

Dental witness seminars: dentistry in the UK since 1948

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IN BRIEF

- Provides a 'roadmap' of how we got to where we are in dentistry today, together with a compass to future trends.
- Advises that the best history is that recalled by those who made it.
- Suggests that if you don't know the recent history of dentistry, present events lack context and importance.

Witness seminars attempt to get behind the scenes of advances and developments to find out what really happened at certain times; they are not intended to provide a detailed history of events. This paper presents highlights from the five John McLean Archive witness seminars, providing an instructional collection of memories and insights into the world of dentistry in the UK since the late 1940s. It is concluded that future change will be seen as a welcome constant to be used for the benefit of the profession and the patients and communities it serves.

INTRODUCTION

The concept of witness seminars – a term coined by the Institute of Contemporary British History – emerged in the early 1990s. The application of witness seminars in biomedical sciences and related areas is attributed to Professor EM (Tilli) Tansey of the Wellcome Trust-funded 'History of Twentieth Century Medicine Group', now the History of Modern Biomedicine Research Group at Queen Mary College University of London.

The sequence of events leading to a series of witness seminars is ably described by Jones and Tansey.¹ Following a conventional seminar on interferon, Tansey was struck by the animated discussions between attendees.² This encouraged her to apply techniques and approaches to prompt and record such group interactions.

A meeting on monoclonal antibodies in 1993 was Tansey's first attempt at a witness seminar. Those attending the meeting included the Nobel Laureates Cesar Milstein and George Kohler. The intention was to 'examine the event behind the headlines'; explain what did or did not happen; identify the influential players, and to hear the voices and perspectives of the diverse group of people attending in different capacities.³

Following the success of the monoclonal antibody witness seminar, Tansey since organised more than 60 witness seminars, involving over 1,400 people. The most recent publication emanating from her seminar series was on the development of narrative practices in medicine.⁴ The further work of Professor Tansey and her colleagues includes the editing of volumes on: British brain banks; bovine TB; waste management; gene mapping; and the careers and contributions of technical staff at the National Institute for Medical Research.⁵

Witness seminars attempt to get behind the scenes of advances and developments to find out what really happened at certain times. As Tansey has said: 'We can all read the results of research in journals, especially that which has been successful. We can also learn about interesting case histories. But we don't really know about the background to all of these events.' It is these issues and the discussions around them that witness seminars attempt to capture and record.

In the 21st anniversary year of Tansey's research group, the research team produced a review of Tansey's witness seminar series. In his foreword to the review, the Government's Chief Scientific Adviser, Sir Mark Walport, states that the book is 'a masterclass in how to innovate in medicine. It is people who innovate, and it is the people who scintillate in this extraordinary anthology. Their values and personalities come to the fore.'⁶

Witness seminars are about people, their contributions to developments and events they witnessed, including their very human disagreements as well as agreements. All are recorded for posterity.

Other groups have learned from the experiences and successes of the Tansey group. One such development is the John McLean Archive Witness Seminar Series

JOHN MCLEAN ARCHIVE: A LIVING HISTORY OF DENTISTRY

A generous bequest to the British Dental Association (BDA) in the will of Dr John W. McLean OBE,⁷ an exceptional clinician, notable researcher and past-President of the BDA (1994–95), allowed the Association to establish the John McLean Archive. It includes, to date, a series of five eponymous witness seminars, together with interviews with dentists, other members of the dental team and individuals who have in some way been involved in the recent (living) history of dentistry. The interviews will be the subject of a separate paper. The BDA intends that the Archive will live and grow and metamorphose into a continuing story that maps the development of dentistry over years to come.

This paper presents highlights from the five John McLean Archive witness seminars held to date. The full transcripts of each have been published as booklets.^{7–11}

- The regulation of the dental profession by the General Dental Council
- Changes in dentistry since 1948
- The changing role of dental care professionals
- The history and impact of development in dental materials over the last 60 years
- The dental press.

The selected highlights below are considered to provide an instructional collection of

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memories and insights into the world of dentistry in the UK, principally from the time of the creation of NHS dentistry in July 1948.

METHOD

Witness seminars require much planning. For each of the five seminars, a number of people (n <50) who had had personal involvement, or were considered to have special interest or expertise in the topic were approached, advised of the nature, aim and proposed arrangements for the seminar, and asked if they would participate. They were also asked if they could recommend colleagues and other individuals who might have something special to contribute to the proposed event. Further invitations were issued following review of the recommendations received. We attempted, where possible, to include people with a range of experiences, be they practitioners who spent their time mostly providing clinical treatment, others who were on, or had served on, local and national committees, and some who can be regarded as leaders of the profession, including several past-presidents of the General Dental Council (GDC) and BDA, together with Chief Dental Officers to Departments of Health. The participants came from all four UK national territories. The programme was supported by an administrative assistant under the direction of the Head of the BDA Museum Services, Rachel Bairsto.

Each full-day seminar was designed to include four to five hours of discussion, interspersed with breaks for refreshments. There were no papers, other than joining instructions and a programme for the day, including a list of participants. Three to four weeks ahead of a seminar the chairmen (NHF and SG) selected individuals from the list of participants and asked them to introduce and lead the discussion on key aspects of the subject of the seminar. These individuals were asked to limit their introductory remarks to no more than five minutes, to include some early history, where appropriate, to give context to their remarks. The role of the chairmen was to give continuity to the discussions, ensuring that all the participants contributed, with no one dominating the proceedings or straying away from the topic.

Each of the five seminars was recorded in full and a transcript produced. After initial editing by the chairmen to remove hesitations and repetitions, identify comments for clarification and ratify facts and figures, the transcript was sent to the contributors for comment, correction and the addition of any afterthoughts for insertion as footnotes. In addition, the contributors were encouraged to provide any relevant papers, documents or photographs for consideration for inclusion as appendices.

Finally, the contributors were asked to sign off their contributions as part of the publication process. Following final editing and formatting the transcripts were published.¹¹⁻¹⁷

SELECTED HIGHLIGHTS

Seminar 1 – Regulation

In setting the scene for the ensuing discussion, the period between 1878 (the date of the first Dentists Act) and 1955 (the date of the third Dentists Act, which established the General Dental Council) was considered by Dame Margaret Seward DBE to have been a time of mixed fortunes for dentistry. This 77-year period was punctuated by the 1921 (second) Dentists Act which made dentistry a 'closed profession'.

The 1878 Dentists Act restricted the use of the titles 'dentist' and 'dental surgeon' to those on the Register and set dentists, aside from doctors, as the principal providers of oral healthcare. Regrettably, dentistry at the time was viewed as a 'cottage industry' rather than a profession, with little, if any appreciation of the importance of oral health to general health and wellbeing, despite acknowledgement, in those pre-antibiotic days, that dental sepsis was a 'potential killer'. Given, among other consideration, the surgical roots of dentistry, it was considered inappropriate to allow dentists to use the title of 'doctor'.

