Could you provide an insight into your background? How did you come to your current position within the Royal Society of Medicine (RSM)?

I have been interested in using IT for the benefit of patients since 1980, and worked closely with the British Computer Society in promoting the benefits of computerised records to GPs. I then helped found one of the largest out-of-hours GP cooperatives – Harmoni. Unique in its use of nurses and doctors to provide advice to patients over the phone, supported by software, Harmoni evolved into one of the first National Health Service Direct (NHSD) call centres. NHSD later became the world’s largest provider of remote care, with 6 million phone calls and 12 million web users per year.

Links to the RSM Telemedicine and eHealth Council were key to developing collaborations with academic and clinical communities in the UK, and the opportunity to undertake the role of President-Elect, and President next year, fitted well with my retirement from the NHS.

As the former medical advisor for NHSD, what is your opinion of the service’s closure this year?

NHSD provided phone, web and information services to the UK population, supported by 3,000 nurses. It implemented a national secure voice/data network, linking its 22 call centres to national patient databases of callers.

It has been replaced by the 111 service, based at local call centres, not linked by voice/data, and all from the cheapest supplier. A national review of 111 services is underway, and it will be interesting to see how their new vision matches the soon-to-be-disbanded NHSD!

How has telehealth developed since its inception?

The first recorded example of telehealth was in The Lancet in 1879, with the use of a telephone to analyse chest sounds remotely. Since then, we have seen remote electrocardiogram (ECG) analysis (1906), radio doctors for shipping (1920s), telepsychiatry (1955) and telecare call centres (1960s). The growth in telehealth has been accelerated by advances in digital technology, the internet and hardware capabilities, which allow provision of remote care to anyone, anywhere, at minimal cost.

What are the advantages of telehealth over more traditional methods of care, and why is telehealth especially useful for caring for long-term conditions?

Telehealth allows clinicians to manage a greater case load, as monitoring devices and software enable them to focus on those patients whose results are abnormal, and who may require intervention. Stable patients can be offered support and education automatically.

Long-term conditions, such as chronic obstructive pulmonary disease and heart failure, are particularly suited to this approach as they can be monitored using simple symptom assessment and parameters, eg. O₂ levels and blood pressure. The real challenge is coping with the rapidly
increasing number of older patients with diabetes, hypertension and obesity, and reduced clinician numbers due to retirement. Telehealth promotes shorter, more targeted admissions and reduced rates of hospital readmission.

You recently attended a one-day conference entitled ‘Innovation driving patient care: Simulation, robotics and telemedicine’. What are the major uses of robotics and simulation in medicine, and what were the outcomes of this event?

Health robotics and teaching simulations are developing at a pace, and the UK is a world leader in these technologies. However, the NHS is tardy in incorporating health robotics into daily practice. The benefits of more rapid training and safer surgical outcomes with simulator-trained surgeons will be lost if the NHS does not fund the purchase of more simulators.

Further to this, could you provide some insight into ‘Telemedicine & eHealth 2013: Ageing Well – how can technology help?’, the RSM’s 2013 conference?

The conference was well attended, with global representation, and addressed the global problem of ageing populations and reducing numbers of carers. A wide variety of telehealth-based approaches were presented; the activities of the US Veterans Administration were of particular interest – they implement telehealth solutions for 20 million patients.

To what extent is the ageing population driving the need for telehealth, and what other factors are at play?

Older people have more health problems, usually related to long-term conditions, and the longer they live, the more health problems will develop. This means that more people need more care, but the number of doctors, nurses and carers is decreasing. This necessitates a greater focus on triaging problems, allowing clinicians to focus on those whose need is greatest. Telehealth and telecare-based services will support these people at home, and monitor them for problems requiring early or acute intervention, facilitated by web and mobile phone/tablet-based services – the NHS must adopt and adapt accordingly to survive.

How useful are data collected by telehealth for research purposes?

Telehealth data are frequently unencoded, so analysis and incorporation into NHS systems can be difficult. Different data formats between suppliers are also a problem. This limits the ability to aggregate data, precluding more informative analysis.

Hopefully, the standardisation of data to allow incorporation into NHS GP records will allow easier access by researchers. Big data analysis may allow extraction of hidden trends or markers. These problems will be addressed in the forthcoming RSM Big Health Data conference in June this year.

A major worry regarding telehealth is that it reduces personal contact between the patient and their doctor. Are there any other concerns regarding telehealth, from the perspective of both patient and physician?

Patient data security is a key concern of both clinicians and patients, and our focus is on encryption and the minimisation of patient-identifiable information transmitted across web/data networks. The sheer volumes of data collected are also a worry to clinicians. Their ability to look for trends and acute events can be blunted by the data deluge, so the ability of software to identify significant events is a real challenge to the industry.

What are the major challenges ahead, and what is needed for the widespread acceptance of telehealth services?

Growth in the numbers of people who could be monitored, and increasing strains on carers and clinicians, will force change in health and social care systems. Evermore affordable hardware, monitoring devices and web services, allied to a growing global market, will overcome the current barrier of cost. The immobile or ill, young and old, will expect personalised mobile solutions, available in their pockets, forcing change to health systems based on 19th Century models of care.

What are your hopes for the future of the field?

The RSM will continue to support leading-edge educational activities that inform patients, carers, clinicians and the telehealth industry, and spread best practice widely. Our focus on interdisciplinary approaches for better care, supported by appropriate technology, will support better solutions, improved care and more satisfied users in this turbulent time.