

How Important is Low-Cost to the Overall Value of Interventional Radiology?

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The scope of what Interventional Radiology (IR) can offer modern healthcare systems is vast. There is enormous potential for reducing invasiveness and recovery that would otherwise be seen with traditional open surgery [1]. This is part of the value that IR offers healthcare systems. One of the other high-value components of IR is that it is usually also considered relatively low-cost [1].

There are some studies which have shown the high-value low-cost role for IR in treating a range of different conditions [2]. However, costs in healthcare are steadily rising across Organization for Economic Co-operation and Development (OECD) countries as shown in Fig. 1. In 1970, the USA spent 6.9% of its gross domestic product on healthcare, but this rose to 16.6% in 2022 [3].

There is minimal research on financial implications of IR which considers the cost, cost-utility, and/or cost-effectiveness of our treatments. A recent systematic review identified only 62 costing studies in the preceding 6 years, most from the USA [4]. Some areas of IR were not studied at all and there were zero costing studies from most countries, where this kind of data is locally relevant for healthcare decision-makers.

Are we doing anything wrong? Based on current headline topics from major IR journals and conferences, there is a focus on new technologies and new techniques. This is

exciting for us all and driving interest in new potential trainees. Many high-cost devices are being used in a trial space where costs are absorbed through development budgets. However, there is public portrayal on social media that many IRs are also utilizing newer technologies in everyday workflow. This is despite sometimes lacking prospective, randomized, and controlled evidence. Some examples are the default use of drug-coated technology, covered stents, atherectomy, and intravascular ultrasound for all cases rather than judicious use on an as-needed basis. There is also expansion of interventional neuroradiology techniques into the peripheral space such as the use of flow-diverting technology for peripheral aneurysms, detachable non-fibred coils for simple embolizations, and expanding use of smaller microcatheter systems.

I hope that there is an internal thought among IRs that interventions with high up-front costs will drive reduction of indirect costs, or through prevention of future interventions. However, in most cases this is an assumption not proven through evidence. In some cases, this may never be realized such as with endovascular aortic repair [5].

In my opinion, rising costs are jeopardizing one or our core value-adding attributes. I believe that we should shift focus to a clinical and research model in which IR remains cost-effective and sustainable, to ensure that the inherent value we can offer patients and healthcare systems can be realized into the future. This needs to be proven through research and audit. Clinical efficacy alone isn't sufficient to change the ingrained surgical referral pathways that have existed for many years.

In noting our rising expenditure, some healthcare systems are pushing cost savings through other avenues to offset our costs. This may include outpatient office-based care for procedures traditionally being performed in

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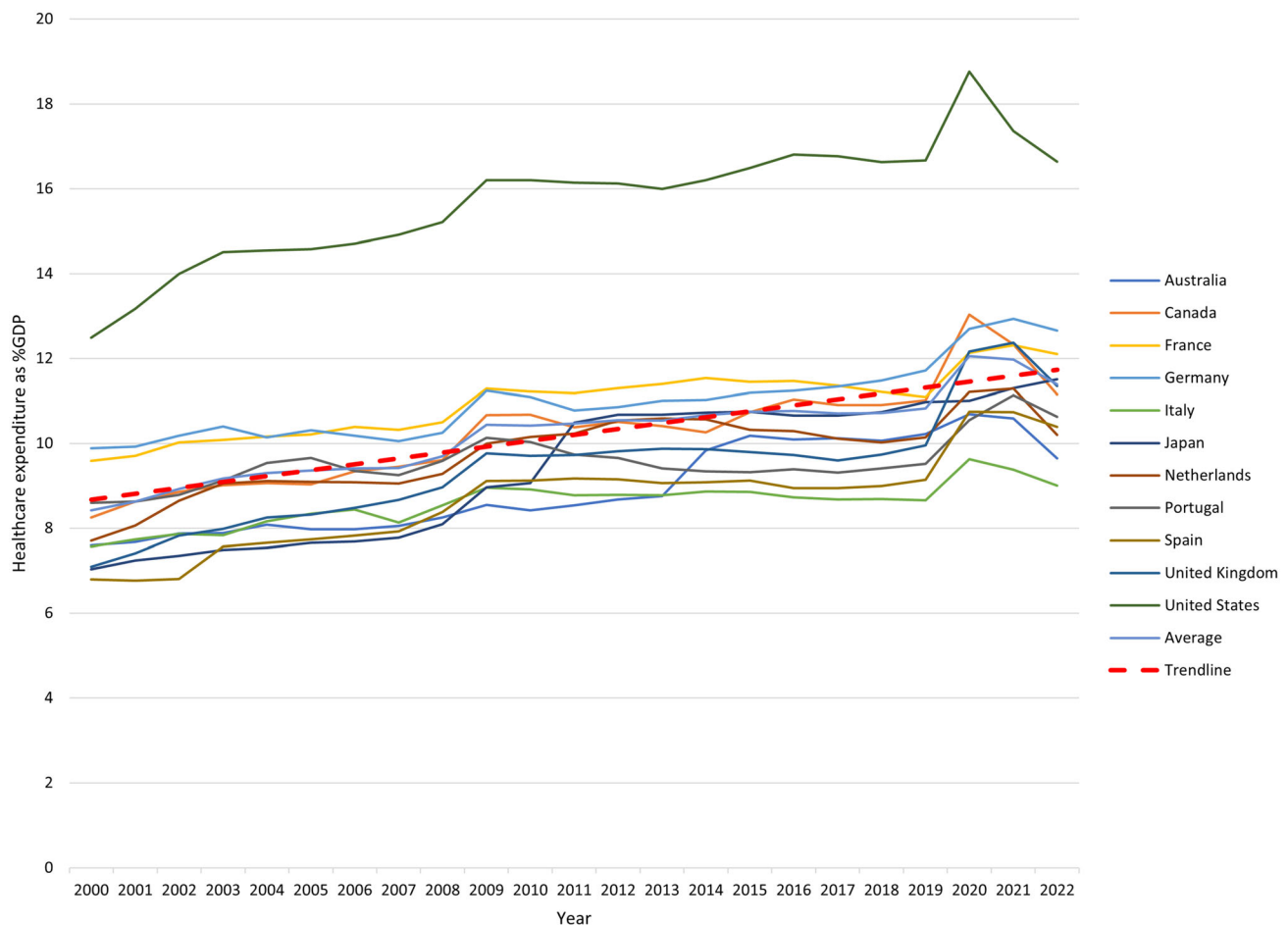


Fig. 1 Line graph showing the growth of health expenditure as a percentage of gross domestic product (GPD) in 11 Organization for Economic Co-operation and Development (OECD) countries [3]. The trendline shows a steady worldwide increase in spending

hospitals, or expansion of less costly non-medical procedural staff in the IR clinical space such as nurse practitioners, physician assistants, or physician associates. We may not need these kinds of adjunct savings if we were to prioritize low-cost primary care.

A risk we face as a specialty is that we drive up costs too high, and price ourselves out of the healthcare market, losing the ability for patients to access our high-value interventions. Placing a focus on cost-effectiveness requires a global mindset shift and development of supportive science.

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