Despite fierce opposition in certain quarters, in May 1898 it was agreed that one of the crown nominees on the General Medical Council (GMC) should be a dentist. Looking back, Sir Charles Tomes, son of Sir John Tomes fulfilled this role with great distinction and fortitude, playing a key role in setting the scene for a new Dentists Act.

1921 Dentists Act

This Act, establishing the Dental Board of the GMC, was hotly debated as it limited the practice of dentistry to registered dentists, registered medical practitioners and some pharmacists who were allowed to extract teeth under certain circumstances. 'Grandparenting' of individuals into registration who had entered dentistry through some form of apprenticeship created the so-called '1921 men', some of whom went on to practise for many years. The widely held view, especially in medicine, that dentistry was more of a business than a healthcare profession rumbled on through the 1930s and 1940s. Following World War II, it was viewed as one of the reasons that dentistry ought to be allowed to become independent and self-regulating. Again, a new Dentists Act was subject to lengthy and from time to time acrimonious debate.

1956 Dentists Act

The 1956 Dentists Act, remembered by many of the attendees at the seminar on regulation, made provision for the formation of the General Dental Council, which was established on 4 July 1956 – 'independence day'. From then, the regulation of dentistry was no longer the business of a sub-committee of the GMC. Sir Wilfred Fish led the Council through its early formative years. In return for the profession gaining autonomy, dental auxiliaries were introduced against the wishes of a significant minority of practitioners, who felt threatened by the resultant 'dilution' of the profession. In reality, most dental practitioners were unaffected and failed to grasp the significance of the development of the GDC. The dental schools had to follow new GDC curriculum guidance and be subject to visitations to ascertain the sufficiency of their programme of study and qualifying examinations. This resulted in the setting aside of much traditional teaching and unique ways of different dental schools with new ways being adopted in their place. Contrary to some expectations the world, as known to dentistry at the time, did not end as a consequence of this much-needed innovation.

Between 1956 and 1984, the date of the fourth Dentists Act, the regulation of the profession was, as recalled by Norman Davies CBE, former Registrar of the GDC, largely 'steady as you go'; indeed, the regulation of the profession changed very little in that time. Relationships between the GDC, BDA, Faculties of the Royal Surgical Colleges and governments of the day were respectful and largely trouble free. The one issue which gave rise to real debate and certain criticism was the occasional, by present day standards very modest, increase in the GDC annual retention fee (ARF). The GDC at the time was viewed by its members as 'the best club in London'.

1984 Dentists Act

The 1984 Dentists Act modernised the regulation of dentistry, but it did not result in any great change in the structure and function of the GDC – self-regulation was preserved with the over-50 strong Council continuing to largely comprise nominated and elected dental members.

Things, however, were about to change fundamentally. From the mid-1980s onwards, the GDC has undergone continuous development. Notwithstanding the huge changes associated with the separation of fitness to practice arrangements from core activities of the Council, the creation of specialist lists, the regulation of the dental team and the introduction of continuous

professional development, the underlying shift from self-regulation to 'shared-regulation' and then 'regulation by appointment', with substantial reductions in the size of the GDC to the present membership of 12 people (six registrant and six lay members) must be considered to be one of the most significant developments in the regulation of the profession. In the process, the important involvement of the dental authorities – *sic* the dental schools – in the work of the Council was, as highlighted by Professor Colin Smith CBE, lost, followed by the development of a more distant relationship with the Royal Surgical Colleges and, in particular, the BDA.

A further fundamental change in the regulation of the profession in recent times has been the very large increase in the number of dentists registered with the GDC, with most of this increase being linked to European Union freedom of movement arrangements and the large numbers of overseas dentists who qualify for registration, subsequent to passing what is presently referred to as the Overseas Registration Examination (ORE), formerly the International Qualifying Examination (IQE) and before that the Statutory Examination. One of the enduring consequences of this development has been an ever-widening gap between the number of dentists registered with the GDC and the much smaller number of individuals actively engaged in the clinical practice of dentistry in the UK, caused by many European and IQE-registered dentists living and working in places other than the UK.

During the course of the discussions, it was recalled that many different bodies had made important contributions to the development of the regulation of the profession; for example, the defence organisations, local dental committees and the British Dental Association. And, of course, many aspects of the regulation of the profession emanated from arrangements within the National Health Service.

Seminar 2 – Changes in dentistry

Inception of the NHS

The dentists present at the 'changes in dentistry' seminar had little, if any, experience of pre-NHS dentistry. However, between them they had a very wide range of experience of post-1948 dentistry in hospital, private and NHS general practice, and in community settings. The situation at the inception of the NHS in 1948, when the state of the nation's oral health was considered to be worse than that found in occupied Germany, was described by Edgar Gordon as follows: 'A weak BDA had slavishly followed the conservative Representative Board

of the British Medical Association in opposing Aneurin Bevan's "envy of the world". Leaders of both professions were hopelessly out of touch with the thousands of doctors and dentists demobbed from the armed forces, who considered themselves betrayed by colleagues in the Royal Surgical Colleges who were famously criticised for 'allowing their mouths to be filled with gold'. From the BDA's Hill Street headquarters the clarion call was 'no socialised dentistry', but by the end of 1948 over 90% of dentists had an Executive Council number, that is, had joined the NHS. In the event the NHS proved to be a 'bonanza for dentists'.

In the first 12 months, dentistry accounted for 10% of the total NHS budget. A few months later, in February 1949, gross (NHS) dental income in excess of £4,800 per annum (a 'princely salary' at the time) was reduced by 50%. This emergency response was replaced in June 1949 with a new scale of fees incorporating a 20% cut in all fees. In May 1950 another new scale of fees was introduced in which all fees had been reduced again, this time by 10%. Music hall jokes about dentists' pay were fuelled by the introduction of patient charges for the provision of dentures (and spectacles) by Hugh Gaitskill in 1951, a matter over which Harold Wilson and Aneurin Bevan resigned. The system led to dentists having to provide increasing numbers of items of service to maintain their income. 'Drill and fill' entered the vocabulary, and today's 'heavy metal generation' was conceived. It was suggested that a cardinal error had been made in treating dentists differently to doctors in setting up the NHS.

1950s and 1960s

By today's standards, dentistry through the 1950s and most of the 1960s was basic. Dentists, especially those in parts of the country with a poor dentist to population ratio, worked hard to control a never ending 'sea of decay', applying 'the greatest good for the greatest number' approach to care. National Dental Health surveys confirmed the terrible state of oral health throughout the country. Many adults were partially dentate or edentulous. So, the country had an 'army' of dental mechanics/technicians to work with dentists to meet the demand for, in particular, complete dentures. Prevention came a poor second to treatment, with extraction being as common as restoration – 'a national disease service', according to Michael Watson OBE, characterised by episodic rather than longitudinal care, which, in hindsight, may have been more for the immediate good of the nation than the long term benefit of patients. Capitation

arrangements, first piloted in the early 1980s, existed for 16 years, through until 2006 – contracts for episodic care being considered to have been 'good for the State'. The innovations of the time were the adoption of the high speed handpiece, low seated, four-handed dentistry and the development of fixed appliance orthodontics.

