

The changing face of orthopaedics

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In *The Picture of Dorian Gray*, Oscar Wilde presents a fascinating paradox. It is not the man himself who records the passage of time, but his portrait. While Dorian Gray's outward appearance remains reassuringly familiar, the painting quietly reflects the cumulative effects of experience, circumstance and change. More than a century after its publication, the novel continues to resonate because it poses a timeless question: how do we recognise something when it is constantly evolving? Trauma and orthopaedics finds itself facing a similar paradox.

The specialty we know today would still be recognisable to our predecessors. The principles that have always defined orthopaedic surgery – careful clinical assessment, sound judgement, technical excellence and an unwavering commitment to restoring function and improving patients' lives – remain unchanged. Yet beneath that familiar exterior, profound transformation is taking place. The face of orthopaedics is changing.

Some of that change is driven by remarkable technological innovation. Artificial intelligence is beginning to influence education, clinical decision-making and the organisation of healthcare itself. Robotics, navigation, predictive analytics and data-driven practice are steadily becoming part of routine orthopaedic care. At the same time, our patients are living longer, presenting with greater medical complexity and expecting care that is increasingly personalised, efficient and digitally enabled.

Other changes are less visible but no less significant. The NHS continues to grapple with unprecedented workforce pressures, record elective waiting lists and increasing financial constraints. Surgical training is undergoing major reform, while the role of the consultant orthopaedic surgeon continues to evolve beyond technical expertise alone to encompass leadership, service development, quality improvement and system-wide thinking.

The title of this Congress subsection was therefore chosen deliberately. The changing face of orthopaedics is about far more than new technology or new ways of working. It asks a broader question: how should our specialty evolve while preserving the professional values that have always defined it? Innovation should enhance – not replace – the qualities that remain at the heart of orthopaedic surgery: clinical judgement, technical craftsmanship, compassion, professionalism and the privilege of caring for patients.

The four commissioned articles that follow explore this changing landscape from complementary perspectives.

Andrew Dunn begins by examining one of the defining challenges of modern orthopaedic practice: elective recovery. His article explores how waiting lists, productivity, surgical hubs and service redesign are reshaping the delivery of musculoskeletal care, arguing that future success will depend not simply on doing more surgery, but on designing smarter, more sustainable systems that improve patient outcomes while protecting training and workforce wellbeing.

Having considered how orthopaedic services are changing, Deepa Bose, Kerin Croan, Amy Grove and Arabella Scantlebury ask what sort of consultant will be needed to lead them. Drawing on the recent national consultation undertaken by the Specialist Advisory Committee and the Medical Training Review, they explore whether the day-one consultant of the future will require a different balance of technical expertise, clinical judgement, leadership and adaptability than today's training programmes were originally designed to deliver.

Technology is central to both of these discussions. Andrew Coppola, Andreas Fontalis, Fares Haddad and Deiry Kader examine how artificial intelligence (AI) may transform orthopaedic service delivery across the entire patient journey – from referral and diagnosis to waiting-list management, recovery and long-term follow-up. Their article reminds us that AI should augment clinical judgement rather than replace it and that innovation must remain evidence-based, ethically implemented and firmly centred on patients.

Finally, Rosie Hackney and Emily Baird turn their attention to the next generation of orthopaedic surgeons. AI is already changing how trainees prepare for examinations, undertake research, organise learning and develop professionally. Their article explores how these powerful new tools can be integrated responsibly into surgical education while preserving the critical thinking, independent judgement and mentorship that remain fundamental to becoming an excellent surgeon.

Viewed individually, each article addresses a different challenge facing contemporary orthopaedics. Together, however, they tell a much broader story. They describe a specialty in transition – one that is adapting to changing technologies, changing healthcare systems and changing societal expectations while remaining anchored by the principles that have guided orthopaedic surgeons for generations.

Perhaps Wilde's portrait provides the perfect metaphor. Change is inevitable; indeed, it has always driven progress in medicine. Our challenge is not to resist it, but to ensure that as the 'face of orthopaedics' continues to evolve, its character remains unmistakably its own. ■