SCRIPT eLearning: building on a firm Foundation

Vallance HK[1], Brooks HL[1], Pontefract SK[1,2], Blackwell NC[3], Hodson J[2], Marriott JF[1], Hughes E[4], Ferner RE[1], Coleman JJ[1,2]

[1]University of Birmingham   [2]University Hospitals Birmingham NHS Foundation Trust   [3]OCB Media Ltd   [4]Health Education England

Background

In the United Kingdom, medication errors account for 10–20% of all adverse events in the National Health Service (NHS). In 2009, the General Medical Council's EQUIP[1] study found that trainee doctors in their first and second (Foundation) years prescribed with error rates of approximately 8% and 10%, respectively.   The study highlighted serious weaknesses in existing educational approaches made three key recommendations:

- *"Education in practical prescribing should be part of foundation year one education.*
- *Foundation trainee doctors should be given explicit feedback regarding their prescribing practice during foundation education.*
- *Help-seeking and feedback-seeking behaviours should be encouraged in workplace education and appraisal".*
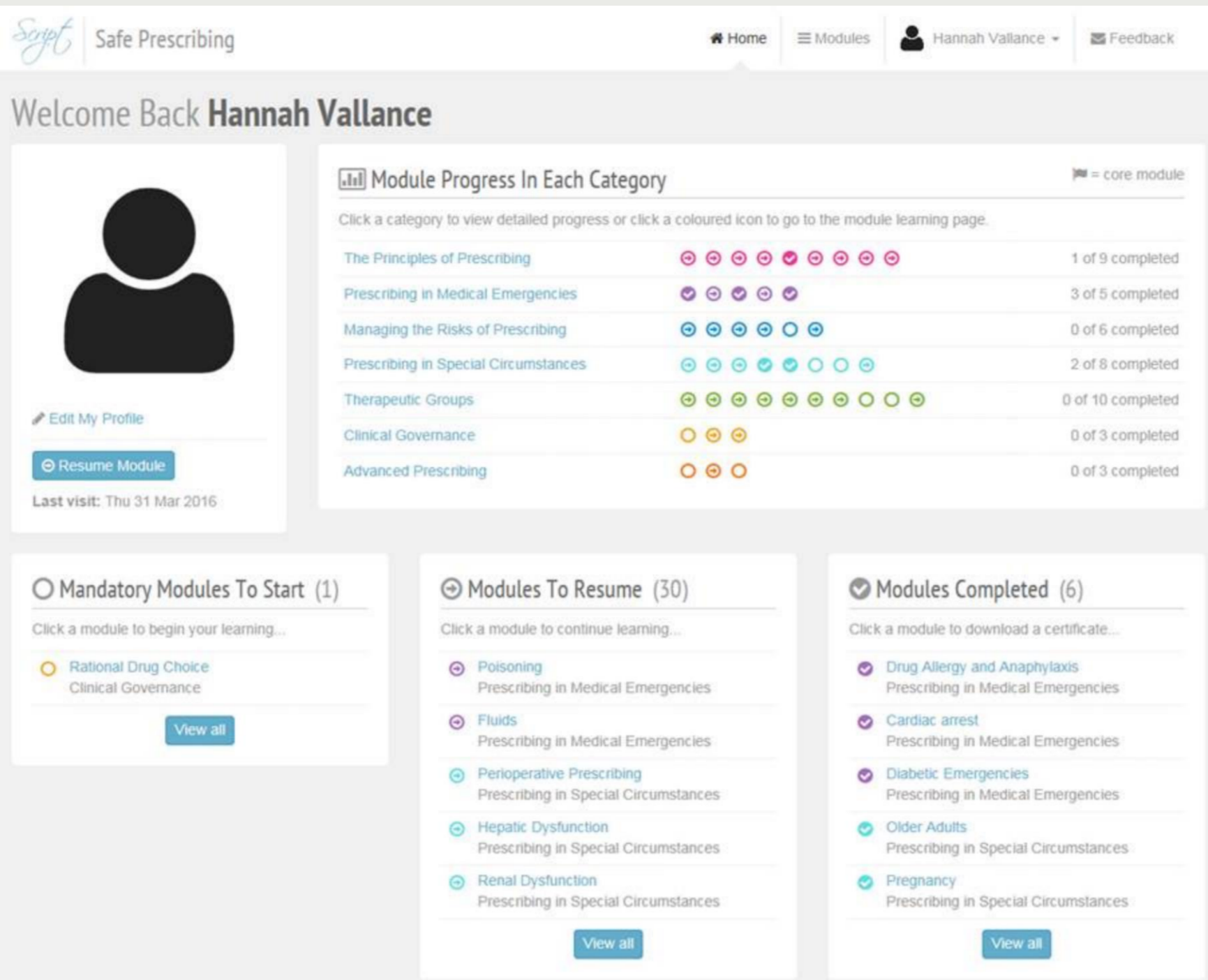

