

You can add tech, but you can't replace people

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2024 Churchill Fellow

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Acknowledgements

With grateful thanks to Dr Catherine Sloan and Dr Barb Doty, and to all those who generously shared their wisdom and experiences with me in Melbourne, Bendigo, Robinvale, Orange, Anchorage, Sitka, Iliamna, Ketchikan, Juneau and Chickaloon.

About the author

Rebecca Payne is a remote island doctor, employed by NHS Orkney as one of four rotational general practitioners on the island of Hoy. She has previously worked on other Orkney islands, in the Western Isles and the Falkland Islands. When not on an island, she leads the North Wales Centre for Primary Care Research at Bangor University. Her research focuses on remote consulting and the use of technology in healthcare. She also chairs the Quality Standards Committee at the National Institute of Health and Care Excellence.

Abbreviations

Term	Definition
ANTHC	Alaska Native Tribal Health Consortium – the statewide organisation providing tribal health services across Alaska.
CMO	Chief Medical Officer.
COVID-19	Coronavirus disease 2019.
ECG	Electrocardiogram.
EURIPA	European Isolated and Rural Practitioner's Association.
FIFO	Fly-in fly-out – a workforce model in which staff (e.g. doctors) travel temporarily to a remote location to provide services before returning home.
GP	General Practitioner.
HCA	Healthcare Assistant / healthcare support worker.
ICS	Integrated Care System – a statutory NHS partnership in England bringing together organisations to plan and deliver health and care services for a local population.
MHEC	Mental Health Emergency Care – Victoria, Australia's telehealth model for mental health crisis support in rural emergency settings.
NHS	National Health Service (UK).
NICE	National Institute for Health and Care Excellence.
RFDS	Royal Flying Doctor Service – the Australian aeromedical and remote healthcare service.

Term	Definition
SCF	Southcentral Foundation – the tribal health provider for the Anchorage region of Alaska, and originator of the Nuka System of Care.
SEARHC	Southeast Alaska Regional Health Consortium – the regional tribal health consortium operating most care in Southeast Alaska.
UK	United Kingdom.
VVED	Victorian Virtual Emergency Department – Australia's coordinated, 24/7 virtual emergency care system for the state of Victoria.

Glossary of terms

Term	Definition
Co-design	An approach to service design in which staff, patients, and local communities are actively involved as partners in shaping how a service is planned and delivered, rather than having a service imposed upon them.
Community health aide	In Alaska, a locally based, trained lay health worker who delivers first-line clinical care in village health centres, working under structured protocols and in partnership with remotely located clinicians.
Customer owner	The term used within Southcentral Foundation's Nuka System of Care to describe patients, reflecting their active, participatory role in decisions about the services they receive.
Digital literacy	The skills and confidence needed to use digital devices and services, such as video-consultation platforms, effectively.

Term	Definition
Health aide	See Community health aide.
Nuka model / Nuka System of Care	The relationship-based model of healthcare developed by Southcentral Foundation in Alaska, in which community health workers in remote communities are supported by centralised clinical expertise.
Outreach worker	A staff member, based in or visiting a local community, who supports patients to access and participate in remote consultations, including by bridging digital, language, or cultural barriers.
Remote consulting / telehealth	A medical consultation, or the delivery of healthcare more broadly, performed when the clinician is in a separate location from the patient, typically using video or telephone technology. "Telehealth" and "remote consulting" are used interchangeably in this report.
Store and forward	A form of telehealth in which clinical information (e.g. images, recordings, or data) is captured at one location and transmitted to a clinician elsewhere for later (asynchronous) review, rather than requiring a real-time video link.
Telemedicine cart	A mobile unit of standardised telehealth equipment (e.g. camera, screen, diagnostic peripherals) used to conduct remote consultations within a health centre.
Tribal health system	In Alaska, the network of tribally owned and operated health organisations (such as ANTHC, SCF, and SEARHC) that provide integrated primary, emergency, specialist, and transport services to Alaska Native communities.
Virtual care	Healthcare delivered remotely using digital technology, encompassing both synchronous (e.g. video call) and asynchronous (e.g. store and forward) approaches; used in this report interchangeably with "telehealth".

Executive summary

This Fellowship explored how technology can support the delivery of healthcare to rural and remote communities, focusing on lessons from rural healthcare exemplars Australia and Alaska that could inform practice in the UK's rural and island settings. The research sought to answer two key questions:

- How is technology currently used to support healthcare delivery in remote communities?
- Which innovations could be adapted to strengthen UK rural healthcare systems?

Major findings

1. Technology should enhance, not replace, human care.

In the successful models that I visited, telehealth was facilitated by trained healthcare staff. Nurses, health aides, and outreach workers played a crucial role in setting up video links, examining patients, and ensuring clarity of communication. Technology can augment the role of humans, but not replace them.

2. Simple technology makes the biggest impact.

The most effective solutions were often low-cost and practical, such as airport key safes for vehicle keys, integrated ambulance garages, and the use of standard iPads or webcams for consultations.

3. High quality healthcare doesn't come cheap.

While technology itself is inexpensive, safe remote delivery often requires at least two professionals, one local and one remote, making services labour-intensive and costly.

4. Co-design, integration, and system support is vital for success.

Alaska's tribal health systems show how digital and workforce infrastructure which has been designed with staff and local communities can make technology enhanced care safe, efficient, and acceptable to patients.

