Current guidelines for the use of nitrous oxide inhalation analgesia/anxiolysis in pediatric dentistry

By Dr. Manal Al Halabi, UAE

Abstract

Nitrous oxide/oxygen inhalation analgesia and anxiolysis as a behavioral management intervention in children has maintained an excellent safety record and is, therefore, utilized widely by pediatric dentists. As is true of any diagnostic or therapeutic dental intervention, however, its usage merits periodic review, especially when it is routinely applied. When nitrous oxide/oxygen is used in combination with other sedatives, such polypharmacy can produce potentially serious side effects. Bioenvironmental risks to patients and staff can be encountered if proper use of the gas and appropriate dispensation of inhaled nitrous oxide is not monitored. Using historical publications, current empirical articles, professional usage policies, and educational textbooks, the purpose of this article was to review indications and contraindications of nitrous oxide/oxygen inhalation analgesia and anxiolysis and discuss various factors that should or should not be considered about its use. Even though today’s parents may be more accepting of pharmacological approaches such as nitrous oxide, the choice to use it should always be made with the child's best interest in mind and with adequate training and understanding.

Introduction

After the analgesic qualities of nitrous oxide were discovered in the 19th century, dental practitioners experimented with nitrous oxide inhalation analgesia for any form of pain or discomfort thatrompted or was anticipated for a dental procedure. This experiment was a result of combining nitrous oxide/oxygen sedation and eliminating the use of nitrous oxide/oxygen inhalation for all dental procedures instead of for just the prophylaxis and restorative procedures. This technique was later utilized by pediatric dentists because it was found effective and safe for children when the nasal hood was used. According to the American Academy of Pediatrics, nitrous oxide/oxygen is considered a safe and effective technique to reduce anxiety, the patient may be able to tolerate unpleasant procedures, discomfort, or pain. The outcome of any pharmacological approach especially mild sedation is defined as diminution or elimination of pain and anxiety in a conscious patient.

Mechanism of action

Nitrous oxide is a colorless and nearly odorless gas with an indistinct, sweet smell. It is an effective analgesic/anxiolytic agent producing central nervous system (CNS) depression and euphoria with slight effect on the respiratory system. Nitrous oxide has multiple mechanisms of action. The analgesic effect of nitrous oxide appears to be initiated by endogenous opioid peptides released from neurons which results in activation of opioid receptors and descending Gamma-aminobutyric acid (GABA) A receptors and non-narcotic pathways that modulate nociceptive processing at the spinal level. The anxiolytic effect involves activation of the GABA receptor both directly and indirectly through the benzodiazepine binding sites. Nitrous oxide demonstrates rapid uptake, it is absorbed quickly from the alveoli and held in a simple solution in the serum. It is relatively insoluble, passing down a gradient into other tissues and cells in the body, such as the CNS. It is excreted quickly from the lungs. As nitrous oxide is 34 times more soluble than nitrogen in blood, diffusion hypoxia may occur.

Studies have shown that children desaturate more rapidly than adolescents, and administering 100 percent oxygen to the patient once the nitrous oxide has been terminated is important.

Nitrous oxide causes slight depression in cardiac output though peripheral resistance is marginally increased, thereby maintaining the blood pressure. This is of particular advantage while handling patients with cerebrovascular system disorders.

Nitrous oxide is absorbed quickly, allowing for both rapid onset and recovery (two to three minutes). It causes negligible impairment of any reflexes, thus protecting the cough reflex. It exhibits a superior safety profile with no recorded fatalities or cases of serious morbidity when used within recommend‐ ed concentrations. Studies have reported negative outcomes as associated with use of nitrous oxide greater than 50 percent and as an anesthetic during major surgery. Although rare, silent regurgitation and subsequent aspiration need to be considered with nitrous oxide/oxygen sedation. The concern lies in wheth‐ er pharyngeal-laryngeal reflexes remain intact. This problem can be avoided by not allowing the patient to go into an unconscious state.

Nitrous oxide has been associated with bioenvironmental concerns because of its contribution to the greenhouse effect. Bacteria in soils and oceans emit nitrous oxide naturally; it is produced by humans through the burning of fossil fuels and forests and the agricultural practices of soil cultivation and nitrogen fertilization. Altogether, nitrous oxide can contribute five percent to the greenhouse effect. Only a trivial fraction of this five percent (0.5 to two percent), however, is actually the result of combined medical and dental applications of nitrous oxide gas.

The decision to use nitrous oxide/oxygen inhalation analgesia

Nitrous oxide/oxygen inhalation analgesia should be offered to children with mild to moderate anxiety to enable them to accept dental treatment better and to facilitate coping across sequential visits. This is a result of combined medical and dental applications of nitrous oxide gas.

Disadvantages of nitrous oxide/oxygen inhalation analgesia:

1. Reduce or eliminate anxiety.
2. Reduce untooward movement and reaction to dental treatment.
3. Enhance communication and patient cooperation.
4. Raise the pain response threshold. Increase acceptance for longer appointments.
5. Aid in treatment of the mentally/physically disabled or mentally compromised patient.
6. Reduce gagging.
7. Potentiate the effect of sedatives.

