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Big Spine Data Put to Good Use: The NHS Sets an Example.

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Big Spine Data Put to Good Use: The NHS Sets an Example

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The substantial importance of spine care/spine surgery and its socioeconomic impact on the present and future health care environment should be well understood by anyone involved in the medical field, public health, or social services. The global and regional dimensions of spine problems brought on through expanding, aging, and increasingly more disabled populations have been clearly demonstrated through the openly accessible database of the Global Burden of Disease project. For most regions and countries back- and neck-related care is not only a leading but also growing entity among major health care domains.¹ Increasingly, large-scale data gathering efforts are utilized to try to better understand resource utilization relative to spine care. Previously *Global Spine Journal* has presented in an editorial titled “Evidence-Based Medicine, Media, and Manipulation” a failed national effort in Germany performed in 2017 by a nongovernment not-for-profit organization (“Faktencheck Rücken”—translated as “Fact Check Spine”).² This national-scale production claimed substantial and otherwise unexplained increases of spine procedures, which was accompanied by a predictable widespread negative media echo pertaining to potential self-serving motives of spine practitioners. The assertions as well as many aspects of the data gathering efforts that they were based on were rapidly debunked by German spine societies as erroneous. A foundational flaw of this data mining exercise was the primary absence of actual spine care content experts. Not surprisingly, there was no corrective media update, so the negative public perception about spine surgery of this big data report probably remains lingering in the minds of people somewhere in the endless digital media vaults for all future times to come.

A study in contrast can be seen in the “Get It Right First Time” (GIRFT) Spinal Services project published in the United Kingdom in January 2019 by the NHS (National Health Service).³ This collaborative and comprehensive multispecialty program is chaired by a practicing orthopedic surgeon, Professor Tim Briggs, CBE, who also holds a number of other leadership positions within the NHS. The spine report itself was authored by a clinically active consultant spine

surgeon, Mr Mike Dutton, and orthopedic spine surgeon from Exeter and a neurosurgical spine surgeon from Newcastle, Mr Justin Nissen. In contrast to the German report this effort was also from inception onwards supported by the leading professional spine, orthopedic, and neurological surgery societies and experienced statisticians. A further noteworthy difference lies in the fact that the authors did not just perform a data mining expedition but actually visited 127 Spine surgery units in the United Kingdom and performed structured interviews. (Note of potential conflict of interest: Mr Hutton has previously been a published author in *Global Spine Journal*.) A remarkable insight to the value of personal visits beyond data mining alone can be gleaned from an introductory comment made by lead author. He was “struck by the passionate commitment of the clinical staff towards the NHS as a force for good in society.”

Organized into 13 chapters, this 101-page report covers diverse aspects of spine care from utilization of nonsurgical interventional therapies to life-and-death impact of spinal cord injury care. Every chapter is followed by recommendations, actions, and a timescale, which allows stakeholders to assess progress and implementation or impediment evaluations. Public health experts will find interest in looking at a classic hot button topic such as practice variations, for instance, demonstrated by the data on compliance with nationally established nonoperative back pain and radiculopathy pathways (chapter 2). All data is presented in a de-identified non-blame approach, by simply showing variations and allowing for future exploration of reasons for such differences. For hospital purchasing managers and surgeons alike, the remarkable variations of implant costs among regions and hospitals will provide foundation for greater coordination of value basics (chapter 13). High-cost rare-use technologies such as spinal cord stimulators were revealed as having surprisingly high revision and explanatory numbers resulting in the concrete proposal to make their use contingent upon participation in a national data registry. The introduction of more general novel surgical technologies is also addressed with the interesting example of dynamic spine stabilization and interspinous spacers,



