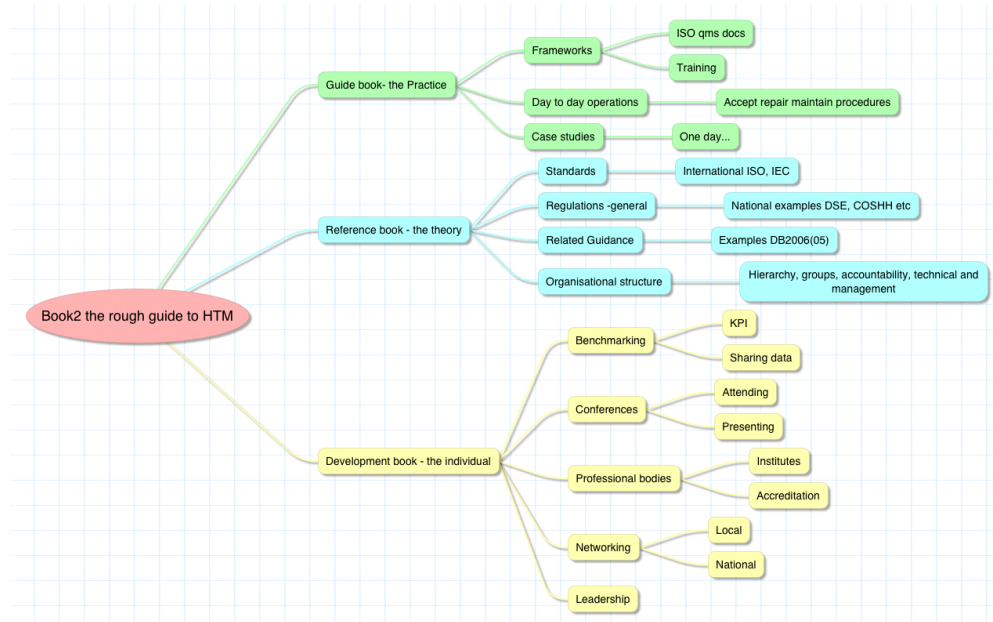


## Paul Blackett.

As I find it better to work in diagrams I hope you'll forgive the mind map in lieu of a few words!



To explain.

This is a book that appeals to both novice/trainee and seasoned user. It's a book that sits on the shelf in every department and workshop, a book that everyone wants a copy of because it's clear and easy to understand. It's well thumbed with post its stuck in. It's used to set local standards and viewed by all as independent. Its relevant and backed up by revisions and in time the authorship is passed on.

As we also need to keep this book relevant internationally it is linked to a website through which the authors have co-opted contributors from other countries. These local authors give a local perspective on the established global principles through web sections for different countries linking back to the text.

I see three books in a book (but not separate volumes!!)

A Reference Book to draw upon the basic international standards (WHO included) such as ISO and IEC, what they are for and do. Then discussing what a typical nation would do (local DB2006 etc) Basic H&S requirements and what is needed to set up a typical 'technical support structure' locally. Lines of accountability both technical and managerially are discussed and scope.

Next up is a book on Practice. The Haynes manual! Discusses frameworks of operation (work procedures etc), the nuts and bolts of the job (acceptance, fix, test, scrap etc). And then our case studies to cover a range of applications (I like the idea of these studies but am not 100% sure what they would look like).

Lastly is a book for development. How the individual can contribute to the wider picture, how they can develop and contribute to the ongoing local and national conversation of HTM both individually, professionally and as an organisational representative.

## **John Amooore.**

### **Book review**

#### **Practical safe and effective Healthcare Technology Management**

Medical equipment supports and enhances healthcare, and without it much of the advances in healthcare would not be possible. Its vital role demands that the medical equipment is effectively managed. This welcome book is a practical guide to Healthcare Technology Management (HTM). With its clear patient focus approach underpinned by a HTM model the book shows how to integrate the strategic management of medical equipment with operational day-by-day practice to support cost-effective healthcare.

HTM must be aligned with the strategic aims of the healthcare institution. The approach developed, applicable to institutions large and small, requires executive leadership to recognise the importance of medical equipment and its intimate relationship to patient care. Models of achieving alignment are discussed, including the use of a multi-disciplinary medical equipment committee answerable to the executive. Professional healthcare technology managers partner clinical and financial leadership, directing medical equipment planning towards the clinical aims of the institution, supporting the institution's overall financial management.

