

SCRIPT: eLearning to improve knowledge of appropriate prescribing around antimicrobial stewardship and sepsis

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Background

Education about appropriate prescribing of antibiotics is crucial to antimicrobial stewardship (AMS). Public Health England recommends that undergraduate and postgraduate curricula include topics on antibiotic use and resistance¹.

The SCRIPT programme provides eLearning for NHS healthcare professionals and undergraduate students, with the aim to improve prescribing and medicines management. SCRIPT (Medicine and Surgery version) was commissioned in 2010 by Health Education England (West Midlands team) for Foundation trainee doctors in the West Midlands following the General Medical Council's EQUIP study².

It is now a national resource, with versions for other healthcare professions, including Dentists, General Practitioners, Nurses, Paediatric trainee doctors, and Pharmacists. All versions of the programme include modules related to AMS.

The Programme

The eLearning programme is available at www.safeprescriber.org. Modules are authored and reviewed by specialist healthcare professionals, based on a pre-defined set of learning outcomes aligned to the relevant professional curriculum. Module content reflects current NHS practice and national guidance, including Public Health England's (PHE) *Start Smart – Then Focus* AMS toolkit³.

Each module commences with a pre-test of 10 questions, to determine the user's baseline knowledge. Modules (Figure 1) take 30-40 minutes to complete and contain activities throughout to embed learning. At the end, the user is presented with the same 10 questions in a random order, to help the user measure their knowledge acquisition on the subject. On completion, the user can download a certificate as evidence of the learning.

Medicine and Surgery SCRIPT for Foundation doctors and medical students contains four modules related to AMS:

- Drug Allergies and Anaphylaxis
- Infection in Secondary Care
- Prescribing in Infection
- Sepsis

