

Information Systems and Data work in Healthcare

Guest Editors

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Abstract

Data is created, produced and available in many domains and advocates extol the virtues of data-driven tools and techniques for their value as drivers of innovation, efficiency and quality. Data is at the core of business for some organizations such as social media or platform organizations. However, even though data often is produced as a matter of course by information systems (i.e. as “data exhaust”), a rich body of research has shown that producing, managing, and using data requires (often intensive) human effort and intervention. This has led to a general interest in data work and data workers in the field of Information Systems as well as in related fields such as Human-Computer Interaction, Computer Supported Cooperative Work and Critical Data Studies (e.g., Bates et al 2016; Miceli & Posada 2022; Muller et

al 2019; Parmigiani et al 2020; Parmigiani et al 2022; Rothshild et al 2022; Tubaru et al 2020).

In this special issue, we focus on data work in healthcare. Widespread digitization via new information systems such as Electronic Health Records (EHRs) for hospitals, home care and general practitioners, as well as systems to support Patient Generated Healthcare Data including wearables and Patient Reported Outcome applications, medication registries, etc., has led to a deluge of data in healthcare. Coupled with demands for data-driven accountability and personalized medicine, healthcare is broadly engaging in data-centric endeavor that has been termed “data intensive resourcing” (Hogle, 2016; Hoeyer, 2016).

The work and technologies required to produce and process data and put it into use (that is, the work entailed by data intensive resourcing) has led to changes for healthcare work and workers on various scales (Bossen et al 2019). Individual healthcare staff have to conduct more data work as part of their job and acquire new skills (Cruz 2023; Møller et al 2020; Sun et al 2023); physicians have more data available from which to assess patients, but also struggle with ‘meaningless data’ (Hoeyer and Wadman 2020) and burnout (Budd et al 2023; Tajirian et al 2020); clerks have to acquire new skills in order submit data (Pine et al 2016); and citizens have to learn to work with healthcare data (Fiske et al 2019; Torenholt et al 2020). Healthcare occupations change because their data work increases or is automated away. Medical scribes grow in numbers and take over tasks from physicians (Bryan and Lammers 2020; Bossen et al 2019), and medical secretaries are laid off (Møller et al 2020). Healthcare organizations establish or expand information management and business intelligence units to use data for efficiency and quality purposes (Choroszewicz & Alastalo 2021; McVey et al 2021), and the healthcare sector in general transforms to incorporate and make use of this new(ish) source of information (Hogle 2016; Hoeyer 2023). Further, these changes go beyond calculations and reorganizing healthcare and imply working with emotional relations to data as well (Fiske et al 2019; Choroszewics 2022).

The research on data work in healthcare is presently spread across various academic disciplines, publication venues and fields, and digitization of healthcare is evolving rapidly but also unevenly across sectors and countries. Hence, this is an opportune time to take stock as well as to provide a collection of studies on recent developments of the interrelations of data work and information systems.

Topics of relevance to this special issue include, but are not limited, to:

- Case studies of data work in healthcare whether this is in the primary, secondary or tertiary sectors of healthcare
- Studies of data work in connection with quality and efficiency improvements or to enable comparison across units, regions or countries
- Studies of patients’ and citizens’ data work

- Studies of the data work of professions and occupations in healthcare such as physicians, nurses, clerks, management, data analysts, etc.
- Studies of the emotional aspects of data work
- Conceptual papers that contribute with discussions and nuancing of healthcare data work and data processes
- Studies of the work involved in healthcare data processing focusing on overall processes or specific steps such as data annotation, data wrangling, or data visualization.
- Studies of organizational or broader societal changes around healthcare data

We encourage authors to draw upon the already emerging field of data work and establish connections across hitherto separated work and fields.

Why is this important?

Analyses of the work to produce, process, manage, present, and make use of etc. data, are required because discourses of digitization, Artificial Intelligence, Machine Learning and becoming ‘data-driven’ are strong and often assume that data will emerge and be produced and processed automatically and with little or no friction. However, to the extent that data work remains invisible and not acknowledged important transformation of healthcare work, professions and organizations might not be noticed and become subject of policy and debate. We will neither know which new competences and jobs are required, nor how data changes healthcare or societies at large.

