Evaluation of Staff Satisfaction After Implementation of a Surgical Safety Checklist in the Ambulatory of an Oral and Maxillofacial Surgery Department and its Impact on Patient Safety

Christian Martin Schmitt, DDS, PhD, MSc, * *Mayte Buchbender, DDS,* † *Saida Musazada, DDS,* ‡ *Bastian Bergauer, DDS,* § *and Friedrich-Wilhelm Neukam, DDS, MD, PhD* ‖

Purpose: Safety checklists in medicine have been shown to be effective in the prevention of complications and adverse events in patients undergoing surgery. Such checklists are not as common in dentistry. The aims of this study were to propose a safety checklist for the ambulatory treatment of patients undergoing oral and implant surgery and to assess its impact on patient safety and staff satisfaction.

Materials and Methods: After implementation of a surgical safety checklist in the ambulatory treatment of patients undergoing oral and implant surgeries, a questionnaire regarding staff satisfaction and safety-related parameters was randomly administered. Incidents, complications, and adverse events were documented. Outcomes with (n = 40 surgeries) and without (n = 40 surgeries) use of the checklist were analyzed and compared.

Results: Staff reported high satisfaction with the use of the checklist, which demonstrably improved team communication and lowered stress levels during surgery. There was a statistically significantly higher frequency of reported incidents without the use of the checklist (n = 43) than with the use of the checklist (n = 10; P = .000). Most incidents were reported in the context of pre- and post-procedural processes.

Conclusions: Safety checklists help to improve work processes, optimize communication, and lower stress levels. Their use in clinical dental practice is recommended.

J Oral Maxillofac Surg ■*:1-24, 2018*

Human errors are common and widespread and occur in many different constellations.[1] They can actively or passively affect individuals in their private and professional lives.[2] No discipline involving people escapes the potential of human error, which has been acknowledged since the publication of "To Err Is Human."[3,4] Clearly, part of human nature is to make mistakes. Because eliminating human error entirely is not possible, the system can be adjusted to exert some degree of control over human actions and errors.

In aviation, for example, error transparency and management is a central important aspect that has been

*■■■, Department of Oral and Maxillofacial Surgery, University of Erlangen-Nuremberg, Erlangen, Germany.

†■■■, Department of Oral and Maxillofacial Surgery, University of Erlangen-Nuremberg, Erlangen, Germany.

‡Private Practice, Berlin, Germany.

§Private Practice, Rothenburg ob der Tauber, Germany.

‖■■■, Department of Oral and Maxillofacial Surgery, University of Erlangen-Nuremberg, Erlangen, Germany.

This study was performed as part of a master's program, International Master of Applied Scientific Dental Education and Research (iMasder, Kiel, Germany), by Dr Schmitt to obtain an MSc degree.

Conflict of Interest Disclosures: None of the authors have any relevant financial relationship(s) with a commercial interest.

Address correspondence and reprint requests to Dr Schmitt: Department of Oral and Maxillofacial Surgery, University of Erlangen-Nuremberg, Glückstr 11, 91054 Erlangen, Germany; e-mail: Schmitcn@outlook.de

