Symposium on Pathways for the Phase down of the Use of Dental Amalgam Worldwide

14-15 July, 2016

Executive Summary

Phase down of the use of dental amalgam worldwide demanded by the Minimata Convention requires engagement of a breadth of stakeholders. Limited data on the use of amalgam and its quality alternatives, uneven distribution of workforce and its increasing mobility, financial resources, and geographic diversity in need complicates defining best pathways to achieve this end.

Development and implementation of an equitable and sustainable phase down process requires engagement of the all stakeholders to create phase down pathways that support integrated people-centred health services through systems strengthening with a strong focus on health equity. No single pathways is anticipated to meet the needs across all geographies, cultures and economic systems. However senior oral health leaders, drawn from across the globe who participated in the symposium agreed that a well formulated communications strategy and key messages would provide a sound foundation for developing, refining, and implementing coherent and coordinated phase down pathways. Done right, the messages can project dentistry as a responsible leader in reducing mercury in the environment as well as improving oral and system health.

Educators are well placed to act as catalysts in the change process by leading in initial stages of pathway development, bringing insight into research findings and gaps, generating research informing evidence-based policy and clinical practice and engaging in the formative learning of dental students, professionals, and the broader health and social workforce.

Sharing expertise across a breadth of expertise, symposium participants were able to explore the implications, interdependencies and politics of needed actions, moving us closer to defining appropriate pathways for phasing down amalgam usage.

Next steps including formulating the communication strategy and key messages; identifying and rectifying gaps in data in amalgam usage, workforce utilization and life cycle management of restorative materials; creating and implementing prototype contracts to incentivise prevention, optimise workforce utilisation and amalgam waste management; and improving our understanding and utilisation of the oral health workforce.

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Summary Report

One of the most important challenges for dentistry over the next decade in the UK and across the globe is the phase down of the use of amalgam, demanded in large part by the Minamata Convention. In mid-July, over 50 senior oral health leaders met at King's College London's Dental Institute to create a draft pathway for amalgam phase down in the UK. Importantly, similarities and differences in aspects of applying the proposed pathway more globally were discussed and next steps elucidated.

The Symposium Agenda

This two day symposium encompassed background information presentations complemented by working group sessions, capitalizing on the remarkable breadth of expertise of the participants. Formal presentations included:

- An overview of the driving forces for change, especially the Minamata Convention Global Action Plan for the prevention and control of non-communicable diseases
    - An introductory overview of the challenges by Professor Dianne Rekow, Executive Dean of King's College London Dental Institute
    - An update on the Minamata Convention and strategic approach to international chemicals management presented by Dr. Desiree Narvaez of the United Nations Environment Programme (UNEP) Office for Chemicals, in the Division of Technology Industry and Economics
- A review of international activities focused on phase down and reduction of amalgam usage
    - An African Region perspective outlining on-going activities and successes presented by Professor Abdouraman Bary, Regional Sub-programme, UNEP Coordinator for Chemicals and Waste, Regional Office for Africa
    - Strategic directions in oral health within the World Health Organisation (WHO), focusing on the UNEP WHO East African Dental Amalgam Project presented by Dr. Hiroshi Ogawa, WHO Dental Office, WHO Global Oral Health Programme
    - Lessons learned from the Scandinavian experience by Associate Professor Emeritus Vibeke Qvist of the University of Copenhagen
- A synopsis of current issues in commissioning dental services in England presented by Ms. Janet Clarke, Deputy Chief Dental Officer NHS England and Dr. Susie Sanderson a Dento-Legal Advisor representing Dental Protection
- A summary of approaches to dentistry that influence choice of materials
    - An overview of contemporary state of the art of minimally invasive dentistry by Professor Avi Banerjee of King's College London Dental Institute
    - The influence of sealing carious lesions on future restorations by Associate Professor Emeritus Vibeke Qvist of the University of Copenhagen
- Implications on the profession and patients of using different materials
    - An overview of potential toxicity and eco-toxicity of restoration materials by Professor Gottfried Schmalz of the University of Regensburg

    - A discussion of philosophical approaches to educating future dentists by Dr. Giles McCracken of Newcastle University School of Dental Sciences
    - Implications on material change on workforce strategies by Dr. Julian Fisher of Hannover Medical School and Director, Advocacy and Network Development, THEnet and Resource Person for the UNEP Global Mercury Partnership Area on Waste Management
    - An update on environmentally sound lifecycle management policies and practices, including lessons learned from the East Africa phase down programme by Mrs. Pam Clark, Past President of the International Dental Manufacturers
- The challenges of creating a draft pathway presented by Professor Mark Thomason, Dean of Newcastle University School of Dental Sciences
- The challenge of next steps to build and strengthen networks and strategic partnerships in order to implement the pathway to reducing amalgam by Professor Helen Whelton, Dean of University of Leads School of Dentistry.

