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Editorial

Research as Part of Daily Clinical Life: Challenging But Possible

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Editorial

The Two Cultures

The surgeon-scientists or academic Surgeon-Scientists (SS) are practising clinicians who are engaged in scientific research. SS are uniquely positioned to facilitate exchange between research and practice, and as such they play instrumental role in developing medical practice [1]. The involvement of Surgeon-Scientists (SS) will lead to increasing clinical relevance of research questions, gaining access to clinical settings for research, bringing clinical expertise and insider perspectives to the research, having researchers who are trusted by participants, which may encourage their participation, and having researchers who are motivated to disseminate applicable findings and continue their commitment to the researched. This combination can result in good patient compliance and strengthen patient-clinician interactions [1-3].

The clinical physician's workforce increased nearly twofold, but the number of physicians choosing research-oriented careers remained steady [3,4]. This means that even if scientists conduct more studies, fewer translators would be available to facilitate the exchange of information between the bench and bedside [3,4]. The clinician-scientist has become a rare and distinct entity, or an "endangered species" threatening to disrupt the cross talk between the lab and clinic [1,3].

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It is not hard to imagine the difficulties for SS to perform in both worlds and on top of that, broker between those worlds [1,3]. The expectations from SS can be stringent and at times unrealistic especially in a context where there is a focus on “production” in clinical world and complex regulation in research world. There is an increasing volume of literature showing that SS dual position is demanding and not well supported. They often feel they are undervalued by having their output compared to full-time colleagues, whilst their efforts in the second field are not being taken into account [1,3]. Despite initial interest and motivation, many early-career SS choose to focus on research or clinical activity only. The difficulties of maintaining a dual career may explain why, despite their recognized importance, their numbers have for several decades been declining [1,4].

Concern has been expressed over the decline of the surgeon scientist for several decades [5]. However, well defined, well-funded plans to stop this decline are still far away. There are mounting pressure for increased clinical productivity in hospitals especially in developed countries. This pressure in addition to competition for funding from physicians working in non-surgical disciplines, and decreased funding available for surgical research threaten the sustainability of SS. For instance, non-surgeon physicians are more likely than surgeons to apply for (and receive) any type of National Institutes of Health (NIH) career development award [6]. Hu, et al., documented that surgery experienced a relative decrease of about \$51.7 million in research funding over a 10-year period and this mostly affected R-awards (i.e. for research projects) and K-awards (i.e. for mentored researches) [7].

As we approach an era of personalized medicine, prompted by better understanding of disease mechanisms and use of novel therapeutic approaches, there is an increased need for a closer collaboration between scientists and clinicians. Surgeon-scientists speak both languages fluently and can facilitate this collaboration. The patients will be the main losers if the current trends of declining proportions of SS are not reversed.

Action Plan

Action plan includes a better understanding of the nature of the surgeon-scientist’s role, improve reward system to account for dual-position and strengthen recognition of brokerage [1]. The training to become a SS is time consuming, and each field is a challenging career by itself, especially in surgery where new techniques are emerging [3].

A key element for attracting students to pursue a career as SS is the creation of well-structured MD/PhD dual programs focused on developing a strong competence in translational medicine and regularly updated to include cutting-edge medical advances. The quality of mentorship, the availability of a stimulating research environment, and well-equipped facilities are also crucial conditions for the success of dual programs. Medical school, hospital, and the university should be aware of the advantages of promoting physicians to grow as SSs. This strategic

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approach is based on the awareness that such investments would ultimately have a high rate of positive return in terms of both research grants and prestige for the hospital as well as for the university [3].

Road Map to Encourage Surgeon-Scientist

Many barriers preventing the career development of SS were identified [8]. Practically speaking, surgeon-scientists will need the following to support their academic success [6]

1. Protected research time
2. Salary support to offset clinical productivity demands (e.g. senior researchers grant)
3. Mentorship
4. Initial research funds
5. Personnel (technicians, secretary, research nurse, etc.)
6. Laboratory space/computing infrastructure. This is especially important in basic science research. Already pointed out many important issues in this regards [9]
7. Supplies (equipment, computer, etc.)
8. Support from chair (department leader, hospital director, etc.)
9. Support from division chief
10. Support from division partners (colleagues in the department)

Support from colleagues is crucial. However, this support needs time to be realized. Awareness of the importance of clinical research for the department as a whole is a prerequisite. Research activities like journal club, mortality/morbidity conference, continuous education, engagement in writing/updating the guidelines and active debates will help to create this awareness and recruit young surgeons to research projects [9].

We know that “it is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change”. The surgeon-scientist plays a vital role in adapting surgical practice to the changes in disease and management options. The surgeon-scientist is a major innovation force that cannot be replaced. Therefore, we need to support this “endangered species”.

References

1. De Groot E, Baggen Y, Moolenaar N, Stevens D, van Tartwijk J, Damoiseaux R, et al. Clinician-scientists in-and-between research and practice: how social identity shapes brokerage. *Minerva*. 2021;59(1):123-37.
2. Hay-Smith EJC, Brown M, Anderson L, Treharne GJ. Once a clinician, always a clinician: a systematic review to develop a typology of clinician-researcher dual-role experiences in health research with patient-participants. *BMC Med Res Methodol*. 2016;16(1):1-17.
3. Somekh I, Somekh E, Pettoello-Mantovani M, Somech R. The clinician scientist, a distinct and disappearing entity. *J Pediatr*. 2019;212:252-3.
4. Lane R. The widening chasm between research and clinical practice. 2018:1-7. [Last accessed on: June 15, 2021] <https://blogs.scientificamerican.com/observations/the-widening-chasm-between-research-and-clinical-practice/>
5. Kibbe MR, Velazquez OC. The extinction of the surgeon scientist. 2017;265(6):1060-1.
6. Kodadek LM, Kapadia MR, Changoor NR, Dunn KB, Are C, Greenberg JA, et al. Educating the surgeon-scientist: A qualitative study evaluating challenges and barriers toward becoming an academically successful surgeon. *Surg*. 2016;160(6):1456-65.
7. Hu Y, Edwards BL, Brooks KD, Newhook TE, Slingluff CL. Recent trends in National Institutes of Health funding for surgery: 2003 to 2013. *Am J Surg*. 2015;209:1083-9.
8. Keswani SG, Moles ACM, Morowitz AM, Zeh H, Kuo JS, Levine MH, et al. The future of basic science in academic surgery identifying barriers to success for surgeon-scientists. 2017;265(6):1053-9.
9. Alverdy JC. Surgeon as basic bench scientist: a play in three acts. *J Surg Res*. 2019;241:336-42.