Disadvantages of nitrous oxide/oxygen inhalation analgesia:

1. Weak potency.
2. Significant dependence on psychological reassurance.
3. Interference of the nasal hood with aspiration need to be considered.
4. Patient must be able to breathe through the nose.

Nitrous oxide pollution and potential occupational exposure health hazards.

Indications for the use of nitrous oxide/oxygen inhalation analgesia:

1. A patient with whom profound local anesthesia cannot be obtained.
2. A patient whose gag reflex interferes with dental care.
3. Certain patients with special health care needs.

Indications for use of nitrous oxide/oxygen inhalation analgesia include:

1. A fearful, anxious, or disruptive patient.
2. Certain patients with special health care needs.
3. A patient whose gag reflex interferes with dental care.
4. A patient for whom profound local anesthesia cannot be obtained.
10 Years of Successful “Continuing Dental Education” by CAPPmea

By Dental Tribune MEA/CAPPmea

Dental Tribune MEA/CAPPmea will mark a significant milestone in the history of the Centre for Advanced Professional Practices (CAPPmea) in Dubai, which has come to celebrate its 10th anniversary. This event is a landmark not only for CAPPmea but also for the entire Dental Society in the Middle East, who have participated in CAPPmea’s Continuing Dental Education programmes. The dentists are those who are at the forefront, driving the industry in the right direction through valuable feedback, experience and increasing demand for high level technology and education.

Thanks to the hard work of our colleagues, sponsors, partners and supporters for the last 10 years, CAPPmea has built a frontrunner standard committed to the highest echelons of continuing dental education. A big “Thank You” is owed to all participants, followers and partners, having helped CAPPmea develop the professional training tools adjusted to the specific needs of the region.

CAPPmea has been an American Dental Association (ADA) CERP Recognized Provider for the last 5 years, specializing in CME and CPD dental programs – conferences, hands-on courses, workshops and self-instructional events. During the past 10 years, CAPPmea facilitated over 550 CME programmes with over 52,000 international participants taking part. With the opening of CAPPmea Asia in 2012, the professional reach of CAPPmea expanded to the Asia-Pacific region and beyond. In 2012 CAPPmea also joined a global family of 96 publishers by becoming the proud license owner of the Dental Tribune Middle East & Africa edition. Over the last 5 years, CAPPmea has delivered nearly six print and digital newspaper publications to over 45,000 dental professionals in the MEA region, 24 newsletters to more than 45,000 active online subscribers, and through an international website the latest industry news and scientific articles are reaching the largest dental community worldwide – an audience of over 900,000 dental readers.

A Decade of Education – Passion for Quality and Perfection “It is unimaginable how fast time has passed. It is already 10 years that I started CAPPmea as a center for professional training, quickly growing into the creation of two very important international conferences, namely CAD/CAM & Digital Dentistry and Dental-Facial Cosmetic International Conferences. Today, even if I would want, it is not possible to stop these events. There is a huge demand for the education and showcasing of the fast developing dental industries.”– Dr. Dobrina Mollova, Managing Director CAPPmea, emotionally commenting on the achievements.

The 10th CAD/CAM & Digital Dentistry International Conference will be celebrated jointly with CAPPmea’s 10-year anniversary. The journey in the last decade came along with many challenges related to the incredible pace of growth of industry and new technologies, particularly in digital dentistry. Ten years ago, one could not imagine that such opportunities existed. They are now able to change dentistry and improve dramatically the patient care. All from diagnostics, planning to the treatment in term of precision, time-consuming and aesthetic treatments.

What has been accomplished in the past 10 years is truly significant. CAPPmea would like to express its highest appreciation of the role of our business partners, industry, sponsors and supporters in helping CAPPmea make the success story that it is today. Thanks to all who have worked with CAPPmea, sharing the challenges and the passion that come along. Thanks to all dentists, dental technicians, dental hygienists and assistants, who followed us in this decade of fast development of dental industry and technology. We look forward to another decade of being together.

For more information please visit www.cappmea.com

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CAD/CAM & Digital Dentistry significant growth in Middle East in last decade

By Dental Tribune MEA/CAPPmea

Dental Tribune MEA/CAPPmea: Behind great achievements are great people. Over the last 10 years the Centre For Advanced Professional Practices (CAPPmea) International Conferences have hosted some of the finest dentists in the dental profession. Dental Tribune MEA managed to catch their opinion on the milestone 10 year anniversary of CAPPmea prior the 10th CAD/CAM & Digital Dentistry Infr Conference on 08-09 May 2015.

Dr. Julian Caplan, UK: 10 years ago CAD/CAM was being heavily used by laboratories but still had limited capabilities chairside. The limitations of the camera and the software reduced the clinical options and the interplay between CAD/CAM technology in-surgery and CAD/CAM technology in-lab. The software was “3D” but there were still few “players” in the market. There were a number of competitors beginning to enter the arena and this would be a catalyst for radical changes to their systems. Prof. Aref Shakar, Egypt: CAD/CAM & Digital Dentistry was dealt with if it came from Mars in our region 10 years ago. Many dentists were dealing with this topic as “Not for every dental field”. But with such a specialized event like CAD/CAM & Digital Dentistry Infr Conference in Dubai, the awareness of this highly important field of Dentistry became more and more known and developed.