Key recommendations

- Use technology to augment rather than replace rural healthcare workers – keep healthcare workers in communities to support access to care.
- Co-design services with local communities and health services staff – technology should be used to enhance rather than remove the services available locally.

- Invest in simple infrastructure such as key safes, integrated garages, and reliable broadband, using satellite where traditional broadband is unreliable or unfeasible.
- Strengthen digital infrastructure – ensure interoperability and resilient connectivity across rural areas.
- Build workforce planning into technological enhancements – think through which staff need to remain in rural areas when technology is introduced, and how they will be supported and access training opportunities.

My Fellowship concludes that while technologies can support rural healthcare delivery, they need to augment, not replace rural healthcare workers. It is the human and organisational structures which surround technological advancements which determine success, not the sophistication of the technology.

Introduction to the project

Background

The mass introduction of remote consultation to the UK at the start of the COVID-19 pandemic saw a wide range of healthcare services offered at a distance to patients. Following the pandemic, many services saw the continuation of remote care (also called telehealth) as a potential way to reduce costs and improve efficiency and patient convenience. NHS England has mandated that all General Practices need to provide digital access, and patients are increasingly familiar with telephone consultations and with texting photos to their doctors. However, research shows that these benefits are often more hypothetical than real and have often worsened access to care, particularly for rural communities and for the socio-economically disadvantaged. As the UK adapts to these challenges, rural patients often encounter two extremes of care: many remote/telehealth services such as GP appointments and consultations with hospital specialists have been curtailed, leaving patients travelling long distances for care; in other situations, remote provision of care has been mandated for patients living in rural and island communities, regardless of public opinion. Plotting a way forward to harness the benefits of telehealth, while minimising the disadvantages, is challenging.

In contrast to the UK's experience, the Alaskan tribal healthcare system and the Australian Royal Flying Doctor service have been successfully providing remote healthcare for decades. Australia has provided radio doctor consultations since the 1930s. The Nuka model pioneered by Southcentral Foundation in Alaska is world famous for its community workers in remote communities supported by centralised expertise. I wanted to learn from these international exemplars and to apply this learning back in the UK.

Aims and objectives

To understand how technology is used to deliver healthcare in remote and rural healthcare settings in Australia and Alaska and to bring that learning back to the UK.

Purpose of the report

This report aims to start a discussion on technologically assisted rural healthcare. How best can technologies augment healthcare professionals situated in rural communities? How can we enhance efficiency and convenience for rural communities without compromising the quality of care and exacerbating existing inequalities? What workforce model works best to support such services and how can communities be involved in co-designing services?

My approach

I spent 6 weeks visiting healthcare facilities in Alaska and Australia, speaking with patients, health services clinicians, administrators and leaders. I travelled with GPs in both countries to the remote communities they were visiting to observe how services were offered and the technology that was being used. Figures 1 and 2 show the locations I visited in each country.

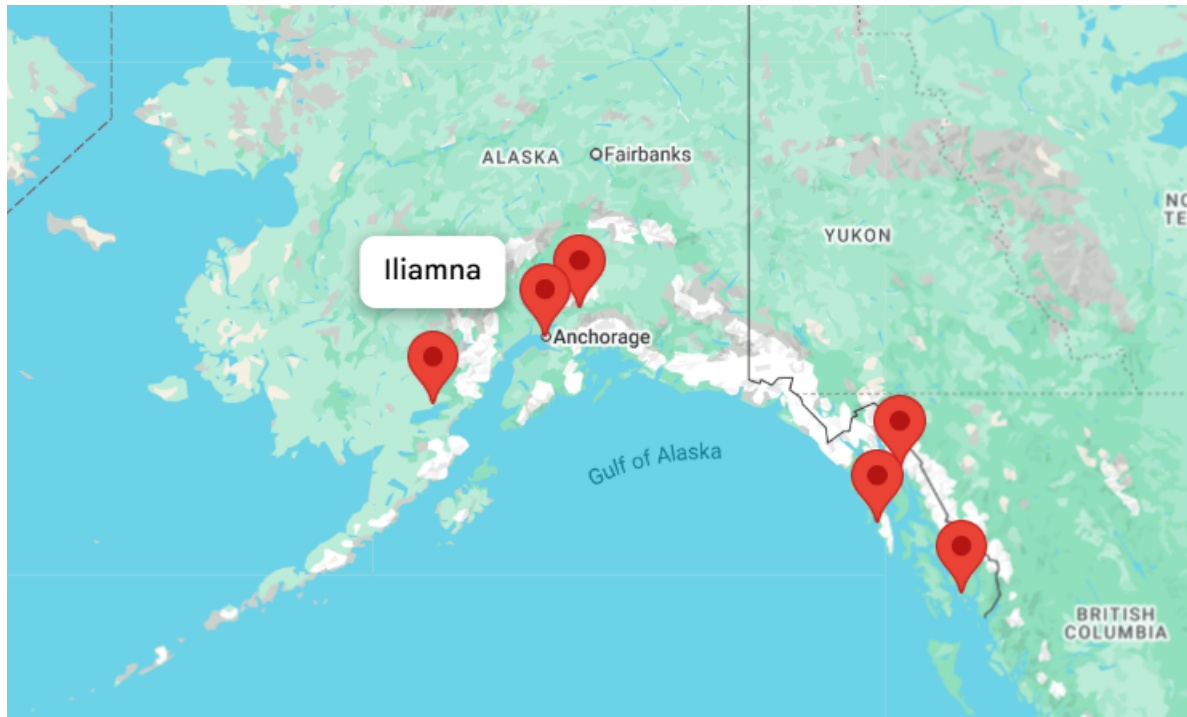


Figure 1: Locations visited in Alaska (Map data @2026 Google. INEGI, TMap Mobility)

