



DiaTreat: A New Method of Communication for Better Diagnosis and Treatment of Dental Problems

K Srinivas Reddy, R Sunil Kumar Reddy, A Sudheer, R Vamshidhar Reddy, N Venugopal Rao, P Lakshmiopathy Reddy

ABSTRACT

Aim: The aim of this article is to present a simple method of communication between two oral health professionals so that the problem can be conveyed easily and treatment options obtained equally easily and quickly, using current electronic communication technologies.

Background: Treatment of dental problems involves a thorough understanding of the underlying dental and medical conditions. The arena of dentistry being ever changing, with new specialties arising each year, it has become virtually impossible for an average dentist to keep track of all the treatment modalities available for various problems at a given time. It is the duty of a dentist, however, to treat his patients to the best of his ability. Professional ethics bind the other health professionals to render their opinion to the dentist so that the patient will ultimately get the best possible treatment. Method of communication is the only problem remaining in the path to achieving a total oral health care.

Technique: DiaTreat is a unique method of clinical charting by which a dentist can incorporate all the ailments affecting his patient, and by withholding the patients name and address, can communicate with any of his colleagues for their opinion on the best treatment option for his patient.

Conclusion: It is a new and innovative method of communication between a dentist and specialist. Even though it has some shortcomings of its own, on a wider range, the advantages far outweigh the drawbacks of the system.

Clinical and academic significance: This can also be used by educational institutes for easy communication during interdisciplinary exchanges. Improvements need to be made yet to incorporate all the ailments known in dental discipline and make communication a comprehensive one.

Keywords: Diagnosis, Treatment planning, Communication chart, DiaTreat.

How to cite this article: Reddy KS, Reddy RSK, Sudheer A, Reddy RV, Rao NV, Reddy PL. DiaTreat: A New Method of Communication for Better Diagnosis and Treatment of Dental Problems. *J Contemp Dent Pract* 2013;14(1):158-161.

Source of support: Nil

Conflict of interest: None declared

BACKGROUND

Every method of communication between two health professionals requires a written document comprising of all the details of the condition of a patient so that no detail, however minor, is omitted. This helps in achieving a better treatment protocol for the patient. Cummer¹ showed that there are 131,072 different possible combinations of partial dentures when both the maxillary and mandibular dental arches and a full complement of 32 teeth are considered. Friedman² observed a high order of similarity of conditions does not obtain in clinical dental research; Confusion in our prosthetic thought has been due in a large measure to an insufficiency of sound knowledge. Universal acceptance of facts forms the basic structure on which concepts are built, and there are not enough concrete facts to warrant many of the conclusions to which we subscribe. More the number of professionals involved in the opinion taking procedure, more will be the treatment protocols available for the patient as no two dentists will advise a similar treatment procedure. A wise dentist can then chose from those available options, the best one that suits his patient. A number of standards for record keeping exist. National standards for quality assurance in certified health plans now mandate reviews to assure quality records in patient charts.³⁻⁷ These days, many providers are dependent on participation in managed care contracts, which often stipulate documentation and reporting expectations. When second opinions are required or when other doctors review records, several key clinical markers are sought in the patient chart.⁷⁻¹¹

TECHNIQUE

DiaTreat is one such method by which a dentist can incorporate all the ailments affecting his patient, and by withholding the patients name and address, can

communicate with any of his colleagues for their opinion on the best treatment option for his patient. DiaTreat is a communication chart comprising of two pages in Microsoft Word format. The first page is called virtual patient profile (VPP). The second page is called treatment protocol (TP).

The VPP consists of age of patient in years, vital parameters of the patient as in medical terminology and all the other details or conditions of the oral cavity of the patient, represented in the form of code signs. There will be small column for a brief case history that is filled with any relevant details that might be needed in cases of fractures/trauma/ongoing treatment for some medical complications. The heart of the VPP is a tabular column consisting of boxes arranged in 4 rows and 32 columns. The teeth are numbered from 1 to 8 in each quadrant and are represented by boxes arranged in the central 2 rows and 32 columns similar to teeth numbering system in Zigmondy-Palmer system. The problem associated with each tooth is typed in the box on top of each tooth numbering box. The dentist who refers the case report for opinion from his colleagues or specialists will have to fill in the details of the ailments affecting each tooth and jaw using the code signs that are assigned for each ailment. The ailments and the corresponding signs are available for reference at the bottom of the page. The signed document is easy to fill, as all the signs are present within the symbols of Microsoft word. Any sign or symbol not found in the MS Word can be directly copied and pasted into the respective boxes from the signs that are kept for reference at the bottom of page. It is easy for even the patient to fill up the sheet and send it to any dentist he deems fit, for a second opinion regarding the treatment option put forward by his dentist.

