"Population Health: Redesigning Care" is the second of SI’s two-part series on population health. Our first, “Population Health: Defining Populations,” set the stage with a discussion on stratifying populations. This issue extends the conversation with medical executives at health systems immersed in innovation: Jeffry Tillery, MD at OSF HealthCare and Lara Terry, MD at Partners HealthCare. Formerly Chief Transformation Officer, Tillery now leads the medical group at OSF in executing on the vision he helped design. Terry wears many hats in her role leading clinical analytics under Partners’ population-health strategy. Both demonstrate how population health is changing the way care is delivered while simultaneously creating new roles for data-savvy clinical executives.

Heartland of Innovation

“We’ve been early advocates for a value-based healthcare delivery model because it aligns so closely with our mission as a faith-based organization,” says Jeffry Tillery, MD, CEO of OSF Medical Group, an 800+-physician group within OSF HealthCare System, https://www.osfhealthcare.org, an 11-hospital Catholic health system based in Peoria, Ill. “Care for everyone—high quality, high service—is not foreign to us. It’s been a great starting point for us to design coordinated care for population health.”

It also helps to start from the top. Kevin Schoeplein, soon-to-retire CEO of OSF HealthCare, emphasized innovation from the moment he took the top job in 2011, notes Tillery, including development of new care and business models such as participating as an inaugural Pioneer ACO.

Still, OSF has embedded value-based population health in its identity. “We’re an ACO no matter what payment model,” he says, noting the Pioneer ACO was helpful in spurring investment in care management and risk management and revisiting care models, all of which support population health.

In April 2015 Tillery, then Chief Transformation Officer, was tasked with leading the medical group in design and development of team-based care. Early on they identified six primary care sites—two each in Peoria, Bloomington and Rockford respectively—out of 70 sites total for about 20 percent of OSF’s primary care population. “It was a bold move,” he recalls, requiring significant support from OSF’s project management office and involvement of leaders from across the care spectrum, including physicians, advanced practice nurses, the call center and homecare division.
That year they designed the new care model, which was influenced by a patient segmentation model from SG2, a Skokie, Ill.-based healthcare analytics and forecasting firm:

- **Occasional Patient**—mostly well; needing only intermittent acute care;
- **Elective Patient**—can determine the timing and need of care;
- **Perpetual Patient**—chronically ill; need to stay connected with;
- **Complex Chronic Patient**—5% of population consuming 50% of healthcare spend.

### Patient Segments

<table>
<thead>
<tr>
<th>Segment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasional</td>
<td>75% of population; Patients with a condition that can be resolved within a short period of time and does not require substantial ongoing medical therapy.</td>
</tr>
<tr>
<td>Elective</td>
<td>8% of population; Patients with a condition or disease that does not pose any significant threat of loss of life or substantial reduction in their functional ability if treatment is delayed.</td>
</tr>
<tr>
<td>Perpetual</td>
<td>20% of population; Patients with a disease that extends over a multiyear period and requires ongoing medical therapy.</td>
</tr>
<tr>
<td>Complex Critical</td>
<td>5% of population; Patients with at least one complex illness, multiple comorbidities, and psychosocial problems.</td>
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### Population Health Goals

- Encourage the balance of physical activity, nutrition and mental well-being to keep the body in top condition and help people lead healthy lives.
  - Keep patients healthy
  - Build loyalty with our health system
  - Collect data on patients to treat them effectively when they do need care
- Assist patients with understanding their intermittent condition or disease status, symptom management and improvement of their functional ability to quickly return them to daily activities and normal function.
  - Keep patients condition from becoming chronic
  - Teach patients how to proactively manage their intermittent condition
  - Avoid unnecessary spending
- Assist patients with symptom management, monitoring, medication management, and ongoing treatment of their chronic condition(s). Enhance and extend these treatments with the use of provider-, patient- and community-enabling technologies.
  - Keep patients from becoming high-risk
  - Manage in primary care
  - Avoid unnecessary spending
- Caring for patients with at least one complex illness, multiple comorbidities, and/or psychosocial problems requires the thoughtful development of systems of care to improve their health status and/or reduce their mortality risk.
  - Develop systems of care that trade high-cost acute care services for lower cost care management whenever clinically effective
  - Deliver intensive, comprehensive and proactive management

Source: OSF HealthCare
Using the model and assigning these personas to standardized patients (actors) present during multiple design sessions, OSF was able to develop various scenarios based on rising risk, the need to develop long-term patient relationships, and access, all with attention to care coordination across the care continuum. OSF’s care-redesign team created five key metrics for a successful value-based care model for population health:

1. Differentiated patient experience through improved access to extended team members, simplified scheduling with increased same-day appointments, and attention to the needs of patients and families;

2. Having an impact on the cost of care in any patient segment through lower cost nurse clinic visits, attention to appropriateness of care, pre-visit planning to improve the effectiveness of a clinic visit, and use of e-tools such as e-visits, e-consults and other digital health solutions;

3. How do we build a team-based model that allows me to continue to grow the patient panel size?

4. Develop a model—relying on data analytics—that captures a larger share of spend as a result of reduced patient leakage; offering the right services at the right time so patients come to us;

5. Developing strategies for clinician and staff engagement so they have more ownership in the model.

“These became our five key outcome metrics,” says Tillery, which led to a series of initiatives:
> **Pre-visit Planning:** Medical office assistants use telephony and the patient portal to conduct outreach to patients to close care gaps, queue patients up for screenings, get their labs done in advance of visit so practice doesn’t have to catch up.

