THE FINEEDGE OF DENTISTRY

Day 3 Abstracts

TITLE OF PRESENTATION: CHARTING THE CURRENT LANDSCAPE OF VITAL PULP THERAPY: A PARADIGM IN TRANSITION

Speaker: Dr Pei Yuan Chan

Abstract:
Vital pulp therapy (VPT) has emerged as a pivotal strategy in dentistry, aiming to preserve and restore compromised dental pulp without resorting to conventional root canal treatment (RCT). In the ever-evolving field of dentistry, vital pulp therapy has undergone a remarkable paradigm shift over the years, expanding its scope to include permanent mature teeth with irreversibly inflamed pulps.

During this presentation, we will examine the pivotal role of pulpitis and repair processes and the role of bioactive materials in enhancing the success and predictability of vital pulp therapy. The discussion also addresses the importance of diagnosis, patient selection, and case-specific treatment planning in achieving optimal outcomes.

We will explore the future directions of vital pulp therapy, detailing the ongoing research and potential advancements that promise to further redefine the field.

This talk will provide dental professionals with valuable insights on the advances in vital pulp therapy, helping you stay updated with the latest developments and offering insights into how these changes benefit both practitioners and, most importantly, patients.

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TITLE OF PRESENTATION: USE OF BIOCERAMICS IN ENDODONTICS

Speaker: Dr Alex W K Chan

Abstract:
One of the advances in the field of Endodontics in recent years is the introduction of Bioceramic Technology. They possess broad applications given their exceptional biocompatibility in the presence of periapical tissues and regenerative capacity to these tissues. They are the mainstay materials for perforation repair and apical retrofilling material in endodontic microsurgery due to their excellent sealability. Bioceramics are associated with more favourable outcomes than calcium hydroxide materials in apexification procedures, where they allow for single-visit procedures, increasing efficiency, patient compliance, and long-term success. Similarly, they represent the gold standard materials when restorative materials must be placed in contact with the pulp tissues, including direct pulp capping or pulpotomy procedures and regenerative endodontic procedures. Lastly, bioceramics have been incorporated into endodontic sealers, where they show promise because of their favourable biologic sealing abilities.

This presentation is intended to give clinicians a knowledge base for the current trend and contemporary use of bioceramics in endodontic practice.

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TITLE OF PRESENTATION: DEVELOPMENTAL PERSPECTIVES IN MANAGING DENTAL ANXIETY: INSIGHTS FROM PAEDIATRIC DENTISTRY

Speaker: Dr Lisa Bowdin

Abstract:
"Children are like wet cement. Whatever falls on them makes an impression" Haim Ginott, 1972. Despite significant advances in dental care and behaviour management, dental anxiety and fear remain a persistent burden for our patients. Research indicates that approximately 16% of Australian adults experience high levels of dental fear (Armfield et al 2006). To effectively address this issue, it is crucial that we understand how patients arrive at this stage of dental anxiety.

Dental anxiety and phobias often originate during childhood, highlighting the importance of managing paediatric patients in a manner that fosters positive attitudes towards dental care from a young age. However, paediatric patients require a distinct approach that recognises that they are not merely smaller versions of adults. In fact, even within the realm of paediatric dentistry, toddlers cannot be likened to preschoolers.

This presentation aims to explore the various developmental stages of childhood and offer insights into how dental practices can be adapted to meet the unique needs of each age group. The knowledge shared will contribute to a greater understanding of the enduring impact of negative childhood experiences on dental anxiety levels in adults and provide strategies for promoting positive behaviour management in our paediatric patients.

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TITLE OF PRESENTATION: OPG OR CBCT; DOES IT MAKE A DIFFERENCE?

Speaker: Dr Jake Samuels

Abstract:
Various CBCT machines now offer reduced exposure scan protocols that significantly lower the radiation exposure to patients. With correct protocoling, CBCT can achieve 3D volume scans with radiation exposure similar to that of conventional panoramic radiographs. These advances make CBCT a compelling alternative to OPG for many clinical situations.

