Editorial

Evidence-Based Management for Performance Improvement in Health Care

This Special Issue collects novel and relevant contributions that advance both the theory and practice of evidence-based management for performance improvement in healthcare. All together the selected contributions shed new light on what we know so far about evidence-based management in healthcare and they offer original insights to further the ongoing debate.

Although the term "Evidence-Based Management" (EBMgt) (Pfeffer and Sutton, 2006) is relatively new and not yet consolidated, the argument of informing management practice and decisions through the systematic use of different sources of evidence is not novel. Following the attention and popularity that Evidence-Based Medicine (Sakett et al., 1996) has received in healthcare over the last twenty years, scholars in different disciplines have progressively focused their research efforts to extend what has been learned from Evidence-Based Medicine (EBM) to Management (Arndt and Bigelow, 2009). This "gold-rush" has acquired momentum as a result of the increasing availability of very large bodies of data. In the specific context of healthcare, not only have serious concerns about the actual sustainability of the healthcare systems of the most developed countries reinforced the enthusiasm for EBMgt, but also the manifested challenge of implementing any change that "comes from the outside" in such a professional and knowledge-intensive socio-technical context. In this view, scholars of different disciplines, such as strategy, management, organization theory and design, operations and innovation management, public management, and operational research, have started an intense debate about how theories and practices about performance improvement developed thus far in product/manufacturing companies have to be re-thought and extended when applied to service, professional, and knowledge-intensive organizations, such as hospitals (Wright et al., 2016). EBMgt has thus emerged as the preferable approach that connects many solutions that are currently under discussion.

EBMgt asserts that managers should ground their judgement and practice on rational, transparent, and rigorous evidence that could help them explore and evaluate the pros and cons of alternatives and that they should be informed by relevant, robust academic research and literature reviews (Tranfield et al., 2003). Healthcare is among the sectors that might benefit more from such an approach. Evidence emerges in healthcare as the keystone for informing decision-making at all levels. At the micro-level, evidence should solve frequent conflicts among physicians' different experiences and opinions about the most cost-effective and safe therapy for a group of patients. At the organizational-level, hospitals managers should look at evidence as legitimization of the adoption of innovative health technologies that prove to be cost-effective and safe in other organizations, according to the well-established Health Technology Assessment paradigm. Finally, at the macro-level, policy-makers should invest in administrative health database research to extract evidence from their extensive and longitudinal databases, to identify those strategies and initiatives that might work better, and to develop the so-called "precision policies."

Considering these three levels of analysis, this Special Issue focuses the research attention on the use of EBMgt paradigm by physicians, hospital managers, and policy-makers to enable change and improvements along the whole supply and value chain of healthcare. In so doing, it reports scientific evidence regarding how the various actors of the healthcare ecosystem could, and actually do, make sense of the difference sources of evidence (e.g. clinical data, administrative data, laboratory and genetic data, big data, etc.) and to what extent they subordinate their judgment and experience to evidence.

This Special Issue merges conceptual and empirical studies and it is aimed at influencing the largest audience possible. The first panel of manuscripts collect contributions that are mostly conceptual on the role of EBMgt to support effective management practices and decision making in healthcare. In this view, they offer an overview of the literature and argumentation on the building dynamics of EBMgt.

The first contribution, by Roshanghalb et al. (2018), presents a systematic literature review on EBMgt in healthcare. Such a review classifies past studies accordingly to an original 'process' perspective anchored on the Input-Process-Outcomes model. Most notably, the authors argue for the need to take a step ahead within the current debate on EBMgt through a more pragmatic approach that connects, with a "golden thread," four main logical blocks. They are: groups of decision-makers (users of evidence), types of management practices or managerial decisions (outcomes), types of analysis and tools (processes), and sources of evidence (inputs). Their original systematization of past studies sheds light on relevant gaps that should be filled in through future research. Moreover, practitioners might take advantage of the "process" framework to consolidate and share best practices in terms of EBMgt.

The second contribution, by Martelli and Hayirli (2018), challenges the current debate on EBMgt by observing that scholars are entrapped into a sterile discussion about what "best available evidence" actually is and, as a result, that they are not able to advance their theoretical arguments. The authors claim that a possible "way-out" is offered by the acknowledgement that the concept of "best available evidence" has three key dynamics – namely, rank, fit, and variety – that coexist to crystallize what is the "best" set of evidence for a specific decision/practice. The first dynamic assumes that the evidence generated by certain processes ranks higher than the evidence that is generated from other processes in supporting truth claims. The second dynamic, instead, evaluates "bestness" according to the exactness of fit between a situation at a point in time and the evidence compiled for that situation. Finally, the third dynamic, which is rooted in the cybernetic theory, assumes that the "best available evidence" can be generated by ensuring that a broad range of knowledge types is elicited from and reconciled across individuals. The authors speculate that, given the epistemic uncertainty and turbulence characterizing decision making process in healthcare, the "best evidence" is produced by variety and not by rank or fit.