Dr. Munir Silvadi, Canada: 10 years ago CAD/CAM dentistry was more or less in its infancy stage. Though chairside systems, such as the CEREC chairside system from Sirona, were well in a reasonably advanced stage, most of the dental laboratories oriented systems were just learning to crawl. Very few dental manufacturers ventured into this technology. A side from some high precision milling units, such as the Everlest Milling Unit from KaVo, both hardware as well as software did not enjoy the required features to warrant predictable and precise restorations.

Dr. Mark Morin, USA: CAD/CAM was available but only provided a limited scope. The number of users was very small. There was only one company that made the machine. It could only do limited types of restorations and there were limited materials available to make the restorations.

Lutz Ketelaar, Germany: Digital dentistry was driven by closed systems, proprietary sharing of capacities not implemented, not even at most in people’s mind. The major driver for CAD/CAM were full ceramic restorations, ZrO2 an upcoming material with a lot of hope and trust - not always fulfilling all expectations technicans did - this was mainly driven through a lack of understanding on the lab side though. I remember the Procrera days, where a scanner which just could create single restorations was enough to win fans all around the world with a central manufacturing solution using AI05, on the other hand a DCs in-house system which was on exhibitions, grading restorations out of hip-material. The switch came with the Zr02 green stage material, as it allowed to mill economically ceramc materials.

Even though there was no movement for open systems, the industry made the implementation of CAD/CAM possible, due to support and training of dental technicians. Information Technology was never part of the dental world and the majority of dental technicians did not even believe that soft and hardware would change their
whole working environment. Even just a couple of years ago, lab owners told me that they are still waiting for the right system to go for, unless there was the perfect system. I believe there is still no perfect digital solution, but we are getting closer. We have to adjust however that hand craft was neither perfect - but we adapted perfectly to the conditions.

Dr. Munir Silwadi, Canada: Almost every single discipline of dentistry had its share of CAD/ CAM technology. Probably the fields of Aesthetic, Restorative and Prosthetic Dentistry got the lion’s share. Indirect Restorations are more precise and predictable when fabricated through CAD/CAM systems. Guided Implant Surgery made the field of Implantology an easier and safer procedure. CAD/CAM driven orthodontics as well is getting more and more utilized.

Dr. Mark Morin, USA: I feel that today the aspects of dentistry that has been altered the most in our profession by CAD/CAM is the implant and the lab world. The lab world is now almost all digital and connected to the office through the internet. Dentists have learned how to work with these labs differently than they did in the past. The implant world has now been simplified through CAD/CAM systems.

Lutz Keteukar, Germany: I am often surprised how quick the old values of manual dentistry have become the new solutions and how the markets adapt this opportunity worldwide. For me personally, the direction of monolithic restorations with the opportunity to go milled-free and virtual adaptations, without losing esthetics out of the view, is a big change and can be seen on the materials that are being offered - simple ZrO2 has been replaced for translucent variations in 16 shades, classical porcelain has a successor in high strength technical glass materials which natural opalescence and fluorescence.

CAD/CAM is not limited by its opportunities, but of economic aspects - not everything that is possible makes sense. The trust into the investment of new technologies with an open end is limited - The price for machines, materials and dental restorations is very much under pressure, knowledge and service are underestimated and almost have to be paid for.

The Doctors, the transformation from a handicraft into a high tech virtual planned 3D work flow is getting more and more utilized and safer treatment methods, better reproducible way. CAD/CAM technology has been replaced for translucent variations in 16 shades, classical porcelain has a successor in high strength technical glass materials which natural opalescence and fluorescence.

CAD/CAM is not limited by its opportunities, but of economic aspects - not everything that is possible makes sense. The trust into the investment of new technologies with an open end is limited - The price for machines, materials and dental restorations is very much under pressure, knowledge and service are underestimated and almost have to be paid for.

Prof. Atef Shaker, Egypt: Technology-based treatments offer for the dental practice versus conventional technology. It also benefits the patients because it makes the treatment predictable and convenient.

Dr. Munir Silwadi, Canada: CAD/CAM generated restorations are more precise and fit by eliminating the lab expense and a second appointment. Studies have also shown how the use of digital impressions are much more accurate and predictable than the traditional impression technique. It also benefits the patients because it makes the treatment predictable and convenient.

Dr. Mark Morin, USA: There are many reasons but the main reason is perceived cost of the systems to purchase. However this is only because the practitioner has not understood the savings that they would make in materials and laboratory costs.

Prof. Atef Shaker, Egypt: CAD/CAM allows a constant high quality of restorations, not only depending on manual skills in dental education - this is not the end of the classical dental technicians, otherwise we could also expect PC-gamers who play flight simulators to take over your next flight to Europe. Dental knowledge allows to use the instrument of CAD/CAM to become a perfect solution for an efficient workflow in high, mid and low price segment.