In this presentation we will discuss:

- How scan volume, exposure time and spatial resolution influence radiation exposure to
- patients
- Advances in CBCT technology and rapid acquisition protocols
- Selecting the correct imaging modality and protocol for your clinical needs
- Advantages and disadvantages of CBCT and OPG
- When CBCT is indicated as the preferred modality to OPG

THE FINEEDGE OF DENTISTRY

ORAL PRESENTATION: INTENSIVE CARE ADMISSION DUE TO ODONTOGENIC INFECTION IN NEW ZEALAND: A 10-YEAR DESCRIPTIVE ANALYSIS

Author: Jessica BUCHANAN[1]

[1]*WellOral, Wellington, New Zealand,* [1]*University of Oxford, United Kingdom, MSc SSP (Distinction)*

Abstract:
Background - Severe odontogenic infection of the head and neck frequently requires intensive care (ICU) admission due to sepsis and airway compromise. In an era of health resource constraint, it may be more cost-effective to allocate additional funding to primary preventative services, with the goal to decrease acute bed stay and morbidity. National level research on ICU admissions caused by severe odontogenic infection is limited in New Zealand and worldwide. This talk describes the national incidence, demographics and utilisation of ICU in New Zealand due to odontogenic infection during a 10-year period.

Methods - A descriptive study was undertaken of all ICU admissions in New Zealand for odontogenic infection using the National Minimum Dataset (NMDS), a highly complete prospective hospital discharge database.

Findings - Pacific Peoples and Māori had significantly higher admission rates in comparison to non Pacific Peoples and non Māori. Those living in the most deprived areas of New Zealand and males were also over-represented. These inequalities and the rate of admission did not significantly shift over the 10-year period.

Conclusion - The findings support a greater need to address the burden of odontogenic infection and prevent ICU admission by reducing health inequalities particularly amongst males, Māori, Pacific Peoples and those living in the most deprived areas of New Zealand. How to place this knowledge into action will be discussed during the presentation with the vital goal to reduce severe odontogenic infection and ICU bed stay.

References

The MSc thesis includes 132 references and can be provided on request, the first 5 references are provided.

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THE FINEEDGE OF DENTISTRY

ORAL PRESENTATION: A COSTLY CRISIS: DISPARITIES IN PREVENTABLE HOSPITAL ADMISSIONS NATIONWIDE

Authors: Danyon GRAHAM[1,2], James STANLEY[2], Jonathan BROADBENT[3], Moria SMITH[2]

[1]Te Whatu Ora Waitaha Canterbury, Christchurch, New Zealand
[2]Department of Public Health, University of Otago, Wellington, New Zealand
[3]Department of Oral Sciences, University of Otago, Dunedin, New Zealand

Abstract:
Background - Management of preventable odontogenic infections accounts for a large proportion oral and maxillofacial surgical service workloads and draws valuable public resources away from other health issues. This presentation will discuss findings of a Master's project investigating rates, characteristics, and financial costs of admissions to NZ public hospitals for treatment of preventable odontogenic disease over the last decade.

Methods - National public hospital admission data from the National Minimum Dataset for admissions deemed 'potentially preventable' using ICD-10 codes K02-09, K12, K13 were analysed. Rates were compared across time and among regions, focusing on differences by ethnicity and socioeconomic deprivation. Cost-weight unit prices were used to calculate costs attributable to each admission.

Findings - 110,307 potentially preventable admissions occurred nationwide. Age-standardised rate ratios showed that Māori and Pacific peoples had 2.3 times higher rates of acute admissions than their non-Māori-non-Pacific counterparts (95% CI 2.2 – 2.4). Admission rates were 3.5 times higher in the most deprived quintile compared to the least (95% CI 3.3 – 3.7).

Both Māori and Pacific peoples were 3.9 times more likely to be admitted with disease of greater severity and to require higher levels of care (e.g., ICU admission) than non-Māori-non-Pacific peoples (95% CI 3.0 – 5.0). Total costs for the study period were estimated to be NZD268 million. Annual costs also increased by 60% throughout the study period.

Conclusion - Rates of preventable hospitalisation for acute odontogenic infection remains high, conferring substantial and increasing financial costs to the public health system. Profound disparities exist in the use of acute oral health care services, with people of Māori and Pacific ethnicity over-represented among those admitted.

