Population Health Management:

Bending the curve with collaboration, access, and interoperability

health business unit

wipro | HfS Research
The Services Research Company™

healthcare informatics
CUSTOM MEDIA

Real world health problems - Hypertension. Obesity. Diabetes. Asthma.

Quick facts and overview

- The Centers for Medicare and Medicaid Services (CMS) estimate that more than half of individuals who have been diagnosed with hypertension, obesity, diabetes, or asthma have at least five additional co-morbid medical conditions.

- These patients, despite only making up about 14% of all Medicare and Medicaid beneficiaries, were responsible for almost half of total spending amounting to over US$200 billion in 2015.

- Research has shown that privately insured patients with chronic long-term conditions spent 13 times more on outpatient services, 11 times more on professional services, and 17 times more on medications than acute care patients. And they were much more likely to visit the emergency room for an issue that was most likely preventable[1].

- While this is not a new trend, there is increasing evidence of the positive impact of population health management on health, medical, administrative, and financial outcomes[2].

Per capita Medicare spending among Medicare fee-for-service beneficiaries: 2015
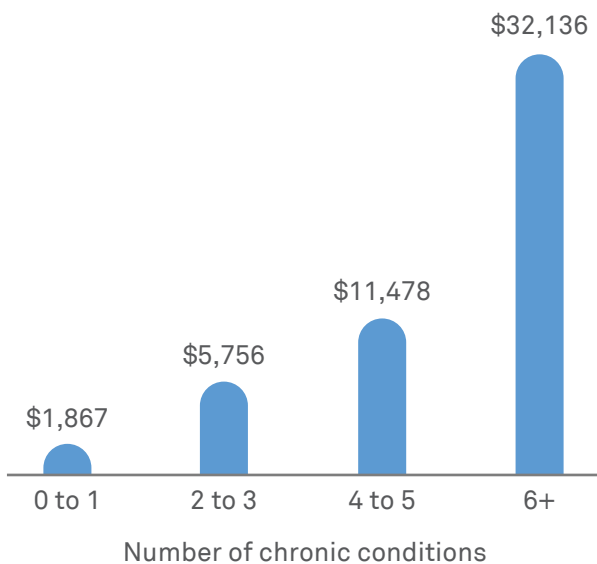
Distribution of Medicare fee-for-service beneficiaries and Medicare spending by number of chronic conditions: 2015

Source : https://healthitanalytics.com/news/chronic-disease-management-costs-17-times-more-than-average
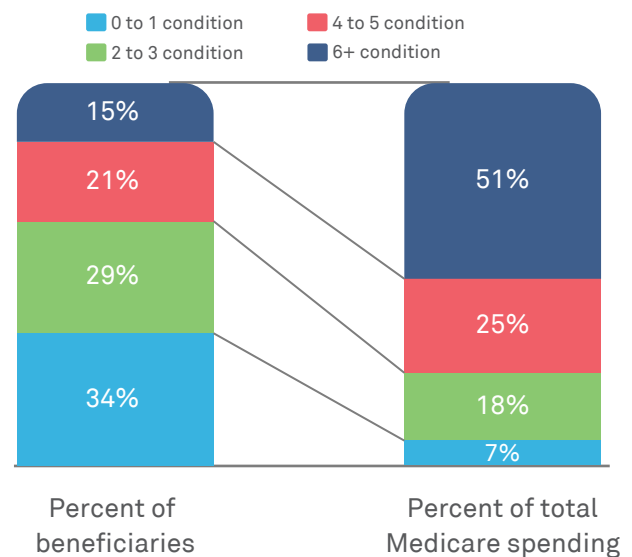
Population health: the art and science of bringing together communities, organizations, and information to prevent diseases and improve lives

The common way to describe "population health" is in terms of what our society wants to achieve—better health and a better care experience at a lower cost per person. The art and science is to extrapolate one person's experience of care to an entire population of patients in a reliable and consistent manner. It takes a community – collaboration – to make it happen. According to the Population Health Alliance, population health initiatives improve health status and holistic person well-being, reduce avoidable healthcare costs, and drive healthcare innovations that produce measurable economic value. Note the point about "holistic person" – this is about considering the social, environmental, cultural, and economic factors[3]

[1] https://healthitanalytics.com/news/chronic-disease-management-costs-17-times-more-than-average

