Evolution of Telehealth Use Cases and Care Settings

Signify RESEARCH

HealthTech Market Insights
Powered by Data

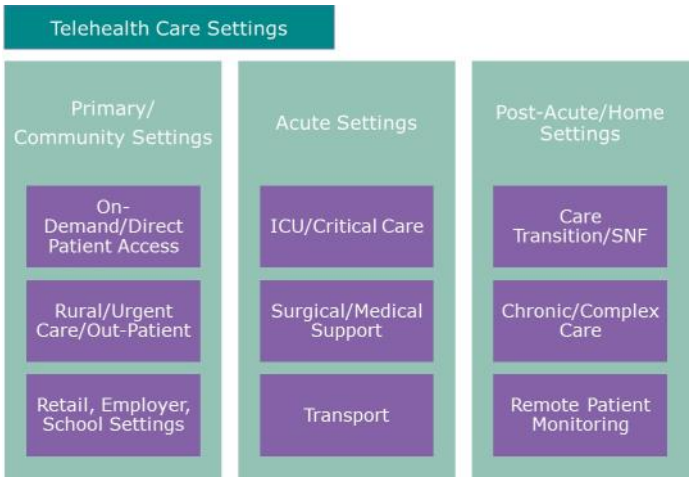
July 2017

White Paper

Written by Alex Green

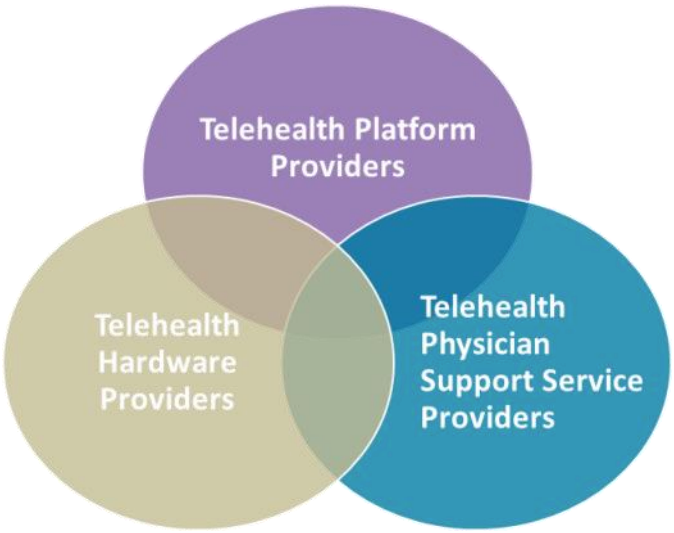
Telehealth is no longer limited to providing patients with on-demand video consultations from home or remotely managing patients with chronic conditions. Instead it now encompasses the whole health care system in terms of care settings. This includes telehealth in the home, rural hospitals, community hospitals, physician practices, ICUs, emergency rooms, within surgery, during transportation, post-acute settings, schools, the retail sector and employer locations.

This has led to a wide array of vendors and service providers developing platforms, hardware and services aimed at addressing the specific requirements for telehealth in these settings. The market opportunity for these vendors will be detailed in Signify Research's upcoming market report *"Acute, Community and Home Telehealth - 2018"*. As a scene setter for this upcoming report, Signify Research has created this white paper which sets out how telehealth is used in these different locations.



On-demand Patient Access

One of the more "traditional" areas of telehealth deployment, these on-demand patient access services allow patients to access a physician directly via an app, web portal or other online service typically for a video consultation. Over recent years a plethora of solutions have been developed to address this market. Some of these are provided by companies



that have developed their own platform, employ their own physicians (via affiliate companies) and who offer services directly to the consumer. Examples include Doctor on Demand, Babylon Health and MDLive. Other companies provide platforms on a white label basis, and the option to use their in-house physician support services, so that providers can offer their own branded on-demand telehealth solutions, either self-resourced or utilising the platform vendor's physician resource. Companies that support this include American Well and Teladoc. It's a business model that's proving relatively successful with Teladoc, for example, recording $123M in revenues in 2016 (up 59% on the previous year) and providing just under one million consultations.

The level of acuity addressed by these services is also starting to increase. Initially many were used to service relatively low acuity care needs. Teladoc's acquisition of Best Doctors, which targets higher acuity demands, in June 2017 is an example of where service providers are looking to address more complex needs via on-demand services.