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ORAL PRESENTATION: COSTING A SINGLE EPISODE OF DENTAL EXTRACTION UNDER GENERAL ANAESTHETIC IN THE AUSTRALIAN PUBLIC DENTAL SECTOR

Author/s: Seth N. DELPACHITRA[1], Simra AZHER[2], Franco SASSI[3]

[1]Head of Oral and Maxillofacial Surgery, Royal Dental Hospital Melbourne, Associate Professor, University of Melbourne
[2]Oral and Maxillofacial Surgery Resident, Royal Dental Hospital Melbourne
[3]Professor of International Health Policy and Economics, Imperial College London

Abstract:
Introduction. General anaesthetic is an expensive but necessary treatment modality required to provide dental treatment to dentally anxious, medically complex, or high-risk patient populations. The Royal Dental Hospital Melbourne (RDHM), based in Victoria, Australia, engages a unique service model in order to provide this care outside tertiary hospital settings. **Aims**. The aim of this paper was to model the average cost of an episode of general anaesthetic facilitated through RDHM for an adult patient requiring Oral and Maxillofacial Surgery services and compare this to the cost of providing similar care in an Australian tertiary hospital. **Methods**. Data from the National Hospital Cost Data Collection was used to determine an average National Efficient Price for provision of dental extraction treatments under general anaesthetic in a tertiary hospital setting. The same costing standards were employed to the service model at RDHM in order to create a comparative price. Data was obtained from the hospital Department of Finance and wage costs were modelled from the relevant state-based Enterprise Bargaining Agreements. **Results**. The average national cost for provision of dental extraction treatment in a tertiary hospital setting is approximately $3202 Australian Dollars. Based upon a costing standards model, the estimated cost for a single episode of general anaesthetic for dental extraction at RDHM was calculated at $1398 Australian Dollars. **Conclusion**. Provision of GA services in a purpose-built, day hospital facility such as RDHM are significantly lower than the average national cost of providing similar services in a tertiary hospital setting. This finding carries significant implications for prudent and targeted allocation of a critical but expensive resource, highlights the importance of efforts to improve theatre efficiency, and recommends consideration of alternative methods of sedation as a form of patient management, including use of dental conscious sedation.

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This thesis includes 18 references and can be provided on request, the first 5 references are provided.

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ORAL PRESENTATION: DISTRACTION - INACTION

Author: Annalene WESTON[1]

[1] Dental Protection Australia Limited

Abstract:
'What the eye doesn't see, the heart doesn't grieve over'

What do we miss in practice, and why? What impact can distraction have on our ability to provide quality care to our patients, and what are the consequences for our patients and ourselves alike?

How about inaction? Is it always appropriate to 'watch and wait'

Background: Using cases from the Dental Protection vault, Dr Annalene Weston will explore the fine line between waiting too long and acting too soon.

Conclusions:

1. Human Factors always creep into our decision-making and can impact on our ability to make the correct diagnosis
2. Supervised neglect still exists, but perhaps not for the reasons you may think
3. Many diagnosis are missed or made too late as a consequence of these issues, with a significant impact on patients and their outcomes.

THE FINE EDGE OF DENTISTRY

ORAL PRESENTATION: DE-STRESS IN THE TROPICS

Author: Dr Katherine HOLZHAUSER[1]
[1] *Private General Practice (Medical), Upward Life Family Practice, Cairns, Australia*

Abstract:
Stress - such a frequently used, and misused word; but what does it mean; and how do we ensure that the stress we live with is helpful and not harmful?

Stress can be defined as “any situation that alters the equilibrium between between a living organism and its environment.”

As a full time clinician working in General Practice for over ten years; I am no stranger to the impact that stress had had on our community; Professionally through clinical work caring for patients; as a Business Owner adapting to ever-changing regulations and risks for staff and patients and Personally; how to balance work-life and how to mitigate risks of burnout while keeping financially viable.