Dr. Julian Caplan, UK: I feel that today the aspects of dentistry that has been altered the most in our profession by CAD/CAM is the implant and the lab world. The lab world is now almost all digital and connected to the office through the internet. Dentists have learned how to work with these labs differently than they did in the past. The implant world has now been simplified through CAD/CAM systems.
some dentists not being involved in CAD/CAM technology is probably lack of proper exposure. CAD/CAM dentistry is still more or less considered a feature of “elite dentistry.” The second must common reason may be that quite few dental practitioners do not realize the full positive impact of CAD/CAM technology on their daily practices. Manufacturers, organizations, and educators have to put more effort to bring this technology to the average dental practice.

Dr. Mark Morin, USA: The number one reason keeping practitioners from adopting CAD/CAM is the price. Dentists still do not think they can justify the cost of the technology. This absolutely false. By just doing one crown a day the dentist can pay for the technology in the first year. I also see dentists who are scared of using the technology. Dentists find it difficult to learn how to use CAD/CAM. Over the years this technology has become easier and easier to use and it can be delegated in most areas to the assistant.

Lutz Ketelaar, Germany: There is no point in drawing black-and-white. The manual skills of an educated and experienced dental technician using precious alloys is outstanding, if he gets the time and the pay to do “this art”. There are still dentists and labs who manage to keep this offer available for people who are willing to pay for manual m ade quality. We can see the same for luxury goods such as watches - the majority of sold watches worldwide will be comparably cheap, but there is a small group of manufacturers who where people can buy manually made “art work”. 

Prof. Atef Shaker, Egypt: Well, as a professional in the CAD/CAM field, I am so ambitious about what is ahead of us, we should allow for a rapid and technical advancement for the first time in dental materials, hardware & software. This places a big weight on the shoulders of the manufacturers companies and their R&D departments and we are relying on the professional organization of “CAPMera” to be the link channel between the manufacturers, the technicians and the R&D departments of CAD/CAM what is the future you foresee?

Prof. Atef Shaker, Egypt: Well, as a professional in the CAD/CAM field, I am so ambitious about what is ahead of us, we should allow for a rapid and technical advancement in dental education on all levels as well.

Dental Tribune MEA: What further innovations in CAD/CAM will be the future you foresee to have an impact on your patients, general dentistry, and dental laboratory technicians. As for the future of CAD/CAM technology, I believe that the “sky is the limit”.

Dr. Mark Morin, USA: The future is bright for CAD/CAM. I think we are going to see a complete digital platform in dental offices with full connectivity to all technologies. I also see the ability of the CAD/CAM technology to help us diagnose and treatment plan our cases.

By taking a picture before we start and doing a 3D analysis we can help determine whether treatment is necessary and what procedure is best.

Lutz Ketelaar, Germany: The future will bring dentist and labs closer together for a better, faster and more economic service towards the patient. Necessary patient data and scheduled appointment can be shared between both parties, manufac
turing sites involved and their status shared - the workflow gets lean. The dental field of restorations is limited, but it still needs innovations and progress in finding proper solutions - possible technical approaches also need to be affordable - Dental treatment is in direct competition with luxury goods, vacation or even affordable standard of living. We can learn a lot from the US about marketing the beauty business of dentistry, but should not forget that we also need highly educated and trained dental technicians to achieve future success.

Rik Jacobs, The Netherlands: This is a very rapidly developing field. What was a wishful thinking few years ago is now a reality. Digital intraoral and extraoral scanners will definitely replace conventional impression techniques in the very near future. Most of Indirect Dental Restorations will be CAD/CAM produced. Dentists will be able to digitally connect with dental laboratory technicians. This should allow for a rapid and genuine exchange of information to facilitate the production of restorations that are esthetically and functionally pleasing to every patient, general, and dental laboratory technicians. As for the future of CAD/CAM technology, I believe that “the sky is the limit”.

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SIRONA LLC founded in Dubai to support a direct operation for UAE private market

By Sirona

DUBAI, UAE: Sirona Cologne was once again a record breaking trade fair. Sirona presented itself to industry professionals as an experienced specialist in the field of digital technologies for dentists and dental technicians. This was borne out by spectacular innovations in optical, digital, and imaging technology as well as by new developments for CEREC and treatment centers. For the Middle East region, dental professionals will be able to see these latest innovations during the anniversary upcoming 10th CAD/CAM & Digital Dentistry Int’l Conference in Dubai on 09 May 2015 – Jumeirah Beach Hotel.

As the dental market leader and a technology pioneer, all at Sirona are passionate about enhancing our products and services. We are permanently investing in research and development, as well as our global sales and service structures. Being close to our customers is essential, which is why we have 28 sites around the world where we work together to advance global dental health.

In May 2015, Sirona LLC will be founded in Dubai in order to support a direct business operation in the Middle East region towards the private customer market in UAE. The big success of previous years has been recorded through increasing sales and services experienced by Sirona in the region. This is an important step for Sirona in improving the delivery of professional sales, after sales and dental education to the UAE market. Sirona LLC will continue to work alongside MPC in order to fully service the needs of the Government sector which remains equally important.

With UAE being a significant hub for its business and education in GCC, the setting up of Sirona LLC underlines the constant commitment to research, development and better servicing of the end-user with surpassed quality to the dental industry whilst reinforecing the image of Sirona worldwide. This will be achieved through a fully dedicated Sirona sales and technical team and Product specialists who will work closely together to deliver premium services to the private market in the UAE.

