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Perioperative Ethics and Patient Safety

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Abstract: Perioperative teams are focused on professional and safe patient care. The most important tool throughout the perioperative process is just health care workers, and quality of their care, despite the facts that they use a number of tools: construction arrangement of operating rooms, modern equipment and instruments, new materials, drugs and sophisticated diagnostic methods and practices based on scientific evidence,. Research demonstrates that poor quality care is also unethical.
If the health care professionals break safety and hygienic policy, they also break the ethics of health care workers. Because they have an adequate knowledge of safe and hygienic patient care in the operating room.

Keywords: *Perioperative care; safety; patient safety; medical ethics; nursing ethics.*

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Background

Perioperative teams are focused on professional and safe patient care. Despite the fact that they use a number of tools (such as construction arrangement of operating rooms, modern equipment and instruments, new materials, drugs and sophisticated diagnostic methods and practices based on scientific evidence), the most important tool throughout the perioperative process is simply health care workers themselves, and quality of their care. The research demonstrates that poor quality care is also unethical. Physicians and nurses are considered prestigious jobs. In the survey of the Sociological Institute of the Czech Republic on the most prestigious professions, physicians ranked first and nurses ranked third on the list (Tuček, 2013). However, those same professionals break basic rules in ORs Hygiene. Safety policy in ORs is violated despite the fact that all health personnel have appropriate knowledge about SSIC and about providing safe care.

The research on the ethical aspect of perioperative care was mainly focused on phenomena and behaviours that affect the safety of the patient undergoing the surgery (WHO, 2009a). The main emphasis was placed on those aspects of perioperative care that depend on the responsibility of the health care staff. Usually, violations of the rules are not noticed. A typical example of these "invisible violations" is surgical hand disinfection and further adherence to the epidemiological regime (WHO, 2009b). Another part of the research dealt with safe procedure during surgery. Harm to the lives and health of patients caused by malpractice led to formulating the research question (WHO, 2009a).

Purpose

The aims of the research were:

- to determine offences against sanitary-hygienic regime and safe procedures in perioperative care
- to determine persons committing these offences
- to find reasons for the violation

Methods

In the operating theatres, all participants of the perioperative care process were observed. All persons who are present during surgery affect its

course and outcome. The observation was mainly focused on activities affecting safe perioperative care.

The research method used was a qualitative ethnographic research, the main instrument was a direct observation in the operating theatres of the Prague University Hospital. The observation was complemented by short, targeted interviews that clarified the observed facts, it was typically just a question on the procedure performed rather than an interview in the true sense. In total, the observation was conducted for 52 days, 3-6 hours a day. Observations took place between January and December 2013.

In Sweden, the observation of operating theatres in University Hospital was carried out as a part of a ten-day internship for 6 hours a day. Observations in Sweden took place in October 2013.

All observations were performed by the same person who was a professional part of the environment in the Czech Republic or was on an internship (in Sweden).

The obtained data were subjected to a qualitative analysis to find the relationship between the observed behaviour, patient safety and ethical behaviour of perioperative staff.

The results of the analysis were compared with documents dealing with safety and hygiene in operating theatres and other literature.

Ethics

For the observations, I received the approval of the chief surgeon of the operating theatres. I did not ask for informed consents from all individuals observed, as the research results would probably be distorted. Actors would behave more as expected than according to common practice, and that would invalidate research results. In the Swedish operating room, I informed the management about the purpose of my internship.

Results

The observation results were categorized according to several criteria:

- according to participants of the perioperative process
- according to the type of violation
- according to the interpretation by the perioperative staff

According to participants of the perioperative process

The observation was mainly focused on anaesthesiologists, anaesthetist nurses, surgeons and perioperative nurses.

