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The Psychology of Failure for Dentists

Abstract: Failure in practice is inevitable. Failure may have negative consequences both for the patient and the dental team. This article will explore the psychological impact of failure on the dental team, and how to manage this. In addition, an approach to managing, preventing and ameliorating the effects of failure based upon an analysis of healthcare systems will be described.

Clinical Relevance: This article will assist general dental practitioners and other members of the dental team in coping with the psychological impact of failure, and to design systems to minimize the harmful effects of failure in practice.

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Failures in healthcare, as manifest in medical errors, occur relatively frequently. While no data are available for dentistry, there have been studies of medical errors in both the United States and the United Kingdom. Weingart and colleagues,¹ reviewing studies in this area, reported that, in the United States, medical errors result in between 44,000 and 98,000 deaths per year, and one million non-lethal injuries. The average cost of additional treatment resulting from an error in drug administration was estimated at US\$2262 per patient in 1997. A retrospective study conducted in two United Kingdom acute medical settings² suggested that about 10% of patients admitted had experienced an adverse care incident, of which about half were deemed preventable. This paper will explore two aspects of failure in dentistry. The first part of the paper will explore the psychological impact of failure on dental practitioners and the dental team, and the second part of the paper will

describe a systems approach to analysing and managing failures in healthcare.

The psychological impact of failure is generally negative, and is associated with self-blame, lowered self-esteem and, often, a breakdown in the relationship between patient and dentist, as well as within the dental team. This is particularly the case if individuals engage in argument over who is to blame for the mistake.³ The key to addressing these negative consequences is to identify and appraise the thoughts associated with failure, this approach is termed 'cognitive restructuring'. For a comprehensive guide to the technique see Burns,⁴ and for a guide to the application of the approach for the dental team see Gibbons and Newton.⁵ In cognitive restructuring, an individual is encouraged to write down his/her thoughts concerning the incident (in this instance a clinical 'failure') and then address whether these thoughts are rational or irrational. For example, in a study of the stress experienced by dental practitioners, Newton & Gibbons⁶ quote one practitioner describing a critical incident in his surgery:

The worst thing is I had a patient with an anaphylactic shock on me twelve to

eighteen months ago which was the most horrendous thing ever and so now every local I'm doing, I'm waiting for it to happen again and I'm living in fear basically.

A number of irrational premises can be identified in this statement:

- Selective focus;
- Incident is magnified;
- Overgeneralization.

In the first of these, *selective focus*, the practitioner is focusing on one negative experience from many similar experiences that were successful or at least not eventful. Secondly, the incident is becoming *magnified* with the impact of the event extending beyond the immediate aftermath, especially since the practitioner describes thinking about the incident repeatedly some 18 months after the event. Thirdly, there is *overgeneralization* – the practitioner is imagining that a similar incident will occur on all occasions of administering local anaesthetic: while it is not possible to say that a similar event will not happen again, it is extremely unlikely. This practitioner could be encouraged to restructure his/her thoughts by writing down an alternative thought (Table 1). This approach to dealing with difficult situations has been

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Thought	Category of irrational thought	Possible alternative thought
'... so now every local I'm doing, I'm waiting for it to happen again ...'	Selective focus	I have given thousands of local anaesthetic injections, only one resulted in anaphylaxis. The odds are very small that it will happen again.
'... the most horrendous thing ever ...'	Magnification	This certainly was very shocking. However, the patient made a good recovery and we now know that in future we should avoid local anaesthesia.
'... I'm waiting for it to happen again ...'	Overgeneralization	The estimated rate of allergic reaction to LA is between 1 and 10000 and 1 in 20000, with most reactions being less severe. This is not likely to happen again.
'The worst thing is I had a patient with an anaphylactic shock on me twelve to eighteen months ago which was the most horrendous thing ever and so now every local I'm doing, I'm waiting for it to happen again and I'm living in fear basically.'	Discounting the positive	The systems in place for future problems will mean that we will deal with them more effectively.

Table 1. An example of cognitive restructuring following a critical incident.

found to be effective in dealing with the psychological impact of failure.

Whenever a failure occurs, there is a tendency to focus on the individuals involved and to seek to identify who was responsible. The person-centred approach to failure has been criticized for a number of reasons.³ Blaming individuals inhibits the reporting of failures, which may lead to further problems, and means that there is no opportunity to learn from errors. Furthermore, the person-centred approach tends to ignore the fact that talented practitioners also experience failures. The person-centred approach does not consider the structural determinants of failure, and ignores the fact that failure is seldom random – there are a number of factors that predict an increased likelihood of failure. Errors are more common when clinicians are inexperienced in the technique they are using, in very young and very old patients, and when new treatments are being introduced. The alternative to the person-centred approach is a systems approach.³ This focuses on the factors that combine to create a failure. The systems approach differentiates between:

- Active failures and
- Latent failures.

Active failures are 'unsafe acts committed by people who are in direct contact with the patient or system'³ and which are largely unintentional but may be intentional.