As you can imagine we have much more to share, so Sirona encourages you to browse our website and review the highlights of 2014 and novelties of IDS 2015. You will enjoy diving into our world of innovation and reading about some of Sirona’s advancements, both within this issue of Dental Tribune MEA and on our official website as well as through all of our online channels.

Make sure you visit Platinum Sponsor Sirona at the upcoming 10th CAD/CAM & Digital Dentistry International Conference on 08-09 May 2015, Jumeirah Beach Hotel where we will present the latest trends and developments for the first time after IDS Cologne.

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Prof. Ofef Shaker, Egypt, 9th CAD/CAM & Digital Dentistry Int’l Conference
FKG Dentaire launches first anatomic finisher for root canal treatments

By FKG

The latest innovation from FKG Dentaire lets practitioners treat complex root canal systems and clean once impossible-to-reach areas with minimal impact on the dentine. Made with a highly flexible Ni-Ti-based alloy, the XP-endo Finisher follows the contours of the canal with an improved reach of 6mm in diameter—or 100-fold that of a standard instrument of the same size.

“With the XP-endo Finisher, we can finally solve a common problem for dentists,” said Thierry Rouiller, CEO of FKG Dentaire, one of the world’s leading manufacturers of endodontic instruments. “They’ll now be able to reduce the risk of future infection by offering patients a deeper cleaning for a better root canal treatment.” Studies using micro CT technologies show that standard NiTi files manage to clean just 45 to 55 per cent of the canal walls, leaving debris and bacteria to accumulate in areas left untouched. However complex the morphology of the canal, dentists can use the XP-endo Finisher following a root canal preparation starting at diameter ISO-25. A unique FKG alloy, the MaxWire (Martensite-Austenite electropolish-flex), gives the instrument unparalleled flexibility so it can remove debris from those hard-to-reach areas, while limiting the impact on the dentine. “Now (the canal) is cleaner, perhaps two to three times compared to the conventional techniques we have today,” said Dr. Gilberto Debelian, Norway. The instrument also features a strong resistance to instrument fatigue, thanks to its zerotaper design, and is simple enough for dentists to quickly learn to use.

The XP-endo Finisher joins a growing list of innovative high-precision products patented by FKG Dentaire to meet the most demanding needs of general practitioners and endodontists around the world.

Interview with Dr. Martin Trope

By Dental Tribune MEA/CAPPmen

Dental Tribune MEA has the pleasure to interview Dr. Martin Trope, past Endo program director at University of Pennsylvania, and chairman of the Endo division at Temple University Dental School and University of North Carolina Dental School. Dr. Trope was also the Director of the American Board of Endodontics.

Dental Tribune MEA: Dr. Martin Trope, you have lectured and provided training in the Middle East several times. What is your experience and feeling of the level of Endodontics in the MEA region?

Dr. Martin Trope: The level of the dentists who have attended my courses is very high. I don’t really know the general level of endodontics in each country. The variability comes in what the dentist can afford in terms of cutting edge technology. In some countries the fees charged for root canal treatment limits what the dentist can afford. This is a universal problem so not limited to the Middle East.

How important is it for a dentist to specialize, particularly in Endodontics and what is the reason you chose to do so?

There are some cases that require additional expertise. I don’t think it is important for a dentist to specialize but to recognize those cases where a specialist is needed. I like to do one thing well so endodontics suits my character although I must admit sometimes it can be very tedious.

How do you stay up to date with the latest technologies?

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By Dr. Ehab Heikal

From a fancy looking clinic to a friendly smile, first impressions are no doubt the most vital impression you will ever make in business so it is important to get it right first time.

But no, this does not just mean making sure that your feet aren’t on the desk or your patients or making sure there is a permanent smile imprinted on your face at all times. It is more about the other details.

First impressions are really important in any industry, but in the current economic climate they are more important than ever before. Our patients are continually faced with making so many decisions. We have to make the right impressions in their minds to make it easier for them to choose us. This is a vital part of any dentist practice management program.

Shifting away from an obsession with first impressions is vital as it can be all too easy to encompass, so shift well clear of only treating your patients extremely well on your first ever contact with them. We all know that in the current economic situation it can be very easy to lose some of your most valued customers, so be sure not to count your chickens before they are hatched.

The success of your practice is in the hands of everyone within it and depends on their delivering a good service. Any weak link in your service chain can make your future dealings with patients very difficult or easy; this also follows in all aspects of your marketing campaigns. If you do not at the very least meet those expectations, you will always disappoint your patients. For this reason, it is vital to deliver what you promise in your marketing. If you exceed the expectations your patients will walk into your practice with, they will have developed a fan for life!

The foundation of this usually involves creating a unique selling advantage.

- Then create a good marketing strategy, which will attract the right type of patients to your practice.
- The kind of patients who are more likely to be interested in your specific type of dentistry or service.

- You need to get your entire team in on the action of what you are trying to do.
- Create systems within the clinic on accomplishing the unique experience for your patients, which compiles with your marketing message.

Customer service is a key element and essential provision of your dentistry.

