

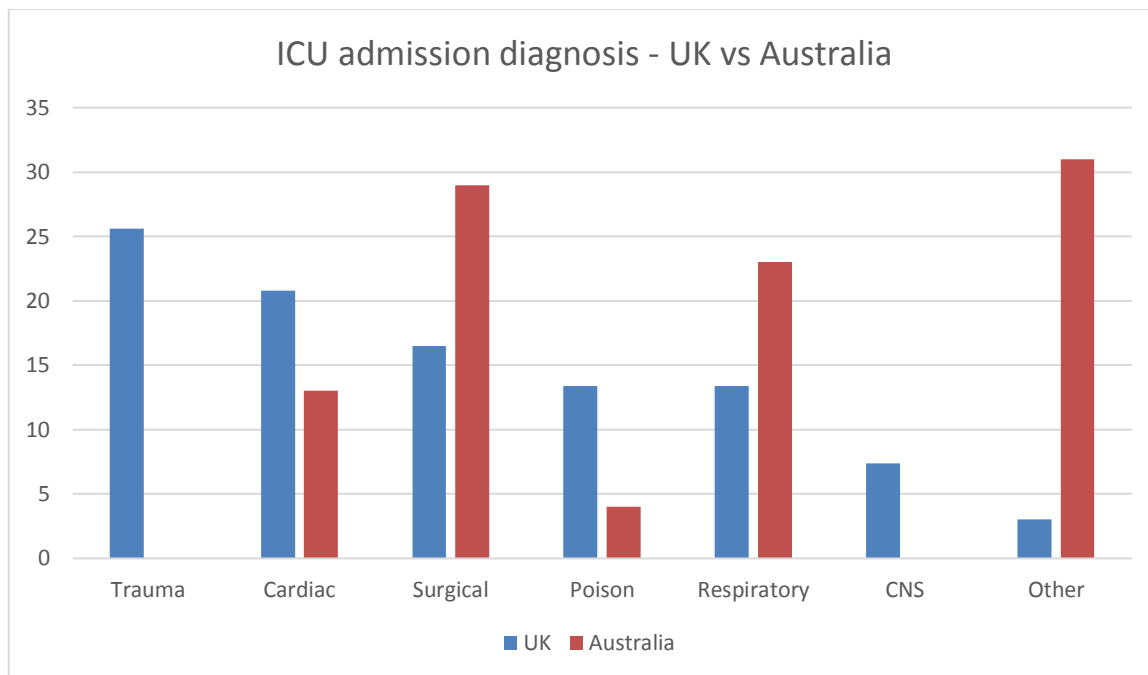
ELECTIVE (SSC5c) REPORT (1200 words)

A report that addresses the above four objectives should be written below. Your Elective supervisor will assess this.

1. Explore the reasons for admission to the ICU in Australia and compare with units in the UK.

Intensive care medicine is unlike most other specialities in that it is not concerned with single organ systems and provides supportive care to patients who are systemically ill. A patient is defined as requiring intensive care if they have a “life threatening or potentially life threatening and reversible or potentially reversible multi-organ failure requiring continuous monitoring, point of care diagnostics and complex supportive therapy” however admission rights lie with the consultant covering ICU.

Both Australia (Godfrey et al. 2012) and the UK (Simpson et al. 2005) have a similar population with similar health needs and therefore it stands to reason that the top admission diagnoses between the two populations should be similar. The most common admission diagnoses in the UK and Australia are detailed in the table below. It is important to note that the two sources use different criteria and this explains the discrepancies between trauma, CNS and other.



2. Compare the Australian health care model with that of the UK.

Australian health care is based on joint private and government funding. The government funded universal healthcare system (Medicare) is partly funded through taxes, with most of the population paying a 1.5% levy with an additional 1% being paid by those who have a higher income and are not invested in private health insurance. There are also a number of private healthcare companies available that offer various coverage of things not covered by Medicare. Typically, 100% of inpatient treatment, and between 75%-85% of outpatient treatment is covered by Medicare with the patients having to fund the remaining costs (AIWH, 2014). In the UK, all permanent residents are provided healthcare that is free at the point of access and paid for through general taxation. There is an established private sector providing some healthcare however this is much less than its publicly funded counterpart.