Figure 1: SCRIPT user interface

In 2010, Health Education England's West Midlands team (HEE-WM) commissioned the Universities of Birmingham, Warwick and Aston, in collaboration with OCB Media Ltd, to develop an innovative online eLearning programme to improve the prescribing competency of Foundation year doctors. The overall aims of the project were to:

- Develop modules to encourage safe, effective, and rational prescribing, reflecting current prescribing practice in the NHS.
- Improve the prescribing knowledge and skills of newly qualified doctors during the formative years of their professional development, in order to reduce medication errors and improve patient safety.

SCRIPT (Figure 1) was developed in 2011 and presented at the International Forum in 2012. Here we provide an update on where we have come over the past four years.

The Programme

- SCRIPT comprises of 45 modules across a wide range of subjects in prescribing and therapeutics. It is accessible online at www.safeprescriber.org.
- The modules provide an interactive blend of background pharmacological knowledge and patient-centred learning, presenting scenarios that Foundation trainees are likely to encounter.
- The content is aligned with The UK Foundation Programme Curriculum[2].
- Each module (Figure 2) has the same core components, commencing with a pre-test of 10 questions.
- In-module activities are presented throughout to embed learning.
- Each module takes approximately 30-40 minutes to complete.
- Upon completion of a module, a personalised certificate is made available, which can be uploaded to an electronic ePorfolio as evidence of completion.
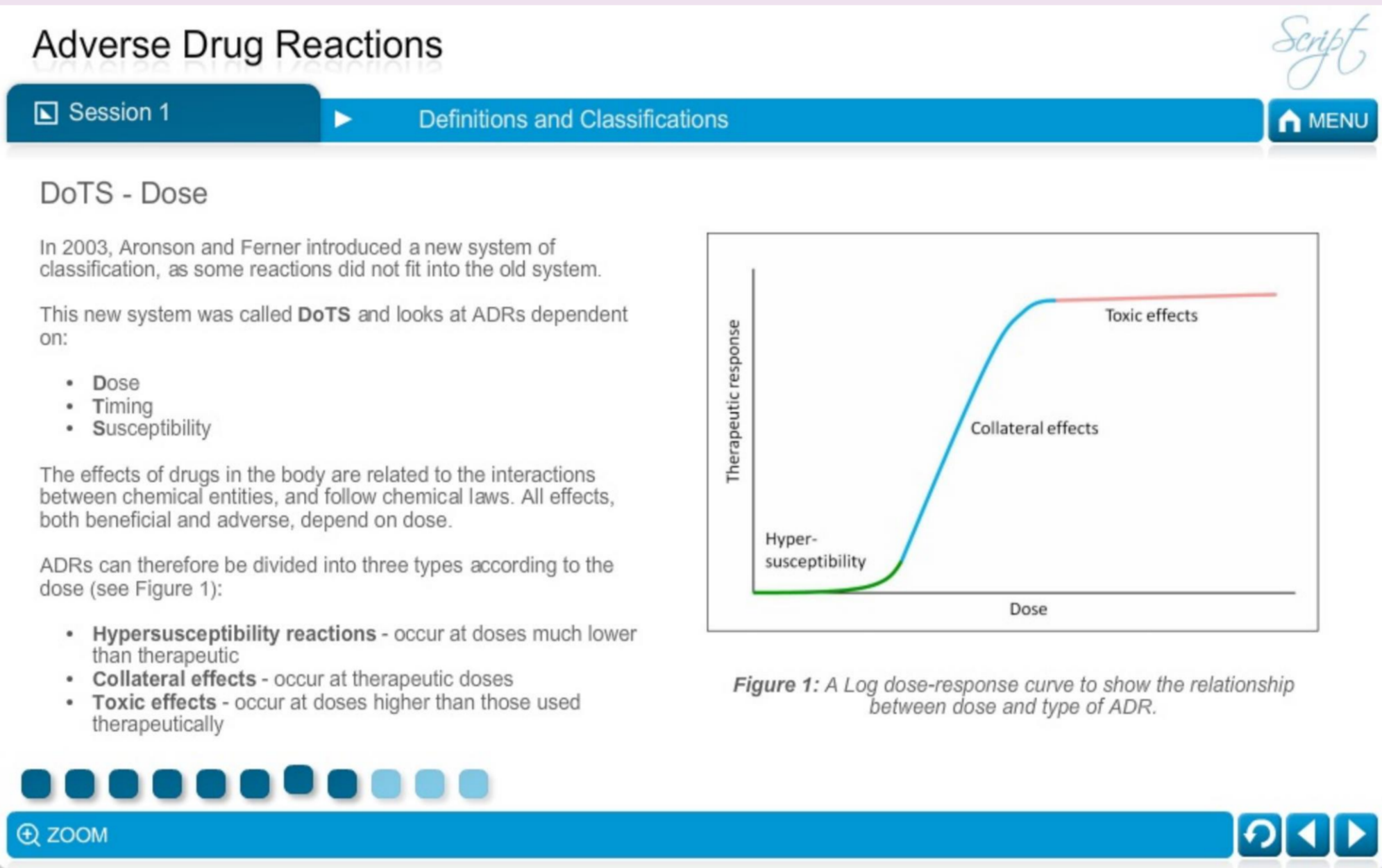