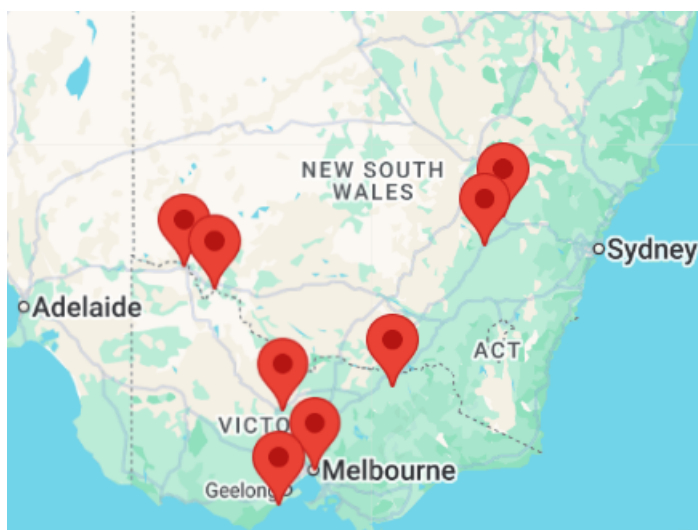


Figure 2: Locations visited in Australia (Map data @2026 Google)

Findings

1. Technology should enhance, not replace, human care.
2. Simple technology makes the biggest impact.
3. Remote healthcare is rarely cheaper.
4. Co-design, integration, and system support is vital for success.

Finding 1: Technology should enhance, not replace, human care

Across both Australia and Alaska, I observed that telehealth works best when human facilitation is built into the model. I expected to see technology enabling healthcare directly to the patient in their own homes. In reality, instead of connecting from their homes, most patients attended local health centres where nurses, health aides (an Alaskan concept), and outreach workers routinely supported video consultations, bridging gaps in digital literacy, performing examinations, interpreting clinical language, and ensuring that communication between patient and clinician was clear and complete. This model happened for both primary and secondary care consultations. It was complemented by simple technology such as iPads or webcams enabling video calls, but it was trained staff, not flashy devices, that made virtual care safe, efficient, and acceptable.

This contrasts with many UK models where patients join remote consultations from their homes without support, usually via telephone. When I discussed this with healthcare workers and patients in Alaska and Australia, they were quick to highlight that this approach risks excluding those with limited digital skills, sensory impairment, low literacy, or cultural or linguistic barriers. They highlighted potential impacts on quality of care, and in the Alaskan context expressed surprise that medical indemnifiers would cover such models of care as they viewed it as high risk from a patient safety perspective. In the successful services I visited, technology functioned as an augmentation of human care, not a replacement.

My findings suggest that provision of care to remote communities should be understood as a team-based clinical activity, with local staff supporting both patients and remote clinicians. In both countries, staff highlighted that where human facilitation was absent, uptake fell, diagnostic accuracy declined, and patient confidence weakened. Where it was present, telehealth expanded access, reduced unnecessary transfers of patients out of their communities, and was valued by the workforce.

Case studies

1. Remote GP Services in Robinvale, Australia

In Robinvale, GP coverage was frequently dependent on FIFO (fly-in fly-out) doctors supported by local nurses who facilitated video consultations. On-site nurses were required to examine patients, interpret clinician instructions, ensure diagnostic safety, and manage follow-up. Remote doctors were able to work effectively because of the continuity and context provided by a familiar and trusted nurse supporting the consultation. Figure 3 shows one such doctor working from Melbourne, seeing patients in Robinvale.

Learning: telehealth expands access but requires strong local clinical capability. It is not a substitute for sustained workforce investment.

