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Early-career Academic Clinicians at the Intersection of Medicine, Research and Policy – Lessons Learned from the COVID Pandemic

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The COVID pandemic enforced unprecedented pressure upon the academic clinician workforce globally. While in some aspects this has been a time of opportunity for academic clinicians, it has also exposed the vulnerabilities of this career path and the challenges early-career academic clinicians face. These challenges include the lack of dedicated training programmes, obstacles to international recognition of their career paths, and the remuneration gap between academic clinicians and their clinical counterparts. Addressing these issues will require a concerted effort from policy-makers, funding agencies, and the medical community. However, investing in increasing the pool of academic clinicians in the long term is essential to advancing medical knowledge and improving the wellbeing of all of society.

Academic Clinician – an 'Endangered' Career Path

Academic clinicians, or physician scientists, are individuals who have completed advanced training in both research and a clinical speciality following medical school, and are conducting research while also providing medical care throughout their careers. These individuals are essential in advancing medical knowledge and improving patient care, bridging the gap between the worlds of science and clinical practice. Due to this experience and knowledge, they are also significant contributors to industry and policy, being in a unique position to identify gaps and unmet needs in

clinical care. However, academic clinicians face unique challenges during their training and careers.

The recent COVID pandemic highlighted the critical role and importance of this dual niche. Besides their clinical service, academic clinicians played a key role in understanding the pathophysiology of the disease, developing effective testing, vaccination and treatment, and introducing preventive public health measures.

In spite of its valuable contribution to society and benefits to human health, this career path is at risk and suffering from uncertainty around the globe. The COVID pandemic exacerbated several factors that contribute to this uncertainty.

This article is a subjective narrative of the challenges faced by academic clinicians throughout their training and early in their careers. It is most definitely not an exhaustive list, and the author acknowledges that the points raised may apply to different extents in different settings, or not be applicable at all. However, the article does aim to highlight some of the pressing deficiencies and unmet needs that need to be addressed by stakeholders and decision makers in order to reverse the declining trends of talented individuals choosing this pathway and to improve the retention rates of those already on this pathway early in their careers.

Training Issues

One of the biggest challenges that academic clinicians face during their training is the lack or unestablished nature of dedicated training programmes. Consequently, academic clinicians often need to design their own training plans. While this offers a degree of freedom, the sequence and proportion of training time devoted to developing research and clinical skills, needs to be carefully considered, with a number of advantages and disadvantages to be taken into account.

Training programmes often offer a degree of flexibility in allowing the aspiring academic clinician to start specialist clinical training after graduation from medical school and enrolling into a PhD programme mid-way or after achieving specialist qualification. Broadly speaking, the other alternative is embarking on research training following graduation with no or minimal clinical exposure in this period, completing a PhD and possibly a post-doc position. Realistically, a combination of simultaneous clinical and research training is rarely achievable and is highly demanding, even if both are done on a part-time basis, as both domains require full-time dedication to enable the trainee to reach sufficient levels of routine and depths of expertise.

Those completing their PhD first will likely achieve a better track record of publications and citations, as their first results will be published at an earlier stage in their careers, allowing more time for citations of their work to accumulate. However, the later disadvantage will be that clinical training will interrupt establishing their own research groups and reaching independence. Several of the grants helping to achieve this are limited to scientists within their first three to five years following their PhD, years that are often critical to their initial clinical training, not allowing them to

compete for these scholarship opportunities. Unfortunately, most grant and scholarship schemes do not recognize clinical training as a valid 'career gap', in contrast to parental leave or sickness, for example, creating an unfair evaluation system and putting academic clinicians into a major disadvantage in comparison with non-clinical researchers. Additionally, salaries of research trainees with no clinical service roles also tend to be lower than those of clinical trainees.

These issues could be overcome by starting a PhD much closer to the completion of clinical training. However, by this stage, trainees often have major clinical responsibilities arising from increasing clinical independence and high training demands just before achieving specialist qualification and applying for a consultant post. Their involvement with research for their PhD at this stage will temporarily put them in a worse position in comparison with full-time clinical trainees when it comes to competition for available consultant jobs.

Either way, the time academic clinicians spend in postgraduate training can total up to 15 years, leaving these individuals in their late 30s or even early 40s to establish independence in both research and clinical practice, contributing to poor retention rates throughout training and afterwards. On top of the core research and clinical skills, a 'hidden curriculum' is also to be mastered. According to Williams et al. (2022), this includes skills such as networking, mentor training and research management. Importantly, there is insufficient emphasis on training for science communication and policy work, whether as part of this 'hidden curriculum' or a dedicated training module. Academic clinicians need to be better equipped in both areas.

Their unique combination of skills creates a great demand both in the area of policy development as well as in industry. However, industrial stakeholders also need to invest a lot more into the training of these highly sought experts, contributing to the sustainability of the sector, rather than simply draining them following their training, further depleting an already diminished workforce.

Obstacles to an International Career Path

Another challenge that academic clinicians face is the lack of global compatibility in the training and funding landscape. Medical research, similar to many other disciplines, is an international endeavour. However, many training programmes and funding sources are limited to individuals who are citizens or permanent residents of a given country, or even to individuals associated with select institutions within a country. This can limit the opportunities for academic clinicians to international training and collaboration opportunities.