The success of your practice can only be measured in terms of the practice’s performance. Performance can only be measured to do their best for you. Performance management is about continuously improving the performance of individuals and in so doing improving practice performance. And that’s not just good for the practice – it’s good for patients too.

- Educate your patients on their conditions so that they are more involved in the process of co-discovery. This will make it easier for you to give options and advice.
- Make it easier for your patients to be able to afford the dentistry. Consider all options.
- Make sure you have a process in your clinic, which continues to provide a consistent experience for your patients. (Check my book, Quality & Standardisation section)

By Fiona Stuart-Wilson

If we lived in an ideal world where nothing ever went wrong, patients always took up treatment plans and arrived for their appointments on time and staff never went sick we probably wouldn’t need to talk about managing performance. However, we might want to believe that staff know what they need to do and will get on with it to the best of their ability at all times, we all know this is unlikely to happen.

The success of your practice is in the hands of everyone within it and depends on their delivering a good service. Any weak link in the chain will have a negative effect on your practice and on your ability to develop a successful dental business. The point of managing performance is to make sure that the performance of your team contributes to the overall performance of the practice, and taking action to improve things when this does not happen.

If you manage performance effectively it will mean that everyone in your practice understands:

- what the practice is trying to achieve,
- their role in helping the practice achieve its objectives
- what they need to know and what they need to be able to do to fulfil their role
- the standards of performance required
- how they can develop their own performance and contribute to the development of the practice
- how they are doing, and if there are performance problems what can be done about them.

However, good performance management looks at how people do their job as well as what they get done. So, how a person approaches their job, or the way they behave as part of a team or communicate with patients and the rest of the team is just as important as what tasks they actually perform. For example your receptionist might make appointments with unfailing accuracy. Their performance might be described as good. However the receptionist might be routinely unfriendly to patients. In the latter case we are highly unlikely to describe their performance as ‘good’ as we are measuring it on how a person’s job (their role) and not solely on what they do (their activity).

Performance management however is more than simply trying to get staff to do things which will help the practice achieve its objectives. Handled well it can encourage both the giving and receiving of feedback, and unlock ideas for improvement and innovation, clarify standards, help foster greater communication.

Clarify and communicate the aims of the practice

You want people to deliver the objectives that are set for your practice. Your staff’s performance can only be measured in terms of the practice’s performance. Things often fall down and business performance can suffer because the objectives of the practice have not been clarified and established by the practice owners. Everyone needs to know what the practice objectives are, and you need to remind people of them frequently to keep them focused. As you achieve certain milestones, don’t forget to tell your staff about what they have achieved!

Clarify people’s roles

Make sure that you have clear and detailed job descriptions and person specifications and update them when working practices change. Job descriptions describe what you expect people to do. Person specifications should outline the qualities and qualifications that your staff need to have in order to fulfil their roles effectively and focus on the ‘how’ people carry out their role.

Make sure that you have clear policies

Your policies are your ‘book of rules’, clear statements about the way your practice should operate. If you do not tell people what they should be doing you cannot complain if they don’t do it.

Know how to get good performance

Make sure that you know how to help people improve through training, coaching and development opportunities to get them to the standard you want.

Provide honest and constructive feedback

Give open, honest and direct feedback regularly so that people know what they are doing well just as much as what they are not doing well, and establish a performance review system which allows for two way discussion.

We all want staff who are engaged, take pride in their job and show loyalty towards the practice. If your team can see the bigger picture and how their role contributes to the success of the practice they are more likely to do their best for you. Performance management is about continuously improving the performance of individuals and in so doing improving practice performance.

How are we doing? Getting the best from your staff

The first impression is the final impression, but…”

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Fiona will be presenting a great seminar on the Dental Business Management Conference in Dubai - 12th June, 2015

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Look at the bigger picture

By Eniko Simon

A nalyse data to understand the performance of your dental business.

There are many important decisions we have to make when managing a dental clinic: we make these decisions on gut instinct or based on previous experiences or by analysing data that is available for us.

Most of the dental clinics I have been working with had some understanding of the power that data can add to their business. It is essential that you regularly track a wide range of data across your clinic to allow you to have a good understanding of your business. Nowadays there are fantastic dental software such as Software of Excellence or R4 very well known on the market. These dental software can assist dental businesses to analyse important key performance indicators and gain a better understanding of their business.

Some data that you need to look at – who are your patients, how did they hear about your clinic, nationality, age group, your chair occupancy in your clinic, the hourly turnover your associates generating, how many new patients you have monthly and many more KPIs we can look at.

Undeniably collecting clean and reliable data and analysing it in a consistent way is part of 21st century management.

Data is the fundamental ingredient in decision making, figuring out where to focus your resources, create your targeted marketing approach.

Taking control of your data

The data on its own has no meaning, it can not provide the full picture, it does not take into account the values you stand for and the culture you trying to create in your dental business or your patients’ personal feelings they feel about your clinic.

Practice data alone can not be used to guide the success of the clinic. In order to fully utilize the facts and figures they need to be put into context. Hours spent collecting data is wasted if the bigger picture not taken into consideration.

