populations have already established programs, but there is no obvious mechanism for involving the many individuals employed by smaller companies and organizations. Because of nascent evidence and the lack of a proven model, it is likely that the short-term future of PHM will involve multiple models that coexist and reach a relatively small percentage of the U.S. population. Good first steps should include defining and coordinating implementation of these competing PHM models with strong research to understand their relative effects and whether they can improve health and perhaps even reduce health care costs over time. If PHM models are rigorously monitored and evaluated over the longer term, the most beneficial models could be spread more comprehensively and evaluated further. PHM coordination and research could occur within the Medicare or Medicaid programs, for example, through the Center for Medicare & Medicaid Innovation. Furthermore, government and/or foundation sponsorship of partnerships between research organizations and large employers could support high-quality evaluations alongside PHM interventions. Careful attention will have to be paid to tracking these programs' ability to influence interim markers of health risk, because (1) any success through prevention of chronic disease would be a powerful and crucial outcome, and (2) such success would be unlikely to be measured directly and related cost savings might take many years to accrue.

Presently it is unclear whether any systematic infrastructure—in the form of financed, rigorous research to improve our understanding of which models work—is being put into place.

It is easy to think that PHM could provide benefits in improving the nation's health and reducing health care expenses compared with a health care environment without PHM. However, without defined and coordinated research to better understand if and how these programs can work, the promise of PHM seems unlikely to be realized.

Endnotes

[1] The environmental scan consisted of contacting key organizations and individuals who provided and pointed us to key published and gray literature. In particular, we thank the staff of the National Committee for Quality Assurance (NCQA), America's Health Insurance Plans, and CCA for their assistance. We supplemented this scan with targeted online research, focusing on literature reviews already completed by other authors.

[2] The criteria for accreditation can be viewed by opening the report card for any accredited organization and focusing on the format of the results rather than the results themselves (http://reportcard.ncqa.org/WHP/External/).

References

For the full list of references, go to www.mathematica-mpr.com/health/phm_brief_ref_7_11.asp.

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