Providing a lifeline for rural doctors

Telemedicine programs are often designed to meet the needs of specialists rather than rural doctors

Australia has almost twice as many small rural hospital-based emergency facilities as designated emergency departments.[1] They see 16% of Australia's emergency patient presentations, or almost 1.3 million presentations each year.[1] Although small rural facilities are tasked with managing mainly minor injury and illness, they also treat patients with complex and time critical problems.[2] These facilities are staffed by nurses alone, or by junior doctors, general practitioners or rural generalists. Rural doctors often have specific training for rural emergency medicine, and they usually have more years of experience than junior doctors who treat most patients in urban emergency departments. What they lack is immediate access to onsite specialist advice.

Tertiary specialty units that receive patients from rural areas are often aware of this deficit. Concerned about the poor outcomes for their rural patients (although rural–urban outcome research is often confounded by hard-to-control-for factors[3]), some have created systems to provide a lifeline for early advice and support. A recent systematic review[4] described tele-emergency programs that provide support for stroke thrombolysis, trauma management, burns care, eye conditions and several other specific problems.

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Direct access to specialists with a passion to help rural doctors is incredibly valuable. Rural doctors feel more supported, and may be more likely to stay in rural practice.[5] It is easier, and likely to be safer, than the usual process of speaking to a registrar at a suitable hospital, although robust evidence is lacking.[4]

However, telemedicine projects that are driven by specialty units create problems. When each program chooses a separate technology that is ideal for their condition of interest, rural doctors can struggle to maintain familiarity with each system. Of more concern is that advice can only be obtained if the patient is critically ill or has a condition that interests one of the specialty telemedicine programs. Advice is difficult to obtain if the patient presents with an undifferentiated illness that is probably self-limiting but in which life-threatening conditions have not been excluded. Telemedicine advice providers with limited resources have complained they are there to "consult with sick patients … Not [to deal with] every other thing".[6]

But undifferentiated problems, such as dyspnoea, chest pain, abdominal pain, collapse and headache, are among the most common emergency presentations at both large and small facilities.[2] No rural ambulance service has the capacity to transfer all such patients to a larger centre just to make sure that the small number of serious diagnoses are detected. These decisions can be difficult. An expert opinion in borderline cases can make a difference, sometimes avoiding unnecessary and expensive transport and keeping patients where they would rather be. It can also save lives. The South Australian Integrated Cardiology Clinical Network provides advice to rural clinicians for any patient with chest pain. As a result, within a decade, they have removed the gap between rural and urban mortality from myocardial infarction.[7]

The alternative approach is to create a centralised telemedicine system staffed by emergency medicine specialists.[8] This replicates the practice in many regions where emergency physicians provide telephone support to surrounding small hospitals. This system has several advantages. Emergency specialists become more familiar with the small hospital environment by seeing it regularly during consultations. It provides a single access point for rural clinicians. No type of presentation should be out of their scope of practice, even if the patient has vague symptoms or is drug affected.

There is a disadvantage too. In emergency departments, emergency specialists rely on inpatient unit specialists directly reviewing some cases. Unless this is explicitly built into a centralised telemedicine system, emergency specialists must use an ad-hoc system of calling specialists or their registrars at surrounding hospitals who may have no access to the video-links and may feel that offering such advice is not part of their employment.

How do we combine a centralised system with a system of specialty units on call? A centralised telemedicine system may have to be located at an actual hospital with a full complement of speciality units resourced to help rural doctors. There is a system like this in Australia, or actually over Australia. For more than a decade, the Good Samaritan Hospital in Phoenix, Arizona, in the United States, has been providing advice for medical situations on Qantas, and many other airlines', flights. A doctor on shift in the emergency department is called to provide advice, with all the specialist and subspecialist resources of a large tertiary hospital available for backup.[9] Can we provide the same service, or something similar, for rural hospitals on the ground?

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