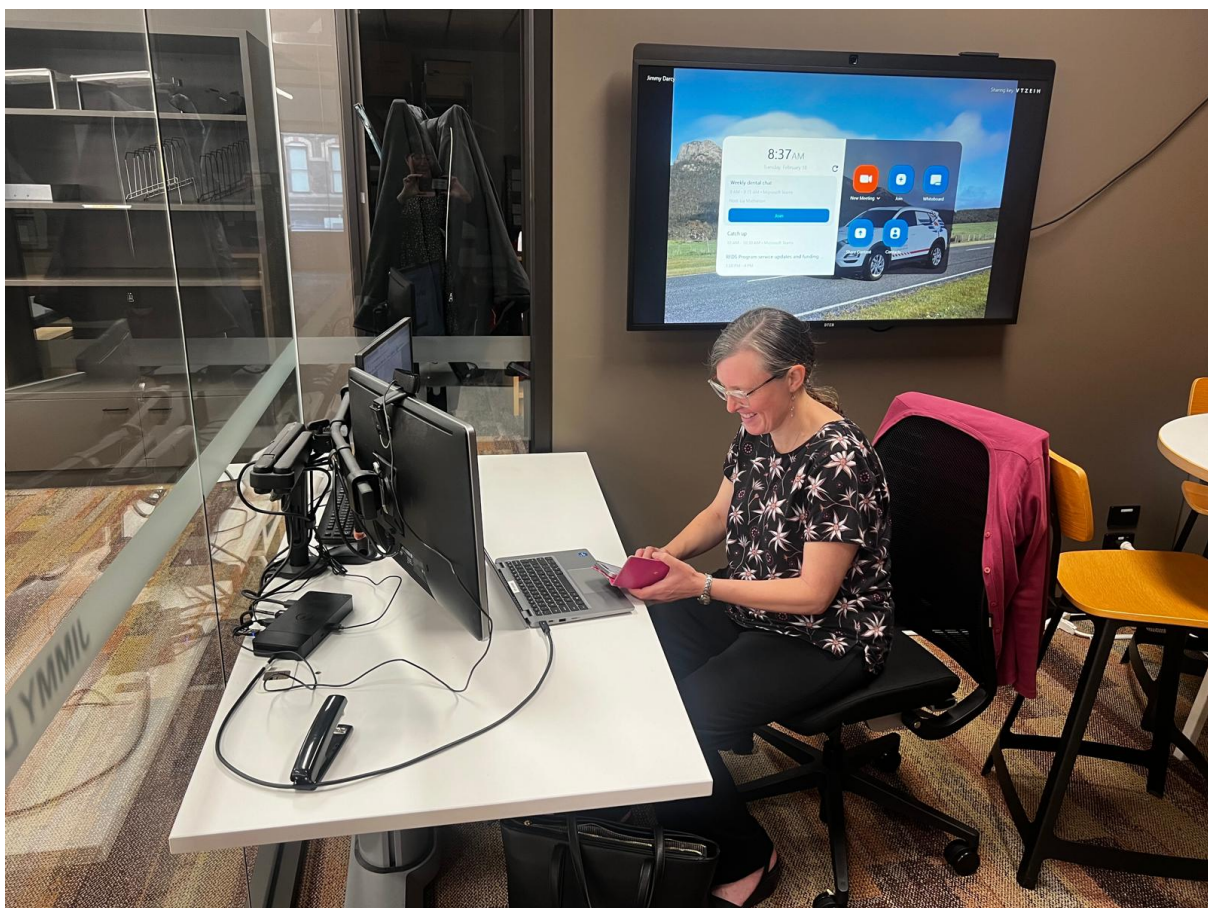


Figure 3: Dr Cathy Sloan, consulting with Robinvale patients from Melbourne with nurse facilitation

2. Aboriginal Health Centres, Victoria, Australia

Attempts to provide unsupervised telehealth via devices sent to patients' homes failed due to loss of equipment, low literacy, and connectivity barriers. By contrast, in-centre

telehealth supported by outreach workers proved highly effective. These workers ensured that patients understood the process, felt culturally safe, and could engage fully with clinicians.

Learning: telehealth inclusion is not achieved by distributing hardware, it requires relational, culturally sensitive human support.

3. Alaska Tribal Health System

Community health aides form the backbone of remote care delivery. They are based at village health centres and are trained in structured protocols and equipped with simple diagnostic tools, enabling them to examine patients, capture images, record vitals, and convey findings to remotely located clinicians, usually via synchronous video call, or via “store and forward” in areas with low connectivity. This model has operated successfully for decades, sustaining care in extremely isolated villages.

Learning: building a local workforce is essential for long-term telehealth sustainability.

Relevance to the UK – opportunities and challenges

The UK has implemented remote consulting widely but has done so largely by providing remote appointments to patients in their own homes, often via telephone, or through text-based platforms between general practices and patients. This has created unintended inequities, particularly for older adults, people with disabilities, and those with low digital confidence or living in areas with limited or expensive digital connectivity. My Fellowship findings suggest a significant opportunity to redesign UK telehealth pathways so that trained staff, such as rural nurses, healthcare support workers, or community outreach staff play an active facilitative role and support video consultations.

Key challenges include:

- Workforce shortages: rural areas often lack sufficient nursing capacity, and new facilitation roles would require investment.
- Training and governance: staff would need clear protocols and supervision.
- Adequate resourcing: increased costs due to the need to employ healthcare staff at “each end”. Funding models will need to be put in place for general practice to provide staff to support remote secondary care consultations.

Despite these challenges, the potential benefits are substantial. Embedding human facilitation in telehealth pathways could:

- Improve diagnostic safety and communication

- Reduce inequalities in digital access
- Enable remote services to support more complex presentations
- Increase patient trust and satisfaction.

Overall, my Fellowship strongly indicates that technology should be positioned as a tool that supports and extends human care, not one that replaces it.

Finding 2: Simple technology makes the biggest impact

One of the most striking lessons from my Fellowship was that simple, low-cost solutions often delivered the greatest impact on patient safety, clinical efficiency, and workforce resilience. I had assumed that I would come home with a shopping list of sophisticated devices, but although I did encounter innovative devices such as remote otoscopes, examination carts and ECG machines, the most transformative innovations I observed were fairly low-tech. These simple solutions resolved logistical challenges, reduced risks associated with geography and climate, and supported clinicians to work more safely and efficiently.