This is an opportunity to offer a glimpse into the underlying pathophysiology of how stress can affect our entire health and wellbeing. This may offer a deeper personal understanding of your own stress level(s) as well as understanding how this theory may be extrapolated to patients and health-care teams. And finally we will explore opportunities and strategies to reduce personal stress and consider real-world tools or strategies to optimise your “stress-management” and by extension your overall health in the long term.

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ORAL PRESENTATION: THE BALANCING ACT OF INTEGRATING SUSTAINABILITY AND LEADERSHIP IN CLINICAL PRACTICE; PATHWAYS TO SUSTAINABLE PERSONAL AND CLINICAL EXCELLENCE WITH MODELS FOR THE ENVIRONMENT, THE SYSTEMS AND IMPLEMENTING THE STRATEGIES WITH SOME LIFESTYLE MEDICINE

Author: Dimitra, MERSINIA[1]

[1] *Smiles Clinic, M.i.n.d Your Health initiative, Sydney, Australia*

Abstract:
In the dynamic landscape of healthcare, clinicians are confronted with a myriad of challenges, especially personal burnout, exacerbated by the rapidly evolving world. This presentation explores the journey towards a reimagined clinical practice through the lens of different levels of sustainability, integrating environmental consciousness (internal and external), social responsibility, and work-life alignment.

Utilizing the Environment pillar, the clinician's personal leadership navigates internal and external challenges such as burnout, economic influences, while fostering a culture of well-being and sustainability among team members. Structure is examined within governance frameworks shaped by personal leadership principles, establishing a foundation supporting professional fulfillment and organizational resilience.

Strategies for environmental stewardship are discussed, demonstrating the influence of personal leadership in driving positive change. Implementation strategies, guided by the clinician's leadership, foster innovation and collaboration, facilitating the successful integration of lifestyle medicine principles into clinical practice. The People pillar underscores the impact of personal leadership on team dynamics and patient care outcomes.

This presentation draws upon a comprehensive review of relevant literature and healthcare professionals interviews and surveys, exploring the integration of ESG frameworks, lifestyle medicine principles, and personal leadership.

Highlighted strategies include environmental stewardship initiatives such as resetting mindset and resource conservation, alongside governance structures maintaining ethical standards. Implementation strategies for sustainable practices at both personal and organizational levels are emphasized.

Conclusion: By embracing the ESG Alignment model and M.i.n.d your Health initiative, through prioritizing personal leadership, clinicians can effectively navigate challenges, inspire change, and lead towards sustainable personal and patient care practices.

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ORAL PRESENTATION: USING DENTAL MONITORING TO SUPERVISE PATIENTS BEFORE DURING AND AFTER THEIR ACTIVE ORTHODONTIC TREATMENT

Author/s: Rhonda COYNE[1], Brittany SHEARN[2]

[1]Private Specialist Orthodontic Practice, NqOrtho, Cairns, Australia,
[2]Private Specialist Orthodontic Practice, Bayside Orthodontics, Melbourne, Australia

Abstract:
Dental Monitoring is an AI-powered tool that uses images generated from a smart phone video to remotely track patients. The parameters detected are determined by the treating clinician's treatment approach and practice workflows; and can occur during all phases of treatment and the patient journey.

This presentation will compare and contrast the role of Dental Monitoring, and how it is deployed, in two different orthodontic practices from the new patient to observation monitoring, treatment monitoring for various phases of treatment such as expanders, removable appliances, braces or aligners and then through to retention and post-retention supervision.

In these practices Dental Monitoring is used by the whole care team to enhance the patient experience, improve compliance and communication, and optimise practice efficiency during virtual and in-office visits. At the completion of the presentation the audience will appreciate that Dental Monitoring is much more than an AI tool, it's an agile patient management system.

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ORAL PRESENTATION: A SURVEY INVESTIGATING THE USE OF ORIFICE BARRIERS BY DENTAL PRACTITIONERS IN AUSTRALIA

Author/s: **Michael WYLIE[1,2],** Peter PARASHOS[1,2], James FERNANDO[1,2], Joseph PALAMARA[1], Alastair SLOAN[1]

[1]*Melbourne Dental School, The University of Melbourne, Melbourne, Australia*
[2]*eviDent Dental Practice Based Research Network, Melbourne, Australia*

Abstracts:
Background **-** Orifice barriers (OB) are often used when restoring root-filled teeth, distinct from the external coronal restorative material. However, there is no agreement in the literature on preferred OB materials or placement techniques.