Most violations committed by **anaesthesiologists and anaesthetist nurses** concerned closing the door between the prep-room and the operating theatre, wearing own clothes and jewellery in the operating theatre, and inconsistent use of masks and caps. It is generally known that anaesthesia is the weakest link in surgery concerning the sanitary-hygienic regime. Partly, this can be explained by the fact that the anaesthesiologists follow a different target than the surgeon. From their point of view, the most important is a calm course of anaesthesia and the state in which he hands over the patient. Another reason is probably that anaesthesia is mostly not subordinate to surgery in the organizational structure of the hospital. When anaesthesiologists and anaesthetist nurses are asked to mend, it often leads to unpleasant arguments only: "***I can't take off my T-shirt*** (protruding under her tunic-style top***) because I'm cold and I don't want to wear a coat!***", "***I can't take off my earrings because I might lose them, and I can't cover them by the cap either, because I wouldn't hear properly then.***", "***I can't take off the bracelet because my spine would collapse.***", "***I have to wear my own T-shirt because I suffer from an allergy. I got a permission from the hospital hygiene officer.***" The person does not explain why he or she "has to" wear the same T-shirt outside the operating theatre, e.g. in the cafeteria. After a reminder, a typical reply is either an excuse ("***I couldn't change my shoes because my size wasn't available.***"), or reluctance and questioning of the rules, or even offended silence. Only in few cases the staff apologized, and stated they either did not know or forgot.

Assessing compliance with patient safety was focused on the quality of the implementation of the security procedure checklist. Obviously, a verification of data (such as patient identification, time of the last meal, drink and smoking, question about allergies, the course of the past anaesthesia etc.) always took place, but, in an overwhelming majority of cases, not in a way of a standardized procedure as recommended by the WHO or ordered by the hospital management. However, the anaesthesiologist usually obtained most of the necessary information.

Another group observed in the research were **surgeons**. The most common violation was a shorter time spent on surgical hand disinfection (WHO, 2009b). Those who spent a shorter time on surgical hand disinfection, even significantly, never commented. It is even considered normal. When the surgeons were warned, they explained "***I am in a hurry***", "***I have washed my hands already today***", "***it is not really necessary***", "***I tested my hands once*** (after insufficient hand disinfection) ***and the results were sterile.***" A young woman doctor said: "***I agree with the***

measures, but we should emphasize their impact," and then she used a non-sterile marker in her sanitized hand for marking patient's skin and did not want to disinfect again even when advised. Only one surgeon returned to wash his hands again after being advised. It should be pointed out that to inform a surgeon about their malpractice is not always easy. Only a minority of surgeons accept a criticism a nurse. In one observed case, the reprimanded surgeon even classified nurse's behaviour as an insult (Andersson, 2013). Orthopaedic surgeon fared generally better in the observation, probably because infection resulting from orthopaedic surgeries, namely of long bones, are much more difficult to treat.

One part of the observation of surgeons focused on wearing jewellery in operating theatres. Such a violation is not considered as a breach of the sanitary-hygienic regime at all, and surgeons, when advised, reacted with a surprise: "***Why do you care?***", "***If I lose those earrings, it'll be your fault***", "***I cannot remove such an expensive piece of jewellery***" and "***My husband would be offended if he found out I don't wear a present he gave me!***" Nobody admitted the possibility of the danger of contamination of the operating theatre. Another mistake was the wrong dressing of the sterile gown, where doctors often donned the cloak before putting on sterile gloves. Another mistake was a wrong way of putting on of the sterile gown, which the surgeons tied before donning the sterile gloves (AORN, 2010).

