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Oral and Maxillofacial Surgery research infrastructure and innovation

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It is a damning indictment of surgery that, despite our reliance on complex interventions, many aspects of our practice in all specialties including Oral and Maxillofacial Surgery (OMFS), are not evidence based.

In 2000, the UK Medical Research Council set out clear guidance for the assessment of complex interventions.[1] Almost a decade later, in 2009, McCulloch et al.[2] gave recommendations in the Lancet for assessing surgery. This was based on a five-stage description of the surgical development process, including the initial idea, followed by development, exploration, assessment, and long-term study (the IDEAL framework).

In the UK, there is limited funding for research into surgical innovations, and unlike the pharmaceutical industry, technology developers do not have to follow strict regulatory frameworks. Consequently, novel devices can make their way to operating theatres in the hands of innovative surgeons and can become standard practice without having a peer-reviewed evidence base. Moreover, these innovators may have worse initial outcomes because of the learning curve when starting to use the device, and these outcomes rarely find their way into the literature[3].

In contrast to these innovators, there are also surgeons who continue to use established techniques or management protocols with which they are comfortable. They may continue to achieve acceptable outcomes (however these are defined), and who pass their approach

unchanged to new generations of trainees[3].

In the UK, we have many great centres with diverse expertise. Unfortunately, all too often they work in isolation. We are a small specialty in challenging times. Most National Health Service surgeons are under pressure and need to be supported to participate in research. This help needs to be practical with trial design and recruitment so that they can evaluate the safety and efficacy of novel and established techniques. The support should also be pragmatic and derived from surgical colleges, editors, and key stakeholders such as the National Institute for Health Research (NIHR).

The way forward is not simply to work harder with the resources we have: this will only lead to failure and disappointment. As surgeons, we need to know what is available to us if we are to appreciate the benefits of innovation in our daily practice.

OMFS needs a better infrastructure and a change in culture among surgeons, educators and managers. We need to embrace and support trials, we need to be active in seeking principal investigator duties, we need to support workshops and make better use of the research design resources available in our local trials units. Participation in organised research networks can help us build expertise and infrastructure in local units.

It is unlikely that most hospitals will have access to additional central resources and therefore additional manpower may be funded by recruiting patients to portfolio studies. We should encourage national collaborations, a register of innovations, and approval from ethics committees.

Finally, we must find ways to develop a culture of research and innovation during speciality training. The requirements to publish and learn by “going through the process” have almost vanished. Why not include training in Good Clinical Practice for trials and taught critical

reading skills as a prerequisite for the Certificate of Completion of Specialist Training? In particular, training programme directors should encourage trainee-led collaborative multicentre research, and we should learn from successful OMFS collaboratives.

It is time to simultaneously empower and regulate innovation in OMFS, but this can only be done if we actively participate in research and clinical trials. Only then can we take the specialty into the new era that it so desperately needs.

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