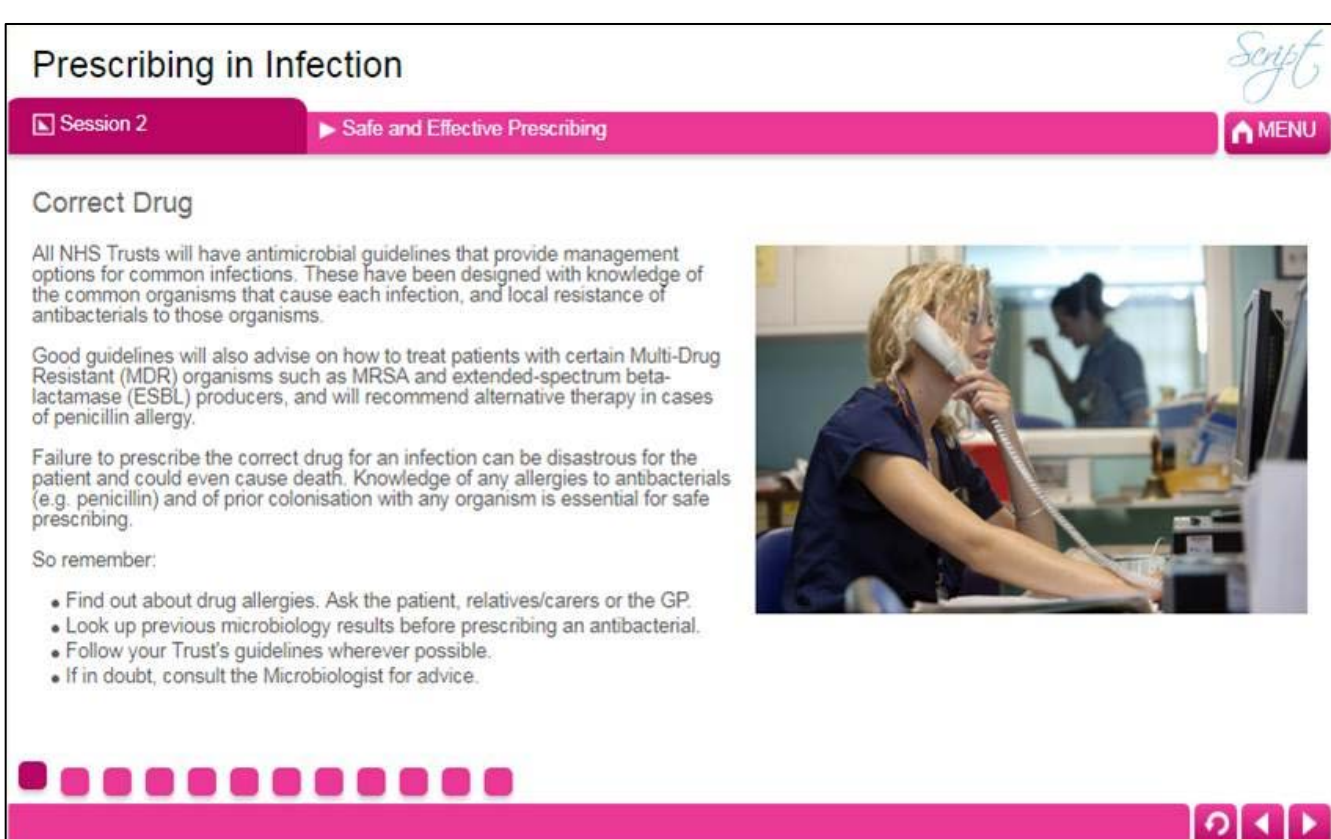


Figure 1: SCRIPT "Prescribing in Infection" eLearning content

Aim and Objectives

Aim:

- To use a web-based resource to improve healthcare professionals' and undergraduate students' knowledge of AMS and Sepsis.

Objectives:

- To establish if SCRIPT Medicine and Surgery modules related to AMS and Sepsis improves users' prescribing knowledge.

Method

SCRIPT includes a learning management programme that enables clinical tutors and system developers to monitor the engagement, progress and knowledge acquisition of users.

We used the SCRIPT management site to extract anonymised data from users of Medicine and Surgery SCRIPT over a 36-month period (January 2015 – December 2017) for the four modules relating to AMS and Sepsis. Data included the date of module completion and pre- and post-test scores.

Results

Module completion

Over the 36-month analysis period, Foundation trainee doctors and undergraduate medical students registered 28,854 completions of the four modules related to AMS.