Across both Australia and Alaska, the emphasis was on usability, familiarity, and reliability, rather than novelty. However, it is important to note that, unlike in the UK, almost all remote consultations happened via video rather than telephone. Almost all the clinicians I spoke to were horrified at the idea of performing a consultation over telephone alone. Standard iPads, webcams and external speakers outperformed advanced but fragile digital equipment which was often used for a short period when initially introduced and then abandoned. Crucially, these solutions were co-designed with local teams who understood the context: harsh weather, difficult geography, unreliable internet, and unpredictable staffing gaps. Where new systems had been imposed rather than co-designed, they were often ignored in favour of familiar and trusted solutions.

This emphasis on “simple done well” challenges assumptions that remote care requires advanced technology. In reality, the systems that worked best were those that made everyday tasks easier (e.g., facilitating a video consultation, bringing an ambulance patient into the health centre, accessing keys to the doctor’s car) and addressed the realities of working in remote environments.

Case studies

1. Airport Key safes, Victoria and Mildura, Australia

A recurring problem familiar to UK island communities, namely how to hand over keys when there are gaps in staffing, was addressed in Australia (figure 4) using secure key safes at rural airstrips and clinic entrances. These were inexpensive, low-tech, and

required no digital infrastructure. Yet they solved a real-world problem and reduced stress in staff and insecure workarounds such as leaving keys in an unlocked car.

Learning: practical logistics often matter more than digital innovation. Small operational adjustments can unlock major efficiency gains and reduce staff stress.

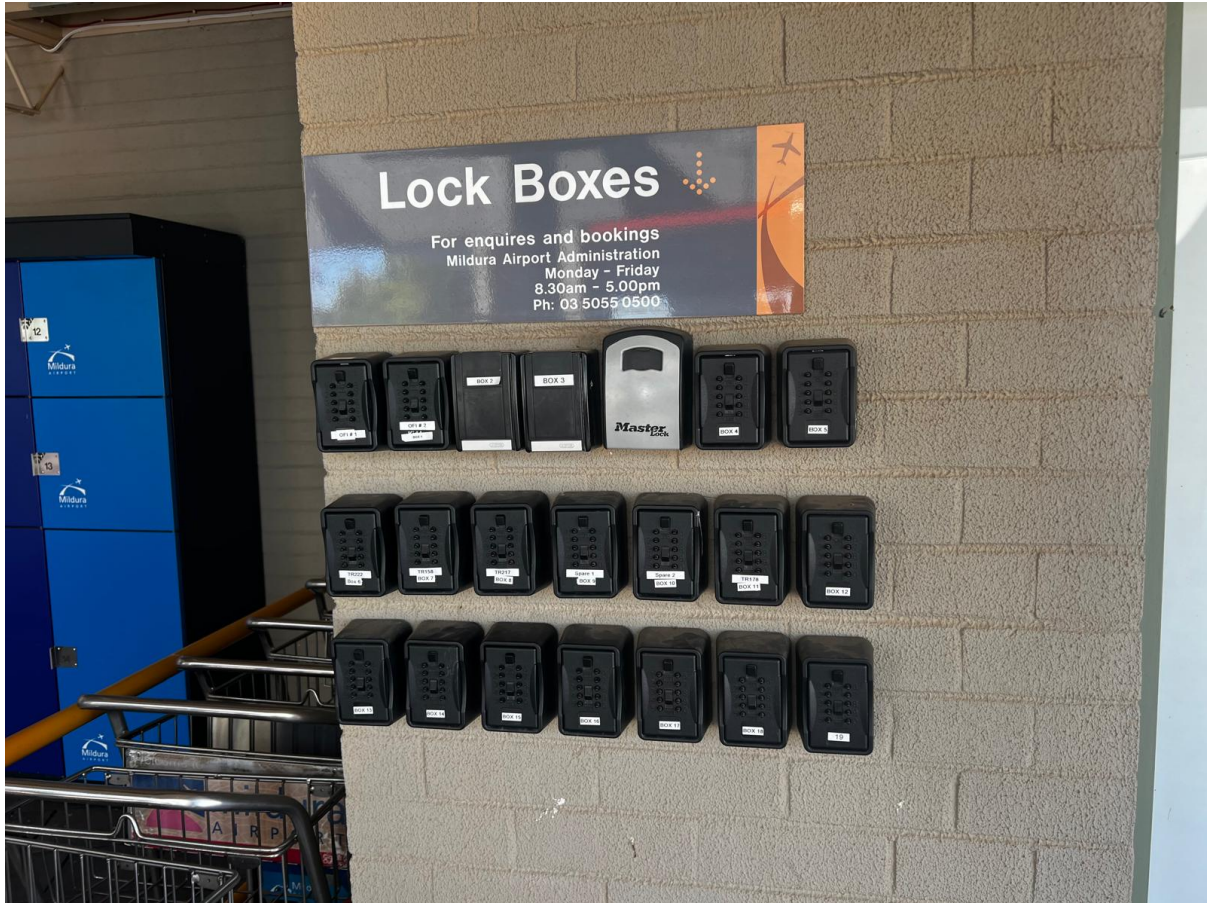


Figure 4: Airport key safes in Mildura

2. Integrated Ambulance Garage, Iliamna, Alaska

Iliamna's health centre features a fully integrated ambulance garage (figure 5) that allows vehicles to pull directly into the building, protecting staff and patients from extreme weather. This simple solution enabled safer transfers, reduced cold-related risks, and ensured equipment was not blown away or damaged during handovers. While the UK does not experience such extreme cold, wild weather is common and integrating covered areas from which vulnerable patients could enter directly into health facilities would improve safety and both staff and patient experience.