Ambulatory/Community Telehealth

Community or rural hospitals that are not resourced with specialists covering specific conditions offer another example setting for telehealth. In this scenario either the patient or a local professional uses telehealth to consult with specialists on specific conditions that cannot be resourced locally. This can save the patients having to travel longer distances to a central location where the specialist is located. It can also be used to support urgent care and access to specialists. The specialists can either be part of the same health system but located elsewhere, provided via relationships with 3rd party providers, or provided via specialist telehealth service providers that focus on specific conditions or providing access to specialist consultants.

An example of a service provider that has developed a service addressing this need is Avera, via its eCARE speciality clinic. During 2016 it provided over 11,000 telehealth visits and claims it has saved patients and health care professionals travelling approaching 3 million miles. When patients schedule an eCARE visit at a physician practice facility the practice retains ownership of ancillary charges and other health care revenues while enabling its patients to have access to medical speciality care via high definition, interactive video technology located at the practice location.

- **On-Demand/Direct Patient Access** is where telehealth is used to provide a patient direct access to a physician or other healthcare specialist via an app, web portal or other online service.
- **Ambulatory/Community Telehealth** is increasingly being used to provide clinics, rural hospitals and physician practices in-setting access to specialists without the patient having to travel long distances.
- **TeleICU, TeleER** command centres are used to centralise the monitoring of ER rooms and ICU wards across a range of hospitals within a provider network.
- **Surgical/Medical Support** using telehealth gives acute hospitals and other health facilities access to specialist consultants located elsewhere. For example, this could be to support emergency assessments or provide specialist support during surgical procedures.
- Telehealth during **Transportation** allows access to specialists while enroute to a hospital.
- The use of telehealth during **Care Transition** or within an **SNF** setting can be used to reduce hospital readmission.
- **Remote Patient Monitoring/Home Telehealth** continues to be one of the most mature telehealth markets, but increasingly is being integrated into PHM and EHR workflows.

As well as this scenario being resourced by 3rd party service providers, it is also often resourced within a health system, particularly larger systems where the provider owns multiple acute hospitals, community hospitals, clinics and rural hospitals. The premise is similar, in that telehealth is used to provide specialist care and advice, that may only be physically available within larger hub locations, to remote, smaller locations. One example where this has been employed is Alaska Native Tribal Health Consortium. This is a provider that manages the health care needs of Alaska's native and American Indian population. ANTHC estimates that it costs approximately $300 to transport a patient from a village to a regional facility or $900 to the main hospital in Anchorage. ANTHC has instead employed telehealth solutions from Vidyo to supply its remote providers with a solution that allows them to access specialist support from regional facilities and the main hospital using telehealth video technology. Over 40,000 remote consultations have now been performed by ANTHC using the Vidyo solution.

TeleICU & TeleER

Telehealth is also being used in a range of acute settings. Within the Intensive Care Unit (ICU) it is being used to remotely monitor critical patients visually and in terms of their health data. Within larger health systems, one approach is to roll out TeleICU command centres or hubs. In this scenario, a command centre will be established that has the responsibility of monitoring the ICUs of a number of hospitals within the system. One of the largest examples of this is Mercy Health in the US. Mercy set up its TeleICU command centre in order to monitor the ICUs in 15 of its hospitals. It uses a combination of Philips and Vidyo telehealth platforms and hardware to monitor close to 500 ICU beds across four states. The solution allows the command centre staff to visually monitor the whole ICU unit from drips to ventilator panels and to directly talk to local staff, patients and patients' families. Mercy is an example of one of the largest TeleICU command centres that has been rolled out to-date.

Developing a solution that is monitored in-house is one provider approach, but as with the community/rural telehealth examples there are specialist 3rd party service providers that also support this type of deployment on behalf of health systems. Advanced ICU Care is one example of a 3rd party service provider addressing this need. It employees a team of physicians and critical care nurses located at its remote operations centre that monitor the ICUs of its clients round the clock. This includes monitoring vital signs, medications, labs and the clinical status of its clients' patients. To-date, it has supported the monitoring of more than 65 US hospital ICUs. It claims that as well as providing the monitoring resource which has measurably reduced ICU mortality, its solution has also supported significantly reducing length of stay in ICU, improved efficiency by ensuring that staff are with patients specifically when needed rather than when someone is available, aided improving capacity utilisation and reduced re-admissions. As of March this year it was providing TeleICU services covering in excess of 1,000 beds.