Through most of the 1970s there were slow incremental advances in the 'art and science' of dentistry, many of which suffered a delayed translation into clinical practice, given a lack of postgraduate education and absence of incentives for career progression in general practice. As recalled by Anthony Kravitz OBE, the longest serving member of the Dental Rates Study Group (DRSG) and past President of the BDA, the introduction of new items of service in a fixed cash system posed a real difficulty for the DRSG which, year on year, had to 'fit a quart into a pint pot' in setting fees for the General Dental Services (GDS), in the knowledge that changes in fees would drive changes in the approach to treatment. According to Paul Mendelsohn, the underlying political priority of the time was access to care.

New technologies and procedures

From the mid- to late 1970s onwards, advances in equipment, materials and techniques were mainly driven, in the opinion of Geoff Garnet, another past President of the BDA, by the need for increased productivity and efficiency. Treatment was faster and cheaper, and there was a need for better solutions to everyday problems. Innovations including advances in pain control, the introduction of autoclaves, the routine use of disposable gloves, and developments in dental biomaterials science: composites, glass-ionomers, endodontic fillers, porcelain fused to metal crowns, cobalt chromium denture bases among many others, transformed everyday practice. Many of these innovations, as stressed by Brian Schottlander, Managing Director of Davies Schottlander and Davies Ltd, were translated into dentistry, having been developed for quite different purposes in other fields of expertise.

End of 'fee per item of service'

Over the years, the community and salaried dental services, not to forget the armed forces dental services, soldiered on regardless, and the profession benefited from 'feminisation'. The Department of Health tried to manage the GDS through many different mechanisms, supported by the Dental Estimates (later Practice) Board in Eastbourne. By 2002, when Professor Raman Bedi was Chief Dental Officer for England, it was concluded that more of the same was

not the way forward. It was considered that the only way to fundamentally change the system for the better in England and Wales, and which had the support of the politicians, was to discontinue the 'treadmill, fee-for-item-of-service approach' and replace it with local commissioning. As ever, as commented by Bill Allen, another past President of the BDA, dentists found a way to make the new approach work for both patients and themselves, notwithstanding the vicious circle of fee cuts, resulting in dentists working harder, only to be rewarded with new fee cuts.

One of the interesting spinoffs of the dissatisfaction stemming from the 1990 GDS contract and associated fees claw-back in 1992, as described by Peter Swiss, was a huge growth in private dental care, including insurance-based capitation, spearheaded by Denplan. This changed forever the concept that the majority of GDPs were NHS dentists with the odd private patient – it was the start of a widespread mixed economy (presently overall c. 50%NHS/50% private in value) oral healthcare provision. At the time, salaried dentists were poorly remunerated, with a history of being paid abysmally.

Dental Estimates Board

One of the great institutions of the GDS in England and Wales was the Dental Estimates Board, subsequently renamed the Dental Practice Board, based in Eastbourne. As Chief Executive of the Board for many years, John Taylor CBE provided outstanding leadership, helping to steer NHS dentistry through difficult times. One of the most regrettable losses, with the demise of the Board in 2006, was the loss of access to 'big data' on courses of treatment and the efficacy of different items of service. A legendary figure in the analysis and interpretation of Dental Estimates Board data was Dr Jean Todd, whose untimely death preceded the full appreciation of the value of her ground breaking work.

General anaesthesia

One of the most controversial changes to the practice of dentistry at the end of the twentieth century stemmed from the decision of the GDC that general anaesthesia (GA) for dental purposes be administered only in hospital settings. GA had provided one of the major means of pain control in general dental practice since it gained widespread popularity; however, this could no longer be justified in the wake of high profile conduct cases linked to 'dental GA deaths'. Individuals, including Lord (Anthony) Colwyn CBE recalled administering up to 25 general anaesthetics on a daily basis, often assisted by a dental nurse only. A leader in the field was Stanley Drummond-Jackson. With the removal of

GA from general dental practice there was a surge in the use of sedation techniques, with guidance on best practice – conscious sedation – being largely determined by a review chaired by Professor David Poswillo CBE.¹²

Corporate dentistry

Paul Mendelsohn started the first dental corporate chain, Whitecross. Initiating factors were changes to arrangements for the 'business of dentistry' and the GDC's relaxation of restrictions on advertising by dentists. Whitecross quickly grew to 50 or so practices. The aim was to develop the provision of private care in NHS practices, allowing dentists to practise the approach to dentistry they were taught in dental school and to be able to meet not just patients' needs, but their expectations. Subsequent to the removal of the restriction on the setting up of new corporate bodies in 2006, corporate dentistry has grown and developed, and is anticipated to form a large element of oral healthcare provision in the future.

The dental team

As discussed below in the highlights from the 'Dental care professionals (DCP) seminar', skill mix and the development of the dental team – a term possibly first used by Professor Peter Rothwell – has had, and will continue to have, a substantial effect on the provision of oral healthcare and dental workforce planning. The seminar was asked how skill mix would influence the further growth of private dentistry: conflict with it, inhibit it, or support it. On balance, the view was 'support it', especially if NHS dental care is no longer recognised to be 'comprehensive' and the role of therapists is increased in the provision of NHS primary dental services. One of the greatest critics of proposals to develop the dental team was Alan d'Arcy Fearn, a long-term, elected, practitioner member of the GDC and former President of the BDA. Despite Mr Fearn's frequent remonstrations and rhetoric, the majority view prevailed and the profession, in contrast to dentistry in for example other European countries (notably Belgium and Greece as reported by Anthony Kravitz OBE¹³), embraced the forward looking concept of the dental team.

Dental education

The major changes in dental education were identified to be the shift to new graduates being competent 'safe beginners' rather than skilled in all aspects of primary dental care; and the emphasis in undergraduate dental degree programmes on preventatively oriented, evidence-based, minimum intervention, patient management rather than traditional skills. It was noted that dental schools remain reliant on part-time

practitioner (clinical) teachers to provide students with clinical supervision. The history of dental school closures in the 1980s and 90s, creating new schools ten years later, and recent reductions in dental student numbers was viewed as a measure of the inability to predict workforce requirements.

Hospital services

Following World War II, a number of specialist oral surgery units were well established in hospital settings. The early hospital consultant appointments were mostly in dental surgery, spanning most aspects of dentistry. The first hospital-based NHS consultant in orthodontics, John Hooper, was appointed in Bournemouth in 1950. Hospital dental services did not undergo further widespread change until the introduction of consultants in oral surgery, many who subsequently became consultants in oral and maxillo-facial surgery, followed by consultants in restorative dentistry. Sometime later, consultants in other specialist (distinct) branches of dentistry were introduced to the hospital services. Present trends are towards the provision of secondary dental services in community settings.

