Using Patient Generated Health Data To Improve Patient Care
Part A -- Laying the Ground Work

This is the second article in a series that is looking at using patient generated health data (PGHD) to improve patient value across a wide range of care. The first article introduced how PGHD can play a meaningful role in helping care teams gather patient data between office visits and use this information to identify issues that typically go unnoticed until the patients shows up in the ER. While there are many applications and devices in the marketplace today that individuals can use to collect information about their latest workout, diet program, health history and more, these tools do not meet the criteria necessary to truly improve patient value. To successfully pass this litmus test, the PGHD solution must help clinicians enable a wide range of patients with a diverse set of medical conditions to realize improvements in their care and outcomes at a lower cost. (See VoiceOfThePatient.us/Vision/ for this article).

Realizing this goal is possible when PGHD systems are built on the principles highlighted in the table below.

Principles for Increasing Patient Value using PGHD	Clinical Usefulness	Patient Experience	Outcomes & Cost
The data collection process is easy for patients		√	
The data gathered is specific to the conditions being monitored	√		
One system can be used for all conditions	√	√	
The system tracks changes in a patient's condition	√	√	
The system enhances patient and provider communications	√	√	
Management of patient activities improves through the use of reminders	√	√	
Care teams are alerted when a significant change occurs	√	√	
Care teams can see current snapshots of a patient's condition	√	√	
The system increases a care team's efficiency and ability to intervene at the right time			√

These principles drive three general categories related to 1) Clinical Usefulness: making it easier for clinicians to manage patient care, 2) Patient Experience: improving a patient's

experience related to the care they receive and 3) Outcomes and Cost: reducing the overall cost of care through improved outcomes.

The data collection process is easy for patients

Studies state that the attention span of humans in the digital age is now in the range of seconds to a few minutes.[1] We know this to be intuitively true based on our own experience. Given this reality, gathering data from a patient on their smartphone, tablet and other devices must be done very quickly if you expect them to provide this information on a regular basis. For this reason, any PGHD app should be able to collect the desired set of information very quickly (e.g., in a minute or less) so the patient's use of the app is effortless.

Data gathered is specific to the conditions being monitored

The data being collected must be specific to the condition or set of conditions the patient and their physician are working to manage or resolve. Future systems need to be able to collect the appropriate set of information on arthritis, asthma, cancer, COPD, Diabetes, Mental health or any other medical condition. They also need to accommodate comorbid conditions where patients are dealing with more than one chronic illness. Is it possible to have one system that accommodates the majority of medical conditions? Absolutely. System designs that enable this exist today and we review these designs in future articles.

One system can be used for all conditions

There are a large number of companies introducing point solution PGHD apps in the market today. Many of these apps can provide useful information on a patient's condition but how is this data integrated with the physician's workflow? Expecting a health system's IT organization to integrate with a separate point solution for each medical condition is never going to happen. The design of the PGHD solution must be able to accommodate the majority of the medical conditions treated by the health system. PGHD information should be integrated directly into the EMR system or, if the EMR vendor makes this difficult to do, then a window can be launched within the EMR system that provides direct access to this information.

The other big advantage of using a single system for many different medical conditions is it accommodates a wider range of patient needs without jumping to different apps. Patients that are experiencing the comorbidity of anxiety and depression with their Parkinson's disease should be able to provide input on all their conditions within the same app.

The system tracks changes in a patient's condition

Patient data is not just about collecting data on weight, blood pressure, glucose values, and other biometric readings. These tests, while important, are not sufficient for fully understanding a patient's condition. It is also important to gather information on the patient's trajectory. Are they feeling better or worse today as compared to yesterday? What is their pain level? Is it going up, staying the same or going down? Someone who had hip replacement yesterday may be expected to have a high pain level today; however, that level should go down over the next several days. Far too often, patients end up in the ER because they did not think their persistent pain was significant enough to call their doctor. "If you had only let us know, we could have …"

Proactively contacting patients is possible when care teams have access to systems that identify when their trajectories are heading the wrong way. These patients can then move to the top of the care team's call list and satisfaction increases when patients know their issues are a top priority.

Up Next -- *Laying the Ground Work, Part B*

Article 3 in the PGDH Series will continue our discussion on the principles to follow to truly increase patient value. Stay tuned!

[1] See http://www.telegraph.co.uk/science, search on human attention span