

Telemonitoring webinar – Questions and Answers

Q1: Remote monitoring following people outside the home is particularly challenged in New Zealand from wireless dead spots. Telcos were only incentivised to support populated areas and not necessarily the routes connecting those. What can be done here? – Rachel Guthrie

A: This will always be an issue and the ability for people to utilise internet also carries a cost which many will not want to incur. The way forward might be to empower local telehealth “pods” based in Marae or even mobile where we ensure adequate coverage and supported by local iwi. Another for diagnostic services may be to use courier process where equipment is delivered and picked up.

– *Answered by Jez Morris*

A: I’m not able to offer any advice or opinion on wireless cellular networks but I do think that coverage is likely going to be a challenge for many years to come even as improvements are made. Therefore, it is important that offline secure storage of data within a device is available for upload at a later time when connection is established (store and forward). For example, using an app installed on a person’s personal mobile device provides the opportunity for a patient to input data or connect the app to a Bluetooth integrated device or similar, store the data locally and then when they are in an internet coverage area securely transmit that data as needed.

– *Answered by Kathryn O’Neill*

Q2: How can you extract data on exception reporting from all data so clinician can respond to change in trend rather than be overwhelmed by data flow? – Grahame Jelley

A: The ability to create exception reporting from the full data set collected is the area that machine learning and AI can support and will grow in coverage moving forward. Alerting based on deviations from normal patterns does require a continuum of data and this was what was spoken about with longitudinal recording or collection of data.

Passive recording works best for these cases where the customer/patient is not required to be the collector or inputter of the data, rather a passive IoT device targeted to collect a single type of data, such as a bed, motion or wearable sensor, that is able to collect data on a frequency basis and return that raw data to an AI for exception reporting.

It should be noted that an AI only narrows down the input for the clinician to then examine and determine treatment or intervention, it should not (at this stage) be the end result determinant.

– *Answered by Mark Smith*

A: Agree with the points made by Mark Smith above, to really take advantage of the benefits of breadth of data it is vital that there is an underlying alert system to highlight to the clinician the sections of data most likely to be of relevance. This is the only way that a human can deal with the vast amounts of data that can be provided in a continuous or longer-term data flow. This already exists in many examples of monitoring such as ambulatory 6 lead ECG monitoring, these systems always have an underlying system of algorithms and analysis to provide alarms and alerts to clinicians.

In a less frequent data flow situation such as point in time monitoring that occurs daily or even several times per day this is a much easier way to digest data but in a large population group a certain level of underlying machine powered comparison and/or analysis is still required. For example, if you are monitoring 100 patients each day for hypertension then the system used will need to be set up to provide alerts or prioritise patients based on preset limits or criteria to help manage clinical workload.

– **Answered by Kathryn O'Neill**

A: Our experience has been the creation of dashboards for whanau and for clinicians, which can show normal ranges, trending and exceptions. The dashboards are particularly intuitive and well received by the user groups. We are developing alerting messaging capability based on exceptions. Our norms are based on research work from Australia and are looking to develop specific ethnic based longitudinal norms. We have started using AI to assist in this exercise.

– **Answered by Philip Jones**

Q3: Whanau Tahi has a limited set of measures through patient portal so how can these be extended to support COVID-19 in community through telemonitoring? – Grahame Jelley

A: Whanau Tahi has two key versions of our platform in the market. Our latest versions are in a place where they can deliver a very wide range of medical data including longitudinal data, point data and integration with key HIRA data sets. This latest version is predominantly in-situ with the Whanau Ora Provider network and is being deployed currently to MidCentral DHB. This version currently has COVID-19 vaccine status. We are NOT as yet using it to store telemonitoring data for at home COVID-19 health data. We haven't as yet had that opportunity with a customer, but it would fit with our data model and roadmap.

– **Answered by Philip Jones**

Q4: Are these products becoming more affordable, reduced in size and footprint, manageable by smartphone and data free? – Grahame Jelley

A: My view is that we should be working on how we use these types of solutions in the home at this stage, where we can control the ability to collect and transfer the data for appropriate storage and analysis. If the customer is active enough to be out and about all the time, so making the collection reliant on mobile operators, they typically will not be the target population for the current technology.

That said, if it is a wearable, then a store and forward when in coverage is available today but most often used in fitness trackers rather than medical support devices.

– **Answered by Mark Smith**

A: Units for assessment of sleep, Holter and Ambulatory Monitors can all be sent via couriers or set up within clinics which allow centralised upload and specialist reporting with recommendations on management; this would also address the points in Question 2.

– **Answered by Jez Morris**

A: I would refer back to comments on Q1 as applicable to this question also. Remote monitoring covers a wide variety of different technologies and therefore it is difficult to respond directly to the products mention in the question, but my experience is that hardware products are becoming more affordable due to a simple supply and demand situation, as there are more products available in the market the prices have reduced. Many devices are

now connecting to remote monitoring apps so therefore wireless internet connections can be utilised to minimise pressure on data costs.

– *Answered by Kathryn O’Neill*

A: Devices are becoming cheaper. Also the camera in the average smartphone is more than capable of being a sophisticated measurement device. Also the range of device options is increasing all the time.

– *Answered by Philip Jones*

Q5: Hospital-centric funding needs to shift to community focus and whanau preventative care rather than suggesting GP is the issue. Ideas how to shift cost out of hospital to community? – Grahame Jelley

A: Absolutely agree that a move to intervention-based funding needs to be available. This will require a paradigm shift in our current health system and something that we all must continue to raise but will be a journey. Using the systems to provide evidential outcomes in New Zealand to base the conversation on is critical to highlight the need for change.

