

Physician sentiments on low-value investigations in Singapore: Part of Choosing Wisely campaign

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Dear Editor,

Low-value investigations provide marginal benefit and may result in harm to the patient or disproportionate healthcare costs.¹ The introduction of Singapore's Choosing Wisely (CW) campaign in 2012 aims to reduce such investigations.² CW was designed to encourage conversations between physicians and patients to weigh the risk-benefit ratio behind each clinical decision.³ A CW campaign was launched in July 2023 at Singapore General Hospital to reduce unnecessary tests and treatments.⁴

We collected responses to a 32-question quantitative questionnaire from 1 June 2023 to 1 July 2023 across public healthcare institutions in Singapore. We included all doctors working in these institutions. A total of 5600 survey invitations were distributed through official emails and group messages. The anonymous survey was answered by 280 doctors (5.0% response rate), comprising 122 (43.6%) junior doctors (house officers, medical officers and residents with 1–2 years of experience), 83 (29.6%) registrars (residents with 3–5 years of experience), and 75 (26.8%) specialists (specialists with more than 5 years of experience). Among them, 121 physicians (43.2%) were from medical disciplines, while 159 (56.8%) were surgical.

The vast majority (85–95%) agreed that this reduction would benefit healthcare professionals, patients and the healthcare system. Similarly, 73% of respondents believed that patient investigations could be safely reduced, contingent upon adherence to international (86%) and departmental guidelines (92%), effective training (91%), and a supportive organisational culture (94%).

The majority of respondents (87%) acknowledged personal responsibility for patient investigations.

Contrarily, 53% either disagreed or strongly disagreed with the notion that reducing investigations would delay treatments or procedures. Opinions were divided regarding the risk of missed diagnoses due to reduced investigations: 34% disagreed or strongly disagreed, 45% remained neutral, and 19% agreed or strongly agreed. Views on increased physician liability were also varied: 25.7% disagreed or strongly disagreed, 37.2% were neutral, and 36.9% agreed or strongly agreed.

When examining the reasons behind ordering excessive investigations, medico-legal concerns (21.9%) and clinical safety precautions (21.7%) were prominent. The influence of these factors varied among different professional levels, with more experienced physicians relying more on national and departmental guidelines. Interestingly, adherence to these guidelines and practices of senior physicians was preferred over international guidelines, particularly among junior doctors and registrars (Fig. 1). A summary of the survey results can be found in Supplementary Table S1.

Low-value investigations may persist due to perceived patient demands, juxtaposed against limited time for patient assessment and engagement.⁵ While patients might overestimate the benefits and overlook the harms of low-value testing, they also tend to re-evaluate their choices when presented with simple information about the overuse of investigations that provide little benefit.^{5,6} Patient education could be an area of opportunity to implement change.

Regarding awareness of the CW campaign, which aims to reduce low-value investigations, most respondents were not familiar with it (71%), though those who were showed a high degree of openness to changing current practices (91%). Awareness of the campaign was more prevalent