Medical councils frequently operate and make decisions on a subjective, and occasionally biased basis. The lack of consistency within the same body and across various bodies internationally has been a major bottleneck in enabling recognition of the academic clinician career path on the regulatory level. Applicants from developing countries are often disadvantaged. Councils fail to engage in dialogue

with applicants and there is no pathway for unjust decisions to be challenged or disputed, likely due to the lack of relevant and applicable reference points and standards. Contributing to this is that members of council evaluation committees, mostly full-time clinicians with very little or no research background, are unqualified to assess academic clinician career paths.

As stated by Williams et al. (2022), it 'would be eminently feasible (and to the advantage of all parties) to allow international recognition of a license to practice for individuals with internationally recognized skills and qualities', provided that experts or bodies with relevant experience perform the assessment of such candidates.

Furthermore, the establishment of an international academic clinician society would contribute to fostering this career path from training up to retirement, allow sharing of best practices and international networking and would serve as a reference point for setting standards.

Problems around Remuneration and Retention

Academic clinicians also face challenges when it comes to remuneration. In general, they are paid less than their full-time clinical colleagues, despite the additional training and qualification required to conduct research. As they often have affiliations with more than one organization, including academic institutions, such as universities or research institutes as well as clinical facilities, employment issues and disadvantages spanning from an 'in-between' state are not uncommon.

As well as what is often perceived as higher job satisfaction in clinical work than in research (i.e., positive change is achieved more rapidly in an individual patient's life during clinical decision making than through the impact of one's research), remuneration issues for academic clinicians also contribute to poor retention rates. Academic clinicians with part-time clinical duties tend to receive remuneration matching a full-time clinical salary at best, at their level of seniority. This often means that they are paid a 'clinical loading' on top of their academic salary, earning more than their full-time academic peers. However, taking into account private clinical or industrial work, which they often have no time to do, their income still falls short of their full-time clinical peers who are running a private practice or working for industry on top of their main contract. While it is difficult to monetize the value of an academic clinician's work, they certainly are a special asset to their employer and wider society in spite of the smaller clinical revenue they typically generate. Furthermore, the value of incentives to draw talent into the field also needs to be taken into consideration, rather than 'depending on the reward of discovery being enough' (Williams et al. 2022).

Finally, the time academic clinicians can devote to their research also greatly varies between clinical specialities. Areas of medicine such as intensive care or surgical specialities versus consultation-based specialities typically have less flexible clinical commitments (e.g., theatre times, procedures, emergencies, on-calls, in-person attendance on the ward). Retention in the academic clinician sphere amongst

these specialists is poorer compared with more flexible specialities, often also combined with less success in grant applications and scientific output (Brass and Akabas 2019). Speciality-based targeted schemes and support would help equalize this disbalance.

The Effects of the COVID Pandemic

The COVID-19 pandemic brought extraordinary challenges to the world, and academic clinicians have been at the forefront of the fight against the virus. They were not only tasked with conducting research to better understand the characteristics of the disease and develop effective public health prevention strategies, treatments and vaccines, but were also often redeployed from their research work to the forefront of patient care. The academic clinician workforce was uniquely impacted by the pandemic (Kliment et al. 2020), highlighting and exacerbating the difficulties they were facing in their careers.

Redeployment to the bedside of patients, often not in a usual setting or role, negatively impacted their non-COVID related research progress, in addition to clinical trials being slowed down or completely halted by the pandemic. Alternatively, their research was diverted from their original focus to that of the pandemic in an effort to support the fight against the virus. Being forced to shift their attention from research to patient care also compromised career aspirations of both trainees and established academic clinicians (NIHR 2020; Wade 2021).

Furthermore, similar to other clinicians, the pandemic affected the mental health of academic clinicians. Many worked long hours and were exposed to the virus on a daily basis, putting themselves and their families at risk. This has led to burnout and mental health challenges, such as anxiety and depression.

In spite of the above, once the pandemic ceased and business is back 'as usual' in research and science, the contribution of these individuals is now fading and escaping institutional memory. The COVID service of academic clinicians has rarely been acknowledged and is rarely taken into account during scholarship or grant applications. While parental leave or sickness are now established as valid reasons for 'career gaps' and are considered when evaluating an individual's output, serving patients and communities during the COVID pandemic, often labelled as 'unprecedented', tend to be ignored by funding bodies or evaluation panels. With the potential of future public health threats and pandemics, a fair system should be established to compensate for what academic clinicians have been missing out on in their career progression while serving society.

Conclusion

In conclusion, academic clinicians face unique challenges during their training and careers. These challenges include the lack of dedicated training programmes,

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obstacles to international recognition of their career paths, and a remuneration gap between academic clinicians and their clinical counterparts. Addressing these challenges will require a concerted effort from policymakers, funding agencies, and the medical community. However, investing in increasing the pool of academic clinicians in the long term is essential to advancing medical knowledge and improving the wellbeing of all of society.

Proposed Solutions

- Establishment of more dedicated training programmes for academic clinicians.
- Increased contribution of industry to their training.
- Conceptualizing training internationally.
- Specific training in science communication and policy work.
- Addressing the remuneration gap between academic clinicians and their full-time clinical counterparts.
- Taking into account differences between clinical specialties and supporting specialists with less flexible clinical working arrangements.
- Including COVID service as a career gap in grant and scholarship applications.
- Medical licensing bodies to evaluate comparability of international career paths by experts.
- Formation of an international academic clinician society.

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