



An infection control exchange in Papua New Guinea

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Abstract

This article outlines an infection control exchange between Mount Hagen General Hospital in Papua New Guinea (PNG) and Port Pirie Regional Health Service in South Australia. Some of the differences in PNG health care which may impact on infection control are discussed, as are the perceived benefits for both practitioners involved. Australian practitioners are urged to help support colleagues in other, less developed nations.

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In 1996 I had the opportunity to participate in an infection control exchange visit between the Mount Hagen General Hospital (MHGH) in the Papua New Guinea (PNG) highlands and Port Pirie Regional Health Service in South Australia, as part of an Australian International Aid Organisation (AUSAid) venture. This article attempts to highlight some of the benefits and difficulties inherent in such a project.

Historically, infection control was not a priority in PNG hospitals. In fact, as far as we know, the first hospital infection control practitioner (ICP) to be appointed to a dedicated position there was in May 1996, at Mount Hagen. Since then, however, most of the major hospitals in PNG have appointed ICPs.

The aim of my visit was not to make exhaustive recommendations for MHGH but to gain an understanding of the hospital's environment and resources, so I could advise on problems identified by the MHGH ICP. Following this, the MHGH ICP would visit me in Australia to learn more about hospital infection control. This approach was different to that of some other aid ventures, where personnel had been sent to Australia from PNG (or other countries) to learn from Australian practitioners with little or no understanding of the PNG health-care environment.

Mount Hagen is situated in the western highlands province of PNG, about 1700 metres above sea level. The area was only discovered as a populated region in 1933, when the existing tribes numbered about 200,000 people and lived a warlike existence as smaller clans. Indeed, tribal rivalry and aggression remains a major problem even today.

On arrival in Mount Hagen for my 2-week visit, my first impression was of the high level of security. Everything of value, including shops, businesses and homes, had its own security measures, including guards on the doors, bars on windows and, in many cases, barbed wire fences and patrol dogs. Apparently, the traditionally violent way of life is still very much the norm.

While the town itself was neat and clean, many buildings were somewhat ramshackle. Nevertheless, the apartment in which I stayed was a masterpiece of modern security. In fact, it was purported to be the safest place in town, having its own power and water supply in case of siege. This did not make me feel any more secure.

MHGH is the main referral centre in this region, serving a population in excess of 300,000. The urban area of Mount Hagen itself boasts a population of approximately 20,000 but census figures are probably only estimates, due to difficulties with data collection. It seems that data collection in PNG can be a major problem, so published health indicators and other information may not always reflect what actually occurs.

With a bed capacity of about 300, MHGH also has an outpatient throughput of about 450 per day. The 17 resident medical staff included a general surgeon, obstetrician/gynaecologist and ophthalmologist, while about 100 PNG-trained registered nurses and 120 'community health workers' (who are used as second-level nurses but have no hospital-specific training) provide the necessary nursing care. A pathology laboratory located on site is reasonably new and

well-equipped and provides most standard tests, as well as a blood collection and transfusion service.

My first impressions of the hospital itself were somewhat surprising. I had assumed the overall level of cleanliness would be poor, but basic cleaning and housekeeping were quite good. Staff appeared to take considerable pride in their environment, even though many structures and floor surfaces were somewhat dilapidated due to lack of maintenance (there were no maintenance staff). All the wards and departments appeared to be run in an orderly fashion, with even the outpatient departments well-controlled in terms of patient movements. The hospital's security staff control all entry into the secure hospital compound.

To gain an understanding of hospital life, I completed a three-stage audit – a walk-through audit of all buildings, an audit of the current inpatient population and an audit of specific procedures. This allowed me to better comprehend its functioning at all levels.

In the wards we examined handwashing, glove use and sharps disposal. Handwashing was problematic, due to a lack of adequate sinks. Even where sinks were available, often soap or towels were not. Nor were antiseptic handwashes readily available in the general wards, even though nurses cannulate for intravenous (IV) access and catheterise in the wards. Sterile surgical gloves were reused after being washed, powdered on the outside with baby powder (to prevent them sticking together), repackaged in sterilisation bags and sent to the central sterile supply department (CSSD) for sterilisation. Some staff told me they do use disposable, non-sterile vinyl or latex gloves on occasion, but these are not readily available. Sterile surgical latex gloves tend to be used two or three times before being discarded.

Most wards used a plastic IV bottle as a sharps container. These had a small hole cut in the top of them and were then hung on the sides of medication/dressing trolleys. Nearly all the syringes used were glass and recycled, so needles had to be removed by hand and placed in the sharps containers. Some of the containers I saw had needles sticking out of the tops and sides. There were anecdotal reports of the regularity with which needlestick injuries occurred, but nothing official (PNG lacks a formal workers' compensation system).