The clinic’s short and long term goals needs to be agreed upon and once you are on your journey the collected data can demonstrate if you are on the right track to achieve your goals.

The numbers provide an effective tool to help manage and control the growth and development of your dental business but do not set the strategy you need to adopt.

Constantly analyse your data – look at how your clinic is performing. The right data at the right time will aid your decision making process regarding your finances, marketing, operations of your clinic – but be ensure that you control your data and put it into context.

Always understand the “whys” to know the way forward to the “hows.”

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The field of digital dentistry is rapidly evolving, with new dental technologies emerging as part of a more efficient and comprehensive workflow. By pairing Planmeca CAD/CAM solutions with X-ray units in the Planmeca ProMax® 3D family, dental professionals can bring together a wide range of detailed information for treatment planning and diagnostic purposes. This seamless combination of CAD/CAM and 3D CBCT technology has opened new doors in creating a new standard of care for patients – offering high-quality features for different specialties, all available through one software interface.

Planmeca Romexis® is the only dental software platform in the world to combine all imaging and the complete CAD/CAM workflow. This powerful solution is at the heart of the Planmeca ecosystem, as it provides dental professionals with the ability to acquire more detailed data sets than ever before. Planmeca Romexis includes advanced tools for all specialties, such as implant planning and other restorative treatments. The software presents dental clinics with a superior way to increase their patient flow and improve the level of care offered.

Seeing more than ever before

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Bringing together CBCT data and CAD/CAM work provides a comprehensive level of care and predictability. Planmeca ProMax® 3D imaging units reveal intricate information on soft and hard tissue structures, including the mandibular nerve canal, while the Planmeca PlanScan® intraoral scanner captures precise data above the gum line. This combination of these data ensures a complete understanding of any case and makes 3D prosthetic designing quick, accurate, and easy. Clinics are able to operate more flexibly, as restorations can either be milled at a clinic with the Planmeca PlanMill® 40 milling unit, or easily sent to a dental lab in an open STL data format.

The rise of same-day dentistry

A more active role in the manufacturing of restorations opens up avenues for dental clinics to significantly increase their patient volume and grow their business. A streamlined digital workflow ensures the full utilisation of resources, leading to a more efficient treatment environment. Same-day dentistry is as beneficial for patients as it is for clinics; instead of two visits, patients can be treated in one hour – with no temporary crowns or physical dental models required.

Open architecture for maximised efficiency

Standardised data is the driving force behind many of the latest developments in digital dentistry, as it guarantees the interoperability of images and dental data across different hardware platforms – reducing costs, increasing predictability and enhancing patient safety. Bringing Planmeca’s CBCT and CAD/CAM systems together through the Planmeca Romexis software platform makes effective chairside dentistry a reality and presents dentists with a streamlined opportunity to substantially grow their practice.

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DENTAL TRIBUNE Middle East & Africa Edition | May-June 2015
Contraindications for the use of nitrous oxide/oxygen inhalation anaesthesia:
Contraindications for use of nitrous oxide/oxygen inhalation may include:
1. Some chronic obstructive pulmonary disease
2. Common cold, tonsillitis, nasal blockage
3. Pre-cooperative children
4. Severe emotional disturbances or drug-related dependence
5. First trimester of pregnancy
6. Treatment with bromocriptin
7. Methylenedtetrahydrofuran reductase deficiency
8. Cobalamin deficiency
Whenever possible, appropriate medical specialists should be consulted before administering analgesic/anxiolytic agents to patients with significant underlying medical conditions (e.g., severe obstructive pulmonary disease, congestive heart failure, sickle cell disease, acute osteoarthritis, recent tympanic membrane graft, and acute severe head injury).

Technique of nitrous oxide/oxygen administration

Only appropriately licensed and trained pediatric dentists must administer nitrous oxide/oxygen. The practitioner responsible for the treatment of the patient and/or the administration of analgesic/anxiolytic agents must be trained in the use of such agents and techniques and appropriate emergency response.

Selection of an appropriately sized nasal hood is very important. A flow rate of five to six L/minute is appropriate for most patients. The flow rate can be adjusted after observation of the reservoir bag. The bag should collapse gently with each breath and should not be either over- or underinflated. Introduction of 100 percent oxygen for one to two minutes followed by titration of nitrous oxide in 10 percent intervals is recommended. During nitrous oxide/oxygen anaesthesia/anxiolysis, the concentration of nitrous oxide should not normally exceed 50 percent. Studies have demonstrated that gas concentrations dispensed by the flow meter may vary significantly from the end-expired alveolar gas concentration if gas concentrations measured at the mouth are used. If nitrous oxide/oxygen inhalation sedation is to be used for dental procedures, the practitioner should continue with the administration of nitrous oxide as patients become highly suggestible. The level of nitrous oxide/oxygen concentrations to be used at subsequent visits due to its considerate placebo effect.

During treatment, it is important to continue the visual monitoring of the patient, the respiratory rate and level of consciousness. The effects of nitrous oxide are largely ignored by the conscious psychological reassertance. Therefore, it is important to continue traditional behavior guidance techniques during treatment. Once the nitrous oxide flow is terminated, 100 percent oxygen should be delivered for five minutes. The patient must return to pretreatment responsiveness before discharge.