Adherence to the security procedure checklist clashes with misunderstanding and ignorance. The hospital management dispensed with the mutual introduction of individual participants of the perioperative process at the beginning of the second step (Time Out), probably in an attempt not to "provoke" the surgeons by the checklist. On a regular basis, it was observed that ***a surgeon asked about the name of the anaesthesiologist he had not acquainted only after the surgery when writing the protocol*** (nametags are barred from operating theatres for sanitary-hygienic reasons). Additional items of the security procedure checklist were also neglected. During the observation, on a regular basis, the planned surgical procedure was not specified before the start of the surgery, as it was assumed it can be deduced from the surgical programme; however, this usually contains diagnosis only, not the planned surgical procedure. When the Time Out checklist was commenced, the standardized question: „Do you expect complications during the surgical procedure?" was often followed by a "lecture": "***We can expect complication with every surgical procedure***", but when asked to specify, the surgeon denied the possibility of complications. However, more often the second part of the

safety procedure checklist was omitted totally, except making a record of it in the documentation. Similarly, the third step (Sign Out) is often incomplete. The performed surgery and obtained specimens are not checked, post-operative medication is carried out irregularly. Nurses report completion of sponge and instrument counts to the surgeon, who confirms it. However, there are exceptions, certain surgical fields do not consider such confirmation to be necessary, and this part is missing. These are mostly fields where the surgeon normally does not open the body cavity and therefore the unintentional retention of surgical material in the patient's body is less likely, but still possible (Haynes et al., 2009; WHO, 2009a).

The last group is **perioperative nurses**. The most frequent violation was wearing jewellery. Earrings and necklaces are often seen. Also, the use of a protective cap not covering all the hair was also observed. Another violation concerned inappropriate footwear (sandals instead of overshoes) or wearing own T-shirt under the blouse. Even scrub nurses were caught spending a shorter time on hand sanitization, however, compared to surgeons, this was a rare case (WHO, 2009b). Repeatedly, a wrong way of tying the surgical gown was observed even when an assisting person was available.

A perioperative nurse is usually assigned as a moderator of the second and third part of safety procedure checklist. However, in the course of the observation, this was not carried out in a standardized form (WHO, 2009a). Often, boxes in the form had been checked before the beginning of the surgery. Safety of the patient was secured in a way that had been used in operating theatres for decades. All the materials and tools the scrub nurse prepares are counted before and after the surgical procedure. However, there are exceptions. In some operating rooms the possibility of an unintentional retention of foreign material was not taken into account. The scrub nurse did not count sponges and threw them directly into the waste bin, thus totally preventing, or significantly complicating an option of checking before the end of the surgery. However, in this particular case, the completion of sponge and instrument counts was neither performed nor asked for. ***In a course of a complex surgery lasting more than 12 hours and involving three groups of surgeons and two scrub nurses, perioperative nurses did not count instruments or material, even though they were operating in an unfamiliar field, using unfamiliar sieves, without lists of instruments. When changing instrumentation, it was found that a small vascular clamp was missing. After revision, it was found on a blood vessel still in the wound.***

According to the type of violation

1Frequency of violations

Hygiene violations	Frequency	Safety violations	Frequency
Insufficient hand sanitization	123	Omitting checklist	58
Unnecessary opening of doors and windows between rooms	73	Omitting count of instruments and material	6
Jewellery	55		
Inappropriately worn cap	30		
Inappropriately worn mask	24		
Unnecessary opening walking between operating rooms	19		

Arguments of the violators could be divided into several groups according to the stated reasons.

Economic reasons are a hidden cause of much malpractice. It is driven by a high cost of healthcare material and instruments; and effort to keep a low budget of a healthcare facility.

Many violations were justified by **the lack of time**. However, it was often found from the circumstances of such misconduct that the reported lack of time was merely an excuse and sufficient time might have been spent on the activity in question. For example, after a doctor completed surgical disinfection of his hands in less than a minute, he spent more than 2 minutes watching a younger colleague disinfecting the operating field and applying drapes.

During the observation, **depreciation of the problem** was a root cause of many violations against safety and hygiene. Underestimating the importance of a perioperative security procedure checklist is a well-known issue as can be illustrated by the staff jokingly commenting "***Pass me that Sudoku.***" The checklist is seen as an obtrusive document only. In the case of violation of hygiene, staff occasionally responds as if it were just a formality: "***When all scrub nurses follow hygiene protocol, then anaesthesiologists will too.***", "***It's not worth telling them anything, they wouldn't listen anyway.***" "***The way anaesthetist team behaves is not our problem***" was the operating theatre manager's response to a suggestion that anaesthetist team - one of the biggest violators - would

receive a training course on the hygienic regime (WHO 2009c). There is no team spirit, everyone has their own rules and follows them as they consider important and appropriate.

