

Bond University  
Research Repository



## Critical thinking, curiosity and parsimony in (emergency) medicine

'Doing nothing' as a quality measure?

Keijzers, Gerben

*Published in:*  
EMA - Emergency Medicine Australasia

*DOI:*  
[10.1111/1742-6723.12782](https://doi.org/10.1111/1742-6723.12782)

*Licence:*  
Other

[Link to output in Bond University research repository.](#)

*Recommended citation(APA):*

Keijzers, G. (2017). Critical thinking, curiosity and parsimony in (emergency) medicine: 'Doing nothing' as a quality measure? *EMA - Emergency Medicine Australasia*, 29(3), 360-362. <https://doi.org/10.1111/1742-6723.12782>

**General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

For more information, or if you believe that this document breaches copyright, please contact the Bond University research repository coordinator.

**Title:**

Critical thinking, curiosity and parsimony in (emergency) medicine. *Doing nothing* as a quality measure?

**Authors:**

Gerben Keijzers

Senior Staff Specialist Emergency Physician

Department of Emergency Medicine, Gold Coast University Hospital, Southport, Queensland

Australia; Faculty of Health Sciences and Medicine, Bond University, Gold Coast,

Queensland, Australia;

**Corresponding author and address:**

Department of Emergency Medicine,

Gold Coast University Hospital, Southport, Queensland

1 Hospital Boulevard, Southport 4215 QLD

Australia

Gerben.Keijzers@health.qld.gov.au

**Conflicts of interest:**

GK is a section editor for Emergency Medicine Australasia

**Word count:**

Abstract: 135

Manuscript: 1156

**Running title:**

Doing nothing as a quality measure

## **Abstract**

Current medical decision-making is influenced by many factors, such as competing interests, distractions as well as fear of missing an important diagnosis. This can result in ordering tests or providing treatments, which can be harmful. Unnecessary tests are more likely to lead to false positive diagnosis or incidental findings that are of uncertain clinical relevance. Estimates indicate that almost one-third of all health spending is wasteful. The “Choosing Wisely” campaign has identified many of these wasteful tests and treatments. Some suggestions are proposed to focus on our critical thinking, embrace shared-decision making and stay curious about the patient we are treating. Most importantly, *doing nothing* could be a quality indicator for EDs, and ACEM supported audits and research to develop benchmarks for certain tests and procedures in ED are important to achieve a cultural change.

## **The patient (I)**

Recently, I received a patient handover from a resident during our morning meeting. The patient was a lady in her seventies who had slid out bed. Her elderly husband was unable to assist her off the floor and he called an ambulance. She never hit her head and had no signs of injury (head or anywhere else). However she was on rivaroxiban for atrial fibrillation. The resident almost apologetically explained he did not order a CT head overnight since he thought there was no indication for it. One of the other senior FACEMs chimed in and said: “She is old and on rivaroxiban – just scan her”. To provide some counterweight, I praised the resident for his critical thinking and trying to avoid unnecessary testing and the final solution was that I would review the patient and make a decision on whether this lady needed neuro-imaging.

## **The problem**

Now think back to your last clinical shift and try to count how many decisions you made. And consider what proportion of your actions was supported by high-level evidence? How often did you deviate from guidelines – and was this deviation a conscious and purposeful decision? At any time, did you turn a blind eye and did you make a decision that you knew was not based on any convincing data? Have you heard yourself (or anybody else) say phrases like this: “We will give you some antibiotics for this (uncomplicated sutured) wound – *just to be sure*”.<sup>1</sup>

As a clinician working in an Emergency Department, there is an apparent tension between doing what is right for the individual who you are treating and what the greatest good for the greatest number is, including downstream harms and benefits. However, we need to consider that guideline recommendations are based on consensus, and are more often than not informed by weak or moderate quality evidence.<sup>2</sup> Sometimes similar or better outcomes are achieved despite suboptimal adherence to guideline recommendations.<sup>3</sup>

Our current medical decision-making can be based on fear of missing an important diagnosis, and may result in ordering tests or treatments, which could be harmful, or in the best case scenario, have no effect on a patient-centred outcome. Unnecessary tests are more likely to lead to false positive diagnosis or incidental findings that are of uncertain clinical relevance. Estimates from the Institute of Medicine suggest up to 30% of all health spending is wasteful.<sup>4</sup> The “Choosing Wisely” campaign has identified many of these wasteful tests and treatments.<sup>5</sup> This campaign is supported by ACEM with several specific recommendations for emergency medicine (see Box 1).<sup>6</sup>

It is difficult to gauge the effect this campaign. Anecdotally, most clinicians are aware of the lack of evidence for certain tests and treatments – but still prescribe that treatment or want to order the wasteful test, as outlined in the example of the lady on rivaroxiban. This suboptimal compliance is likely driven by multiple factors, which include human factors (tiredness, hunger, distraction, fear), environmental factors (many patients waiting, noise, critically unwell patient arriving) or patient factors (varying expectations and degree of understanding). Our brains have only so much ‘band-width’ available for cognitive processing and this may affect our curiosity and critical thinking. Which may lead to a simplified decision-making process - “Let’s admit this (systemically well) patient with mild cellulitis to the short stay ward on intravenous antibiotics – *just to be sure – he has a cannula anyway, so we might as well*”.

Besides the competing pressures and interests - some of this decision-making may be driven by how our health systems emphasise the significance of missed diagnoses. Morbidity and mortality meetings can be quite anxiety-provoking. They usually feature poor outcomes due to delayed diagnosis or inappropriate treatment. These forums much less often feature adverse events from unnecessary tests or treatments (i.e. patient with significant gastrointestinal haemorrhage requiring blood transfusion due to (unnecessary) oral anticoagulants for a small below knee deep venous thrombosis (DVT) – or a patient who required hospitalisation for prominent diarrhoea from clostridium difficile after being given inappropriate antibiotics for ‘sinusitis’). The focus seems to be on the adverse events of something we *did not do*, rather than the adverse events caused by something we *did do* - “to be sure”.