Monitoring

The response of patients to monitor during procedures performed with nitrous oxide/air anesthesia serves as a guide to their level of consciousness. Clinical observation of the patient must be performed during any dental procedure. During nitrous oxide/oxygen/air anesthesia, clinical observation of the patient’s respiration and evaluation of respiratory rate and rhythm must be performed. Spoken responses provide subjective evidence that the patient is breathing. If any other pharmacologic agent is used in addition to nitrous oxide, an electrocardiographic monitor and a local anesthetic monitoring guidelines for the appropriate administration of sedation must be followed.

Adverse effects of nitrous oxide/oxygen inhalation
Nitrous oxide/oxygen anaesthesia/anxiolysis is an excellent safe task record. When administered by trained personnel on carefully selected patients with appropriate equipment and techniques, nitrous oxide is a safe and effective agent for providing pharmacological guidance of behavior in children. Acute and chronic adverse effects of nitrous oxide in the patient are rare. Nausea and vomiting are the most common adverse effects, occurring in 0.5 percent of patients. A higher incidence is noted with longer procedures, administration of nitrous oxide/oxygen, fluctuations in nitrous oxide levels, and increased concentrations of nitrous oxide.

Typically, if a child appears restless during the course of administration of nitrous oxide/oxygen, they might be ready to vomit or they might be entering into a deeper stage of sedation. Fasting is not required for patients undergoing nitrous oxide anaesthesia/anxiolysis. The practitioner, however, may advise that only a light meal be consumed in the two hours prior to the administration of nitrous oxide. Dizziness, hypoxia can occur as a result of rapid release of nitrous oxide from the blood stream into the alveoli, thereby diluting the concentration of oxygen. This may lead to headache and disorientation and can be avoided by administering at least 20 percent oxygen after nitrous oxide has been discontinued.

Documentation

Informed consent must be obtained from the parent and documented in the patient’s record prior to administration of nitrous oxide/oxygen. An explanation of the sedation technique to be proposed and of appropriate alternative methods of pain and anxiety control must be given. In advance of the procedure, the child and their parent or guardian must be given clear and comprehensive pre- and postoperative instructions in writing. The practitioner should provide the patient and parent with written instructions concerning the use of nitrous oxide/oxygen inhalation sedation. The patient and parent must check this document and return it to the practitioner prior to any use of nitrous oxide/oxygen inhalation sedation. The procedure should also be documented in the patient’s record to the use of nitrous oxide and the postoperative instructions. The administration of nitrous oxide must be followed by the provision of appropriate analgesia for the treatment of the patient and/or the administration of nitrous oxide.

Facilities/personnel/equipment

All newly installed facilities for delivering nitrous oxide/oxygen must be checked for proper gas delivery and monitoring function prior to use. Inhalation equipment must have the capacity for delivering 100 percent, and never less than 50 percent, oxygen concentration at a flow rate appropriate to the patient’s size. Additionally, inhalation equipment must have a fail-safe system that is checked and calibrated regularly. If nitrous oxide/oxygen delivery equipment capable of delivering more than 70 percent nitrous oxide and less than 50 percent oxygen is used, an inline oxygen analyzer must be used. The equipment must have an appropriate scavenging system to minimize room air contamination and occupational risk. A thorough check of the equipment must be carried out in advance by the dental personnel any time nitrous oxide/oxygen anesthesia is to be used.

The practitioner who utilizes nitrous oxide/oxygen anaesthesia/anxiolysis for a pediatric dental patient shall possess appropriate training and skills and have available the proper analgesic, anxiolytic personnel, and equipment to manage any reasonably foresee able emergency. Training and certification in basic life support are required for all clinical personnel. These individuals should participate in periodic review of the office’s emergency protocol, resuscitation drug cart, and simulated exercises to assure proper emergency management response.

An emergency cart (kit) must be readily accessible. Emergency equipment and drugs are available to accommodate children of all ages and sizes. It should include equipment to resuscitate a non-breathing, unconscious patient and provide continuous support until trained emergency personnel arrive. A positive-pressure oxygen delivery system capable of delivering 100 percent oxygen at a flow rate of more than 90 percent oxygen at a 10 L/minute flow for at least 90 minutes will be also available. When a self-inflating bag valve mask device is used for delivering positive pressure oxygen, a 15 L/minute flow is recommended. There should be documentation that all emergency equipment and drugs are checked and maintained on a regularly scheduled basis.

Occupational safety

In the medical literature, long-term inhalation exposure to nitrous oxide has been used as a general anesthetic has been linked to bone marrow suppression, resulting in blood system disturbances. Exposure to nitrous oxide can result in depression of vitamin B12 activity resulting in impaired synthesis of RNA. Dental surgeons and their staff are particularly at risk as they are exposed to high concentrations in the confined space of a dental surgery, especially if scavenging is inadequate. In an effort to reduce exposure of dental personnel associated with nitrous oxide, it is recommended that exposure to nitrous oxide is minimized through the use of effective scavenging systems and periodic evaluation of the efficiency of the delivery and scavenging systems.

References


The full list of references is available from the publisher.

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