Learning: infrastructure design, rather than digital technology, can significantly improve both patient and staff experience.



Figure 5: Integrated ambulance garage in Iliamna

3. Standard Consumer Technology for Telehealth

In both countries, advanced telemedicine equipment was often broken, lost, or unused. Instead, clinicians relied almost entirely on familiar tools such as iPads, standard computer webcams, and inexpensive external speakers which enabled them to turn up the volume in a remote consultation for patients with hearing loss. These devices were more reliable, easier to replace, and widely understood by staff.

Learning: the most effective telehealth systems prioritise reliability and staff familiarity over technical sophistication.

Relevance to the UK – opportunities and challenges

The simplicity and effectiveness of these interventions have clear relevance for remote and island communities in the UK. Several insights stand out.

High-impact, low-cost changes can immediately improve service reliability in rural settings. Simple infrastructure-based innovations, such as key safes, could resolve persistent logistical issues in UK island services.

Building design matters. Many island UK practices receive patients via community ambulance for urgent care, but lack integrated garages or protected transfer areas. Redesigning or retrofitting existing buildings and specifying such undercover areas for new buildings could materially improve safety and experience for both patients and clinicians. Consideration should be given to providing in the commissioning specifications for new health centres an undercover area where patients arriving in wheelchairs or in ambulances can transfer from the vehicle into the health centre without being exposed to the weather.

For many services, consumer-grade technology such as iPads may be sufficient. UK digital programmes sometimes prioritise procuring high-spec equipment, yet my Fellowship demonstrated that everyday consumer devices often deliver better durability and acceptance and are easier to integrate into services due to their familiarity to patients and staff.

Key challenges include:

- Funding constraints for estates improvements in small rural practices.
- Ensuring that simple solutions are not overlooked in favour of high-profile digital initiatives.

Despite these challenges, my Fellowship showed that simplicity is a powerful design principle in remote healthcare. When services focus on what staff actually need, and on what will reliably work in severe weather, low-connectivity locations, or for small teams who may lack digital prowess, simple tools can produce disproportionate benefits.

Recommendations

1. Invest in simple, practical infrastructure (e.g., key safes, integrated garages and iPads).
2. Ensure human facilitation of telehealth through nurses or outreach workers.
3. Strengthen digital infrastructure.
4. Co-design services with local communities, especially Indigenous and culturally distinct groups.

Finding 3: High quality rural healthcare doesn't come cheap

A consistent finding across both Australia and Alaska was that integrating technology into the provision of patient care did not reduce workforce demands. While the technology itself is often inexpensive, using it effectively typically requires two professionals: a healthcare worker supporting the patient locally and a remote clinician providing oversight or specialist input. Rather than substituting for staff, implementing telehealth reconfigures the workforce into distributed teams.

Local staff were required to facilitate consultations, monitor patients between assessments, ensure continuity, and complete tasks that an on-site clinician would previously have carried out. Remote clinicians, in turn, relied on this local workforce to provide examination findings, observations, escalation decisions, and patient support.

In practice, this meant that telehealth often provided access to services not previously available locally, but did not replace in-person clinical roles. This challenges the common assumption that remote care will deliver cost savings or reduce workforce pressures. My observations indicate the opposite: remote care is resource-heavy, demanding high staff skill and trust at both ends, reliability, and resilience.

Case studies

1. Paramedic and Nurse-Supported Emergency Care, Australia

In rural urgent care centres, remote emergency physicians supported local teams via telehealth. However, paramedics or nurses remained physically present for extended periods, especially when retrieval teams faced long delays. Telehealth did not reduce the number of clinicians required; instead, it coordinated distributed teams across large distances.

Learning: telehealth can enhance emergency delivery, but it cannot replace on-site emergency clinicians.

2. Alaska's Tribal Health System – Dual Workforce Model

In Alaska's villages served by Southcentral Foundation, telehealth consultations were supported by community health aides who performed hands-on assessments, recorded observations, captured images for digital transfer to remote clinicians, and supported care plans. Remote clinicians relied heavily on these staff to maintain safety. Pharmacy services were provided in-house but via an off-site pharmacist reviewing and authorising every prescription in real time before it could be dispensed locally (figure 6). Far from reducing costs, the system required a sustained investment in staff, accommodation, technology, training, supervision, and protocol development.

Learning: effective telehealth is expensive.



Figure 6: Machine for releasing medication following pharmacist review in Iliamna, Alaska

Relevance to the UK – opportunities and challenges

The UK often frames telehealth as a strategy to reduce workforce, improve productivity, and address staff shortages. My Fellowship suggests that this expectation is unrealistic. Technology enhanced models often require more, not fewer, staff.

Implications for the UK:

- Rural and island services need additional investment in facilitators such as nurses or Health Care Assistants (HCAs) to enable safe remote consultations alongside technology.
- Cost-saving assumptions should be avoided; instead, telehealth should be justified based on equity, safety, and access, not efficiency.

Challenges include:

- Funding models that currently assume telehealth substitutes for in-person care rather than complements it.
- Ensuring that telehealth expansion does not inadvertently increase pressure on already stretched local teams.
- Adapting funding models to support telehealth provision.
- Recruiting and retaining rural staff.
- Accommodation for staff in rural areas.