The following two contributions, therefore, illustrate EBMgt-based conceptual proposals for improving healthcare service delivery.

The contribution by Bruzzi et al. (2018) proposes a novel conceptual model for managing frail elderly patients in acute-care hospitals. The model redesigns the flow of these chronic patients and puts together organizational solutions that the literature considers effective in terms of outcomes and costs. The model assumes a patient-centred perspective and analyses the main problems, namely admission, frail patient management, and delayed discharged, hampering the patients" flow.

The contribution by Agnihothri and Agnihothri (2018) develops a model for applying EBMgt-based principles to chronic diseases. The authors point out that a new theoretical framework, entitled "Influence Model of Chronic Healthcare," introduces the critical areas where managers can identify and evaluate relevant changes for improving patient outcomes. Their model can be used by hospital managers to determine the effectiveness of their decisions and strategies for improving healthcare quality.

The remaining contributions are predominantly empirical, and they offer a comprehensive overview on the use of EBMgt within specific healthcare processes, both clinical and administrative/managerial.

The contribution by Ippolito et al. (2018) investigates EBMgt in the peculiar context of hospital triage through qualitative comparative analysis (QCA), which is a novel method that has attracted enthusiasm among scholars of the social sciences. The authors investigated the interplay between individual and organizational factors in determining the emergence of errors with respect to different decisional situations. They argue that individual and organizational factors are strictly interwoven and factors that lead to the outcomes of the decision-making process are not homogenous. As result, any intervention should emerge from an in-depth understanding of the organizational context and the peculiarities of different typologies of decisions. Additionally, interventions must be aimed at fine-tuning the relationships between individuals, contextual resources, and constraints. In

so doing, this study proposes a new contingency-based perspective, drawing on the theory of complex adaptive systems, for identifying the patterns of factors that determine the emergence of errors in triage decision making.

The following contribution by Lenkowicz et al. (2018) proposes a conformance checking methodology based on process mining to evaluate the adherence and efficiency of clinical processes. This research interprets the EBMgt paradigm within the assessment and evaluation of actual patient clinical pathways against established clinical guidelines. Finally, the study coherently presents potential improvements for the evidence that has been gathered. While testing the methodology on advanced colon-rectal cancer treatment pathways, the work also offers an interesting real-case application, which could inspire interested practitioners to pursue similar initiatives.

The contribution by Ortiz-Barrios et al. (2018) deals with EBMgt with respect to patient risk assessment and proposes an integrated framework based on three different multi-criteria methods: analytic hierarchical process (AHP), decision-making trial and evaluation laboratory (DEMATEL), and Vikor. The authors tested their suggested approach in three hospitals in Colombia, where they assessed the risk of potential adverse events in hospitalized patients, and they discuss the key implications for both hospital managers and professionals.

The contribution by Cho et al. (2018) investigates cost determinants of dialysis facilities in Taiwan using multiple linear regression analysis. They show that the costs of dialysis treatments are influenced by several managerial factors, such as capacity, resource utilization rate, and geographical location. Their findings stimulate providers to consider new systems to control costs by increasing the operational efficiency. Their analysis can help regulators of health systems worldwide to design the reimbursement rates for cost accounts dealing with dialysis.

Next, we have a group of contributors investigating the healthcare processes and related decision-making dynamics from an organizational perspective, investigating resources and teams, the role of performance measurement and management control systems, and information systems.

The contribution by Grippa et al. (2018) investigates healthcare team interactions to redesign the care delivery model within a large US children's hospital and to increase the value for health actors (patients, families, and employees). They apply a social network methodology and focus on communication flow among patients, family members, and healthcare staff to measure knowledge flows, communication behaviour, and the channels used to interact. This case study describes how the visualization and measurement of relational data can help the interdisciplinary healthcare teams identify patterns of interactions across hospital units and disciplines. The authors show how it is possible to identify structural properties of healthcare teams to promote knowledge sharing and improve team performance. In so doing, the authors offer a strong contribution for practitioners on the value of adopting social network-based methodology for organizational redesign.

The following contribution by Nuti et al. (2018) proposes a new generation of performance measurement systems (PMS) for the healthcare industry. They emphasize that patient care processes increasingly involve multiple organizations and, consequently, traditional PMS considering a single organisation are somewhat inadequate. They present a PMS, which is graphically represented by a "stave," whose focus is on a specific care pathway (e.g. the treatment of breast cancer), and it considers all organizations involved in the pathway. Such a PMS has already been adopted by thirteen regional health systems in Italy.