Short speaker biographies are available on the Symposium website (http://www.kcl.ac.uk/dentistry/Pathways/Pathways.aspx).

Symposium Participants

Symposium participants represented the breadth of expertise needed to identify challenges and barriers and outline a realistic approach to phase down of dental amalgam usage with primary focus on the UK. The symposium brought together dental policy makers, national Chief Dental officers, representatives from NGOs, clinicians, researchers and educators from the UK and from across the world as well as health-related corporate representatives. Together they created a rare occasion to address the breadth of challenges and opportunities intrinsic in creating a phase down pathway. By sharing a common goal, they were able to explore the implication, interdependencies and politics of the needed actions.

Draft Proposed Pathway – the Process

Participants were asked to first consider the desired outcome state of the pathway, then focus on current policies, procedures, and practices. Next attention focused on four workstreams: workforce and education; techniques and materials, financing and incentives; and policy, regulatory and governance. Working groups identified activities needed now, in 3 years, and in 7 years. Ultimately, these activities were integrated into defining next steps in drafting a pathway for the phase down of the use of dental amalgam in the UK. That, in turn, informed a discussion of similarities and differences between pathways for the UK and global, especially in East Africa.

The Agreed End State: The participants postulated that an acceptable end state for the UK not only addresses dental procedures, but also incorporates the public and policy makers having a better understanding of both health and environmental outcomes associated with phasing down of amalgam. In particular, they agreed that:

- There needs to be a lower level of caries, thereby reducing the need for any restoration. Dentistry should need less, use less, and manage the waste.
- The contemporary minimally invasive care approach should be the first choice of dental professionals. Said another way, care pathways need to enable and support clinicians and dental teams to do the right thing at the right time.
- There needs to be appropriate data to underpin and support the efficacy of approaches that deliver the phase down of amalgam.

- The public and politicians need greater understanding of the potential advantages and improvements to the environment and to health outcomes intrinsic in phasing down the use of amalgam. This can only be accomplish by setting and meeting clear targets and providing clear and coherent messaging.

The Perceived Beginning State: In the UK as in many parts of the world, we are starting from a position quite some distance from this desired end state.

There is very limited data relating to amount of amalgam currently used in the UK or globally, how much is recycled, how much is used for first-time vs. replacement restorations, and a host of other relevant related questions.

Much of the UK population already has large restorations (particularly in those over 60 years of age sometimes called the 'heavy metal generation'). The health care system has set strict constraints, with economic implications for replacement restorations. Current NHS contracts have specified performance criterion (UDAs) and at least at this time, material costs and time to place composites exceed those for amalgam. The contracts do not incentivise prevention or conservative dentistry, although the current contract is under reform. Nationwide, NHS resources are constrained and there is substantial regional variation in approaches to health care commissioning. Furthermore, the workforce may not be utilized optimally, evenly geographically distributed, nor deployed and retained in those areas of greatest need. In addition, there appears to be a disconnect between what is taught in UK dental schools, what is reinforced and practiced in foundation training, and what is practiced and rewarded by NHS contracts. It is perceived that the political imperative for maximum access at minimum cost overrides scientific evidence.

As is the case in many countries, health care inequities in the UK are significant and 80% of the restorations are needed by 20% of the population. This is further exacerbated by the fact that the interests of the dentist and patient may not be aligned. Indeed, the patient population (and politicians) may not see the breadth of advantages of good oral health to systemic health.

Complicating all of this, of course, is that we operate in a relatively litigious culture. Shifting from early surgical intervention to more modern minimally invasive approaches could be inhibited by perceived challenges from other practitioners who do not subscribe to this modern approach.