Despite these barriers, I saw how remote care can significantly enhance service reach and improve patient access, but only when supported by appropriate workforce investment. Positioned correctly, telehealth becomes a way of delivering high-quality care to remote communities, not a shortcut for reducing staffing levels.

Finding 4: Co-design, integration, and system support is vital for success

Across both Australia and Alaska, I observed that successful telehealth services were those embedded in well-designed, integrated systems, where technology, workforce, and infrastructure aligned seamlessly. Virtual care did not operate as an add-on; it was part of a coordinated ecosystem with clear pathways, defined roles, strong governance, and dependable local support for patients. Lesser skilled staff could play a role, but this was within clear protocols and governance systems.

In successful services, both staff and patients had often played a role in service design, and felt a sense of ownership of the end result.

In such services, technology wasn't an "add-on", but had been designed into how the services were delivered. Such services worked because they took a deliberate and thoughtful approach to combining skilled human facilitation within appropriate physical and digital infrastructure and robust organisational procedures. Workflows worked effectively and the technology was integral, rather than "bolted on" to a preconfigured system. Patients were guided through the process, staff knew how to work effectively within the system, and clinicians, both remote and local, operated within shared protocols and patient records. Where this integration was absent, telehealth became fragmented, inconsistent, or unsafe. Where it was strong, care was timely, acceptable, and clinically effective.

This highlights that technology enhanced care is not simply about providing technology, it depends on the infrastructure around the technology.

Case studies

1. Australian Tele-Mental Health Services

A defining feature of Australia's Mental Health Emergency Care (MHEC) model is the intentional, sustained focus on co-design and staff engagement, which has been critical to its success. The service has had to work hard to persuade local clinicians to engage with them. This has been because keeping a patient experiencing mental health crisis in a local centre involves significant amounts of work for the small number of staff onsite. Service designers involved sceptical local services in co-designing the model of care, and regularly visit distant sites to build and maintain relationships, seeking feedback and adapting the service as a result. With time, staff have come to see the difference this model of care makes, and some of the most sceptical are now the most enthusiastic supporters of the service.

2. Victoria's Virtual Emergency Department (VVED), Australia

The VVED represents one of the most coordinated digital emergency systems globally. It operates 24/7 with consistent triage pathways, rapid access to remote clinicians, automated discharge summaries, and clear protocols for shifting patients between virtual and in-person care. Patients attend local urgent care centres in community hospitals where trained nurses facilitate assessments. The VVED clinicians work from a central hub with high-quality digital support. Importantly, VVED does not function in isolation, it is tightly connected to ambulance services, retrieval teams, pharmacies, and regional hospitals.

Learning: virtual emergency care becomes safe and efficient only when embedded within a comprehensive regional system, not as a standalone digital service.

3. Alaska's Tribal Health System

Alaska's telehealth services are rooted in the structure of its integrated tribal health organisations, which manage primary, emergency, specialist, and transport services under one umbrella. Tribal patients in the Southcentral Foundation area are described as “customer owners” rather than as patients or clients, and communities are involved in decisions about the services they receive and how they are designed. Community health aides are trained and supported through a central curriculum; digital records are shared; and telehealth equipment is standardised across all villages.



Figure 7: Telemedicine cart, standardised across Southcentral Foundation Health Centres

The combination of trusted local workers, centralised specialist support, and shared governance creates a unified, resilient system. Patients know what to expect, staff understand their roles, and know how to access support, for example there is a technical support team who aim to resolve issues within 5 minutes, meaning consultations can continue rather than needing to be rescheduled. Medication issuing is made safe through a robust pharmacy system, with prescriptions checked remotely before being released from a local machine to the health aide.

Learning: strong local engagement combined with organisational integration, more than technology, enables the delivery of strong healthcare in geographically remote environments.



Figure 8: The author visiting the village health centre in Iliamna

Relevance to the UK – opportunities and challenges

The UK has adopted virtual care rapidly, but co-design has often been non-existent with both staff and patients feeling that technologies have been imposed upon them. Implementation of new technology and pathways has often been patchy, inconsistent, or isolated from wider clinical systems. Unlike the integrated models I saw on my Fellowship, UK services sometimes operate in silos, with each organisation choosing its own platforms, protocols, and workflows.

Opportunities for the UK:

- Engage with local communities and involve them in designing health services. Seek and act on staff opinions and concerns.
- Ensure adequate resourcing of primary care to allow the staff capacity to support remote consultations with secondary care.
- Standardise digital tools, record systems and workflows within a region to ensure continuity between services.
- Invest in the workforce, training up healthcare professionals for the rural environment, supporting them when in the field and encouraging relationship building with clinicians working remotely seeing patients in encounters facilitated by the local workforce.

Challenges include:

- Failure to design services alongside local people, a lack of process for co-design with NHS staff.
- Fragmented NHS structures and silo working between primary and secondary care.
- Variation in digital maturity and connectivity.
- Rural workforce shortages and recruitment challenges, often related to lack of options for spousal employment, suitable accommodation or secondary school provision.
- Lack of capital funding and investment in infrastructure.

Despite these challenges, my Fellowship demonstrates that the UK can significantly improve the effectiveness of virtual care by focusing less on technology procurement and more on co-designing integrated systems which work for communities and for the staff serving them.

