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Scaling up a Clinical AI Fellowship

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Abstract. Insights derived from successfully scaling a Clinical AI NHS Fellowship, addressing the scarcity of professionals proficient in clinical and Artificial Intelligence (AI) domains. Approach focus on operationalising a novel educational route critical for the present and future of healthcare using AI.

Keywords. Fellowship, Interdisciplinary Training, Healthcare, AI, Education

1. Introduction

The rapid evolution of digital healthcare necessitates innovative educational approaches to bridge the gap between clinical practice, and the frontline use of emerging AI technologies [1]. The journey of scaling a Clinical AI NHS Fellowship emphasised the importance of transformative education routes in healthcare.

2. Methods

The fellowship matches senior clinical staff with AI Supervisors (at 0.4 FTE) to deploy AI. This is complemented by online training and in-person masterclasses to address the full AI lifecycle, with the curriculum additionally spanning diverse Clinical AI aspects [2]. Agile processes and MSP methods were used to secure funding and expand (geographically and within medical specialties) to operate across UK regions, adhering to local regulations. Led by a Nurse/Midwife, Physicist and Specialty Genetics Registrar, the programme has a focus on addressing the education gap in the whole of the NHS workforce, equipping healthcare leaders to adopt clinical AI, as is noted as a key aspect of the NHS Long Term Workforce Plan3

3. Results

The fellowships novel and innovative approach to upskilling the NHS workforce experienced exponential growth. Cohorts expanded in participant numbers from 11 to 30 in 3 cohorts, and in participating regions from 2 to 10 in the same amount of time– this expansion was successfully achieved with a lean faculty working group of a total of 1.5 FTE. This was achieved through constant reflection and key lessons as described

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within the Discussion. The demand for the programme, and appetite amongst all stakeholders from potential participants to supervisors, region Deans, and executives remains extremely high. Notably, the programme garnered support from major national-level agencies, including NHS England, and was explicitly recognised in the NHS Long Term Workforce Plan [3]. The programme underwent an independent review by the Health Innovation Network (HIN) [4], which affirmed its status as a high-impact initiative. Participants, spanning diverse health specialties [5], achieved successful AI-driven solutions, enhancing diagnostic accuracy and streamlining workflows. The programme fosters continuous learning and collaboration, leveling up all clinical stakeholders. The Clinical AI projects being implemented through the programme vary in specialism, ranging from medical imaging to pathology and through to mental health. The AI approach also varies, from deep learning, neural networks and large language models. The programme faced various challenges, likely to be experienced by initiatives of this scale and impact, therefore representing key learnings that are earned from such novel innovation. These lessons are further explored in the Discussion.

4. Conclusions

This programme highlighted the multifaceted nature of scaling programmes and initiatives aligning with the broader landscape of informatics projects, emphasising the need for adaptability and strategic planning. In essence, the challenges and insights from this programme extend beyond the specific context, offering universal lessons for those in the informatics field. Observers and learners can draw parallels and apply these lessons to their respective areas, fostering a collective understanding of the nuanced dynamics inherent in informatics initiatives. However, the success of scaling the NHS Fellowship in Clinical AI underscores the significance of interdisciplinary medical and informatics training. The experience highlighted the significance of proactive strategies in designing programmes that not only meet demand but also foster inclusivity and representation. Observers and learners can glean insights into the intricate dynamics of healthcare systems, recognising the need for nuanced approaches in scaling initiatives, particularly when addressing workforce knowledge gaps and promoting equality in AI adoption across different regions and professions. Valuable lessons include the need for flexibility in curriculum design, fostering collaboration, and providing ongoing support for participants navigating the intersection of AI and clinical practice.

References

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