Received December 5 2017

Accepted March 21 2018

0278-2391/18/30290-8

https://doi.org/10.1016/j.joms.2018.03.032

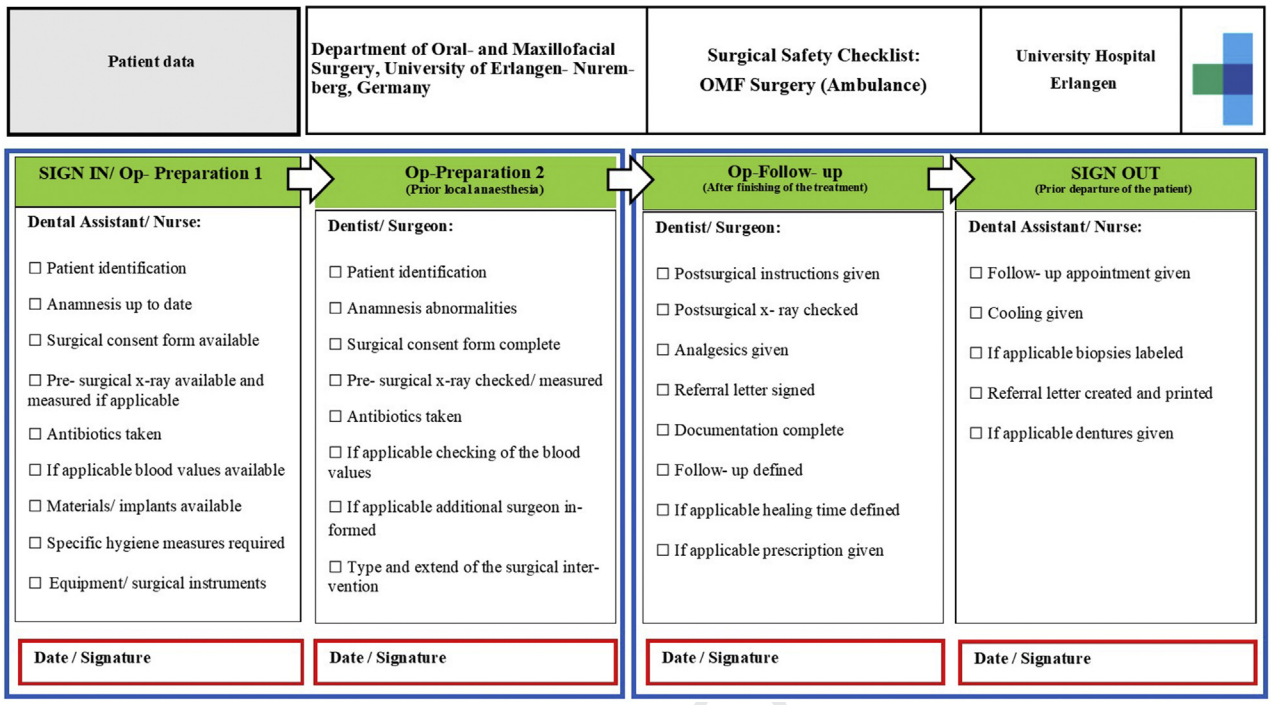

FIGURE 1. Safety checklist for ambulatory treatments in oral and maxillofacial surgery. The checklist consists of 1 pre- and 1 postoperative set (*blue boxes*). The 2 sets are divided in 2 sections: 1 to be verified by the dental assistant or nurse and 1 to be verified by the surgeon or dentist. The treatment and safety checking process is continued after signing the corresponding section (*red boxes*) by the responsible person. Abbreviations: OMF, oral and maxillofacial; OP, operation.

Schmitt et al. Satisfaction with surgical safety checklist. J Oral Maxillofac Surg 2018.

integrated into workflows and processes.[5-7] In medical disciplines, interestingly, a similar mindset was adopted much later and is still not in widespread use. There is limited medical literature regarding "human errors" and "human factors," and the topic is not an integral part of current medical training.[7]

In medicine, human errors can lead to minor local or major general complications that can result in death. One powerful tool for the decrease of complications and improvements in patient safety is "surgical safety checklists," which have been proposed by the World Health Organization (WHO).[8-10] The implementation of such checklists demonstrably improved the sharing of patient-related medical information among team members, with substantial decreases in death and perioperative complications.[8,9,11-14] A culture of patient safety is a growing focus in different disciplines,[9,15-18] especially anesthesiology and surgery (procedures performed mainly under general anesthesia).[18,19] As a result, the safety checklist originally designed by the WHO has been adapted to the specific needs and constellations of different disciplines worldwide.[13,14]

Minor medical procedures and dental treatments also can be affected by human error and result in patient harm. In primary care dentistry, data on the incidence of complications occurring in daily practice and reports about the implementation of safety measures are scarce and the improvement of patient safety is a relatively new concept with a distinct lack of an evidence base.[20] Modern dentistry is becoming increasingly sophisticated, thereby increasing risks to the patient; in this setting, patient safety is a comparatively new discipline.[20-22] Although iatrogenic harm to dental patients does occur, the implementation of patient safety measures in daily clinical practice remains uncommon. A review of the literature regarding patient safety incidents in dentistry yields few reported complications within the dental specialties.[21] This could be the result of insufficient data collection and documentation and the unwillingness of practitioners to report incidents for fear of loss of clients and earnings.[21] Of the incidents reported in the current literature, injuries (10%), medical emergencies (6%), inhalations and ingestions (4%), adverse reactions (4%), and wrong-site extractions (2%) are the main complications.[21] Thusu et al[21] in 2012 showed that most of these complications were due to human errors (36%) and a serious degree of iatrogenic harm occurred not during treatment, but through controllable pre- and post-procedural measures. Among the dental sub-disciplines, another study of 415 adverse events in dental practice in Spain from 2000 to 2010 found that implant treatments, endodontics, and oral surgery had the highest frequencies of adverse events (25.5, 20.7, and 20.4%, respectively).[23] Moreover, up to 44.3% of the adverse events reported were due to