[2] https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/Downloads/2012Chartbook.pdf
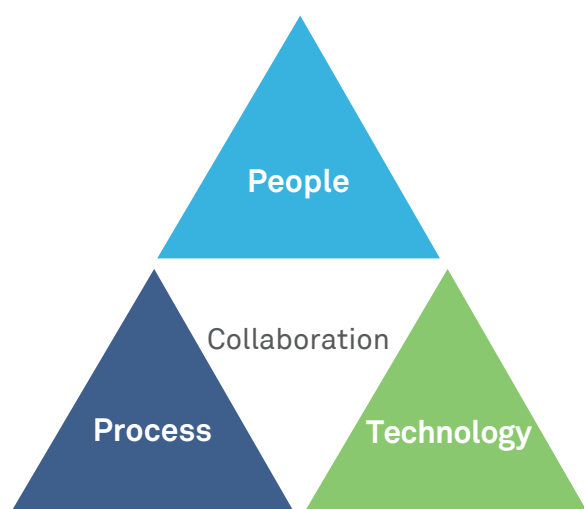
[3] http://www.populationhealthalliance.org/pha/the-principles-of-population-health-improvement.html

that impact a person's health and well-being, not just the medical ones.

Population health is hardly a new concept – healthcare entities have been trying to move in this direction for at least a decade. But the

imperative to change – and the availability of technological resources to enable it – has never been greater.

The three pillars that aid access and interoperability

People
- Appropriate clinical and non-clinical staff for care management and coordination
- Strong buy-in from executive and physician leadership
- Patients, community, family

Process
- Evidence-based care plans
- Coordination at the individual and population level
- Workflow that meets the needs of the different constituents

Technology
- Interoperability across multiple systems and settings
- Integrate data from disparate sources from within and outside the organisation
- Industry standard PHM platform

People

Collaboration

Process   Technology

Requirements for Population Health Management(PHM) success

Source: Wipro

Reimagining population health by putting the healthcare consumer first

Collaboration is critical to make population health something more than a buzzword. Organizations need to work together in order to understand the needs of the population and how to extrapolate that for each patient. That means, for example, clinics working with community associations and faith-based organizations – figuring out the best way to meet people where they work and live and use that connection to

encourage them to get actively involved in the recommendations that will help better their outcomes.

As anyone who works in healthcare knows, facilitating that kind of collaboration outside the four walls of the examining room is not without challenges, and in order to get there, you have to have the right people, the right process, and the right technology in place.

The right people, process, and technology enable collaboration for better outcomes.

Population health cannot be implemented without the right people on board, both in clinical and non-clinical positions, who understand the goals and are working together to reach them.

Process-wise, it's about evidence-based care coordination. The right care plans need to be in place, not just for the different populations but also for individuals. And it is also critical that those best-practice plans are then consistently applied so follow-ups happen, information is shared, and all potential loops are closed to reach that true continuum of care.

Care management plans can make a world of difference. In fact, study after study suggests that when it comes to hypertension, obesity, diabetes, and asthma, having a coordinated care team can significantly improve outcomes and lessen the number of healthcare resources required to help these individuals stay healthy. For example, an approach that considers patients' weaknesses and enables coordination between patient and care team is more apt to succeed as opposed to telling an obese patient to lose weight by eating less and exercising more.

What is the right way to implement these processes? Strong physician engagement is necessary from the start—with that alignment in place, others in your organization will follow. Yet, even with the right people on board who are committed to putting a good process in place, one that offers that comprehensive care coordination, you still need the right technological support to sustain it.

This brings us to technology. Technology is the enabler, not the starting point. There are plenty of population health management tools on the market today - enough to cause any hospital chief information or technology officer confusion and fatigue in selecting the right tool to enable the targeted outcome. In order to select the platform to make your population health effort effective, two key factors to consider are: data accessibility and interoperability.

"Never before has there been such intense focus on healthcare entities to provide high-quality care at lower costs while maintaining financial viability. Population Health presents an opportunity to address the outcomes at the patient and group level by assimilating patient data from disparate sources, stratifying patients based on risks, understanding adherence and compliance barriers, and coordinating care beyond the "four-walls" utilizing a digitally-enabled patient-centric approach that draws on clinical and non-clinical teams from provider, payer, community and service provider organizations."
- Amar Prasad

Capturing a patient journey for HONDA through a journey map

Patient journey maps help capture a patient's experience and provide a holistic view of various touchpoints for their care team. It helps a solution team to gather and analyze information from various sources emapthetically - from the patient's perspective - and chart opportunities to bridge gaps and improve patient and provider experience. Once a journey like this one for a patient with a condition we call "HONDA" is defined, a patient journey map can be extrapolated to a broader population, helping organizations design health systems more effectively to predict, prevent or treat the disease state.

