

PREPARING FOR RURAL SURGERY: PROCEDURES OR SKILLS?

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Keywords: surgical skill, teaching, learning

Abstract

The present approach to the challenge of preparing doctors for rural surgery is to compile a list of essential procedures to be practised until competent. It is difficult to finalise such a list and to provide the necessary practice within a reasonable time frame. It is argued that skills and procedures are not interchangeable terms and that a more analytic approach to the learning process is needed. To lay a foundation of "knife and fork" (psychomotor) skills, to be able to access procedural anatomy, and to acquire the cognitive skill of imprinting surgical procedures are sounder ways of preparing for rural surgery than the practising by rote of specified procedures. The skill of map reading is an analogy that may aid understanding of this opinion. (*SA Fam Pract* 2003;45(9): 8-9)

Introduction

It has proved difficult, within the current framework of undergraduate and postgraduate training, to prepare doctors for their role in rural hospitals and rural health services. There is poor specification and documentation of the wide range of responsibilities, tasks and specific skills; of the standards of competence; and of the contexts, and their criteria, for referral.¹ Of these challenges, it is often surgery, in particular, that engenders feelings of a lack of confidence, incompetence and anxiety.

The presently dominant approach to this situation aims to identify the surgical

procedures that are performed most often. These are to become the content of a doctor's supervised opportunity to practise them. Whether the endpoint is a degree of confidence or a degree of competence is a distinction that only adds to the practical difficulty of providing the appropriate opportunity.

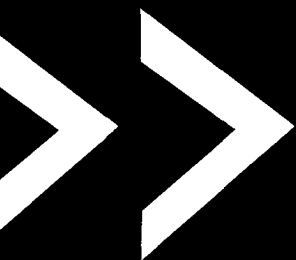
A learning process

The abovementioned approach seems to compress the subtleties of the learning process into one dimension, as if to say: practise these procedures until you can reliably do them again. It seems to me that the terms *skill* and *procedure* are

being used interchangeably. But a list of skills is not the same as a list of procedures. A more analytical approach to the process of learning is needed. I would distinguish between *skill*, *knowledge* and *procedure* and insert into this learning "equation" a resourceful activity that is familiar to us, but is not given the status of a skill in the way I think it should be. I will call it *imprinting*, and divide the learning process as follows:

1. Basic surgical skills

These are the basic psychomotor skills of using a scalpel, dissecting



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forceps, artery forceps, retractors and suckers, tying knots and swabbing, for making and closing a wide variety of incisions, exposing organs, separating tissues, and controlling bleeding (sometimes called "How to use your knife, fork and spoon").

Uncertainty and incompetence in the execution of these essential skills lead to uncertainty in contemplating and carrying out operations. Confidence and competence in these skills are a platform for applying the knowledge and the imprinting mentioned below.

These skills can be acquired by assisting at and/or performing *any* of the variety of common as well as uncommon procedures that a surgical tutorship could provide. This can be done from Day 1 of any apprenticeship and be acquired in a more predictable time frame than waiting for the recommended number of listed procedures to accumulate. The emphasis is on acquiring confidence and competency in the basic skills, and not on "getting through" a list of specified procedures.

2. Knowledge of clinical or procedural anatomy

(As importantly presented by Hanno Boon at the Annual Conference of the Rural Doctors Association of South Africa (RuDASA) in 2002). This is the procedural anatomy that the operating surgeon needs to know. The material is already available on CD-ROM.

3. Procedural imprinting.

Reading up on a procedure is itself an intensive exercise and a practice to be acquired. It involves bringing into the mind's eye the reality of text, illustration and diagram. It involves a studied comprehension of the sequence of necessary steps, a summary of the steps, preferably in writing, and mentally rehearsing the steps. The purpose of this is that the surgeon can go into theatre prepared to proceed knowingly step by step – a procedure indeed.² This

will counteract the natural tendency of an inexperienced surgeon to dither or be sidetracked.

To be thus armed with a combination of basic psychomotor skills and a disciplined cognitive approach to the use of good anatomical and procedural resources is a constructive platform for increasing confidence and competence to deal with the variety of procedures with which the rural surgeon is faced. It does away with the issue of what should be on a list of particular procedures by instilling a conscientious way of performing an operation for the first time, if and when that is necessary.

Deep-ending

The proposed basis for formative training is based on what I have discovered from my own experience of being "thrown in at the deep end". Other grey heads have been deep-enders and will, I think, recognise what I have described as a practical description of our coping skills. They can tell about how they were faced with an emergency situation requiring an operation they had not done before, or a situation arising unexpectedly in the course of an operation, and describe how they used a book to find out what to do next and how to do it. We are slow to speak about how we coped, partly because we would not wish deep-ending on anyone, and also to avoid being misunderstood about the lessons learned.

Today, using computers to access databases such as Medline to search for literature, protocols and guidelines is recognised as a skill. We recognise how reluctant doctors can be to set out on the learning curve involved. Such disciplined "resourcefulness" (i.e. making use of potential resources) is a kind of self-application that many are not used to. It is seen as avoidable. Yet there is little doubt that it is one of today's essential skills for competent medical practice. I see the diffidence towards practising surgery 'because I haven't been shown how' as similar to

the diffidence towards using computers 'because I haven't been shown how'. I see the imprinting of surgical procedures that I have described as equivalent to the skill of imprinting computer techniques. I see the deliberate and reflective process of using textual descriptions in preparation for unfamiliar procedures as an essential skill to be taught and practised.

I am not able to use the jargon (in the good sense), nor the literature of experimental, applied and cognitive psychology, which I am sure might well be applied to what I have simplistically called a learning equation. Instead, I present map-reading as an analogy of the imprinting skill.

The map-reading analogy

If you are able to read and make use of a map and have the appropriate map for an area, you can find your way to particular places. You can find your way not only to places you have been to before, but to places you have never been to before. The skill and practice of map reading is equivalent to the skill and practice of using a well-illustrated text on operative surgery. Having the right books is equivalent to having the right set of maps. Reviewing the operation in advance is the equivalent of studying a map carefully before you set out and before you get lost. The more you practise map-reading, the better you are at using maps and following good routes. The more you spend time reading up on operations, the better you are at envisaging what an operation requires of you, and at doing it. □

References

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