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# Lessons from the TAPS study

## Knowledge and skills errors

The Threats to Australian Patient Safety (TAPS) Study collected 648 anonymous reports about threats to patient safety from a representative random sample of Australian general practitioners. These contained any events the GPs felt should not have happened and would not want to happen again, regardless of who was at fault or the outcome of the event. This series of articles presents clinical lessons resulting from the TAPS study.

### Clinical lesson

Although errors related to the process of providing health care are more common, errors related to deficiencies in the knowledge and skills of health professionals are more likely to result in patient harm. Ensuring a high standard of clinical care is essential in reducing the harm related to medical errors.

### Case study

A man, 36 years of age, presented to his general practitioner with severe depression. He was admitted to a local psychiatric hospital. Shortly after admission he complained of pain in his chest. After some delay he was sent to the local public hospital for a chest X-ray. He was not examined by medical staff at either hospital. He was sent back to the psychiatric hospital with a normal chest X-ray result. His symptoms continued and after 3 days he was examined and found to have a florid shingles rash on his chest. He was discharged a week later and returned to see his GP. While in the psychiatric hospital he had been commenced on analgesics but had not received any antiviral medication, thus increasing his risk of postherpetic neuralgia.

### Comment

This case study illustrates a range of knowledge and skills errors leading to both diagnostic and management failures. In this case, the clinicians responsible for this man's care failed to consider the possible differential diagnoses for the presenting symptom, failed to adequately examine the patient and failed to commence appropriate therapy to treat the patient's condition once the diagnosis became apparent.

■ **The TAPS study used a secure anonymous reporting system and found that around one error was reported per 1000 patient consultations per year.<sup>1</sup> The error reports were primarily classified as being due to either problems related to the process of providing health care, or deficiencies in the knowledge and skills of health professionals such as mistakes in diagnosis or managing patient care. Only about 30% of reported errors in TAPS related to deficiencies in the knowledge or skills of health professionals. Around one-third of these knowledge and skills errors were diagnostic, and two-thirds were errors in managing patient care.<sup>2</sup>**

TAPS GPs also reported patient harm. Reports containing only process errors were associated with patient harm 15% of the time, compared with reports of knowledge and skills errors being associated with patient harm 39% of the time. When a report had a combination of these error types (around 7% of all reported errors), there was an association with patient harm in 55% of cases.

Earlier research analysing harm in Australian general practice have suggested that diagnostic incidents were more harmful<sup>3</sup> and mainly occurred because of errors in judgment, particularly in forming and testing diagnostic hypotheses.<sup>4</sup>

General practitioners involved in the TAPS study made many recommendations about how to avoid common errors in general practice related to problems with clinical knowledge and skills (*Table 1*). A contributing factor reported by some GPs was a tendency to take shortcuts. Feeling pressured for time in general practice has long been recognised as a common contributing factor for errors.<sup>5</sup>

### Knowledge and skills errors reported in the TAPS study

- Failing to take an adequate patient history during a consultation leading to a diagnostic error
- Failing to adequately perform a physical examination on a patient leading to a diagnostic error
- Errors in requesting investigations (eg. asking for the wrong test or omitting to ask for an appropriate test)
- Errors in interpreting investigations that had been requested

- Errors in knowledge required to effectively manage medications (eg. not being aware of current best practice guidelines, drug interactions or dosage schedules)

Table 1. Lessons for preventing knowledge and skills errors

- Allow adequate time for difficult consultations, and ask patients to return for a longer appointment if inadequate time has been allocated
- Avoid 'corridor' and phone consultations where appropriate physical examination cannot be readily undertaken
- If checking investigations before a report is available, be vigilant in checking that your diagnosis was consistent with the final report
- Make use of decision support software such as drug interaction warnings
- Maintain your clinical knowledge and skills across the breadth of general practice with a variety of continuing education activities

- Errors in the knowledge or skills required to undertake a specific procedure on a patient (eg. attempting intubation without appropriate skills).

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### References

1. Makeham MA, Kidd MR, Saltman DC, et al. The Threats to Australian Patient Safety (TAPS) study: incidence of reported errors in general practice. *Med J Aust* 2006;185:95–8.
2. Makeham MA, Stromer S, Bridges-Webb C, et al. Patient safety events reported in general practice: a taxonomy. *Qual Saf Health Care* 2008;17:53–7.
3. Bhasale AL, Miller GC, Reid SE, et al. Analysing potential harm in Australian general practice: an incident-monitoring study. *Med J Aust* 1998;169:73–6.
4. Bhasale A. The wrong diagnosis: identifying causes of potentially adverse events in general practice using incident monitoring. *Fam Pract* 1998;15:308–18.
5. Ely JW, Levinson W, Elder NC, et al. Perceived causes of family physicians' errors. *J Fam Pract* 1995;40:337–44.