Persona: Sam suffers from Hypertension, Diabetes, Obesity, and Asthma; he is also Non-compliant with his care plan. In short, Sam is a HONDA patient and needs help. The chart below shows some of Sam's experience as a patient, his needs, and ideas for how to help him live a healthier lifestyle.

Sam's Journey.	Sam's health condition	Seeks a solution for burning pain in his feet	Engages with a fragmented health system	Problem diagnosed in isolation and treated	His visit to a retail pharmacy	An unsettled feeling of a bigger problem
Customer Needs and Interactions.	I am embarrassed by my weight and angry that I have diabetes. I want to get better, but I don't know how	I have burning pain in my feet. From the internet, I learn that I might have neuropathy which is something to do with the nerves. I decide to meet a doctor.	I never like waiting rooms, hospital gowns, the weighing scale or blood pressure tests before the doctor finally comes in. He has the blood pressure and weight results in his hands.	I begin to talk about my burning sensation, but the doctor has diagnosed that the problem is due to my blood pressure. I have barely said anything before the doctor gives me meds and walks out	I visit the pharmacy thinking the burning sensation will go away but wonder how the doctor is sure that he is treating me appropriately	I am suddenly worried that I will soon have to visit the hospital again with a complication

Sam's mode and level of interaction.

Chart: values +1, +0, -1, -2

Improvement Opportunities.

- Enable 24/7 access to care team
- Enable on-demand home/virtual consultations by healthcare provider
- Design new care delivery model
- Innovate benefit design (performance guarantees) with payers
- Reward behavior change (including caregiver/loyalty/rewards in the community)

- Specialized cognition (unique big data capability)
- Remote and autonomous monitoring using IoMT (internet of medical things)
- Robots and chatbots
- Embeddables, wearables, Augmented reality and Virtual reality
- Use of blockchain for collaboration, record-keeping, and sharing

The critical role of data accessibility and interoperability for Population Health Management readiness

Challenge 1: The variety of data across the population

You will need to know and understand who your patients are, what they need, and what you can do to help them. That means drawing from multiple systems and sources, including electronic medical records (EMRs), claims, labs, benefits, and emergency room visits, as well as input from socio-economic sources, maybe even geographic ones too, depending on what outcomes you want to impact. All this data needs to be cleansed and available to be used with your population health tools.

Given the significant differences in healthcare IT infrastructure in organizations, this aggregation – the starting point – can be the biggest hurdle. And, it is only exacerbated when you consider other institutions within your healthcare system, as well as accountable care organizations, health information exchanges (HIEs), and other healthcare partnerships. Data collection must extend outside the institution. Interoperability with other providers and health systems is essential to build a model of care around an individual's ecosystem and enable collaboration for better results.

The key is to put the patient's needs at the center of the effort. If a patient goes to multiple facilities and has to request and carry records from one to the other, and ends up possibly having duplicate tests, that's costly. Addressing their pain in this experience also addresses the administrative costs and potentially the health and medical outcomes as well. Continuing with this example, the challenge here is to ensure that a patient's care is continued through referrals and follow ups irrespective of the caregiver's facility. As technology advances, healthcare systems can better access patient and health data across the care continuum, and automated triggers and algorithms can play an increasingly intelligent role in aligning and enabling the flow of data, insight, and actions.

Payer and provider organizations are beginning to realize the benefits by adopting smart, data-driven population health initiatives. For example, one of Wipro's clients uses a commercial PHM platform to aggregate data, segment the population into focused categories based on risk profile, develop and document individual care plans, and coordinate care beyond the "four walls" using a clinical care coordination team of registered nurses, local vocational nurses, and Certified Medical Assistants.