Salaried dental services

In 1974 the school dental services, first appearing in the early 1900s, became community dental services (CDS) with responsibility for the care of, among other groups, handicapped adults in the community – the catalyst for the present day speciality of special care dentistry. In the early 1990s there was an 'explosion of activity' in the community services, leading to a radical modernisation of the salaried dental services in primary care settings, with new career pathways and standards of care. The 'Tony Blair pledge' that everyone would have access to NHS dental care shifted the priority in the salaried dental services away from reducing health inequalities to access – the goal responsible for many of the developments seen in practitioner-provided primary dental care services since the inception of the NHS. The issue of quality of care in the CDS, as in all other sectors of primary oral healthcare provision, would appear to have been largely side-lined time and again by considerations of access and remaining within budget in resource limited systems – 'the greatest good for the greatest number', but only to the extent of available resources.

The dental trade

Simon Gambold, Managing Director of Henry Schein in the UK at the time of the relevant seminar, and Past-President of the BDTA (British Dental Trade Association, subsequently the British Dental Industry

Association BDIA), summarised the history of the BDTA, dating from the 1920s. He explained that by the end of World War II the trade was 'mainly a cartel that set prices and controlled the industry very tightly'. Subsequently, the BDTA struggled to get the balance right between controlling and regulating its members. It was suggested that the BDIA has more or less achieved and maintains such a balance.

Over the years the major trends in the dental industry have been consolidation, with a shift to a relatively small number of major manufacturers, providers and suppliers. The investment needed to develop and introduce new lines to the market has been enormous, and is ever increasing. Despite such costs, innovation and the proliferation of products, including dental equipment, have been astonishing, together with encouraging partnership working between dentists and the industry. Interestingly, a number of pharmacists, such as Norman Friedman and Roger Hart who established Rexodent in the 1970s, played an important role in the development of the dental industry in the UK. Regrettably, the UK no longer has a major dental manufacturing base, the business having gone to principally the USA, Germany and Japan. Also, the dental supply business has gone from a predominantly family, entrepreneurial-type business to a corporate model, within which many employees are graduates, including an increasing number of dental graduates.

In recent years, there have been major improvements in service levels to the dental team: the norm now being same day shipping and next day fulfilment of orders using e-commerce. Concurrently, there has been a substantial reduction in dealer margins in an attempt to remain competitive and limit year-on-year increases in consumable costs to practices.

In discussion on developments and changes in the dental industry, there was unanimous praise for the industry for its unswerving, continuing support of the profession. All those attending the seminar concurred with the view that close working relationships between the profession and dental industry were invaluable.

Seminar 3 – Changing role of dental care professionals

Dental nurses

Dental nurses originated as housemaids – young ladies of refinement, opening surgery doors and welcoming patients. For a period, commencing in 1916, there was a desperate shortage of school dentists. To help meet treatment needs, a number of school dentists in England controversially

trained the young ladies working with them to provide simple treatment, referring to them as dental dressers. In addition to polishing teeth, they filled cavities with no pulp involvement and extracted deciduous teeth.

Dental surgery assistants (DSAs) – the successors to, in turn, dental dressers, dental attendants and dental assistants – and DSA qualifications were first recognised in the late 1940s. Through the 1950s, 60s, 70s and 80s, relatively little changed for DSAs until the introduction of low-seated, four-handed dentistry gave them greatly increased involvement in the delivery of patient care. In the 1990s, there was growing interest in and increasing anticipation of registration with the GDC. Despite strenuous efforts by successive Presidents of the GDC, it was not until 2006 that the register opened. Subsequent to a two-year window for 'grandparenting', the only route to registration (from 31 July 2008) was a GDC-recognised qualification. Concurrently, career development opportunities were created with the introduction of post-qualification diplomas, and subsequently an expanded scope of practice. The title 'dental nurse', as now used throughout the profession, was introduced at Guy's Hospital, London, which changed the name of its School of Dental Surgery Assistants to Guy's School of Dental Nursing. This was not, however, without some controversy, given that the Nursing and Midwifery Council considered the title 'nurse' to be protected. The matter was finally resolved at the time of statutory regulation of the dental team with the title 'dental nurse' being used in the enabling legislation.

Subsequent to the introduction of high speed handpieces and low-seated, four-handed dentistry, dental nurses have increasingly been recognised as crucial to the safe, effective delivery of dental care to patients of all ages. Dental nurses also make a major contribution to the productivity and, in turn, profitability of dental practice – an often forgotten fact. This contribution was increased with the introduction of extended duties for dental nurses, first pioneered in North America.

In the field of dental nursing, Jean Smith MBE must be remembered for her tireless work, supported, among others, by Professor George Nixon. They gave rise to the National Examination Board for Dental Nurses, formerly the British Dental Nurses and Assistants Examining Board formed by Philip Grundy, with the support of Birmingham Dental School. Diana Wincott OBE, who masterminded the Dental Surgery Assistants' Training Advisory Board and Mabel Slater MBE were other major driving forces in the field.

Dental hygienists

The 'father' of dental hygienists was Alfred Fones, a dentist in the USA who taught his dental nurse, Irene Newman, to scale and polish teeth. Fones initially referred to these members of the dental team as 'prophylactic assistants'. He considered women best suited to be such assistants for reasons which are now considered sexist and politically incorrect. Fones went on to establish, in 1913, the first school of dental hygiene training in a garage in Bridgeport, Connecticut. In 1947 a two-year curriculum was established for dental hygienists in the USA.

In the UK, the training and use of dental hygienists started in the Royal Air Force (RAF), following a short-lived (c. 5 years) programme of instruction launched by University College Hospital London in 1928.¹³ Key figures in that initiative were Sir William Kelsey Fry and Gerald Leatherman, the latter subsequently becoming Executive Director of the Federation Dentaire Internationale (FDI) and Honourary (lifelong) President of the British Dental Hygienists' Association, subsequently the British Society of Dental Hygiene and Therapy (BSDHT). The initial programme of instruction in Sidmouth was of 16 weeks duration. Thereafter, there was a pilot scheme of five years duration at the Eastman Dental Hospital, the course closing in 1954. In 1956 a new Dentists Act allowed dental hygienists to practise in community, hospital and practice settings. This vigorously debated change to the Dentists Act, which some saw as 'dilution of the profession', created the need to establish schools of dental hygiene. The first school was established in Manchester in 1959. Others soon followed across the UK. Training was initially for nine months, then one year, before emulating the two-year American programme.