– *Answered by Mark Smith*

A: There is no easy answer here; we currently have a system of two points of care where the facilities provider monopolises funds to the detriment of the entry point for care. There is the ability to manage chronic disease patients through disability funding (where they qualify) but this has significant equity issues. There needs to be a revamp of the funding model where primary care acts as the funder utilising budget to access appropriate care for their population and allowing negotiations with all potential provider entities. This would make secondary care offer services that fit the needs of the population not of the hospital services.

– *Answered by Jez Morris*

A: Agree with Mark Smith that a funding and mindset shift is required. There are multiple studies that have proven that dollars invested in primary care have a greater return on investment than dollars invested in hospitals, but I can understand that this is a very complex issue for governments and healthcare systems even if the clinical data would recommend it as the right choice. Most hospital systems would accept that there are a large number of benefits from treating patients in the community rather than in hospital where appropriate and are happy to work actively to reduce length of stay and emergency department presentations. But this can also create a disincentive especially with activity-based funding as health services are often funded on how much they “do”, rather than the outcomes which can be harder to quantify.

– *Answered by Kathryn O’Neill*

A: Whanau-centred funding, pan-government agency is going to be the easiest way to achieve this. A device does not need to be an individual device, many can be shared. Then it can be used on a longitudinal basis across multiple individuals, multiple crisis and in-between crisis events. A working example of this is Nga Tini Whetu programme which is a devolved bulk funding programme to identified at risk whanau where they choose the services required to support them. The NTW programme is co-funded by ACC, OT and TPK.

– *Answered by Philip Jones*

Q6: Love the concept but how do we get BP monitors, O2 monitors etc into the individual home rather than to the GP in a community centre in the outback so the GP and nurse can do true telehealth. The cost of provision is huge. Also face-to-face is essential as 80% of presentation to general practice has an element of mental health. We must not stop delivering true holistic care and contact is essential for this. I also work in a semi-rural practice in Auckland. A lot of our patients either do not have access to the internet or very poor connection issues. –

Jenny Burge

A: There is little evidence that it is a cost-efficient model of care by providing medical equipment directly to the patient; and in general practice there will never be a “one size fits all” outcome. We must be dynamic and disruptive in our application of healthcare placing the most appropriate resource with the appropriate patient demographic to ensure the most proactive outcome. There will be a need to always have F2F capability as there must be a movement toward “rapid response” services not just for mental health but for a number of areas of care. We need to move diagnostic services away from secondary care and enable higher level studies to be carried out within the home with specialist reporting and management pathway identification. If we have to send patients to hospital for minor health management, we have lost. Just as we have when we allow early discharge of patients to be managed by an over burden primary health network. We have to acknowledge that it is the system that is broken and not the funding.

– Answered by Jez Morris

A: The costs of devices are reducing over time as more supply comes into the market, especially in commonly used devices such as BP and O2 monitors. Our company operates a rental system to lower the cost of devices further and can suit particularly a few different purposes including:

- Patients who will not need to monitor long term
- Limiting upfront costs and instead spreading them over a longer time period
- Avoiding technical obsolescence (as tech upgrades the costs of doing so is reduced)

Distribution wise we use commercial courier and postage services to deliver products to customers and can either deliver patient education in-person, remotely or potentially through videos installed on the device if data connectivity or costs are a constraint. Local storage apps and store and forward apps do provide options for connectivity challenged areas, but most will still require internet connection at some point to provide full capabilities, as the back-end technology requires far more storage than a personal device can provide.

I agree that remote monitoring should be used as a complimentary or adjunct service to in-person care. I see remote monitoring as an enhancement rather than an instead of, it is about providing more options for care.

– Answered by Kathryn O’Neill

A: The in-home simple device (smartphone) is the model we have deployed in South Australia, then using more expensive and sophisticated devices by exception. Some at home devices are cheaper than a smartphone where that isn’t an equitable solution.

– Answered by Philip Jones

Q7: As a GP I have a variety of patients and cases. People look ready to accept telecare or telehealth but when you want to apply it in practice some of them become negative due to the fear of the access in their life and health matters. How can I change their mentality especially when the age group is elderly? I face the same in two countries Greece and Finland but mostly in Finland. - *Emmanouil Papaioannou*

A: As we discussed in question 7 there can never be a one size fits all approach and primary care has to adapt to become a flexible area of care with a collaborative outcome approach as opposed to the reactive one we currently pursue. There should be no need to “change their minds” but work with them to find the most engaged type of care they need.

– *Answered by Jez Morris*

Q8: When an elder lives alone remotely and has no knowledge or does not want at all to use the smart devices and does not want any home visits, what do we do then? - *Emmanouil Papaioannou*

A: We do exactly what you currently do, we support them to engage with the areas of care they need and not force them into a system where they feel disengaged from their healthcare provider.

– *Answered by Jez Morris*

A: Our experience has shown that using a service that includes all the technology required to provide an end-to-end environment is best in these instances. As mentioned earlier, using passive sensors than needing the control and input from the customer is key here, as is providing the internet connectivity in the service as well. In doing so, it removes the hesitancy around technology from the conversation and creates a remotely controllable and managed service so the focus becomes the analysis and intervention process, not the data collection.

– *Answered by Mark Smith*

A: I agree with Mark Smith that in our experience often a fully managed service can be best for these client groups. We work with a very multicultural and elderly patient group, and we have found that patient’s family and friends can be a wonderful source of technical support. Many of our patients may not be that technically skilled themselves but when setting up their service we identify people who can be in their support circle and try to involve them during the initial set-up and first few weeks of monitoring to provide a local support and reference point. Often once the patient settles into the routine of monitoring and develops comfort with the technology they become able to handle monitoring independently.

– *Answered by Kathryn O’Neill*