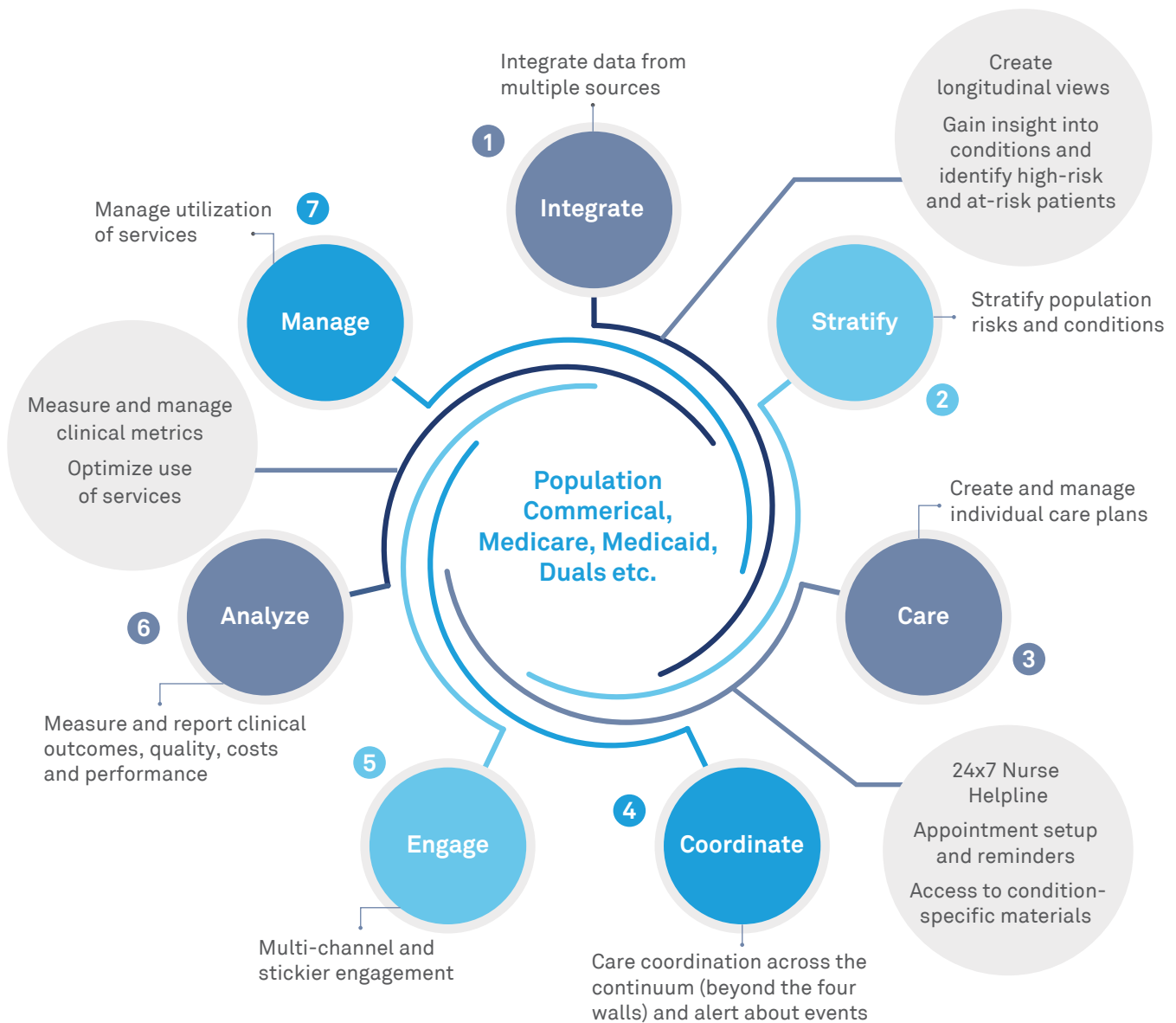### Challenge 2: Catering to different segments of the population

Why is segmentation so vital? Informed segmentation helps healthcare providers to better understand the challenges faced by these sub-segments and their needs for care. To truly impact a patient population, look beyond their medical records to social and economic welfare. What do you know about how and where they live? Is your clinic primarily servicing a heavily Hispanic community where English is the second language? Is a high percentage of your local population also on welfare support or is primarily a "vacation" community? Are your patients single parents, working mothers, or elderly? Population health is most effective when it is in the "real world" – the world in which we work and live.