Methodology **-** An online survey was distributed via the eviDent Dental Practice Based Research Network and professional bodies to endodontists, general, and other specialist dental practitioners (GDP+) practising in Australia. Demographic and multiple-choice questions were asked to evaluate usage patterns and relate to practising and training backgrounds. Independent samples proportions z-tests were undertaken.

Results **-** There were 457 eligible responses: 393(86%) GDP+ and 64(14%) endodontists. Of 429 reporting endodontically treating or restoring root-filled teeth, 317 placed OB and preferred depth of GP removal by most (91.8%) was ≤ 2mm. Preferred materials for posterior and anterior OB were conventional and resin-modified GIC (GIC), resin composite materials (RC), Cavit and zinc polycarboxylate cement (ZPC). ZPC use was significantly greater among endodontists ($p<.001$) in all teeth, while GIC was significantly greater for GDP+ in anterior teeth ($p=.038$). For anterior teeth, RC increased from 16.2% to 22.7%, with aesthetics a significantly more common reason for choosing GIC (GDP+, $p<.001$; endodontists, $p=.008$) and RC (GDP+, $p<.001$). Perceived ease of use was significantly higher among endodontists for ZPC ($p<.001$) for all teeth. Methods for ZPC use varied significantly: GDP+ - packing ($p=.002$); endodontists – spinning/lentulo spiral ($p<.001$).

Conclusions **-** Despite most participants placing OB, there was no clear consensus in technique for placement among Australian dental practitioners. Future research should guide best practice for OB use.

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ORAL PRESENTATION: ASSESSMENT OF IMPACTED CANINES AND MANDIBULAR THIRD MOLARS USING EYES OF AI™ SURGICAL MODULE

Author/s: Sen LE[1]

[1]Eyes of AI™(EAI), Sydney NSW 2000, Australia

Abstract:
Tooth impaction is a condition where teeth cannot erupt properly and remain buried within the jawbone beyond the normal time frame for eruption.[1] CBCT, periapical radiographs, and orthopantomography are the standard radiographic methods for diagnosing impacted teeth.[1] Third molars are the most frequently impacted teeth, followed by maxillary canines.[2] The relationship between impacted mandibular third molars and the inferior alveolar nerve (IAN) plays a crucial role in assessing treatment plans and may shift the decision from tooth extraction to monitoring or coronectomy due to the increased risk of nerve injuries.[3] Similarly, assessing the location, angulation, and orientation of impacted canines is vital in planning orthodontic treatment.[2] However, evaluating the CBCTs in such cases is time-consuming. EAI™ Surgical Module is a clinical decision tool for dental surgeons to automate the detection and evaluation of impacted teeth on dental radiographs using state-of-the-art AI algorithms. In this tool, the criteria deemed to be high risk to the IAN include (1) contact with the canal, (2) narrowing of the canal, and (3) diversion of the canal.[4,5] For the impacted canines, (1) alpha angle (the long axis of the canine and the midline angle), (2) D distance (canine cusp tip to the occlusal plane distance), and (3) sector (mesiodistal crown position) measurements are automatically calculated to assess the initial canine position.[6] We anticipate our presentation will define the circumstances that warrant surgical removal of these teeth, underline the evidence-based practice principles, and offer a way to measure it quickly and accurately.

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ORAL PRESENTATION: AN EXAMINATION OF THE COLLABORATION BETWEEN SPEECH-LANGUAGE PATHOLOGISTS AND ORAL AND MAXILLOFACIAL SURGEONS IN AUSTRALIA FOR THE MANAGEMENT OF PATIENTS WITH ORAL CANCER.

Author: Annette, COYNE[1]

[1] Research Project for the Degree of Bachelor of Speech-Language Pathology (Honours) 2018.

