The following report describes trends in the application of telehealth technologies to facilitate chronic disease management. The analysis is designed for use by program or strategic leadership in health care provider organizations interested in exploring telehealth opportunities.

The brief includes definition of key terms, discussion of investment considerations, and a sample case study from a leading health care organization with an established telehealth chronic disease management program.

For additional resources and custom assessments relating to telehealth strategy, implementation, and evaluation, please contact your Dedicated Advisor.
Telehealth Largely Focuses on Chronic Disease Care

How is telehealth being used to improve chronic disease management?

In response to growing prevalence of chronic disease across the U.S., many health care organizations are turning to telehealth to more effectively educate patients, develop and share care plans, monitor symptoms, and manage medications.

For example, virtual visits or telephonic consultations promote convenient, routine check-ins outside the confines of a physical office space. Additionally, wearables and smart phone applications can serve as useful tracking tools to monitor care plan adherence and set alerts. Some of the most common use cases for applying telehealth to chronic disease management include patient management for highly prevalent conditions like diabetes, CHF, and COPD.

Chronic Conditions Commonly Targeted for Telehealth Programs

**HIN 2015 Telehealth Benchmarks**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>58.5%</td>
</tr>
<tr>
<td>CHF</td>
<td>56.6%</td>
</tr>
<tr>
<td>COPD</td>
<td>43.4%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>43.4%</td>
</tr>
<tr>
<td>Behavioral Health</td>
<td>37.7%</td>
</tr>
</tbody>
</table>

What are the emerging trends driving telehealth adoption for chronic disease management?

- **High Disease Prevalence**
  - Over half of all Americans are diagnosed with a chronic condition, and nearly a third suffer from multiple, comorbid chronic conditions

- **Increasing Costs**
  - Health care costs are almost 2.5 times higher for patients with one chronic condition relative a patient without any chronic disease diagnosis.

- **Provider Shortages**
  - One in five patients lives in a provider shortage area, and the average appointment wait time for a family practice is nearly three weeks

- **Shifting Patient Preferences**
  - Patients prioritize improved access and convenience over in-person interactions; in fact, 11 percent of survey respondents report that they would be willing to change their PCP if given the option of a telehealth visit

- **32%**
  - Percent of adults diagnosed with two or more chronic conditions

- **$4.2 trillion**
  - Projected burden of chronic illness in the United States in 2023

- **19.5 days**
  - Average wait time in days for appt. to family practice nationwide

- **76%**
  - Patients responding that they prioritize access to care over need for human interaction with providers

Virtual Chronic Care Can Generate Revenue, Cost Savings

How are telehealth services for chronic disease management reimbursed?

Since the reimbursement for these services is limited, most organizations initially adopt telehealth pilots under grant funding, although private and public payers have consistently been expanding coverage for chronic disease management. Starting in January 2015, Medicare reimburses telehealth providers for remote chronic care management (CCM) under CPT code 99490. Eligible providers include physicians and select non-physician practitioners.

The CCM billing code can be used for services relating to care plan development, communication and coordination with other treating health professionals, and medication management. The code may be billed once per month for qualified patients.

What is the business case for using telehealth in chronic disease management?

Virtual platforms for managing chronic disease boast compelling improvements in care quality, provider and practice-level operational efficiencies, and health care costs. In a systematic review of over 40 studies, researchers found telemedicine was associated with significant reductions in patient mortality (15% to 56%), and reduced hospital readmissions, readmissions, length of stay, and emergency department visits.

These benefits are increasingly important as health system accountability for chronic disease outcomes is incentivized by payment models like the Medicare Hospital Readmission Reduction Program, shared savings programs, and pay-for-performance or enhanced coordination incentives associated with the patient-centered medical home model.

<table>
<thead>
<tr>
<th>VALUE PROPOSITION</th>
<th>HEALTH SYSTEM CHALLENGE</th>
<th>STRATEGIC BENEFIT FOR VIRTUAL CHRONIC DISEASE MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care Quality</td>
<td>Chronic conditions exacerbate poor health outcomes and can increase mortality and diminish patient quality of life</td>
<td>Demonstrates significant improvements in clinical, functional, and quality of life status for evidence-based interventions</td>
</tr>
<tr>
<td>Cost Avoidance</td>
<td>Patients with multiple comorbid chronic conditions experience higher ED utilization, inpatient admissions, and readmissions</td>
<td>Reduces hospitalization and emergency department visits, prevents and/or limits illness severity and episodes, resulting in cost savings</td>
</tr>
<tr>
<td>Provider Efficiency</td>
<td>The primary care provider workforce cannot adequately meet patient chronic disease management needs</td>
<td>Leverages physician marginal capacity; reduces appointment duration to enable increases to patient panel sizes</td>
</tr>
<tr>
<td>Patient Adherence</td>
<td>Lack of patient understanding, insufficient social support, and community resource gaps result in mismanagement of chronic conditions</td>
<td>Engages existing patients with enhanced access for routine follow-up appointments; increases availability of educational resources</td>
</tr>
</tbody>
</table>

Where can I learn more on this topic?

- Related content from the Market Innovation Center: "Telehealth Industry Trends for 2015"
- Related content from the Care Transformation Center: "Four tips for adding remote monitoring to your care management program"
- External literature: CDC synopsis, "Telemedicine Interventions for Chronic Disease Management"


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To maximize the amount of patient support for both clinical and psychosocial needs, programs include a traditional nurse and physician team but also pull in support staff such as a physical therapist or social worker on an as-needed basis—requiring a great deal of care coordination. A dedicated, diverse staff makes certain that the RPM program responds to specific patient needs, even with one set of staff.

Banner iCare™ designed its remote patient monitoring (RPM) program to meet the needs of complex chronic care patients, rather than patients with any particular condition. When evaluating RPM technology vendors, a centralized Banner telehealth team sought out technology that could adapt to various conditions, rather than investing in several condition-specific technologies.

The team selected a central monitoring device to transmit data, as well as peripheral attachments that can be connected or excluded based on patient needs. To adapt to commonly monitored conditions, central monitoring devices should be able to accommodate the following indicators:

- Weight
- Pulse/heart rate
- Blood pressure
- Blood glucose levels
- Oxygen saturation

Peripheral Devices Support Monitoring Multiple Conditions for Complex Patients

We needed to design a program that looks at patients as a whole and takes into account co-morbidities and chronic complex conditions rather than fitting patients into narrow definitions.

Dr. Hargobind Khurana, Medical Director, Banner Telehealth Services

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Case Study
Banner iCare™ Team Addresses Array of Chronic Conditions

Case in Brief: Banner iCare™

- Primary care management telehealth pilot program developed in collaboration with Philips Healthcare Hospital to Home division and operated by Banner Health in Phoenix, Arizona
- Program sought technology to help manage complex chronic disease in general, rather than purchasing multiple technologies to monitor specific conditions
- Invested in central remote patient monitoring technology with peripheral devices to adapt to specific patient monitoring needs

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Care Team Coordinates to Respond to Patient Needs

**Physician**

*Determines patient care plan*

**Nurse**

*Monitors, responds to patient data*

**Health Coach**

*Supports patient education, motivation*

**Social Worker**

*Addresses patient psychosocial well-being*