An example is Wipro's collaboration with government agencies and academia to develop a low-cost diabetes management solution spanning glucose sensing, insulin delivery, exchange of data between patients, providers and counselors, and a 24x7 call center for patient monitoring and assistance to ensure adherence to treatment plans.[4]

[4] http://www.hpoe.org/Reports-HPOE/ACHI_Survey_Report_December2013.pdf

Overcoming the challenges

Integrate data from multiple sources

Create longitudinal views

Gain insight into conditions and identify high-risk and at-risk patients

1 Integrate

7 Manage

Manage utilization of services

Stratify 2

Stratify population risks and conditions

Measure and manage clinical metrics

Optimize use of services

Care 3

Create and manage individual care plans

Analyze 6

Measure and report clinical outcomes, quality, costs and performance

Population Commerical, Medicare, Medicaid, Duals etc.

24x7 Nurse Helpline

Appointment setup and reminders

Access to condition-specific materials

5 Engage

Multi-channel and stickier engagement

4 Coordinate

Care coordination across the continuum (beyond the four walls) and alert about events

Source: Wipro

In a recent survey regarding population health adoption by KPMG, 44% of respondents, representing payer and provider organizations, stated they have population health platforms in place. And, they felt platforms were being "utilized efficiently and effectively." Yet another 24% stated they are in the process of moving towards a population health program implementation within the next few years. Clearly there is momentum in implementing systems – and the community context will make a difference in effectiveness.[5]

[5] https://home.kpmg.com/us/en/home/media/press-releases/2017/01/payers-providers-see-population-health-taking-hold-despite-challenges-kpmg-survey.html

The most relevant tools will help you more effectively deploy resources, drive better health outcomes, improve patient experience, and reduce costs

With so many IT platforms and vendors offering PHM services, what should your organization consider as you move towards implementing your population health initiatives?

The right population health management platform can help you better understand patients, automate work that doesn't need to be done by people who can then focus on the patients, physicians, and caregivers, and even predict or propose next best action. It should bring together data from the increasingly diverse sources, help you stratify your patient population into meaningful categories, and, frankly, go beyond just sending automated appointment reminders. The bottom line: it comes down to usability and relevance.The technology should solve problems for doctors, business users, caregivers, and patients. It must be relevant to the changing user expectations and provide access to the right data at the right time. It's critical that any PHM system work with surrounding systems, upstream or downstream.

Automation and Artificial Intelligence (AI) are two increasingly relevant technology considerations. For example, in the field of cancer services, automation frees clinicians and caregivers to spend more time on patients' care plans as digital assistants take care of scheduling appointments, reminders, and notifications.

Sophisticated AI technology also augments clinical workers such as chatbots to provide natural language querying for scheduling/rescheduling appointments, checking on claims status, premium due, service locators etc., or by running algorithms on patient population data, which is getting increasingly sophisticated through machine learning and making recommendations for how and when to reach out to patients proactively with interventions.

Successful population health management for Hypertension. Obesity. Diabetes. Asthma.

These chronic diseases do not just represent an excess of healthcare spend. They also represent an opportunity for healthcare systems to better collaborate and meet their patients' needs: improving health outcomes while more strategically deploying healthcare resources and improving the patient experience in such a way to inspire loyalty and constancy.

These chronic conditions cost the healthcare system billions of dollars each year. They are likely to cost your organization a considerable amount as well. But with the right people, processes, and technologies in place—to mine your data for health information, to derive the right sub-categories of chronic diseases, to develop evidence-based care management plans, and help hospital employees, patients and their extended care teams easily access the information they need to better follow plans—your organization will have the tools in place to make population health a reality.

The time to start is now.

About the authors

Barbra Sheridan McGann
Executive Vice President,
Business Operations, HfS Research

Amar Prasad
Senior Manager | Healthcare &
Life Sciences – North America, Wipro Ltd.

To learn more about how Wipro Healthcare & Life Sciences (HLS) can help your healthcare organization reap the benefits of successful population health management platforms, visit their website at
http://www.wipro.com/industries/healthcare/solutions/.

Wipro Limited
Doddakannelli, Sarjapur Road,
Bangalore-560 035,
India

Tel: +91 (80) 2844 0011
Fax: +91 (80) 2844 0256
wipro.com

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. A company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship, we have over 160,000 dedicated employees serving clients across six continents. Together, we discover ideas and connect the dots to build a better and a bold new future.

For more information, please write to us at **info@wipro.com**