The second sheet namely TP consists of an elaborate tabular column consisting of 8 rows numbered arbitrarily from top to bottom as 1 to 8 with the rows numbered 4 and 5 being central rows and variable columns in each row. The central 2 rows are similar to that of VPP wherein teeth are numbered according to Zigmondy-Palmer system. The rows lying above and below the central rows are just divided into 2 columns on either half and act as filling spaces for treatment options. Treatment options are typed in the form a single alphabet for each ailment of individual tooth, by taking care to type the alphabet exactly above the particular tooth number. Treatment options which are represented by alphabets can be readily referenced by the dentist or patient at the bottom of page. The 3 rows of spaces in the tabular column, lying above and below the two central rows are divided into three phases of treatment to be rendered to the patient according to urgency. The rows numbered as 3 and 6 correspond to emergency treatments like immediate pain

relief, extractions, etc. termed as phase I. The rows numbered as 2 and 7 correspond to endodontic, periodontic and orthodontic care which correspond to phase II treatment which follow emergency care of phase I. The rows numbered as 1 and 8 correspond to prosthodontics care which forms the phase III. After the tabular column lies a simple classification system to determine the complexity of the case. The specialist who is giving his opinion selects one among the four classes and ends his opinion. The four classes are as follows:

Class I: Simple—a case which can be treated just by using one branch of dentistry.

Class II: Compound—a case which needs two branches of dentistry for successful treatment.

Class III: Complex—a case which needs three branches of dentistry for successful treatment.

Class IV: Interdisciplinary—a case which needs four or more than four branches of dentistry for successful treatment of case.

Any special comments, if needed to be made by the specialist, can be made at the end of the classification, followed by his digital signature.

A clear picture of the above two documents can be attained by viewing the following document pages (Charts 1 and 2).

DISCUSSION

The dentist, when exposed to a dilemma regarding the course of action or the treatment protocol to be followed in treating a patient, resorts to help of his peers or specialists for their expert opinion. DiaTreat helps the dentist to communicate the problem exactly and in detail to the peer group. The dentist fills up the VPP form and sends it through electronic mail to the specialist or his peer group for their opinion. On the other hand even a highly motivated patient can send the same VPP to the dentist of his choice for a second opinion regarding the treatment plan formulated by his dentist. The VPP is accompanied by an attachment of an empty TP in the same mail. The specialist, who receives the mail, goes through the VPP, comes to an opinion and fills out in the TP, a treatment plan that best fits the patient's needs. After filling out the details, he will return the TP to the dentist who asked for opinion through the same route.

The above method of communication has several advantages over other methods of interdisciplinary communication.

1. Almost all the ailments (except few rare ones) affecting individual teeth are conveyed in detail.
2. Simple to mark the condition of each tooth. Signs save lot of space.

Chart 1: Virtual patient profile in Microsoft Word format

Virtual patient profile															
Age: _____ years				Height: _____ cm				Weight: _____ kg/lbs							
Blood pressure: ____/____ mm Hg				Diabetic: Yes/No ESR: _____											
Respiratory disorder: _____								Blood disorder: _____							
Sexually transmissible diseases: _____								Drug allergy: _____							
Case history:															
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
Requisition message:															
Signature:															
o : Missing; ↓ : Impacted; ≠ : Fractured; ↑ : Supra erupted; ↗ : Mesial tilt; ↘ : Distal tilt; ~ : Attrition/Abrasion; ↔ : Mobility; • : Carious; v : Submerged; λ : Furcation; □ : Spacing; X : Nonvital; II : Root stumps; Ω : Cleft palate; U : Tongue tie; ± : Cleft lip; Θ : Deciduous tooth; θ : Gag reflex; † : Periodontal pocket; ‡ : Root fracture; * : Mottling/fluorosis; ∩ : Bone loss; ∪ : Exostosis; # : Rotation															

