

In response to 'The clinical artificial intelligence department: a prerequisite for success'

Piyush Mathur ,¹ Kamal Maheshwari,¹ Frank Papay²

To cite: Mathur P, Maheshwari K, Papay F. In response to 'The clinical artificial intelligence department: a prerequisite for success'. *BMJ Health Care Inform* 2020;**27**:e100221. doi:10.1136/bmjhci-2020-100221

Accepted 12 August 2020

We read with interest the article by Cosgriff *et al*, on the need for a clinical department of artificial intelligence (AI), in which the authors argue that the clinical AI department is a prerequisite to harness power of AI in clinical care.¹ While we agree with the goal, understanding the historical context of the departments in healthcare institutions and related challenges may highlight an alternate strategy for success.

Since 1930, many clinical departments originated from the departments of medicine and surgery, with a tripartite mission of education, research and patient care of healthcare organisations.² Departments provided an organisational framework for larger groups of faculty with similar training and goals.² While in the evolutionary history of academic organisations, departments were formed to provide care to patients with similar disease groups, centres have evolved to fulfil the need of having a multidepartmental, multidisciplinary approach to provide better patient care. AI initiatives at many of the medical institutions are driven through specialised centres cutting across divisions, departments and organisations. An innovative project can thus be completed effectively in a specialised centre.

Hiring talented people and defining revenue streams are critical to the success of any department or centre. Recruitment and retention of clinicians, data scientists, engineers and other administrative support into a single clinical AI department are likely to be challenging. For example, clinicians already have specific patient care roles and responsibilities in existing clinical departments and it will be difficult to recruit and retain for a new department. An affiliation with a centre will provide a simple structure to foster collaboration and may produce results quickly. While initial investments are necessary from parent institutions, eventually the department or

the centre should also seek to be financially self-sustaining.

Importantly, key metrics for productivity, finance, quality, scholarly activity, education, technology implementation, professional development and collaboration for such a department need to be defined. Rather once established and appropriately resourced a reverse evolution from a centre to a department may be the path forward. Many centres for clinical AI or specialty centres have already been established at various institutions across the world. For example, Maheshwari *et al* founded the centre for perioperative intelligence focused on improving perioperative care at Cleveland Clinic.^{3 4} Hopefully, building on the success of the centre, in the future, a perioperative intelligence department will be created.

In the mean time, the question is not about who will establish the first department of clinical AI. Rather by defining a strategy for success and measuring it, who will be the first to answer the question—are we there yet?

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Provenance and peer review Not commissioned; internally peer reviewed.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iD

Piyush Mathur <http://orcid.org/0000-0003-3777-8767>

REFERENCES

- 1 Cosgriff CV, Stone DJ, Weissman G, *et al*. The clinical artificial intelligence department: a prerequisite for success. *BMJ Health Care Inform* 2020;**27**:e100183.



© Author(s) (or their employer(s)) 2020. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

¹Anesthesiology Institute, Cleveland Clinic, Cleveland, Ohio, USA

²Dermatology and Plastic Surgery Institute, Cleveland Clinic, Cleveland, Ohio, USA

Correspondence to

Dr Piyush Mathur;
piyush_mathur@hotmail.com



- 2 Braunwald E. Departments, divisions and centers in the evolution of medical schools. *Am J Med* 2006;119:457–62.
- 3 Maheshwari K, Ruetzler K, Saugel B. Perioperative intelligence: applications of artificial intelligence in perioperative medicine. *J Clin Monit Comput* 2020;34:625–8.
- 4 AMA. Cleveland clinic ready to push AI concepts to clinical practice. Available: <https://www.ama-assn.org/practice-management/digital/cleveland-clinic-ready-push-ai-concepts-clinical-practice>