The reluctance to meet the safety and hygiene regime is often due to **convenience** (or even **negligence?**), but it is always justified by another reason: Externalisation: "**it is not done that way here**." But when analysed deeper, it becomes obvious that the cause of indifference is laziness. *"**They told me I didn't have to change shoes**." "**I've changed shoes in the morning**", "**My size is not available here.**"* are responses when advised about appropriate footwear**.** "***Nobody follows this rule here.***", "***It's even worse in other places***." or "***Nobody does it abroad***". A statement "***I need another type of a cap, this one does not cover my hair satisfactorily***" in fact means the cap is not fashionable enough.

Violations committed staff are often interpreted as utterly insignificant omissions that have no effect on the outcome of treatment. Also, both staff and management do not admit any problems, as compliance with hygiene and safety standards is taken for granted.

Four principles of bioethics

When defining ethical principles of perioperative care, we can follow the principles set out for general health ethics. When taking heed of Beauchamp and Childress (2001), we can apply their four principles also in the field of perioperative care.

- Principle of non-maleficence
- Principle of beneficence
- Principle of autonomy
- Principle of justice

Members of the perioperative team, who keep in mind they must not harm the patient, cannot deliberately disregard the principles of hygiene. In fact, infection at the surgical site may even cause death due to infectious complication. A violation of hygiene rules may only be possible in case of real-time constraint. The same is valid for safety principles in case a time delay caused by adherence to safety procedure could harm the patient. However, this concerns a minor fraction of cases.

Non-maleficence often overlaps with another principle of beneficence. Everything we do should benefit the patient. Sometimes, in operating theatres, regulations override the patient's good. Processes have been institutionalized. Sometimes, there is a mistaken assumption that regulations can replace morality and ethics, but properly functioning process

can be only secured by the vigilance of the people who understand it (SOKOL, 2010).

In the operating theatre, the issue of autonomy reaches its extremity forms in the operating room. Patients lose their independence and ability to make decisions by surrendering themselves to the surgeon and their team. Of course, patients sign Informed Consent (if possible), but much of the perioperative care is based on the patient's confidence that all its participants will act in the best interest of the patient for "lege artis".

Safe surgery in Sweden

A surgical checklist, with a high legibility, is posted in all operating theatres, so all staff can use it at maximum ease. The first step (Sign In) took place in the presence of all members of the team. Everything was happening in a calm atmosphere, with an emphasis on the importance of the information being collected. Upon the arrival of surgeons, before the incision, the second step (Time Out) was performed. It was led by the circulating nurse or the surgeon himself or herself. First, the team introduced themselves by name and function, followed by verification of patient identification and the surgeon described the planned surgical procedure in detail. The anaesthesiologist identified anaesthesia risks. The nurses confirmed the readiness and sterility of instruments. Then, ATB prophylaxis and prevention of prevention of deep vein thrombosis and pulmonary embolism was performed. Before the end of the surgery, the performed surgery was verified, sponge and instrument counts confirmed, and post-operative care reviewed in the third step (Sign Out).

Following sanitary-hygienic regime

In Swedish healthcare, the principles of hand hygiene are reminded and required at every step. In the hospital where the internship took place, the nurse responsible for the hygiene prevention of operating theatres performed an audit every month. The consumption of antiseptic is regularly evaluated. Hand hygiene is inherently applied into everyday routine of all healthcare workers and management takes all reasonable steps to enable and facilitate the compliance. The antiseptic dispenser is placed on each bed, at every door, at the entrance, at the exit. You cannot miss it! Another helpful step is the use of disinfectants with a shorter efficient exposure time. For instance, for surgical hand disinfection products with a recommended exposure time of only 1.5 minutes are used. Even following the correct use of protective non-sterile gloves is higher in Sweden than in the Czech Republic.