In common with every other aspect of dentistry, dental hygiene underwent many changes. Notable extensions to the roles and duties of hygienists included the administration of local anaesthesia, the placing of temporary restorations and the re-cementing of crowns, none of which were approved without controversy and debate. The recent introduction of direct access to treatment by dental hygienists could be viewed as a 'coming of age' for this category of dental care professionals. Some consider the issues of independent diagnosis and treatment planning by dental care professionals, including dental hygienists, to continue to be a 'grey area' in regulatory arrangements. The story does not, however, stop there, as many schools of dental hygiene in the UK have become schools of dental therapy and hygiene, with therapists and hygienists

obtaining a single qualification embracing both disciplines, typically a BSc degree. Generally heralded as change for good, it remains to be seen if such developments will lead to the creation of a skills escalator, with provision for dental hygienist and therapists to become dentists through 'top up' education and training. In the meantime, dental hygiene and dental therapy remain dominated by women. Perhaps in time they, like dentistry, will evolve to include similar numbers of men and women.

Rosemarie Khan OBE was a key person in moving forward the dental hygienist agenda, being the first dental hygienist to be elected a full member of the General Dental Council. Rosemarie would, however, be the first to stress that it was a huge team effort, with Professor Colin Smith CBE being a great champion of the cause as chairman of the GDC's Auxiliaries Committee through the time of greatest change.

Dental therapists

In the promulgation of the 1956 Dentists Act, the following draft provision, which was accepted, opened the door to the development of dental therapists: 'If the Privy Council, after consulting the General Dental Council, are of the opinion that in the order that the value to the community of the existence of a class of ancillary dental workers be permitted to undertake the filling of teeth and extraction of deciduous teeth, it could be judged by an experiment.' The New Cross Dental Auxiliary Scheme began in 1960. It was closed in 1983 on the recommendation of the governmental Dental Strategy Review Group (DSRG) – a highly politicised, terrible event, according to Dame Margaret Seward DBE.

The following extract from the DSRG, quoted by Professor John Murray CBE during the 'DCP seminar', says a lot about attitudes and thinking in dentistry in the UK in the early 1980s:

'It is estimated that that 53% of (dental) practices are single-handed and many dentists have been reluctant to accept operating auxiliaries. To some, delegation is synonymous with dilution, and has been resisted not least in the case of dental therapists. The need for treatment especially in the younger age groups is already declining, and the preventive strategy we are proposing should lead to a further substantial reduction. This will result in more delegation to auxiliary dental staff. We would wish to encourage the concept of the team approach in dentistry and have therefore reviewed all the auxiliary grades currently employed and make recommendations. (Regarding dental therapists) This class, originally called dental auxiliaries, was established when there was an acute shortage of dental manpower in

the school dental service, a high prevalence of dental caries in children and little interest on the part of practitioners in providing treatment for them. We have therefore questioned seriously the long term viability of the group and reluctantly concluded that further entry into this class should be discontinued and the New Cross School closed.' This thinking and its regrettable consequences 'put a spanner in the works' of the subsequent, many would say, inevitable development of the dental team. For the 160 individuals who had trained at New Cross, and its third and last Director, Ted Seal, who 'maintained tremendous dignity' in the face of adversity, the conclusion was devastating.

New thinking in the Nuffield Report on dental education and training of personnel auxiliary to dentistry, published in 1993, led the GDC's Auxiliaries Committee, chaired by Professor Colin Smith CBE, to establish a Dental Auxiliaries Review Group (DARG) under the chairmanship of Jenny Pinder. Among the recommendations of this Group which met with government approval was that therapists be allowed to work in general practice – a 'bed of nails' for the then Chief Dental Officer, Robin Wild. According to Dame Margaret Seward DBE, the BDA attempted to 'spike' the DARG report, having allegedly been leaked its contents. However, the Representative Board of the BDA 'turned on the recommendations put forward by the officers (of the Association)' and the way forward for the further development of the dental team was established.

The development of an Advisory Board for dental care professionals (DCPs) by the Faculty of General Dental Practitioners [FGDP(UK)] under the Deanship of Raj Raja Rayan OBE was in anticipation of the formation of a Faculty of DCPs when the FDGP(UK) realised its ambition to become a College of Dentistry. The inclusion of dental therapists in the vision set out in *Options for change*¹⁴ fuelled further developments, including the introduction of the first degree programme for dental therapists by the University of Portsmouth – a development largely attributable to Professor Sara Holmes MBE. Despite these various developments and increasing number of dental therapist graduates, those members of the dental team remain underutilised in oral healthcare provision. This situation may, however, change with future NHS commissioning arrangements for dental services.

Dental technologists

As detailed by Tony Griffin MBE, the introduction of the first dental technology qualification (by the City and Guilds of London Institute) in 1937 created dental technicians and heralded the end of the era of apprenticeship-trained dental mechanics. There were City & Guilds

Intermediate, Final and Advanced examinations, with trainees being indentured to their employers and entered into the voluntary National Joint Council Register. The course involved day release over a five-year period, with the Intermediate Examination being taken after two years, and the Final Examination at the end of the course. Advanced courses were offered in crown and bridge, prosthetics and orthodontics.

Once the Technician Education Council joined the Business Education Council, the modular BTech (Business/Technician) national diploma was introduced. In the early 2000s a foundation degree was developed by Tony Griffin MBE and colleagues working in a number of colleges of higher education. The Dental Technologists Association (DTA) stemmed from the Dental Technicians Advisory Board (D-TAB) of the GDC. Sue Adams was the long serving Chief Executive of DTA. Many members of DTA joined the DCP Advisory Board of the FGDP(UK), keen to contribute to the anticipated DCP Faculty within a College of Dentistry formed by FDGP(UK) – the lack of an independent standard setting body for DCPs being, and remains, a missing piece in the dental organisation and bodies jigsaw.

As to the future of dental technology, including clinical dental technology, established through the grit determination of Canadian trained 'denturists' and the Association of Denture Prosthetics (ADP), administered for many years by David Macted (Max) Jones, it is considered to lie in sophisticated applications of innovations in IT stemming from digital imaging ('impressioning') and CAD/CAM technologies.

An account of the history of dental technology over the last 60–70 years would not be complete without reference to maxillofacial technology. Before the days of compulsory wearing of seat belts, anti-crumple zones and airbags in cars and bone fixation plate systems, skills and knowledge developed by maxillofacial technologists in World War II were widely applied in the management of facial trauma. Fast forward to the present day: maxillofacial technologists apply technologies such as digital imaging and 3D printing in modern reconstructive craniomaxillofacial surgery. With increased sophistication and complexity, training in maxillofacial technology has developed into a university degree programme, with opportunity to study to the masters level and beyond.

