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Connected Patients in Light of Big Data

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Editorial

Connected Patients/Informed Clinicians: It's All About Data, Analytics and Technology

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Patients and their families today are expecting more transparency and involvement in their care than ever before. They want to engage with their health, to access their medical records, and to be informed about clinical decisions and options. Clinicians and administrators also have heightened expectations about the data, analytical tools and technology available to them. They seek more personalised patient information to implement the right treatments faster, better data to save them clinical and administrative time and money, and more powerful technology to give them the tools to achieve better outcomes. To meet the expectations of patients, clinicians and administrators, healthcare delivery organisations are undertaking significant efforts to create digital engagement tools for patients, to turn data into usable and understandable information and to implement advanced technology for better care. These efforts underscore how data, analytics and digital information technology are critical assets in healthcare today for enhancing patient experience, reducing costs, improving outcomes, and improving clinician experience.

In this issue, our contributors discuss the effective collection, management, analysis, interpretation and utilisation of patient data and how this data can be secure, how patient privacy can be protected, how data accessibility can be improved for both clinicians and patients and what issues healthcare professionals face with access, transfer and sharing of this data.

Diogo Neves and Henrique Martins talk about linking patients with data and the use of Brain-Computer Interfaces, their potential application in different psychological and neurological disorders and the use of data and AI to take BCIs to the next level. Eugene Fidelis Soh and co-authors highlight the need to flip healthcare and redesign entire systems using population health stack supported by five key enablers: care, finance, workforce, digital and data, and engagement.

Srdjan Babic and co-authors discuss data science, how it has brought forth exciting advancements in healthcare and how it can continue to be used to positively advance healthcare. Francisco Maestre and co-authors provide an overview of new ways to represent data by combining patient access and DICOM information, advanced use of medical imaging metadata, analysis of radiation dose and image segmentation and deep learning for feature engineering to enrich data.

Jörg Schwarz discusses why big data is underutilised in healthcare and why it makes sense to utilise it for healthcare improvement. He also explores how to achieve data privacy and security with big healthcare data. Betsabe Melcon and co-authors explore why healthcare has not been able to make the most of data science and why it is important to address the problem of low-quality health data and identify new ways of acquiring this data to overcome this problem.

Ashley MacNaughton and co-authors highlight the need to redesign outpatient services and how this transformation needs to break down traditional barriers and focus on optimising patient experience and outcomes.

Simona Agger Ganassi discusses the key elements of good public administration capable of confronting current challenges with autonomous responsibility and for healthcare managers to better utilise healthcare data, make appropriate use of advanced technologies and move from the traditional hospital-centred model by applying the One Health principle.

Daniela Pedrini talks about EcoQUIP+, a collaborative EU-funded project in the field of healthcare to develop and diffuse new concepts and methodologies and to encourage and enable innovation in the supply chain to bring forward cost-effective solutions and deliver high-quality care.

Richard Dasselaar talks about the use and application of Artificial Intelligence and the Internet of Things in healthcare and how the benefits of AI can be realised in the short- and long-term. Kencee Graves shares her experience during COVID-19, how the pandemic presented a frequently changing situation for health systems, and how successful management required a flexible and creative approach within a healthcare team.

We hope you will enjoy this issue. As always, your feedback is welcome.

Happy Reading!

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