Draft Pathway – the Outcome: The evolving pathway for the UK identified the need for the breadth of stakeholders to actively participate in order to successfully phase down amalgam use. It is noteworthy that this phase down will not be fast but instead is anticipated to unfold over a number of years, during which the stakeholder collaboration may change but remains a necessary element for success.

Educators are well placed to be the catalyst for change, leading in these initial stages of development of a pathway, as they provide formative learning for undergraduate and in-service/CPD education; collaborate with and across policy, practice and industry stakeholder networks; and generate much of the research for evidence-based policy making and clinical practice.

Considerations from a Global Perspective

There is remarkable parallelism between the pathway outlined for the UK and the pathway for Africa, and perhaps even more global reach. Direct overlap was noted for:

- Creating and implementing a multi-stakeholder and holistic communications though it was pointed out that perhaps the National Dental Association should also be engaged.

- Research initiatives on biomaterials and implementation of approaches might be complemented by operational research and best practice.
- Education and advocacy by health personnel and teachers is needed across the globe.
- Systemic and oral health promotion and disease prevention, including fluoridation, are needed globally.

The singular difference noted between the UK and Africa was regulation and legislative differences, as noted in particular for mandatory amalgam separators in the UK whereas not as widely demanded in Africa.

Symposium Outcome and Next Steps

Symposium participants recognized that there is no 'one size fits all' pathway, and that developing and implementing an effective, measurable and sustainable pathway will require a health systems approach.

A clear and strong consensus emerged by the end of the meeting and highlighted dialogue and communication as one of the key successes of the two-day meeting. The symposium enabled senior oral health leaders representing different domains of dentistry to hear others, exchange thoughts and ideas and advance their understanding of other workstreams. Participants agreed that *it will be important in pathway development that **all** stakeholders have a better understanding of both the politics of oral health policy change and of the interests driving the process through which oral health policies and interventions are developed and implemented.*

Developing a communications strategy and key messages (both overarching and for each workstream domain) would contribute to understanding how to influence policy and take action to strengthen health systems in a coherent and convergent manner. Such an approach would also help to develop and refine a phase-down narrative as a part of a dynamic and evolving process.

***Communications/Messaging**:* Clear and impactful communication is critically important, underpinning the success of achieving the desired outcomes needs to be created immediately. A carefully crafted two-branched communications strategy is needed with one branch emphasising the advantages and value of mercury reduction to the environment. The second needs to emphasise oral health prevention and minimally invasive dentistry approaches. They must include clear, consistent and joined up messaging. It would be advisable to engage groups from Wales, Scotland, and Northern Ireland to help drive the shared message and its urgency to the maximum extent possible for a UK pathway. And, we must proactively engage the press. It is strongly recommended that a parliamentary briefing pack be created and distributed. It is further recommended that strong messages be made available to the public, recruiting them to help drive changes in policy and clinical practices.

The BDA, Kings, and Wrigley all have professional media teams that can help devise the appropriate strategies and communication pieces. It was noted that there may be an opportunity to begin the media campaign at the 2016 autumn FDI meeting.

Done right, the messages can project dentistry as a responsible leader in reducing mercury in the environment as well as improving oral (and systemic) health.

Prototype Contracts for Practices: Through stakeholder consultation, based on the Minamata agreement, prototype contracts should be created and implemented for a small group of clinicians to participate voluntarily. The contracts should commission incentives toward rewarding and

incentivising prevention, minimally invasive dental practices, optimised workforce utilisation, and state-of-the art amalgam waste management.

Workforce and Workforce Education: WHO Global strategy on human resources for health provides a timely opportunity for the dental community to reflect and examine health workforce and health workforce education issues as part of health systems strengthening. Similarly dental educators can engage in the WHO transformative health workforce education agenda and work with other health professions to examine and explore barriers, gaps and opportunities. WHO national health workforce accounts could help inform and guide the development of the relevant policy questions for both these groups, as well as assisting in consistent data collection and analysis. Professor Jenny Gallagher and Julian Fisher have offered to take this workstream forward, which might include WHO Global Oral Health Programme assisting in developing a technical working group.

Environmentally Sound Lifecycle Management of Materials for Dental Restoration: Presentations at the symposium highlighted gaps and challenges in science and evidence in the ecotoxicity of dental materials and their environmentally sound lifecycle management. Key first steps might be mapping and identifying dental/other researchers in this area and overviewing current research and priority gaps that need to be addressed.