Orthodontic therapists

In 1967, the chairman of the newly formed Consultant Orthodontists Group, Gordon Dickson, surveyed consultant orthodontists

on orthodontic assistants. The outcome was overwhelmingly in favour of the use of ancillaries in orthodontics. Follow up representations to the GDC failed to elicit any response. With the increasing use of bonded brackets and preformed arch wires in the 1980s, the case for the training and registration of orthodontic auxiliaries was greatly strengthened. As detailed by Professor Chris Stephens OBE sustained, concerted action, involving a plethora of professors, including Jim Moss, Bill Houston, Norman Robertson and Bill Shaw CBE and latterly Steve Richmond, resulted in pilot studies justifying orthodontic therapists being included in GDC consultations on the regulation of the dental team. As said by Janet Robins, a dental nurse with special interests and expertise in orthodontics, 'it has been absolutely fabulous (to play a part in) the extension of duties for orthodontic therapists.'

Seminar 4 – Dental materials

In setting the scene for this seminar, the chairman's introductory remarks included the following comment received from Professor John McCabe who was unable to attend: 'When I took up my post at (the University of) Newcastle in January 1978, I attended a plenary lecture entitled *The way forward in dentistry* in which an eminent dental researcher put forward the view that restorative dental materials (and existing operative techniques) would soon be a thing of the past. When I retired in 2010, I was pleased to see sales of my book on dental materials to be healthy and dental biomaterials science continuing to make real practical advances', following in the wake of late twentieth century UK-based giants in the field including John McLean, Alan Wilson, and Professors Dennis Smith and Mike Braden.

To assist discussion on developments over the last 60 years, Professor Ric van Noort prepared a spreadsheet of milestones in contemporary dental biomaterials science. A version of this spreadsheet is reproduced in Fig.1. Professor Dianne Rekow, in commenting on the spreadsheet, volunteered that while a great deal of groundbreaking work had come out of the UK, dental biomaterial scientists see the world as a global community, with UK colleagues continuing to play a large, important role in further developments and advances.

Stemming from comments on the observations of McLean and Kramer on an interface between dentine and Servitron,¹⁵ observations which many considered to be the first report of a hybrid layer, subsequently described by Nakabayashi *et al.*,¹⁶ the group recalled major developments in the field.

One of these major developments was suggested to be the work of Munksgaard and Asmussen,¹⁷ which resulted in what was suggested to be the first, clinically effective, commercially available dentine bonding system – Gluma (Bayer, Leverkusen, Germany). The subsequent work in Japan by Professor Takao Fusiya,¹⁸ which first reported the etching of dentine ('total etching'), rather than the use of any liner or base material before the placement of a resin-based restorative material, was also noted to have been ground breaking.

These, in hindsight 'game-changing' developments followed the equally important work of Bounocore on acid etching,¹⁹ the introduction of BisGMA by Bowen²⁰ and the description of the hybrid layer by Nakabayashi.²⁰ A 3M conference in St Martin²¹ was considered by Professor Tim Watson to bring the technologies behind these various innovations together and kicked started modern, adhesive approaches to operative dentistry. A further key development was the introduction of visible light curing by ICI Dental,²² technology which persisted until the introduction of LED light-curing sources.²³

Standards

Dr Peter Jacobsen, who had represented the British Dental Association on British and international standards committees over a period of 35 years, recalled the early history of standards in dentistry, dating back to a specification on dental amalgam in 1926.²³ Standards became 'more formalised' in the 1960s, with the American National

Standards Association (ANSA) and the Federation Dentaire Internationale (FDI) being behind the International Standards Organization establishing standards for dentistry. Subsequently, Professor Ernest Matthews and, in particular, John Mclean played important roles in the development of standards. Other major contributors were Dr Alan Wilson of glass-ionomer fame and Professors Harold Wilson and John Bates. Over the 45 years to the date of the seminar (2012) 115 standards were developed and adopted by BSI and CEN – the British Standards Institute and European standards organisation respectively. In discussing standards, some of which took as long as eight years to develop, it was agreed that they fulfil a useful function, but suffer several drawbacks, notably that they typically reflect the 'lowest common denominator'.

Cements

According to Dr Adrian Shortall developments in dental cements, during the period under review, followed the three phases common to all restorative materials: first, great expectations; second, disillusionment, and third, assuming the material had survived, realistic appraisal.

The introduction of polycarboxylate cements, thanks to the perseverance and commitment of Professor Dennis Smith,²⁵ was quickly followed by the development of glass-ionomer cements (GICs) by Alan Wilson and Brian Kent²⁵ at the Laboratory of the Government Chemist, with John Mclean OBE and Professor Graham Mount being supportive pioneers and innovators in

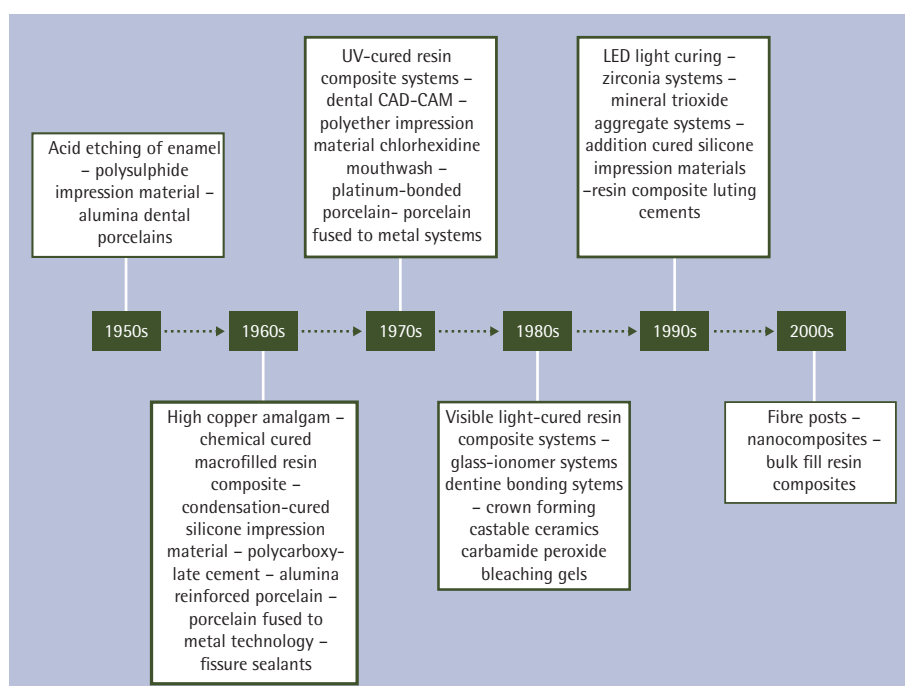


Fig. 1 Dental materials summary timeline from 1950

the field. Many different variants of GICs followed, including resin-modified GIC and GIC-luting cements, leading to the development of polyacid modified composites. A lingering question throughout this period of innovation was: Should the use of cement bases and liners be phased out, or should two materials continue to be used in the restoration of a deep preparation – one to replace dentine and the other enamel? Discussion at the seminar failed to reach a consensus answer to the question. There was, however, consensus that GICs had not yet been fully exploited. Professor Ric van Noort cautioned that much remained to be discovered about the biomechanical behaviour of restored teeth before the most effective approach to restoration could be determined.