Latent failures are aspects of the design or procedure which have the potential for creating a failure. They can be either long-lasting weaknesses in the system which lie dormant until the system is stressed ('an accident waiting to happen'), or they can be weaknesses which gradually erode the ability of the system to cope (for example, chronic stress in the workplace). An example of a person-centred latent weakness would be the practitioner's level of burn-out. Dentists suffering burn-out may be more prone to error.

Nolan⁷ suggests a number of ways in which systems can be changed in order to prevent failure and promote patient safety. These are:

- Clarify the aims of activity;
- Reduce complexity;
- Optimize human information processing by designing systems that minimize the demands on clinicians;
- Automate wisely;
- Use constraints to prevent active failures;

- Mitigate the unwanted side-effects of change.

Organizations that have clear aims, and which communicate those aims, will tend to have fewer failures since, should leadership be lost, the remaining team is clear about what needs to be done, and also it is apparent when an action is not oriented toward the goal. Sharing goals with patients will also clarify whether there is a shared goal. For example, a patient's goal in receiving local anaesthesia may be to have no perception at all at the site of the injection. However, the clinician will be aware that this is not the goal of LA; proprioception and pressure awareness will remain intact. Communicating expectations clearly leads to a shared understanding.

Complex systems are more error prone. Simple steps can be taken in dental practices to reduce complexity – for example, where members of the team move from surgery to surgery, keeping the layout similar will minimize the possibility that a piece of equipment cannot be found, or materials (drugs, etc) confused. Further, taking away treatment options where there is no benefit will reduce complexity. Recall that, when a new

treatment is introduced, errors are more likely, consider carefully the introduction of any new material or treatment strategy where the benefit is not apparent or marginal.

Written materials to support information gathering and treatment will reduce the burden of information processing on practitioners, for example checklists and treatment protocols. Other techniques for avoiding confusion between equipment or drugs that might be confused include the use of colour coding, differentiation by size and shape, and eliminating drugs or equipment that sound similar.

The use of automation offers great possibilities for reducing error. However, automation should support the clinician rather than adding to complexity. Procedures can be built into automation to ensure that steps are taken which are essential for safety. For example, the automated prescription of drugs allows dosages to be checked, as well as possible interactions, and reduces the possibility of error caused by difficulty reading handwriting or interpreting obscure Latin instructions.

Checks and constraints built into a system may be physical, procedural or cultural.⁷ Physical constraints refer to the design of materials to avoid error or failure, or to ameliorate the effects of failure (for example the placing of radio-opaque wires in swabs to make them easier to locate), or the use of barriers to prevent problems such as the use of rubber dam to prevent inhalation injuries. A failure to use rubber dam would constitute a latent failure – while it does not directly lead to a problem, it may create the environment where an error becomes magnified. Clear protocols for gathering information and performing treatment would constitute procedural constraints, for example checking dosage and expiry dates on local anaesthetic cartridges as they are used, ensuring that, when new stock is added to cupboards, old stock is rotated so that there is not the possibility of stock exceeding its expiry date and storage of stock under the correct conditions. Many dental materials and forms of treatment have ideal methods of application, failure to follow these procedural guidelines may result in failure – for example, composite

restoration materials are more likely to fail if they are exposed to excess moisture during application. Cultural constraints on failure refer to building an ethos where the importance of safety is paramount, for example encouraging checks and rehearsal of safety mechanisms.

Nolan's final set of suggestions for managing failure refers to systems changes which address the effects of change.⁷ Nolan suggests reviewing systems regularly and planning for likely failures. Organizations which engage in activities where there are potential safety issues (such as the armed forces or the aviation industry) conduct regular risk assessments and will plan contingencies for failure. Any proposed changes in the systems for dealing with safety should be tested on a small but thorough scale before full scale implementation.

In July 2001, the National Patient Safety Agency (NPSA) was set up following the publication by the Department of Health of two key documents^{8,9} in response to concerns regarding safety following the Bristol inquiry into death rates after paediatric cardiac surgery. The NPSA seeks to promote safe healthcare through two key activities:

- A national reporting and learning system which encourages practitioners to report and share lessons from failures in healthcare; and
- The provision of training in root cause analysis – a systems-based approach to exploring failures and identifying the active and latent components which were responsible for the failure.

The NPSA provides training and comprehensive resources to support its activities. Many of these resources are available without cost to NHS practitioners from the NPSA website: www.npsa.nhs.uk. In overview, the NPSA advocates a seven step approach to improving patient safety:¹⁰

- Build a safety culture;
- Lead and support your staff;
- Integrate your risk management activity;
- Promote reporting;
- Involve and communicate with patients and the public;
- Learn and share safety lessons;
- Implement solutions to prevent harm.

For each of these steps the

NPSA provides guidance and resources to support change in practice.

Failure is inevitable in dental practice, however, failure need not cause harm. Through anticipating and planning for the management of failure, the harmful effects of failure for the patient can be minimized. By addressing the expectations of the dental team for their performance and their reactions to failure to meet these expectations, it is also possible to ameliorate the harmful effects of failure for practitioners.

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