> **Daily Huddle:** Care-team nurses run morning meetings with physician, care manager, behaviorist and other members of the care team to go over the day’s schedule, logistics of care and assess utilization risk of patients within their defined patient panel to ensure proper care management.

> **Connected Nurse Clinic:** Nurses work independently from the care team to carry out standing orders, conduct disease education or take blood pressure. This unit blends an urgent care model (low-acuity same-day service) and has the time and schedule to oversee patients’ transitions to new physicians, conduct chronic disease education and perform low-acuity follow-up (keeping tabs on patients).

> **Primary Care Behavioral Health:** Licensed clinical social workers are available to providers for intervention if the provider identifies depression or grief in a patient—or even an issue like smoking.

> **EHR Optimization:** OSF has built technologies within its Epic EHR like “Colleague Connect” that enables eConsults and eQuestions between primary care doctors and cardiologists, endocrinologists, neurologists and other specialists. eConsults enables a specialist to do a chest study on a patient for a primary care doctor, for example. “We manage many patients in rural markets,” says Tillery.

> **Telehealth:** Including the e-solution examples above, OSF’s six “beta site” practices are enabled to do other telehealth applications like tele-psychiatry. OSF’s relationship with “Matter,” the Chicago-based health technology incubator, makes it possible to find early-stage companies to pilot and adopt solutions such as the use of ReGroup Therapy, to provide teleconsultations for challenging cases and even medication management.

> **Other care-redesign components:**
  - **Million Hearts Risk Reduction**—With care-team nurses at the helm, this CMS program fits well within OSF’s new model of care.
  - **Rapid Improvement Methodology**—Allowing use of performance-improvement methodologies to identify and solve problems within the practice within a short period of time.
  - **Survey Tool**—“Tonic” is an iPad-based app that enables patients to offer feedback on OSF’s care transformation model. Care teams are also surveyed on their experience with the new model.
  - **Care Transformation Dashboard**—An analytics-based tool that enables managers to assess how well any care transformation initiative is performing.

**Early results**

While it’s too early to publish documented results, OSF’s care transformation effort has yielded positive anecdotal results, according to Tillery. Improvement has occurred on:

- All quality metrics;
- Panel & population growth;
- Connecting clinicians;
- Patient satisfaction in some practices (others remained steady).

“Overall, care transformation has been well received,” he says. “We began implementing the new care model in six practices and are now up to 32. We’ll complete implementation in a total of 70 practices by May 2018.”
Partners in analytic care design

In order to most effectively measure the impact of population health programs, it’s helpful to think about the details upfront, before the programs are implemented, according to Lara Terry, MD, Medical Director, Clinical Analytics, Center for Population Health at Boston-based Partners HealthCare, a 10-hospital academic health system, http://www.partners.org.

“We’ve learned a lot about the ideal process for designing and developing analytics that measure the impact of population health programs. The more we invest in the design process before program implementation, the easier it is to do the measurement later,” she says. Some key things to think about in the design are:

1. **Define outcomes upfront.** “Be thoughtful about what outcomes are of interest. Why are you implementing this program? What do you hope to achieve? What do you hope to improve with the program?”

2. **Decide what to measure.** “What’s the measure of impact? Do you want to measure the effectiveness of an intervention? Or, if it’s already been shown to be effective in the literature, perhaps you’re interested in how effectively your site has implemented...”

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**Outcome Measures – 6 Sites X 12 months**

- Patient Experience (Press Ganey)
- Patient Experience (Tonic Surveys)
- Extended Care Team Referrals
- New Patients
- < Deactivated
- < Unactivated
- Access
- < Hospital Utilization
- < ED Usage
- Prompt Care/ ED Follow Up w/in 5 days
- Quality Measures

**Panel Growth** > 7%

**Quality Measures** All Sites

Source: OSF HealthCare
the intervention? What does that look like?
Decreased trend, a shift toward lower acuity
utilization, improved quality?”

3. **How do you collect data?** “Once you know
what you want to measure, think about
ways to capture the data in as structured
a process as possible so as to minimize
chasing and cleaning up the data (data
wrangling) when you’re ready to start
analyzing.”

Of course, analytical design is not one-and-
done. The analytic design is an on-going process
that requires continual refinement as programs
evolve, but the more it’s incorporated in the
initial program design and implementation, the
fewer the challenges later.

**Partners’ “Pop Health Seven”**
Partners has organized population health into
seven key areas across all phases of care:

**Patient-Centered Medical Home (PCMH)**
Partners HealthCare’s primary care practices
are undergoing a transformation to a more
advanced model of care, the patient-
centered medical home, aimed at
coordinating care and proactively keeping
patients healthy.