An alternative model for TeleICU to the centralised command centre is the "Round and Response" model that was initially developed by UCLA and used by Dignity Health Telehealth Network in California. The "Round and Response" model employs tighter coordination between the ICU telehealth support staff and the onsite support team and continues to employ the more traditional schedule of rounds at set times, rather than rely on pure monitoring via the command centre. With this approach accountability remains with the bedside nurse, who then leverages telehealth physician support when needed. This solution typically requires the greater use of telehealth carts that are moved around the unit to provide "face to face" consultations with patients. It is an approach that proponents claim requires lower upfront investment compared to a command centre approach and creates a more integrated solution for local and remote practitioners.

Surgical/Medical Support

Another example of the use of telehealth in the acute setting is surgical/medical support. This can be provided in a range of care settings, such as the Emergency Room or during surgery. The main premise being that consultations can be made with specialists, not located at the hospital, during assessments, surgery and post-treatment via telehealth hardware and platforms. For example, expert neurologists can be consulted using telehealth during assessments of patient admitted with a suspected stroke. Again, a range of 3rd party service providers have emerged that address this need. In the US service providers such as Blue Sky Telehealth, MLS Telehealth and Questcare Telehealth, to name just a few, provide services to hospitals supporting treatment of specific conditions.

Transport

Telehealth is increasingly being used in transport applications. This is particularly so in transport to an acute setting in an emergency where paramedics and other ambulance/air ambulance staff need to consult with specialists while enroute to the acute settings.

It can also be used to ensure that staff at the acute setting are fully familiar with a medical emergency so that on arrival they can react in the quickest and most appropriate way. Portable telehealth stations are often used in such circumstances. A number of hardware vendors offer portable telehealth stations that address this need. One example is GlobalMed, that offers its Transportable Exam Station (TES). TES is an integrated, fully-mobile telemedicine platform, housing a tablet PC, speaker, microphone and an array of cameras and medical devices in a dust– and weather-resistant rolling case. It provides connectivity over WiFi, 3G, 4G, satellite or wired connections.

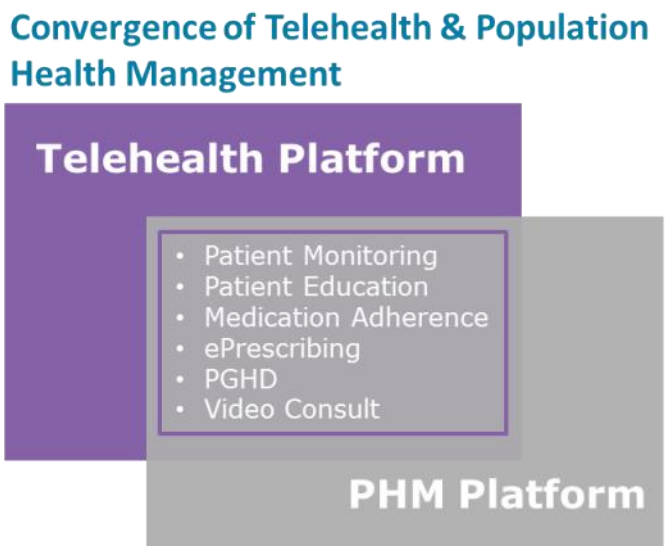
InTouch Health offers a comparable solution with its Xpress High Acuity portable solution. Again, this is housed in a ruggedised casing with connectivity via WiFi and cellular interfaces.

Care Transition/Skilled Nurse Facilities

Inpatient post-acute care in settings such as Skilled Nursing Facilities (SNF) is also increasingly using telehealth solutions and services. An SNF telehealth program is designed to keep patients in the SNF for evaluation and treatment and lessen the need for costly emergency transfers. This can typically involve remote patient monitoring within the SNF via a telehealth service, either internally or externally provisioned, and video consultations with specialist physicians to ensure routine care is delivered in the most effective manner with the objective of reducing re-admission to hospital and speeding up transitions of patients back to their homes. A number of platform providers including Philips, Avizia and InTouch Health offer telehealth solutions tailored specifically to SNF requirements. Using these platforms SNFs can virtually meet new admissions prior to their discharge from an acute setting and familiarise themselves with their medical history and specific needs. Further, using telehealth during the transfer of care process can improve capacity utilisation and improve patient throughput.