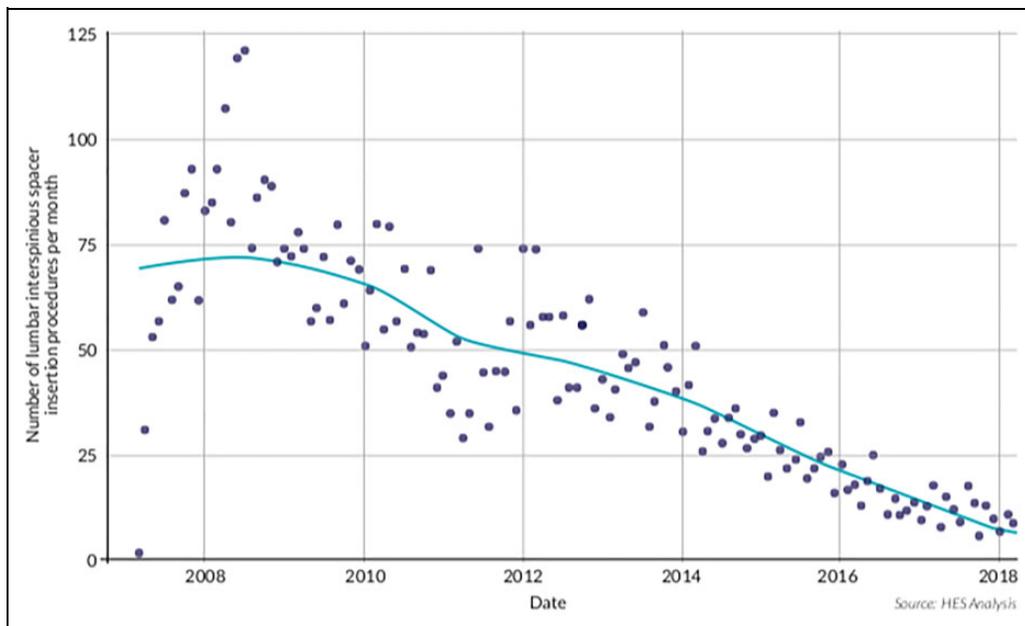


Figure 1. Lumbar interspinous space insertions.

which literally exploded into clinical use between 2008 and 2012 and since then have progressively have fallen into disuse, very similar to the famous Scott's parabola described in 2001 for surgical technologies.⁴ The solution presented in the GIRFT report suggests controlled roll-outs with mandatory data gathering and explanatory data shared between manufacturers and practitioners to better understand actual product performance. In this “value era” of health care the need to become wiser about the role of new products should be in everybody's best interest (chapter 9; Figure 1).

Uncomfortable but important topics such as medical malpractice and controversial issues such as management problems related to cauda equina syndrome (CES) are not spared either and meaningful foundational information is provided to the benefit of the greater public as well as individual practitioners. For instance, the universal problem of not bringing patients with potential CES to the attention of actual clinical decision makers in a timely fashion is a rather ubiquitous one around the world and this report offers real metrics for improvement (chapter 3.1). The profound cost of medical malpractice litigation (£535.5 million in 2012–2017 with an average of 200 claims/year) for a relatively small country of 66.04 million (2017 data) not known for being a litigious hotbed provides valuable data for health care economists and politicians as well and may provide interesting longitudinal and cross-cultural comparison as an often overlooked aspect of health care delivery cost (chapter 12).

Of course, the space for this editorial is not large enough to do the “GIRFT” effort justice. Therefore, an individual deeper dive by our *Global Spine Journal* readership from around the world is recommended as it may provide an impetus for

individual comparative references (ie, spine surgery infection rates, length of stay for larger spine reconstructions, and day surgery rates for smaller procedures) and challenge all of us to look system-wide into the time to surgery for spine trauma patients and look into long overdue reference values for spinal cord injury care (Figure 2).

Perhaps most important, this report illuminates cardinal issues such as practice variations (they are dramatic) with helpful background data, and it makes strong supporting arguments in favor of minimum case numbers for major complex spine surgeries (they do seem to matter) and strongly supports creation of national and/or regional spine registries.

Concrete actionable items, such as creation of more dedicated spinal cord injury beds and implementation of best practices guidelines for short-stay surgeries and an inventory for operational definitions will directly promote more actual value-oriented surgery determinations to be made.

Hopefully more state, regional, and national efforts will take the initiative to follow suit the GIRFT effort undertaken in the United Kingdom and allow actual practicing colleague to gather and analyze big data rather than having some remote government or administrative entity exert a controlling function on care apportionment. For us who have been fortunate enough to be entrusted with spine care, our uniting goal around the world is the same: to improve and promote ethical and motivated spine surgery to the benefit of our patients and to continuously strive to do better. Being on the forefront of the biggest breakthrough in spine technology—meaningful big data gathering and interpretation—is therefore *Our* challenge, so that we all may *Get It Right the First Time*.

