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Delivering healthcare efficiency – scraping the barrel or creating the future?

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Purpose

The packaging and delivery of healthcare treatment in developed economies across the world is often inefficient, ineffective and unfriendly to consumers/patients, resulting in soaring costs and much publicised medical errors (Herzlinger, 2006). The situation in developing economies differs little to developed countries (Gok and Sezen, 2013; Yang and Zeng, 2014; Alonso et al., 2015). Such evidence suggests the shared goal of performance improvement is equally elusive to all healthcare systems, regardless of structure, funding arrangements and economic development. Building on our previous qualitative research, which explored strategy development and implementation in the NHS, this paper presents the initial findings from our continuing longitudinal study into performance in the UK healthcare provider, the NHS. Our objective was to examine hospital performance to see if those hospitals that had a significant investment in managerial interventions such as Lean or new public management performed any better than others.

The NHS has been subjected to many cost-saving initiatives and strategic restructuring and has multiple targets which cover financial, clinical and operational aspects of service design and delivery. The most recent, the Carter Review (2016) suggested a number of approaches to limit unwarranted variation and thus improve overall performance. To date, no step change in improvement has been achieved, despite such concerted efforts. We propose that core principles of Operations Management theory (for example: Deming, 1986; Schmenner and Swink, 1998) can provide the means of addressing unwarranted performance variation and unlock targeted performance potential. This is particularly relevant in the current era where organisations commit to being Lean and Agile without necessarily fulfilling these aspirations. We develop the Swift Even Flow Capability Cycle as a key ingredient to managing service operations within healthcare.

Design/methodology/approach

We investigate the performance of 136 hospital trusts in England through the lens of Operations Management theory using a publicly available dataset, the national Reference Cost Index, which is used to assess overall NHS productivity. We use comparative analysis to delve into performance data from 2014-2017 as it is currently represented, to establish whether there is a link between managerial improvement initiatives and performance outcome (Mayo, 1949; Spear and Bowen, 1999; Smith, 2002; Matthias and Brown, 2016). We supplement the comparative analysis with

Machine learning analysis in order to identify hitherto unknown patterns or correlations.

Findings
Our initial comparative analysis shows that variation appears to be random and inconsistent, even with those hailed as beacons of good practice such as the Quest and Virginia Mason hospitals, known for their adoption of Lean methodologies and techniques. Subsequent analysis, using Machine Learning, highlighted staffing mix as crucial to performance. We identify the new insight that time-series is an important factor in understanding the levers that require most management focus. Hospitals need to manage not only capacity but also the rate of change of capacity under growing demand of the key resource. This confirms our contentions that there are missing features in the planning, implementation, managing and reporting of performance which make improvement elusive despite concerted efforts.

Relevance/Contribution
Our research shows glaring discrepancies between performance-oriented intent and practice. We demonstrate how new techniques of data creation and management can be used to inform managerial decisions and propose the Swift Even Flow Capability Cycle to guide a novel approach to capacity planning in hospitals which we posit can create the requisite performance improvement within healthcare.
Our findings should provide guidance and advice to practitioners within the NHS.
This research is within one country and there may be caveats when transferring to other countries. However, the framework's underlying principles should be applicable in other healthcare settings, which globally are experiencing the same operational challenges.

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