The corollary of the above is that clinical decision-making is influenced by competing interests, distractions and cognitive limitations (leaving us less curious and critical) as well as concern about missing diagnoses – leading us to over-investigate and over-treat. It is important to remember, *more care isn’t better care*. So what is the solution? Although every clinical decision needs to be put in context, the following suggestions may provide some guiding principles.

### **Encourage and reward critical thinking amongst all levels of staff.**

Guidelines help to standardise and improve evidence based care, but not all guidelines are created the same and recommendations can be based on weak evidence. Know the information you base your decision on. Be prepared to deviate from guidelines if required, preferably after consultation with a peer or supervisor.

**Stay curious.**

Review a history and exam if decisions are not clear-cut. Avoid using terminology such as “to be sure”, “to be safe” or “we may as well” for tests and treatments that are just as likely to lead to adverse events or false positives. Engage the patient and use shared decision-making models.<sup>7</sup>

**Be parsimonious.**

At individual clinician level this will be informed by appropriate critical thinking and clear shared decision-making with the patient. At an institutional level (or state and national level), recognition and incentives for *not* ordering unnecessary tests and *not* providing unproven treatments would be needed to support this cultural shift. Which leads me to my final suggestion.

**Doing nothing as a quality indicator.**

Currently, quality of care indicators are currently almost exclusively directed at what doctors do, not at what they abstain from doing.<sup>8</sup> ED Quality indicators could include benchmarking of certain tests/treatments to be ordered, with the ACEM recommendations from the Choosing Wisely campaign (Box 1) logical candidate markers. For example, the proportion of patients who receive a CT head for trauma who did not meet a validated clinical decision rule should be less than a pre-defined percentage. Appropriate and achievable benchmarks can be determined by (ACEM endorsed, encouraged and incentivised) audits of current practice in all accredited Emergency Departments. Departments who meet these benchmarks are to be rewarded.

**The patient (II)**

I reviewed (history and examination) the patient that was handed over to me. I agreed with the resident there was no indication for a CT brain. The patient stated she was only in our department because she was unable to get up by herself. We discussed her social situation and the shared decision was that she would be discharged without CT in the care of her family with a GP follow-up appointment the next day.

The next time I saw the resident who gave me the original handover I told him: “Please stay critical, curious and parsimonious”.

## References

1. Hall H. Why doctors order too many tests. *Science Based Medicine*. Exploring issues and controversies in science and medicine. Available from URL: <https://sciencebasedmedicine.org/why-doctors-order-too-many-tests/> Last accessed 16 March 2017.
2. McAlister FA, van Diepen S, Padwal RS, Johnson JA, Majumdar SR (2007) How Evidence-Based Are the Recommendations in Evidence-Based Guidelines? *PLoS Med* 4(8): e250. doi:10.1371/journal.pmed.0040250
3. Keijzers G, Kelly AM, Cullen L, Klim S, Graham CA, Craig S, Kuan WS, Jones P, Holdgate A, Lawoko C, Laribi S. Heart failure in patients presenting with dyspnea to the emergency department in the Asia Pacific region: an observational study. *BMJ Open*. 2017;7(2):e013812. doi: 10.1136/bmjopen-2016-013812.
4. Institute of Medicine. Best Care at Lower Cost: The Path to Continuously Learning Health Care in America. Available from URL: <http://www.nationalacademies.org/hmd/Reports/2012/Best-Care-at-Lower-Cost-The-Path-to-Continuously-Learning-Health-Care-in-America.aspx> Last Accessed 16 March 2017
5. Choosing Wisely Australia. Available from URL: <http://www.choosingwisely.org.au/home> Last Accessed 16 March 2017
6. Choosing Wisely Australia. Australasian College for Emergency Medicine: tests, treatments and procedures clinicians and consumers should question. Available from URL: <http://www.choosingwisely.org.au/recommendations/acem> Last accessed 16 March 2017
7. Scuffham PA, Moretto N, Krinks R, Burton P, Whitty JA, Wilson A, Fitzgerald G, Littlejohns P, Kendall E. Engaging the public in healthcare decision-making: results from a Citizens's Jury on emergency care services. *Emerg Med J*. 2016 pii: emermed-2015-205663. doi: 10.1136/emered-2015-205663.
8. Campbell SM, Ludt S, Van LJ, Boffin N, Wensing M, Petek D et al. Quality indicators for the prevention and management of cardiovascular disease in primary care in nine European countries. *Eur J Cardiovasc Prev Rehabil* 2008; 15(5):509-515.

**Box 1. Australasian College for Emergency Medicine: tests, treatments and procedures clinicians and consumers should question.<sup>6</sup>**

---

- Avoid requesting computed tomography (CT) imaging of kidneys, ureters and bladder (KUB) in otherwise healthy emergency department patients, age < 50 years, with a known history of kidney stones, presenting with symptoms and signs consistent with uncomplicated renal colic

---

- Avoid coagulation studies in emergency department patients unless there is a clearly defined specific clinical indication

- Avoid blood cultures in patients who are not systemically septic, have a clear source of infection and in whom a direct specimen for culture (e.g. urine, wound swap, sputum, cerebrospinal fluid or joint aspirate) is possible

- For emergency department patients approaching end-of-life, ensure clinicians, patients and families have a common understanding of the goals of care.

- Don't request imaging of the cervical spine in trauma patients, unless indicated by a validated clinical decision rule

- Don't request computed tomography (CT) head scans in patients with a head injury, unless indicated by a validated clinical decision rule

---