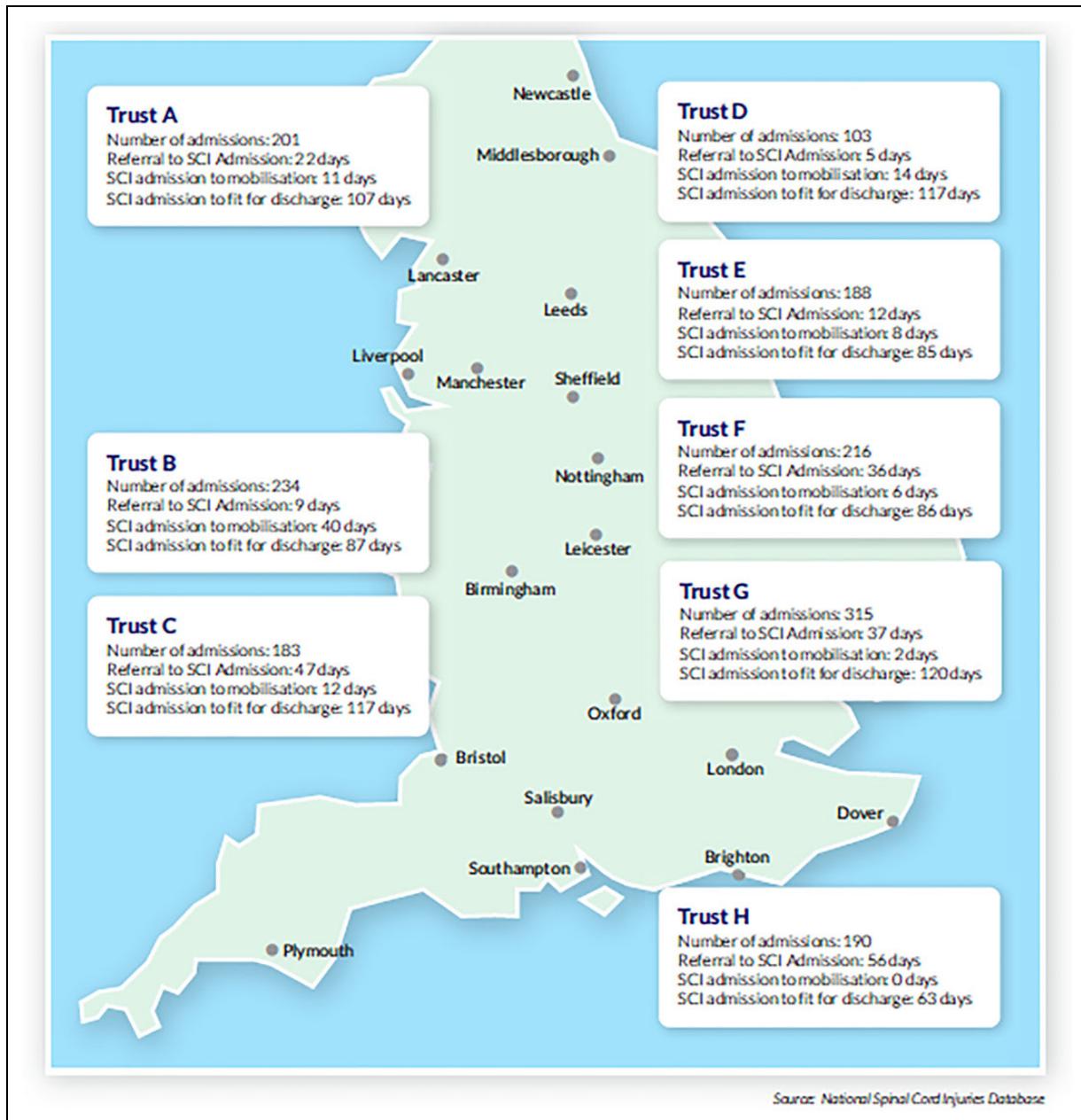


Figure 2. Variations across SCI centers in England.

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