Designing and implementing an intravenous therapy book

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This article describes how a workbook for IV drug therapy for nurses was designed and implemented in the Royal United Hospital Bath NHS Trust.

For almost 20 years IV therapy education for nurses was taught in our hospital via a three-day in-house course. This made a significant demand on resources in terms of teaching time, room and tutor availability and the problem of removing nurses from clinical areas, and the cost of replacing them.

There was no reliable measure of what had been learnt apart from an end-of-course evaluation. Many students on the course used English as a second language, giving rise to comprehension issues and there was a long waiting list for the course.

In summary, a taught IV therapy education course was becoming very difficult to manage and did not suit the learning needs of the trust.

Compiling the workbook

In 2002 the deputy director of nursing approached the clinical skills lead and asked for the design and implementation of a workbook to replace the in-house course. A project team was formed comprising the specialists who had taught on the IV therapy course, which included a clinical scientist, a pharmacist and an infection control nurse.

The first job was to look at a sample of workbooks written by other trusts to use as a guide.

Accountability issues were chosen to form an integral part of the workbook and were not included as a distinct section as other trusts had done, the rationale being that accountability is a fundamental part of clinical practice.

A book that was pertinent to the trust’s policies and procedures and which could be kept current by periodic review was needed. It was decided to have the book printed and bound professionally. The extra expense was judged worthwhile given the benefits in terms of quality. It also emphasised its importance as an invaluable learning tool.

The advantages of the workbook would be:

- No waiting list;
- It would be easy to administer;
- It could be completed in clinical time at the student’s own pace;
- Staff could refer back to it to aid understanding;
- A very significant reduction in the costs of providing the training.

The disadvantages that were anticipated were:

- The workbook was a form of distance learning that would not suit all learning styles;
- The effort required to produce the workbook.

Each member of the project team was asked to write a section of the workbook according to her or his own specialty (Box 1).

In order to assess the understanding gained by the student, each member of the project team wrote a section of questions.

Competencies were written against practical abilities and aspects of theoretical knowledge.

As each section of the book was drafted, it was sent for validation both internally within the trust and to external experts. This process was not without its frustrations as colleagues needed to factor this work into their existing commitments. Sometimes several redrafts of a section were required and in retrospect the team did not appreciate the impact of this in terms of time and effort at the outset.

A literature search was carried out in order to ascertain whether any direction was available to assist in the production and implementation process. We could find no published work specific to the task. While models of innovation, implementation and educational change were available, such as Fullan (2001) and House and McQuillan (1998), these were largely theoretical, based on the North American school system and gave little practical guidance.

Assessment of the candidate

An assessment algorithm was drawn up, which provided the basis for the assessment strategy:

- Assessment would be only carried out by nurses of at least grade “F” (Band 6) and above;
- Staff undertaking the workbook would need to attend infusion device training within one month of commencing the workbook;
- Staff would only need to complete those parts of the book pertinent to their particular clinical practice;
- The pass mark was set at 100%.

The possibility of making staff undertake an unseen invigilated test was considered but rejected...
as unrealistic. It was agreed to remind assessors of their responsibilities regarding the assessment process and to change the questions periodically.

The ‘Train the trainers’ course
The trust’s ‘Train the trainers’ course for IV therapy is a one-day course and is compulsory within our trust for all senior staff wishing to assess nurses in this area. However, where there is a need, experienced nurses of grade ‘E’ (Band 5) are also accepted on the course at the discretion of the clinical skills lead. The course covers all the main topics addressed in the workbook and is an opportunity for those staff to update their knowledge. Particular emphasis is placed on assessing accountability and competence, and also the responsibilities of the assessor.

The effectiveness of this course has not been formally assessed but written and verbal feedback has been positive. Further research is needed, which the clinical skills lead will be undertaking shortly.

Preparing the workbook for use
The authors’ advice to anybody undertaking a project like this is as follows:
- Never underestimate the time required. Waiting for validated drafts from contributors was sometimes very time consuming. Also, if an individual had difficulties achieving deadlines there was a knock-on effect for the project. Proofreading takes time and must be done methodically to ensure errors are not missed. Ensure there are at least two proofreaders;
- The first page of the workbook should have space for the student’s name, together with the dates of the issue and completion;
- Ensure a member of the team has excellent IT skills or you can appoint someone with these skills;
- Do not wait until the book is fully drafted and validated before preparing it for print;
- If changes to a draft section are notified while formatting, ask for them via email or keep a written record so you can identify where changes came from;
- Make clear decisions as to how you would like the finished book, for example A4, card-cover or three colours, as this affects both the format and the cost;
- Keep a copy of all drafts sent to the printer. An effective version control system is essential (each version was given a name but numbering them would have worked just as well);
- Make sure that your finished draft has a statement of copyright where it can be clearly seen. Under British law this is not technically necessary but people are less likely to plagiarise if it is clear that your organisation values its intellectual property;
- Nominate one person in your organisation to keep a copy of the master document and be wary of distributing it electronically;
- Acknowledge all trademarks but as far as possible try to avoid them by using the correct terminology such as peripheral venous cannula;
- Decide on a date for review of the workbook (in this trust it is annually) and ensure that enough copies of the book are ordered to last for this period;
- Ensure that your workbook is launched properly. Make people aware of its launch and promote its benefits. Answer any queries on fears or misgivings;
- Consider organising a social event for the contributors to thank them for their hard work.

Maintaining the book
When staff are issued with the workbook this is added to their training record. The date of completion is appended later. The clinical skills lead inspects completed books at random for quality control.

The authors meet annually to review the workbook and decide whether any changes need to be made before ordering a new batch from the printers. This is also done in consultation with the deputy director of nursing and the specialists contributing to the book. For example, in the last edition a new section on blood transfusion was added. Changes such as this cause printers extra work, so be aware that extra expense may be involved that will need to be budgeted for annually.

Summary
If considering using the workbook format be very clear of the requirements and policies of your organisation. Initially a workbook will require a significant amount of effort to become operational. It is not therefore necessarily a ‘quick fix’ or easy option and may not be suitable for your needs.

However, the introduction of an IV drug therapy workbook to the Royal United Hospital Bath NHS Trust has been well received. To date over 400 staff have completed it successfully. Informal verbal reports from practitioners whose first language is not English show that generally they have found the workbook better suited to their learning needs. In addition, the inclusion of questions as well as competency-based assessment has enhanced the quality of the education and training for this skill.

REFERENCES

REFERENCES

Reference name. (1999) ‘Reference title’ of the source document follows the authors name. Publishers name follows in ‘Ref. body’ text style. Note all right hand side-text columns containing reference information always have the copy range left.

For Journal articles Reference name. (1999) individual references for each article in the Clinical section is twelve.