Remote Patient Management/Home Telehealth

The final step for a patient who has experienced an episode of acute care is the return home. This is the setting where telehealth was first implemented with the intention that remote patient monitoring, patient education and video consultations with medical teams be used to ensure that a patient limits the potential for hospital re-admission, limits the likelihood that the condition severity will escalate, adheres to prescribed



medication and that the patient adopts certain behaviours. There is a vast number of vendors of hardware, peripherals, platforms and services targeted at this sector and it's perhaps the most developed application for telehealth. However, it is still an area where innovation is seen. In particular, with the increasing merger of telehealth, patient engagement and population health management (PHM) workflows. PHM solutions are developed to manage the health needs of a whole population, including the well, those with rising health needs and those that fall into the high-risk category. i.e. those that may be managing multiple conditions or that have recently been discharged from an acute setting. For some time, telehealth has been used to remotely monitor those with the highest risks.

However, increasingly the workflows associated with this management are becoming part of a wider PHM workflow. This ensures that analytics can be used to identify which parts of a given population represent the highest risks of condition escalation or hospital readmission, that standard evidence-based, coordinated care management processes are followed and that sophisticated, EHR-integrated, content-rich patient engagement platforms are used as the foundation of the remote patient monitoring solution. Increasingly, leading PHM vendors are developing remote patient monitoring telehealth solutions that are an extension of their PHM offerings.

Examples include Allscripts and eClinicalWorks. Others are working in partnership with leading telehealth platform providers to address this need. Signify Research forecasts that these two functions will increasingly be integrated into common platforms.

Key Take-Aways

Telehealth has developed considerably over recent years and now spans applications well beyond remote patient monitoring in a home setting and video consultations from home. It's increasingly being used in enterprise settings throughout the care continuum.

There are a number of vendors such as Philips, InTouch Health and Avizia that are attempting to address all care settings with their solution set, that includes associated platforms, hardware and physician support services.

However, a much longer list of vendors and service providers are addressing specific segments of telehealth, be it a cart for TeleICU or services aimed at community telehealth.

Assuming a number of regional legislative barriers are overcome in the short– to medium term, the industry-wide drive to better manage costs while improving outcomes, along with the increased availability of enabling technology such as high speed Internet supporting HD video, will result in this still relatively embryonic market growing rapidly over the coming years.

Signify Research Telehealth Market Report

The information presented in this white paper sets the scene for Signify Research's upcoming market report *"Acute, Community and Home Telehealth—2018 Edition"*. This report will present the market for telehealth platforms, hardware and services across all of these featured care settings and will include projections and market sizings for more than 20 countries.

The report is available as a stand alone product, but it is also a component of Signify Research's newly launched *"Population Health Management and Telehealth Service*". This is a year round service that provides ongoing data, insights, and analysis on the global population heath management and telehealth markets. The service includes four market reports delivered over a 12 month period, regular updates of key market metrics, competitive environment and market share analysis by product type and region and quarterly analyst briefings to each subscriber firm.

For more information on the service or the telehealth specific report, please email Alex.Green@SignifyResearch.net or call us on +44 1234 436150.

Why Signify Research?

At Signify Research we are passionately curious about Healthcare Technology and we strive to deliver the most robust market data and insights, to help our customers make the right strategic decisions.

Focus on primary research

We blend primary data collected from in-depth interviews with technology vendors and healthcare providers to ensure our Analysts have a balanced view of the market trends. Whilst primary research is the cornerstone of our work, we have developed a unique country level database of healthcare infrastructure, to enable our Analysts to build detailed, transparent and reliable models of current and projected demand for various healthcare technologies.

Unparalleled access to our analysts

Whether our research is delivered as an off-the-shelf report or as a consultancy project, our customers benefit from direct access to our Analyst team and an expert opinion when they need it.

Related Signify Research Reports and Services

- Population Health Management and Telehealth Service - 2018
- Population Health Management - North America Market Report - 2017
- Population Health Management - EMEA, Asia and Latin America Market Report - 2018
- Acute, Community and Home Telehealth - 2018
- Clinical Content Management Service - 2018
- Machine Learning in Medical Imaging Report - 2018

Primary Market Data

+

Key End User Opinion

+

Health Econometrics Data

=

Reliable Data

Clear and Concise Analysis

Informed Opinion

Alex Green

Director & Principal Analyst

UK Office

alex.green@signifyresearch.net

+44 01234 436150

Signify Research - UK

Cranfield Innovation Centre

University Way

Beds. MK98 OBT

United Kingdom

Signify RESEARCH