Amalgam

While acknowledging the important role played by dental amalgam, it was agreed that the continuing use of amalgam is going to become increasingly difficult to defend, given considerations of the 'dirty business' of mining mercury, albeit that most dental mercury is now obtained from recycling, and the growing body of evidence in favour of minimal intervention operative dentistry, based on the use of adhesive, tooth-coloured restorative systems. It was suggested that there was a lack of social responsibility and forward thinking in not putting in place arrangements for a relatively rapid 'phase down' in the use of dental amalgam, in particular, in developed countries.

In passing, tribute was paid to Marie Gaylor who conducted research on dental amalgam at the National Physics Laboratory in the 1930s. When she retired in 1947 she was awarded the Rosenhain Medal by the Institute of Metals and made an honorary member of the BDA.

Composites

Professor David Watts suggested that composite materials were currently 'the most versatile and important category of direct dental restorative material'. Stemming from the work of Rafael Bowen, resulting in the introduction of the first dimethacrylate composites, 'Bowen resin composites', and the introduction of visible light cured composites by ICI Dental, a huge industry and many new techniques and procedures were developed. In the process there were two major developments: innovations in filler systems and the introduction of effective, multi-purpose bonding agents. Jointly, these developments, together with greater attention to shade matching and the translucency of composites, opened the way to present-day aesthetic dentistry and composites becoming

realistic alternatives to dental amalgam.

Rightly or wrongly, concerns about the polymerisation shrinkage of the resin phase of composites became the principle driver behind the design and manufacture of new composite systems, some of which may, in time, be viewed as 'over-specialised'. Diversification led to an ever-growing range of composite systems, with many, different applications, all of which require a respect of composite technique sensitivity and the need to achieve adequate curing at the time of placement. The introduction of LED curing units may have provided an improved source of light; however, it remains vitally important to correctly position and direct the light in use.

Dentine bonding systems

Following on from the work of Munksgaard and Asmussen,¹⁷ there followed, in relatively quick succession, numerous generations of dentine adhesive systems, driven on by the widespread recognition that 'the seal (marginal seal of restorations) is the deal'. Many attempts to rationalise multi-phase systems, in the interests of making them 'faster, easier and quicker', came and went. More recently, certain simplified systems have been shown to be effective and worthy of further development. The introduction of self-adhesive composite systems was considered to be some time off.

Impression materials

In providing some introductory remarks on developments in dental impression materials, Dr David Brown emphasised that the key drivers had been accuracy, stability, patient acceptance and ease of use. Many innovations in impression materials, subsequent to the transformational introduction of alginate, came from applications from different technologies. Of particular note, addition silicone systems came from the NASA moon programme (precise door seals and the soles of the boots of astronauts) and replaced the difficult-to-mix, long-setting-time polysulphide systems and condensation-cure silicone systems which suffered clinically significant shrinkage. Polyether systems, first introduced in 1970s, continue to enjoy substantial popularity. The replacement of hand mixing with automix tip systems was credited with greatly improving the quality of the recording of impressions.

Alloys

The use of precious metal alloys was very popular in operative dentistry and fixed prosthodontic procedures up until the late 1980s/early 1990s, but diminished in use thereafter with escalating, fluctuating costs

and growing interests in tooth-coloured restorative systems.

The introduction of techniques to bond porcelain to metal substrates in the 1970s fuelled a growing interest in palladium-based alloys and heralded the era of porcelain fused to metal (PFM) crown and bridgework. Base alloy alternatives to precious metal PFM systems offered the possibility of greater affordability, but at a price with notably a less favourable marginal fit.

Nitinol (Nickel, Titanium National Ordinance Laboratory) memory effect alloy, which found its way into dentistry by serendipity, not from the wreckage of the Roswell flying saucer as believed by some UFOlogists, transformed orthodontics and found application in endodontics, and innovations in the use of cobalt chromium alloys saw the beginning of a new art and science in the provision of partial dentures.

While novel ceramic systems offer huge potential, those attending the seminar concluded that metallic alloys will continue to find applications in dentistry for many years to come. This together with the use of titanium in implant dentistry was suggested by Professor Charles Lloyd to preclude 'metal-free dentistry' in the foreseeable future.

Ceramics

Porcelains can be made to look identical to natural teeth, but being brittle and, among other challenges, liable to failure through crack propagation from inherent flaws are not ideally suited for use in dentistry. Porcelain teeth, however, were used extensively and with great success in removable prosthodontics (prosthetics), and thanks to the work of giants in the field, including John McLean, porcelain jacket crowns (PJC) and related full crown systems enjoyed huge popularity for many years. As emphasised by John Hubbard (one of John Mclean's long-term, collaborating dental technologists), the history of this era is captured in the John McLean textbooks on the art and science of dental ceramics.^{27,28}

In the 1980s 'the game changed big time' with the bonding of ceramics to tooth tissues and the introduction of ceramic CAD/CAM (computer assisted design/ computer assisted milling) technologies.³⁰ Stemming from the work of Simonsen and Calamia²⁹ there was global interest in opportunities provided by, in particular, porcelain laminate veneers (PLVs) as an aesthetically pleasing, less inter-ventive alternative to full crown restorations. The use of PLVs, even with minimal, if any, preparation solely for cosmetic enhancement quickly became a contentious issue. Leaders in the field of CAD/CAM included Professors Mormann, Brandestini, Andreasen, Tusami,

Tsutsumi, and Dianne Rekow, working at the University of Minnesota at the time. The first commercially available ceramic CAD/CAM system – CEREC 1 (Sirona Dental, Salzburg, Austria) stemmed from the work of Mormann *et al.*³¹ Huge advances in computational power and the development of ceramics specifically for CAD/CAM systems underpinned subsequent developments in the field. Various innovative ways to overcome the inherent limitation of monochromatic milling blocks enhanced aesthetic outcomes and patient acceptance. The group agreed that the future potential of CAD/CAM and related digital imaging in dentistry was huge.

Research

In the 60-year period under consideration, research in dental biomaterials science was wide ranging, voluminous and highly productive, with academics and industry often working together to great effect. As often stressed by one of the key players in the field of applied dental biomaterial science research, Professor Ivar Mjör, one of the main barriers to the achievements not being ever greater was the problem of translating developments into clinical practice, with many clinicians being reluctant, or at least hesitant to adopt new materials and techniques in favour of traditional materials and techniques. A further barrier was, and continues to this day, notwithstanding outdated service funding systems, relates to many clinicians clinging to traditional instrumentation and approaches to operative techniques when using new concept materials.

Whether laboratory-, clinical academic-, or practice-based, variations in methodologies, terminology and data handling, and reporting in dental biomaterials science research, despite numerous international standards, have resulted in unnecessary grey areas. As summarised by Professor Ric van Noort: 'All science is measurement, but not all measurement is science.' While the 'ultimate test may be clinical success' – a quote from the work of Professor Gordon Christensen, the work which must be done by dental biomaterials scientists, before a material can be considered suitable for clinical testing, remains fundamental and crucial to understanding performance and, in particular, failures in clinical service.