The practice of healthcare is at the clinic, at the bedside, where clinical professionals use medical equipment to care for patients and to support the healthy. The book describes how to marry the strategic medical equipment planning with practical steps to ensure the availability, for these clinical professionals, of safe and effective medical equipment that the professionals understand and can use competently.

The book guides the teams of professional technologists who look after the equipment with principles of operation of the vast array of medical equipment from anaesthetic machines through infusion devices to X-ray machines and vital signs patient monitors. A particular strength of the book is the case studies demonstrating how to tackle the many challenges of caring for medical equipment in the exacting clinical environment where machines interact with people, patients, carers and healthcare professionals.

Meeting the increasing demands for healthcare within the constraints of limited budgets requires innovative leadership. The book shows how to manage the resources of medical equipment cost-effectively through their full life-cycle, from conception through operational use to disposal, supporting better healthcare at lower cost.

The practical emphasis on safe and effective management of medical equipment for the benefit of patients, whilst supporting the clinical professionals to use it effectively, makes this a recommended book for all responsible for this important resource.

## **Fran Hegarty**

Keith's book deals with much of the detailed guidance out there. This frees us to speak to the same topic from another perspective. I suggest we consider making the theory half of our material a "how to do it" manual. The remainder being case studies. This would make it a very accessible book and probably make it easier to work across jurisdictions.

Case studies should be presented that illustrate the contributions at all levels and so make the book attractive to students, young Clin Eng and seasoned pros.

The equipment management conception of the two interconnecting cycles works well. However, we need to cross read this work with both pas55 and eq56, then bring it to life with examples.

I think we have a gap in that we don't have a framework for discussing how the professional work (r&d, quality improvement, process engineering, health informatics etc) gets delivered. While we identify their role and need at the strategic level we have not yet described a process by which these can be delivered and sustained. I suspect this will require a bit of a brainstorm and probably a discussion about the difference between on going process and projects. While I think we should go into this topic and lightly touch on management theory I no longer think we should describe in detail how to structure a Clin eng dept. There is the danger that this will take too much energy, distract from the other material and maybe defocus the approach.

## **Richard Scott**

My starting point is that Keith Ison's book covers the detailed mechanics of the medical device "lifecycle management" and we've given an overview of the management of health technologies in Azzam's book, so what's unique about our offering?

It strikes me that what we have started to articulate is a Clinical Engineering systems approach with 2 key themes, namely engineering solutions for patient benefit and the effective management of healthcare technologies. There are many excellent texts on systems management so we shouldn't re-invent the wheel but have a brief overview of "systems thinking", suitably referenced.

The systems thinking approach should be contextualised to our environment but works well for innovation, management of information systems and we shouldn't forget the role CE can play in wider healthcare system optimisation and project management.

A section on HTM is warranted but with a specific focus to ensure it is complementary to existing texts. There is an opportunity to interpret PAS 55/ISO 55001 for the healthcare sector. This works well with the systems approach, as a key message is having "line of sight" through the organisation to ensure value is achieved from assets. In our case – "value" means risk minimisation as well as cost effectiveness.

A unique feature of the book should be a rich diversity of case studies

## Justin McCarthy

This book has been written by five very experienced Clinical Engineers who have brought together their knowledge to present a vision of healthcare technology management (HTM) based firmly on the principles set out in PAS 55 (BSI-IAM, 2008). This Publicly Available Specification is the parent document for the recently issued ISO 55000 (ISO, 201X).

The authors have for the first time articulated and codified an coherent and comprehensive approach to HTM which will provide the most effective and best value for money in managing healthcare technology at the lowest risk.

The book unashamedly presents the role of Clinical Engineers as central to the process and starts with an brief introduction to Clinical Engineering, making it clear that the involvement of engineers in the clinical environment, working with clinicians of various disciplines, is what makes them Clinical Engineers. Their role in HTM is then central, since effective lifecycle management of such equipment requires both clinical and engineering knowledge and judgement. The aspects of managing healthcare technology that require a modified approach within the PAS 55 context are well explained.

The authors take the reader through all aspects of HTM and the book's great strength is the extensive use of case studies. These are presented in a consistent way at appropriate points in the narrative. They read as both relevant and, to this reviewer, authentic illustrations of the universal problems and situations that arise.

The book is perhaps primarily aimed at those coming new into this field but will be relevant and useful to established clinical engineers and practitioners and to senior clinicians and managers. The latter will benefit from a comprehensive treatment of the subject written in an engaging and relevant way.

The book is well reference, with useful historical sources and more recent contributions from both the UK and the USA. It represents a very useful addition to the sparse literature on this subject.