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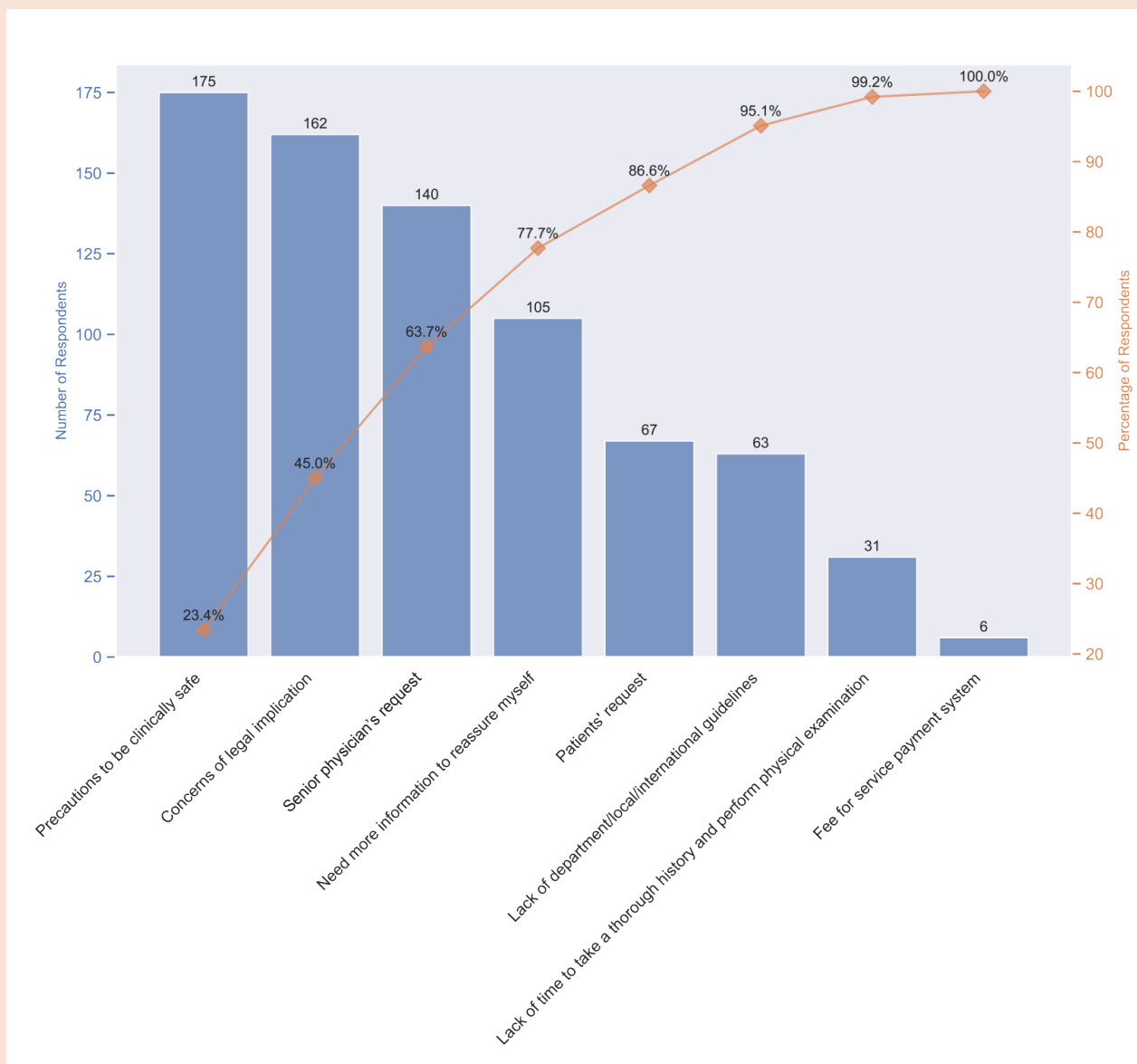
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Fig. 1. Pareto chart of reasons why physicians order more investigations than necessary.



among specialists compared to junior doctors (37/75 at 49.3% versus 25/122 at 20.5%). Among those aware of the CW campaign, the majority agreed that it would influence their practice, indicating that enhancing campaign awareness is crucial (65%). One pertinent consideration would be to incorporate the principles of the CW campaign into medical education.³

Next, the survey highlighted that the main reasons for ordering preoperative chest x-rays were instructions from senior physicians and departmental policies, with less experienced physicians more influenced by their seniors. This is unsurprising as the senior doctor is the leader of the team and junior doctors usually defer to the seniors instead of guidelines. This trend suggests that reliance on theoretical knowledge alone may

not be sufficient to reduce the frequency of unnecessary investigations and chest x-rays.⁷ It is necessary to obtain buy-in from senior doctors in order to make CW a successful campaign in Singapore.

The study's limitations encompass a relatively small sample size, with a low response rate (5.0%), potentially restricting generalisability within the Singapore cohort. This could also potentially cause non-response bias. Recall and response bias might affect responses regarding reasons for excessive investigations. Specific inclusion criteria might induce selection and specialty bias. The absence of qualitative insights and a single time-point for data collection could limit understanding. Lastly, the study's construct validity and reliability might be influenced by the structured questionnaire

such as one validated by methods like Cronbach's alpha,⁸ and potential biasedness of respondents to trainees and hospital-based physicians.

The findings of this island-wide survey shows promising readiness for change regarding low-value investigations in our local physicians. Effectively addressing physicians' concerns, enhancing awareness of initiatives like CW, and incorporating CW into local clinical guidelines are essential steps toward reducing unnecessary investigations and improving healthcare efficiency.

Supplementary Material

Table S1. Survey responses to the reasons for ordering more investigations than necessary.

Declaration

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Ethics and consent

Written informed consent was obtained from the respondents for this report.

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