Finally, the contribution by Metcalf et al. (2018) examines the effects of understaffing in hospital-unit respiratory care and it evaluates the impact on error rates in the USA. They also investigate the moderating effects of teamwork and integrated information systems. A higher rate of understaffing seems to be associated with more missed treatments and both teamwork and integrated information systems seem to have a moderating role in avoiding errors.

References

Agnihothri, Saligrama, Agnihothri, Raghav (2018) "Application of evidence-based management to chronic disease healthcare: a framework", Management Decision, https://doi.org/10.1108/MD-10-2017-1010

Arndt, M., & Bigelow, B. (2009). Evidence-based management in health care organizations: A cautionary note. Health Care Management Review, 34(3), 206-213.

Bruzzi, Silvia, Landa, Paolo, Tànfani, Elena, Testi, Angela (2018) "Conceptual modelling of the flow of frail elderly through acute-care hospitals: An evidence-based management approach", Management Decision, https://doi.org/10.1108/MD-10-2017-0997

Chia-Ching Cho, AnAn Chiu, Shaio Yan Huang, Shuen-Zen Liu, (2018) "Cost drivers for managing dialysis facilities in a large chain in Taiwan", Management Decision, https://doi.org/10.1108/MD-06-2017-0550

Grippa, Francesca, Bucuvalas, John Booth, Andrea, Alessandrini, Evaline, Fronzetti Colladon, Andrea Lisa M. Wade, (2018) "Measuring information exchange and brokerage capacity of healthcare teams", Management Decision, https://doi.org/10.1108/MD-10-2017-1001

Ippolito, Adelaide, Ponsiglione, Cristina, Primario, Simonetta, Zollo, Giuseppe (2018) ""Configurations of Factors Affecting Triage Decision-making: A fuzzy-set Qualitative Comparative Analysis", Management Decision, https://doi.org/10.1108/ MD-10-2017-0999

Lenkowicz, Jacopo, Gatta, Roberto, Masciocchi, Carlotta, Casà, Calogero, Cellini, Francesco, Damiani, Andrea, Dinapoli, Nicola, Valentini, Vincenzo (2018) "Assessing the conformity to clinical guidelines in oncology: An example for the multidisciplinary management of locally advanced colorectal cancer treatment", Management Decision, https://doi.org/10.1108/MD-09-2017-0906

Martelli, Peter, Hayirli, Tuna, (2018) "Three Perspectives on Evidence-Based Management: Rank, Fit, Variety", Management Decision, https://doi.org/10.1108/MD-09-2017-0920

Metcalf, Ashley Y., Wang, Yong, Habermann, Marco (2018) "Hospital unit understaffing and missed treatments: primary evidence", Management Decision, https://doi.org/10.1108/MD-09-2017-0908

Nuti, Sabina, Noto, Guido, Vola, Federico, Vainieri, Milena, (2018) "Let's play the patients music: a new generation of Performance Measurement Systems in Healthcare", Management Decision, https://doi.org/10.1108/MD-09-2017-0907

Ortiz-Barrios, Miguel Angel, Herrera-Fontalvo, Zulmeira, Rúa-Muñoz, Javier, Petrillo, Antonella, De Felice, Fabio (2018) "An integrated approach to evaluate the risk of adverse events in hospital sector: from theory to practice", Management Decision, https://doi.org/10.1108/MD-09-2017-0917

Pfeffer, J., & Sutton, R. I. (2006). Evidence-based management. Harvard business review, 84(1), 62.

Roshanghalb, Afsaneh, Lettieri, Emanuele, Aloini, Davide, Cannavacciuolo, Lorella, Gitto, Simone, Visintin, Filippo (2018) "What Evidence on Evidence-Based Management in Healthcare?" , https://doi.org/10.1108/ MD-10-2017-1022

Sackett, D. L., Rosenberg, W. M., Gray, J. M., Haynes, R. B., & Richardson, W. S. (1996). Evidence based medicine: what it is and what it isn't, British Medical Journal, 312(71)

Tranfield, D., Denyer, D. and Smart, P. (2003) "Towards a methodology for developing evidence-informed management knowledge by means of systematic review", British Journal of Management, Vol. 14, No.3, pp.207-222.

Wright, A. L., Zammuto, R. F., Liesch, P. W., Middleton, S., Hibbert, P., Burke, J., & Brazil, V. (2016). Evidence-based Management in Practice: Opening up the Decision Process, Decision-maker and Context. British Journal of Management, 27(1), 161-178.