Timeline

- Submissions due: May 15th, 2024
- Initial screening decisions: June 15th, 2024
- Round 1 decisions: October 1st, 2024
- Revisions due: February 1st, 2025
- Round 2 decisions: March 1st, 2025
- Second revisions (if needed): June 15th, 2025
- Anticipated publication date: December 31st, 2025

Further information

Please include a cover letter with your submission explaining that you submit to the special issue about “Information systems and data work in healthcare”

References

- Bates, J., Lin, Y. W., & Goodale, P. (2016). Data journeys: Capturing the socio-material constitution of data objects and flows. *Big Data & Society*, 3(2), 2053951716654502.
- Bossen, C., Chen, Y., & Pine, K. H. (2019). The emergence of new data work occupations in healthcare: The case of medical scribes. *International journal of medical informatics*, 123, 76-83.
- Bryan AL, Lammers JC. (2020) Professional fission in medical routines: Medical scribes and physicians in two US hospital departments. *Journal of Professions and Organization*; 7: 265–282.
- Budd J. (2023) Burnout Related to Electronic Health Record Use in Primary Care. *Journal of Primary Care & Community Health*; 14: 1–7.
- Choroszewicz, M. (2022). Emotional labour in the collaborative data practices of repurposing healthcare data and building data technologies. *Big Data & Society*, 9(1), 20539517221098413.
- Choroszewicz M, Alastalo M. (2021) Organisational and professional hierarchies in a data management system: public–private collaborative building of public healthcare and social services in Finland. *Information Communication and Society*; 26: 155–173.
- Cruz, T. M. (2023). Data politics on the move: Intimate work from the inside of a data-driven health system. *Information, Communication & Society*, 26(3), 496-511.
- Fiske A, Prainsack B, Buyx A. (2019) Data work: Meaning-making in the era of data-rich medicine. *Journal of Medical Internet Research*; 21: e11672.
- Hoeyer K, Wadmann S. (2020) ‘Meaningless work’: How the datafication of health reconfigures knowledge about work and erodes professional judgement. *Economy and Society*; 49: 433–454.
- Hoeyer, K. (2023). *Data Paradoxes: The Politics of Intensified Data Sourcing in Contemporary Healthcare*. MIT Press.
- Hogle, L. F. (2016). Data-intensive resourcing in healthcare. *BioSocieties*, 11, 372-393.
- McVey, L., Alvarado, N., Greenhalgh, J., Elshehaly, M., Gale, C. P., Lake, J., ... & Randell, R. (2021). Hidden labour: the skilful work of clinical audit data collection and its implications for secondary use of data via integrated health IT. *BMC Health Services Research*, 21, 1-11.
- Milagros Miceli and Julian Posada. (2022). The Data-Production Dispositif. *Proc. ACM Hum.-Comput. Interact.* 6, CSCW2, Article 460 (November 2022), 37 pages. <https://doi.org/10.1145/3555561>
- Muller, M., Lange, I., Wang, D., Piorkowski, D., Tsay, J., Liao, Q. V., ... & Erickson, T. (2019). How data science workers work with data: Discovery, capture, curation, design, creation. In *Proceedings of the 2019 CHI conference on human factors in computing systems* (pp. 1-15).
- Møller, N. H., Bossen, C., Pine, K. H., Nielsen, T. R., & Neff, G. (2020). Who does the work of data?. *Interactions*, 27(3), 52-55.

- Møller, N. H., Eriksen, M. G., & Bossen, C. (2020). A Worker-Driven Common Information Space: Interventions into a Digital Future. *Computer Supported Cooperative Work (CSCW)*, 29, 497-531.
- Parmiggiani, E. and Grisot, M. (2020) Data Curation as Governance Practice, *Scandinavian Journal of Information Systems*: Vol. 32: Iss. 1, Article 1. Available at: <https://aisel.aisnet.org/sjis/vol32/iss1/1>
- Parmiggiani, E. ; Østerlie, T.; and Almklov, P.G. (2022) In the Backrooms of Data Science, *Journal of the Association for Information Systems*, 23(1), 139-164. DOI: 10.17705/1jais.00718
- Pine, K. H., Wolf, C., & Mazmanian, M. (2016). The work of reuse: birth certificate data and healthcare accountability measurements. *IConference 2016 proceedings*.
- Rothschild, A., Meng, A., DiSalvo, C., Johnson, B., Shapiro, B. R., & DiSalvo, B. (2022). Interrogating data work as a community of practice. *Proceedings of the ACM on Human-Computer Interaction*, 6(CSCW2), 1-28.
- Sun, Y., Ma, X., Lindtner, S., & He, L. (2023). Data Work of Frontline Care Workers: Practices, Problems, and Opportunities in the Context of Data-Driven Long-Term Care. *Proceedings of the ACM on Human-Computer Interaction*, 7(CSCW1), 1-28.
- Tajirian T, Stergiopoulos V, Strudwick G, et al. (2020). The influence of electronic health record use on physician burnout: cross-sectional survey. *Journal of medical Internet research*; 22: e19274.
- Torenholt R, Saltbæk L, Langstrup H. (2020). Patient data work: filtering and sensing patient-reported outcomes. *Sociology of Health and Illness*; 42: 1379–1393.