Figure 2: SCRIPT eLearning content (Module: *Adverse Drug Reactions*)

Content Management System (CMS)
- A web-based management programme enables clinical tutors and postgraduate education managers to monitor the progress of their Foundation trainees.
- The CMS provides sophisticated analytical tools. These facilitate trainee feedback, monitoring of mandated learning, assessment of user behaviour, interface design, and audit of content development.

Use in Practice
- In 2011, SCRIPT eLearning was fully integrated into the West Midlands Foundation Programme, providing training to approximately 1200 trainees across 45 hospitals.
- Trainees are required to complete 16 specified modules in their first year (F1) and a further 15 modules of their choice during their second year (F2).
- The eLearning programme has an embedded 'Feedback' function allowing Foundation trainees and clinical tutors to contact the editorial and technical team, who are responsive to their suggestions for improvement.

Evaluation and Development

We have investigated trainees' learning behaviours in the technology-enhanced learning environment.

Learning behaviours
- Over a 12-month period examined, 688 F1 doctors made 10,255 interactions with the 16 compulsory modules.
- The geometric mean time taken to complete a module was 28.9 minutes (95% Confidence Interval: 28.4 - 29.5).
- There was an increase in the frequency of modules completed on Sundays compared to other days of the week, and more time was spent on modules on Saturdays and Sundays.
- The peaks in the maximum number of modules being completed per week (late February, and early June) occurred directly prior to the Foundation trainees bi-annual progression review.

Impact of evaluation

Training
- We now provide Foundation trainees with a structured learning plan to encourage regular use of the programme.
- We have recommended that Foundation trainees are provided with protected time during paid employment to complete SCRIPT modules.
- We hope that this research will help educators to optimise the delivery of prescribing education at the postgraduate level.

Content
Based on feedback from Foundation trainees.
- We have added five new modules to the interface.
- We have divided module content into distinct sessions to allow for 'just-in-time' learning.

Reach
- Foundation SCRIPT is now also available in eight out of the 13 local regions in the UK.
- It is being used to support prescribing and therapeutics teaching for medical students in seven academic institutions.

Other variants

Following the success of Foundation SCRIPT we have been commissioned to develop similar resources for other healthcare professionals.
- *Dental SCRIPT (7 modules)*: mandated for all Foundation trainee dentists across the UK.
- *Paediatric SCRIPT* (25 modules): under development.
- *Nursing SCRIPT* (17 modules): free for West Midland nurses.
- *GP SCRIPT* (12 modules) : under development.

Lessons Learned

Lessons Learnt
- eLearning module content needs to be interactive and context-based in order for users to find it relevant to their practice.
- Modules need to be designed to allow for 'just-in-time' learning for busy healthcare professionals.

Message for Others
- Evaluation is integral to the success of an eLearning programme. It ensures learning outcomes are being achieved, informs the ongoing development of content and helps optimise the learner experience.

Conclusion

The regulations governing the prescribing, administration and supply of medicines are subject to regular review. In addition, as new evidence emerges, guidance on the management of conditions and monitoring of pharmacological treatments can change. Keeping up-to-date with changes in prescribing and administration practice is essential for patient safety and to maintain high standards in healthcare professions.

For further information please contact:
script@contacts.bham.ac.uk

References

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