Chart 2: The treatment protocol sheet in Microsoft Word format

Treatment protocol																
Advisory message:																
III																
II																
I																
	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
I																
II																
III																
Class 1:																
Class 2:																
Class 3:																
Class 4:																
Comments:																
Signature:																
() : Optional; E: Extraction; R: Root canal treatment; F: Filling; O: Orthodontic correction; C: Crown; I: Implant; RPD: Removable partial denture; FPD: Fixed partial denture; L: Crown lengthening; P: Pocket elimination; G: Grafting; S: Splinting; V: Veneering/laminates; B: Bone remodeling/alveoloplasty/alveolectomy; TE: Total extraction; Ms: Major surgical correction; ms: Minor surgical correction; ↔ : Combined treatment area; FR: Full mouth rehabilitation																

3. No chance of getting confused or marking wrong, as all the signs are given at the bottom of page and the dentist has to just copy and paste the sign into the respective box.
4. Quick and clear conveyance of the problem to the specialist through electronic mail.
5. Since the treatment plan is represented in a phase by phase manner, it is easy to implement.
6. Ease of conveyance for a motivated patient to seek independent opinion from another dentist of his choice.
7. Easy for the specialist to convey his opinion to the dentist or patient.

CONCLUSION

A new and innovative method of communication between a dentist and specialist has been described. Even though it has some shortcomings of its own, on a wider range, the advantages far outweigh the drawbacks of the system. Treating the patient's oral condition is of priority. Equally important is the need to communicate with specialists and peers to improve one's knowledge and know—how to provide a better treatment which the patient deserves.

CLINICAL SIGNIFICANCE

This can also be used by educational institutes for easy communication during interdisciplinary exchanges. Improvements need to be made yet to incorporate all the ailments known in dental discipline and make communication a comprehensive one. Views and exchanges between various dentists can help in betterment of the system.

REFERENCES

1. Cummer WE. Possible combinations of teeth present and missing in partial restorations, *Oral Health* 1920;10:421-30; *Dental Summary* 1921;41:156-66.
2. Joel F. The ABC classification of partial denture segments. *J Pros Den* 1953;3(4):517-24.
3. Haldeman S, Chapman-Smith D, Peterson D. Guidelines for chiropractic quality assurance and practice parameters gaithersburg, MD: Aspen Publishers 1992;95-106.
4. Mootz RD. Maximizing the effectiveness of clinical documentation. *Top Clin Chiro* 1994;1(1):60-65.
5. Baird R. Health Record Documentation: Charting Guidelines. *Dig Chiro Econ* 1981 Jul/Aug;32-33.
6. Lloyd G, Wyn-Pugh E, McIntyre N. The problem oriented medical record and its educational implications. *Med Educ* 1976;10:143-53.
7. Martin R (Ed). Reviewer guidelines for accreditation of managed care organizations. Washington, DC: National Organization for Quality Assurance 1993.
8. Sutton M, McMillin AD. Documentation and peer review issues in trauma management. *Top Clin Chiro* 1998;5(3):1-9.
9. Wyatt LH. Handbook of clinical chiropractic. Gaithersburg, MD: Aspen Publishers 1992;5-23.
10. Hansen DT, Sollicito PC. Standard chart abbreviations in chiropractic practice. *J Chiro Technique* 1991;3(2):96-103.
11. Baird R. Obtaining health record information. *Dig Chiro Econ* 1981 Nov/Dec;137-38.

ABOUT THE AUTHORS

K Srinivas Reddy

Professor and Head, Department of Prosthodontics, Institute of Dental Sciences, Bhubaneswar, Odisha, India

R Sunil Kumar Reddy

Reader, Department of Conservative Dentistry and Endodontics Dr HSRSM Dental College and Hospital, Basamba Phata Maharashtra, India

A Sudheer (Corresponding Author)

Reader, Department of Prosthodontics, Sree Mookambika Institute of Dental Sciences, Kulasekaram, Tamil Nadu, India, e-mail: arunachalam125@gmail.com

R Vamshidhar Reddy

Professor, Department of Orthodontics, Dr HSRSM Dental College and Hospital, Basamba Phata, Maharashtra, India

N Venugopal Rao

Reader, Department of Prosthodontics, HiTech Dental College and Hospital, Bhubaneswar, Odisha, India

P Lakshmipathy Reddy

Reader, Department of Prosthodontics, Oxford Dental College and Hospital, Bengaluru, Karnataka, India