Conclusion

The reasons for frequent errors occurring in perioperative care can be divided into four categories:

Attitudes of staff

Employees are aware that they do not follow the guidelines and manuals strictly, but as revealed by the research, they do not consider their violations as serious; on the contrary, they consider the impact of these errors on the health and safety of patients to be negligible. As the most common reason for violations, health care professionals report work overload and lack of time. Another frequent reason is **underestimation** of some hygienic and safety measures.

Staff is **overwhelmed** by prohibitions and **lost ability to distinguish essential from unimportant**. This creates a general feeling that most of the orders coming from management are **meaningless** and do not need to be taken seriously. This can be even strengthened by the feeling that **the management does not have enough insight** into the issues of perioperative care. Together with **a lack of information** demonstrating the positive influence of adherence to good practice, staff are setting their own rules, which are different from the official ones. This leads to confusion where people do not know **what is necessary to do**, what is right and what can be dangerous**.** The rank and file perceives the behaviour of management, who merely orders and does not bother to explain, as **arrogant**. The staff assumes that **the management itself does not know** why they change an established procedure and only blindly copies instructions from higher levels.

Influence of leadership

Why does not the leader take sufficient care to adhere to the hygiene and safety regime of operating theatres, even though the leadership's responsibility for his or her level is indisputable? The argument that **"they don't listen and do what they want"** is not an explanation. The role of management is to manage and control employees. One might conclude that managers in healthcare are not selected because of their ability to manage and promote the right methods and procedures. There also might be a lack of candidates having these qualities, or the conditions under which managers perform their duties might not provide them sufficient support. Also, to enforce the above-mentioned rules might require a disproportionate effort.

Another possibility might be that the leaders themselves are not convinced of the necessity of these steps, and they depreciate them by such an attitude.

Organization culture

Correct implementation of processes ensuring safe surgical processes in the established procedures is essential for their successful use. Only correct and conscientious introduction of novelties into everyday practice and their gradual integration into the institution's culture will bring improvements to the current situation.

At the observed workplaces, the use of a "checklist" was ordered by an internal directive. Workers had not been acquainted with its significance or its benefits. It has become only part of the documentation. Patient Safety Audits assess only the correctly completed document, not how and when it was actually performed. Staff in operating theatres is focused on what is being evaluated - the form completion, not a performance of a described procedure. **An example of management** is crucial, and unfortunately, so is a bad example. The overall atmosphere should promote adherence to rules and emphasize their importance (Poroch & Agheorghiesei, 2018).

Influence of the system

The document On Patient Safety, including the Prevention and Control of Healthcare-associated Infections in the Czech Republic, issued by European Commission in 2009 (OECD, 2013; OECD-MZČR, 2014), criticizes a low level of patient safety strategy, including protection against nosocomial infections. Data infrastructure is inadequate, data is shared on volunteer basis only. In addition, quality service is not profitable for providers. Providers are not motivated and no one appreciates them. The fact that the treatment of infectious and other complications is costly is obvious, but even at the ministerial level there are no estimates indicating higher costs of the treatment in case of a postoperative infection or other complication. The likely consequence is that it is paradoxically more expensive for providers to develop preventive programmes than to deal with complications. The treatment is paid by a health insurance company, while preventive programmes are paid from the budget of a provider. Therefore, healthcare facilities focus more on economic indicators than on a comparison of safety and hygiene results. Thus, medical teams lack the incentive to strive for significant improvements.

Addressing the issue of perioperative care ethics involves long-term measures at many levels of the health care system, and it is the only way how to bring the expected positive change.

Discussions

The analysis has a character of a microethnographic study which describes the ethical aspects of the provision of perioperative care in the Czech and Swedish University hospitals. The research results cannot be generalized, they are valid only for a specific environment.

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