**Integrated Care Management Program (iCMP)**
The Integrated Care Management Program
matches chronically ill, medically complex
patients with a nurse care manager who
works closely with them and their loved ones
to develop a customized healthcare plan to
address their specific healthcare needs.

**Behavioral Health Integration**
Through a team-based collaborative care model,
Partners offers a set of resources and support
services for primary care providers to help
manage patients with depression.

**Specialty Programs**
Using a range of technology and tools, Partners
providers are helping patients get the right care
at the right time, improving care coordination
between primary and specialty care, and
managing episodes of care to improve patient
outcomes.

**Non-Hospital Care**
Strategies to improve access to emergency room
alternatives, ensure smooth transitions to non-
hospital care facilities, and provide options for
home healthcare monitoring.

**Patient Engagement**
Multimedia tools and resources to help patients
engage in and manage their own care, and
be more involved in decision-making when
considering treatment options.

**Analytics and IS**
Partners provides analytic and technology
infrastructure to help support population health
activities across the network.

A dyad executive team—an administrative lead and a
medical director—oversee design, development and
roll-out of population health initiatives under each area
to the Partners network. Terry and members of her
analytics team meet regularly with the program
leadership dyad to define outcomes and use
analytics to continuously improve and refine
programs.

**Gold in them thar hills**
“We have multiple hospitals and physician
groups in our network. Implementation of our
population health programs takes into account
local culture and priorities, which can result
in variation. This makes analytics challenging
at times,” she says. “The more consistently
a program is implemented, the more
straightforward it is to analyze the impact.”

However, Partners and other leading health
systems have realized that some sites—
hospitals, clinics, medical groups—have
found a way to harness that variation in order
to determine best practices. In essence, that
variability may be a vein of gold that should be
mined and shared with the rest of the healthcare
enterprise.

“Program variation, while challenging, can also
present us with opportunities. By comparing
the outcomes and impact of programs across
different sites, we can identify and share the best practices that we’ve learned from the most successful program implementations,” Terry says.

For example, when the analytics team measured palliative care for patients near the end of life, they discovered one group had a notable year-over-year increase in patients who were receiving palliative care when compared to the other groups. “It turns out they had a palliative care unit in their hospital that was educating the patients who were nearing the end of life about different options for their care. This allowed patients to consider the range of options, including palliation, as they considered their personal health-related goals and preferences,” she says.

Of course, it’s not always as simple as emulating the “best practice” based upon variation. Sometimes the differences are specific to local culture and cannot be exported to other sites. Other times it’s not the specific difference in implementation but something that’s associated with it. “In the example of the physician group with the increase in palliative care utilization, it may be the act of educating the patient about care options that made the difference in palliative-care adoption and not the fact that it was happening during the inpatient admission. We try to learn as much as we can to share the most meaningful aspects of variation.”

**Wearing different hats**

Making such determinations can require a combination of analytics savvy, clinical training, management skills and just plain ability to think. “This is just one of the hats I wear,” says Terry. As part of her role leading the population health analytics team at Partners, she meets with provider groups to engage them in reviewing analysis and opportunities for care redesign and medical management.

Dr. Terry is also a senior member of the team supporting the implementation and on-going development of the Partners’ Enterprise Data Warehouse (EDW). “We need to capture data in a way that informs leadership and care providers. The more thoughtful we are in planning and the more we know what data should be collected, the easier it will be downstream.” One lesson learned is that there are multiple ways to collect data. Again, it’s
necessary to balance local variations even in data collection while standardizing as much as possible. Structured data is better than free text, notes Terry, but that requires some adaptation:

Ideally you want all the different data sources to feed into the EDW. “I want my analysts to spend most of their time on thoughtful and insightful analytical work, not data wrangling.”

It is hard to identify a single best practice for improving access to specialty care. But it is clear, that using technology to provide good alternatives to the standard visit-based model is one of the keys to delivering high value care.

Conclusion
As health systems redesign the way care is delivered under population health, they’re integrating the healthcare enterprise for team care and coordinated care, chronic disease management and risk management, patient engagement and physician engagement. As health-system executives grapple with this new model, they’re being changed as well. New executive roles are rapidly emerging that combine clinical training, analytics savvy and people-centered skills to steer the healthcare enterprise through innovation, transformation and ultimately person-centered care. The proof’s in the outcomes.
Check out these resources from OSF Healthcare

OSF Innovation [https://www.osfhealthcare.org/innovation/](https://www.osfhealthcare.org/innovation/)

Check out these resources from Partners HealthCare


Check out these resources from SI

Check out the *SI Inside Edge* “Population Health: Defining Populations” at [https://scottsdaleinstitute.org/docs/pubs/ie/IE.2017-03.Defining-Populations.2563snj4j.pdf](https://scottsdaleinstitute.org/docs/pubs/ie/IE.2017-03.Defining-Populations.2563snj4j.pdf)

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