Conclusion

In my Fellowship, I set out to understand how technology can support the delivery of healthcare in rural and remote settings, drawing on learning from Australia and Alaska. I came home feeling I learnt far less about technology than I expected, but much more about what is needed around it for technological promise to be realised within healthcare systems. Technology is most powerful when it enhances the work of healthcare professionals already embedded in remote communities, not when it attempts to replace them.

My findings reinforce four interconnected lessons:

1. Human facilitation is indispensable. In the successful models that I was privileged to visit, it was the on-site nurses, health aides, or outreach workers with the patient who made the system work, not fancy technology.
2. Simple technology often delivers the greatest impact. Low-cost tools such as key safes, consumer-grade devices, and practical building features brought the advantages of technology to staff and patients.
3. High quality technology enhanced remote care is rarely cheaper, because it requires both local and remote expertise working together – two healthcare professionals, not just one.
4. Co-designed, integrated, well-supported systems succeed with community buy-in, staff engagement, shared records, strong governance, and coordination between local and central teams.

Together, these findings demonstrate that technologically enhanced remote healthcare depends far more on workforce design, logistics, governance, and culture than on digital tools alone. For the UK, particularly its rural and island communities, the challenge is not simply to expand the use of technology within healthcare, but to build the human and organisational structures that allow technology to enhance care safely and equitably.

Recommendations for the UK

1. Embed human facilitation into rural telehealth pathways

Who: NHS boards, Integrated Care Systems, primary care networks, rural practices.

What is needed: Development of secondary care pathways which include local support. Investment in rural nurses, healthcare support workers, community health aides, and outreach workers who can support remote consultations. Development of training, supervision frameworks, and relationships with the clinical teams supporting them off site. Funding for rural general practices to support secondary care remote consultations.

Benefits: Safer assessments, reduced miscommunication, improved digital inclusion, better patient experience and the ability to manage more complex presentations remotely.

2. Prioritise simple, high-impact infrastructure improvements

Who: NHS estates teams, local authorities, rural practices, capital funding bodies.

What is needed: Key safes, integrated ambulance or patient-transfer bays, weather-proof entrances, reliable heating and lighting for emergency areas.

Benefits: Reduced operational delays, safer transfers, and greater staff resilience in harsh environments.

3. Avoid assuming adding technology will result in cost savings and plan for increased staffing

Who: NHS planners, commissioners, workforce modelling teams.

What is needed: Revised workforce assumptions for rural telehealth, recognising the need for dual clinical presence (local and remote). Funding mechanisms that reflect real labour needs rather than hypothetical efficiencies.

Benefits: Realistic service planning, reduced risk, and safe implementation of telehealth.

4. Co-design rural services with local communities

Who: NHS boards, community planning partnerships, local councils, Indigenous community representatives (where relevant).

What is needed: Ongoing engagement with remote populations to ensure cultural appropriateness, trust, and service acceptability.

Benefits: More inclusive and sustainable models, higher uptake and acceptance, and reduced inequalities.

Next Steps

Drawing on the findings of this Fellowship, I intend to:

Share this report with UK rural health networks, NHS boards, and policymakers to inform ongoing rural health strategies.

Collaborate with NHS leaders across the four UK nations to promote integrated, system-wide approaches. I have already met with the English CMO's team to discuss my findings.

Continue to engage with the Rural Health Special Interest Group at the Royal College of GPs and the EURIPA (European Isolated and Rural Practitioner's Association), sharing these findings with them and influencing their outputs.

Publish and present findings across academic, clinical, and policy forums to promote evidence-informed decision-making. I have already submitted an article on "Augmented video consultations" to a major journal and presented my findings to the Rural Service Network and the European digital primary care learning lunch.

Appendix 1: Organisations visited

Alaskan organisations

Location / Organisation	Facility / Operator	Website
Alaska Native Tribal Health Consortium (ANTHC)	Statewide tribal health consortium	https://www.anthc.org
Southcentral Foundation (SCF)	Tribal health provider in Anchorage region; operates many village health partnerships	https://www.southcentralfoundation.com
SEARHC (Southeast Alaska Regional Health Consortium)	Regional tribal consortium operating most care in Southeast Alaska (Sitka, Ketchikan, etc)	https://www.searhc.org
Sitka	SEARHC – Sitka Medical Center / Mt. Edgecumbe Medical Center	https://www.searhc.org/locations/sitka
Ketchikan	SEARHC – Ketchikan Health Center	https://www.searhc.org/locations/ketchikan
Chickaloon	Chickaloon Village Health Clinic	Home – C'eyiits' Hwnax Life House Community Health Clinic
Iliamna	Iliamna Health Clinic (operated by Southcentral Foundation under the tribal health system)	https://www.southcentralfoundation.com/primary-care-clinics/ (<i>Iliamna listed under regional clinics</i>)

Australian organisations

Organisation	Website
Royal Flying Doctor Service (RFDS) – Melbourne / national	https://www.flyingdoctor.org.au/ (csu.edu.au)
RFDS Health Group – GP surgery in Robinvale	https://www.flyingdoctor.org.au/vic/what-we-do/flying-doctor-health-group/ (csu.edu.au)
Western NSW Mental Health Service (Orange)	Mental health, drug and alcohol services in Western NSW NSW Government
The Royal Melbourne Hospital	https://www.thermh.org.au/