Seminar 5 – The dental press

In the post-World War II years, through until the mid 1960s, the dental press comprised principally the *British Dental Journal (BDJ)*. Other dental publications existed, including '*Dental Magazine and Oral Topics*'; however, it is understood that these had limited

circulations and impact. At the time, the *BDJ* focused on academic and technical aspects of dentistry; however, it included, in addition to the minutes of the Representative Board and annual accounts, the occasional supplement, which could be politically overt. For example, one supplement in 1948 carried various advertisements by the BDA, encouraging dentists to stay out of the then new NHS – a strategy which was largely ignored by members of the profession coming out of the armed forces and new graduates at the time who entered the NHS *en masse*. Advertising was limited and relative to modern day standards 'low key'.

Since 1950, there have been five editors of the *BDJ*: Leslie Godden, appointed in 1953, Archie Donaldson, who took up post in 1968, Margaret Seward – subsequently Dame Margaret Seward DBE – who came into office in 1979, Mike Grace in 1992, and Stephen Hancocks OBE, the editor at the time of the seminar, appointed in 2004. Throughout these various editorships the *BDJ* has remained the scientific journal of the BDA. Various physical changes have been made to the journal over the years, the full colour A4 format being introduced by Margaret Seward in the early 1980s. Now with a twice-monthly print run of 23,000 and 100,000 unique visitors from all over the world to the web-based version of each issue, the *BDJ* is arguably the number one journal in the UK in terms of readership. It certainly remains the journal to consult first when looking for a new position in dentistry.

With many different speciality specific and general dentistry titles, including the BDA News, entering the market, the contents and editorial philosophy of the *BDJ* have changed with an emphasis on articles of immediate clinical relevance. The editor, supported by a scientific editor and an editorial board, has always been free of any influence from the BDA hierarchy, as far back as the various editors can remember, with one notable exception which Margaret Seward ignored. Opinion pieces, none of which have been commissioned, letters to the editor (the dental equivalent of writing to *The Times*), obituaries and the 'jobs section' have always been popular, at home and abroad. Above all else, the *BDJ* has strived to serve the membership of the BDA rather than appeal to the wider international dental community. Successive research assessment exercises of dental schools have driven academic authors to seek to publish in high impact journals. However, this results in very few practitioners reading papers reporting the best oral and dental research in the UK, let alone applying the findings in clinical practice. That said, it

is often recalled, before the days of mandatory continuing professional development (CPD) that unread *BDJs* tended to form an untidy heap in some corner of many dental practices. The *BDJ* has, however, always been considered to be an important element of the dental establishment in the UK; indeed, a national treasure – the dental equivalent of the BBC. Among its many other attributes, the *BDJ* is now a major provider of verifiable CPD.

Other titles

From the late 1970s/early 1980s, the dental profession has been served by an ever-increasing range of titles, including *Dental Update*, *Dental Practice*, *The Dentist*, *The Probe*, *Dental Tribune* and *Private Dentistry* (formerly *Dentistry*), a number of which are distributed at no cost to the readership. However, it was suggested that publications with no peer review policy run a risk of publishing material which may mislead some members of the dental team. Attendees, including Mary Newing MBE and Michael Watson OBE, both prolific, long-serving contributors to the dental press, together with Lisa Townsend, who described herself as a 'lay editor', countered this suggestion, emphasising the important role played by editorial advisers and boards, let alone the discretion and judgement of the readership. Overall, the wide diversity of dental titles, with different styles and content was considered to be of value, albeit that some titles are deliberately controversial, campaigning and competitive.

Advertising

Traditionally, the dental press, with the exception of some academic and speciality specific publications, has always included advertising, to a greater or lesser extent. In titles financed by advertising revenue, the balance between advertising and content was described as having been increasingly delicate, with advertisers looking for added value beyond the immediate purpose of their advertisements. Historically, advertisements in the dental press sought to simply raise awareness and interest in the goods and services featured. Over time, advertisements in dental titles have changed to, for example, identify the attitudes and lifestyle of the dental team with the use of certain products. As in all other aspects of society, advertising in dentistry has become complex and difficult to manage. In discussion, concerns were expressed over the publication of advertorial articles with the appearance of regular content. Transparency and the presentation of content were considered key in addressing such matters in the future.

Information technology

There was unanimous agreement that advances in information technology had had a profound and lasting impact on the dental press, both in the production and use of published material. The introduction of different media, notably social media, continues to be transformational, offering huge choice in content, instant access to news – wherever wifi is available – and opportunity to share immediate and reflective reactions and comments. While important, new means of disseminating information were not considered to offer the lasting value of traditional forms of publication. As such, the group were of the view that hard copy dental press would continue to exist for the foreseeable future. Concerns were expressed that many electronic publications would not be archived, depriving future dental historians of essential source material.

British Dental Editors Forum (BDEF)

The Forum, established in the 1980s and kept active by Professors Ken Eaton and Chris Lynch and Dr Mervyn Druian, was recognised to be ‘a jewel in the crown of professional bodies and associations in UK dentistry’.³¹ The membership of the Forum, open to all those with interests and responsibilities in dental publishing in the UK, has included many of the countries ‘good and the great’ authors, publishers and editors, including Donald Derrick, John Davis, Ken Brown, Ted Renson, Jenny Dyer, Edgar Gordon, Ellis Paul, Michael Watson, Mary Newing and successive editors of the *BDJ*, among many others. Over the years the Forum has been addressed by many eminent individuals and considered a wide range of issues.

International considerations

It was agreed that UK-based authors and editors had, and continue to make a huge contribution to global dental literature. Indeed, the UK could be considered to have ‘punched above its weight’, especially in the oral and dental scientific literature, with the prospect of this increasing with trends towards open access. Despite this strong heritage and continuing excellence, it was noted with regret that matters reported in the dental press had rarely been picked up and reported in the national press, in particular, the many, different advances there had been in oral and dental research in the UK.

CONCLUDING REMARKS

Given the purpose and nature of witness seminars, their outcome, as evidenced in the present report, does not provide a comprehensive, detailed history. Witness seminars complement traditional histories and related documentation, providing personal insights and nuances which may otherwise be lost with the passage of time. It is to be hoped that the present report, together with the audio recordings and full transcripts of the John McLean Witness Seminars will lead to the funding of further seminars; for example, on the impact of the European Union (EU) and EU legislation on dentistry in the UK, and serve their intended purpose, adding colour and character to whatever future histories may be written on dentistry from the inception of the NHS through until 2015. It was a time of many remarkable changes, which may become the prelude to many more innovations and unexpected developments of the type John McLean and his peers were responsible for during their illustrious careers.

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