College of Health Care Sciences, Speech Pathology Department, James Cook University, Townsville, AUSTRALIA

Abstract:

Background - The professional interactions between speech-language pathologists (SLP) and oral and maxillofacial surgeons (OMFS) involved in the assessment and treatment of patients with oral cancer is largely unknown. SLPs are trained to assess, diagnose and treat people with speech, language, communication and swallowing difficulties. OMFSs are specialist dentists (and more recently hold another degree in medicine) who treat defects, injuries and aesthetic aspects of the mouth, teeth, jaws and face. Multidisciplinary care for patients with oral cancer is recommended to be best practice. Understanding the influences, such as barriers and facilitators, involved in these interactions assists in providing patients with optimal care and treatment outcomes.

Methodology - SLPs and OMFSs were invited to participate in a survey utilising both quantifiable and free text questions about referral practices, barriers to referral, features of patients with oral cancer that would benefit from referral and suggestions to facilitate interactions between SLPs and OMFSs.

Results - Both groups reported that the primary reason for referring and receiving referrals was for support with speech, swallowing and communication, however, SLPs and OMFSs differed in their concerns about the management of the patient. The OMFSs were concerned with defects whereas the SLPs were also concerned with the psychosocial aspects of those defects.

Conclusions - This study provided preliminary evidence about the interactions between SLPs and OMFSs. It highlighted the need for further research and support for both SLPs and OMFSs to provide better management of oral cancer patients. It also identified facilitators and barriers to collaboration with suggestions for improvement.

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ORAL PRESENTATION: USE OF VITAMIN B12 IN THE TREATMENT OF IATROGENIC INFERIOR ALVEOLAR NERVE INJURIES FOLLOWING ORAL SURGERY

Author: Luke CHUNG[1]
[1]Royal Darwin Hospital, Darwin, Australia

Abstract:
Background - Iatrogenic injuries to inferior alveolar nerve (IAN) remains a known complication of oral surgical procedures. (1) Damage to the IAN can result in altered sensation, taste and pain associated with the affected ipsilateral region of the lower teeth, chin and lip. (2) Although most of these nerve injuries are transient and undergo spontaneous recovery within eight weeks, symptoms lasting for greater than six months are generally deemed as permanent. (2,3) This affects the patient's quality of life and can have medico-legal implications. (1) The use of Vitamin B12 in management of peripheral neuropathy is known, however there is limited evidence of use in oral surgery settings. (4,5) This review aimed to evaluate the efficacy of vitamin B12 in the treatment of iatrogenic inferior alveolar injuries after oral surgical procedures.

Methodology - MEDLINE and COCHRANE database were searched from 1962 to 2024 for relevant articles. Key words included vitamin B12, inferior alveolar nerve and injury. No restrictions were made to the date of publication or the language of articles.

Results - Thirty studies were found through the search. Five of the thirty studies were relevant. Three randomized control trials and two retrospective cohort studies were identified. Four out of five studies showed administration of vitamin b12 may improve the neurosensory recovery of the IAN.

Conclusions - The use of vitamin B12 may improve the recovery of IAN injuries after oral surgical procedures. However, there are some limitations of the included studies, as such further clinical studies are needed to support use vitamin B12.

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TITLE OF PRESENTATION: BREAKING BAD NEWS

Speaker: A/Prof Nathaniel Treister (DMD, DMSc)

Abstract:
Whether disclosure of a failed dental therapy, or the need to extract a tooth, sharing unexpected or difficult news with a patient can be challenging and stressful for both parties. But situations arise, for example when providing a new diagnosis of an autoimmune disease, or cancer, when the stakes become greater and the implications for overall health are more serious. Simply how a provider communicates with a patient, and the way bad news is conveyed, can profoundly influence comprehension and understanding, emotional distress, treatment plan adherence, and even health outcomes. This talk presents a framework for approaching difficult conversations with patients and includes a review of available protocols that provide useful recommendations and best practices for health care professionals.

Learning objectives

1. Recognize the spectrum of medical conditions that may be diagnosed by a dentist that have significant general health implications.
2. Understand the importance of good communication skills when delivering bad news to a patient.
3. Be familiar with available protocols and tools for delivering bad news that best support health care professionals, patients, and caregivers.