Waste collection was the responsibility of the cleaning staff, with all waste (including sharps, laboratory cultures, etc.) placed in a dumpster for transport to the local dump. A visit to that dump revealed that, far from being a sanitary landfill,

it was merely a site for disposing of all the town's waste. Indeed, people (and pigs) regularly scavenged there.

In CSSD, which was part of the theatres, we examined cleaning, packaging and sterilisation. All items were washed and dried by hand prior to packaging, which consisted mainly of strips of material (called 'lap-laps') held together with ties. Most material was laundered between uses. Ward equipment, such as glass syringes, was washed and packed in the wards, then taken to CSSD. Theatre instrument sets were packed on stainless steel trays with solid bottoms and placed in the autoclave on their sides.

Many hospital admissions were as a result of communicable diseases, with malaria and typhoid the most common. Tuberculosis was another common diagnosis, with a separate ward used to care for such patients; however, no restrictions were placed on their movements in other wards. In fact, apart from a three-bed special ('intensive') care unit, there were no physical isolation facilities at all. Nor were there records of staff illnesses, or staff vaccination or screening programs.

A very brief prevalence survey of 224 patients during my visit revealed that only 11 infections (in 10 patients) met the definition of nosocomial. These consisted of four surgical wound infections, one bacteraemia, one urinary tract infection, one pneumonia and four others (gastroenteritis, IV site, conjunctivitis and decubitus ulcer), an overall rate of 4.5 per cent. We encountered great difficulty, however, in determining the presence, or otherwise, of evidence of infection, due to poor record-keeping. Even so, I was surprised by the lack of obvious hospital-acquired infections.

Some other differences between MHGH and South Australian hospitals included the following:

- poor medical record-keeping (retrospective audits were not possible, due to poor filing of existing medical notes);
- long lengths of stay (often due to the need to complete antibiotic medication courses, since patient compliance at home was inadequate);
- shortages of medical supplies, due to their unavailability (including essentials like IV fluids), and
- the lack of antibiotic resistance in bacterial pathogens (patients were treated with either penicillin or chloramphenicol and recovered).

One of things that struck me most was that most patients were very ill when admitted, yet recovered. People often put

off seeking medical care until the last minute because access to care often meant a long trip on foot and great expense (hospital visits were charged to patients). Thus, they were likely to be critically unwell when they presented. Nevertheless, simple care such as IV therapy or antibiotics often saw a marked improvement in a short space of time. This is a credit to the medical and nursing staff providing this care in less than ideal conditions.

After my return to Australia, Peter Pindan, MHGH's ICP, visited South Australia for 6 weeks. Based with me in Port Pirie, he was also able to spend time with ICPs in other hospitals, including Royal Adelaide Hospital and major country centres in the state. Further, he attended Infection Control Association of SA (ICASA) meetings and seminars and met other ICPs.

Peter – who is a PNG-trained registered nurse – felt his visit gave him a better understanding of the application of infection control principles than that he could have gained from textbooks and standards. He returned to MHGH with a clear vision of how to accomplish his list of tasks. Although, as an isolated practitioner, he encounters difficulties, he is attempting to network with other PNG ICPs, whom he hopes can assist in policy/procedure development and the sharing of ideas.

Peter's achievements include the following:

- establishing an infection control committee;
- formulating an infection control manual;
- commencing hepatitis B and typhoid vaccination programs for staff;
- using more rigid sharps containers;
- successfully lobbying for an incinerator;
- continuing a surveillance program, and
- providing education to other hospitals in his region, as well as to his own staff.

I feel this exchange visit was successful in a number of ways: firstly, it enabled me to gain an understanding of Peter's hospital environment and culture, to assist me in planning his visit to Australia; secondly, it helped me think more laterally about infection control problems and, thirdly, it gave Peter a point of reference for his visit and an 'authority' to quote to staff at MHGH. Pedantic as this may seem, it is important,

since Peter would otherwise have been even more isolated in his attempts to elicit change. My visit to MHGH indicated to staff that Peter was receiving advice from a tangible source. Infection control was not a subject to which, previously, they had paid much attention, so they had to be convinced. Finally, Peter's networking with Australian ICPs has helped him develop a base of professionals to whom he can turn for advice.

ICPs in Australia have a lot to offer colleagues in other countries where health-care systems are less developed and funded than our own. As a profession, we should become more involved in promoting infection control in neighbouring countries like PNG. The ICASA continues to sponsor Peter's membership, to assist him in keeping abreast of changes in infection control, and also helps other visiting PNG ICPs. The opportunity to contribute to the development of infection control in a neighbouring country provides many benefits for both parties.

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