When looking at demographics, both the UK and Australia are remarkably similar. Australia has one of the highest life expectancies at 78.5 for men and 83.3 for women. The UK has a life expectancy of 79.5 for men and 82.5 for women. This means that both countries have an increasingly elderly population to cater for. The leading causes of death for both countries are ischaemia heart disease, stroke, lung cancers and COLDF, with melanomas having a higher incidence in Australia.

2. Explore the choice of fluids available in the ICU for both resuscitation and maintenance.

Fluid management is a controversial subject with little published guidance and that is poorly taught in medical schools. In practice prescribing fluids is far from standardised with each doctor favouring different regimens and varying in practice. Crystalloids are generally favoured over colloids due to their reduced incidence of anaphylactoid reactions, reduced incidence of other adverse effects and cheaper cost, however colloids are theoretically more effective in fluid resuscitation than crystalloids as more of the volume given remains in the intravascular space.

A 2013 study conducted in 32 hospitals across Australia and New Zealand found that, for resuscitation purposes, neither colloids or crystalloids conferred a survival benefit alone however colloid use was associated with an increased incidence of acute kidney injury requiring renal replacement therapy. It was suggested that using colloids in specific subgroups predisposed to kidney injury such as sepsis patients should be avoided as there was a trend towards increased mortality. This increase in acute kidney injury and mortality has led to recommendations against the use of colloids for resuscitation purposes, especially in patients with sepsis and/or pre-existing renal disease (Phillips et al. 2013).

Maintenance fluids are one of the most widely prescribed things we give in hospitals and yet there is very little guidance on how and what to prescribe. In an ICU setting, where patients are critically ill and may be unable to take fluids orally inappropriate intravenous fluid administration can lead to significant morbidity and mortality. Due to the increased adverse effects and cost associated with colloids crystalloids are favoured in routine maintenance. For patients who require fluid replacement over a longer period of time, electrolyte disturbances become more of a problem and as such balanced solutions such as Hartmann's or plasmalyte are becoming increasingly used. Clinicians are using crystalloids such as 0.9% normal saline less than previously due to the potential and actual side effects associated with large volumes and the high sodium content such as hyperchloraemic acidosis. This fits in with what I have experienced on the ICU in both Australia and the UK where the mainstay in fluid management is a balanced solution as mentioned above.

3. Gain sufficient experience in intensive care to make an informed decision on future career choices.

Intensive care as a speciality appeals to me as something I would have liked to experience in my foundation training but also as a speciality that I could possibly see myself taking up. As a speciality it focuses on the whole person rather than a specific organ or system, and has a very physiological and supportive basis. As a junior in the UK, it is very hands on and even as a student I was given my own patients to examine and form management plans for before ward rounds. There are a high number of practical procedures to learn from a very early stage and there is constant high levels of supervision allowing you to learn and develop your skills in a safe environment. On paper, all of these reasons make intensive care a really appealing job for me however the other side of that is that you see the critically ill

patients, most of whom are sedated or unconscious as well as the higher mortality associated with ICU admission. ICU is a very academic subject, with lots of opportunity for research and educational development. It is for the reasons above that I am not sure I can answer the objective set. This 4 week placement as well as the week I spent in ICU during my core training have allowed me to gain a much greater insight into intensive care medicine. Coming to the end of my placement I am more comfortable in ICU, with an improved understanding of the clinical as well as physiological aspects. I have enjoyed it and am not completely discounting it as a career but I am not sure Intensive care medicine is for me.

References:

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Simpson HK, Clancy M, Goldfrad C et al. (2005). Admissions to intensive care units from emergency departments: a descriptive study. *Emergency Medicine Journal*. **22**. 423-428.