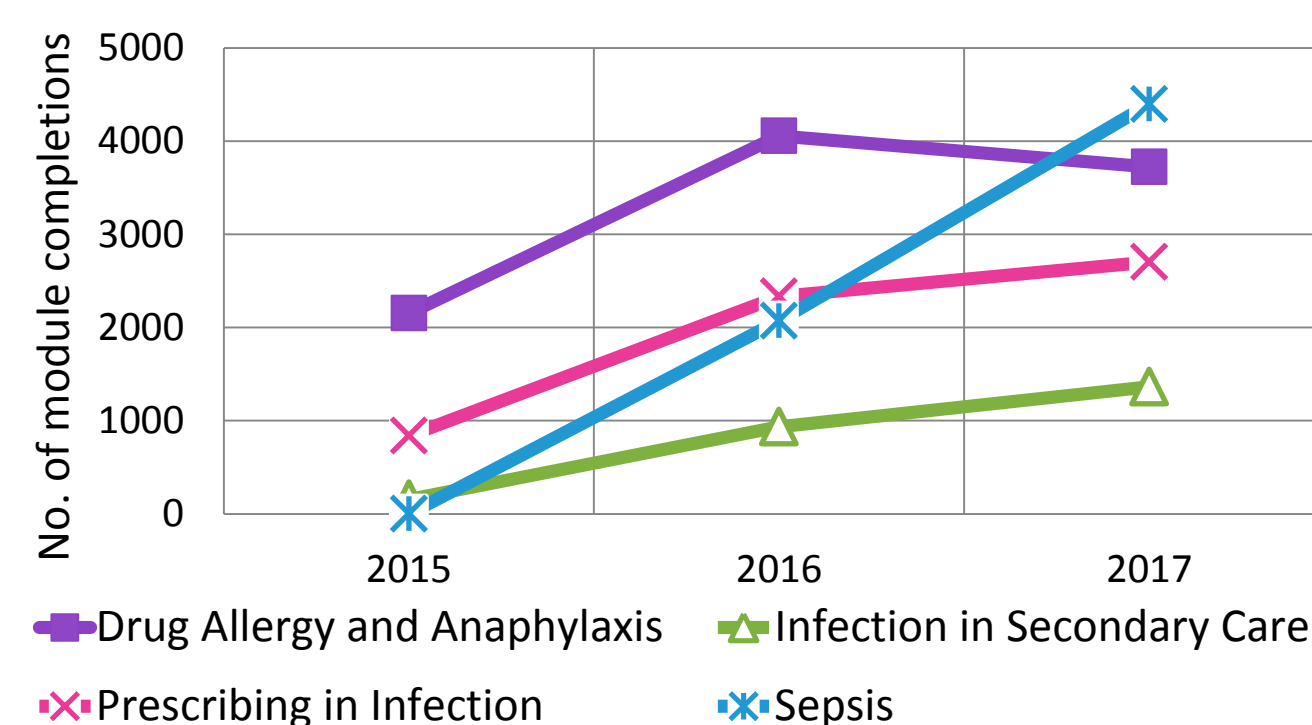


Figure 2: Number of AMS modules completed by Foundation trainee doctors 2015–2017

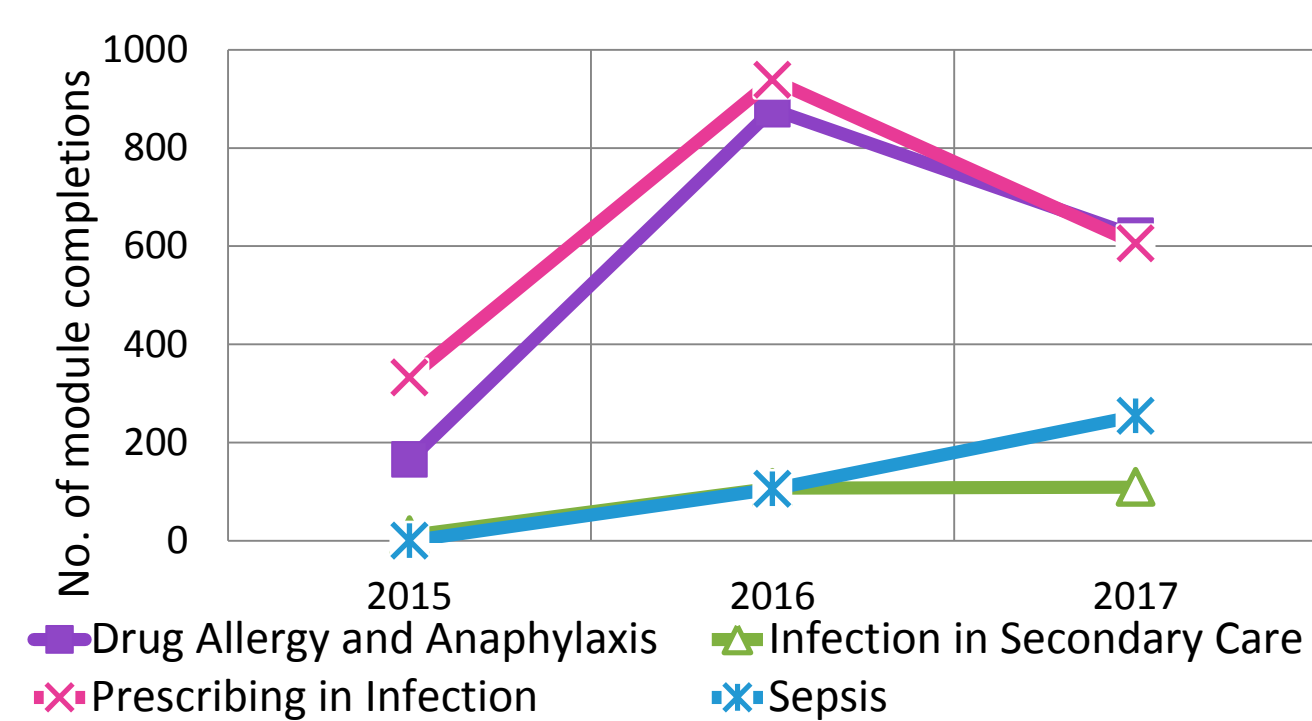


Figure 3: Number of AMS modules completed by undergraduate medical students 2015–2017

Pre-Post Test Scores

Analysis of the pre- and post-test results found that post-test scores improved for all AMS- and Sepsis-related modules. On average across the four modules, 65% of Foundation trainees and 71% of undergraduate medical students achieved a higher post-test score. Post-test scores showed an average increase of 1.4 points (out of 10) (mean pre-test score 7.23, mean post-test score 8.59) for foundation trainees and 1.7 for medical students (mean pre-test score 7.05, mean post-test score 8.74).

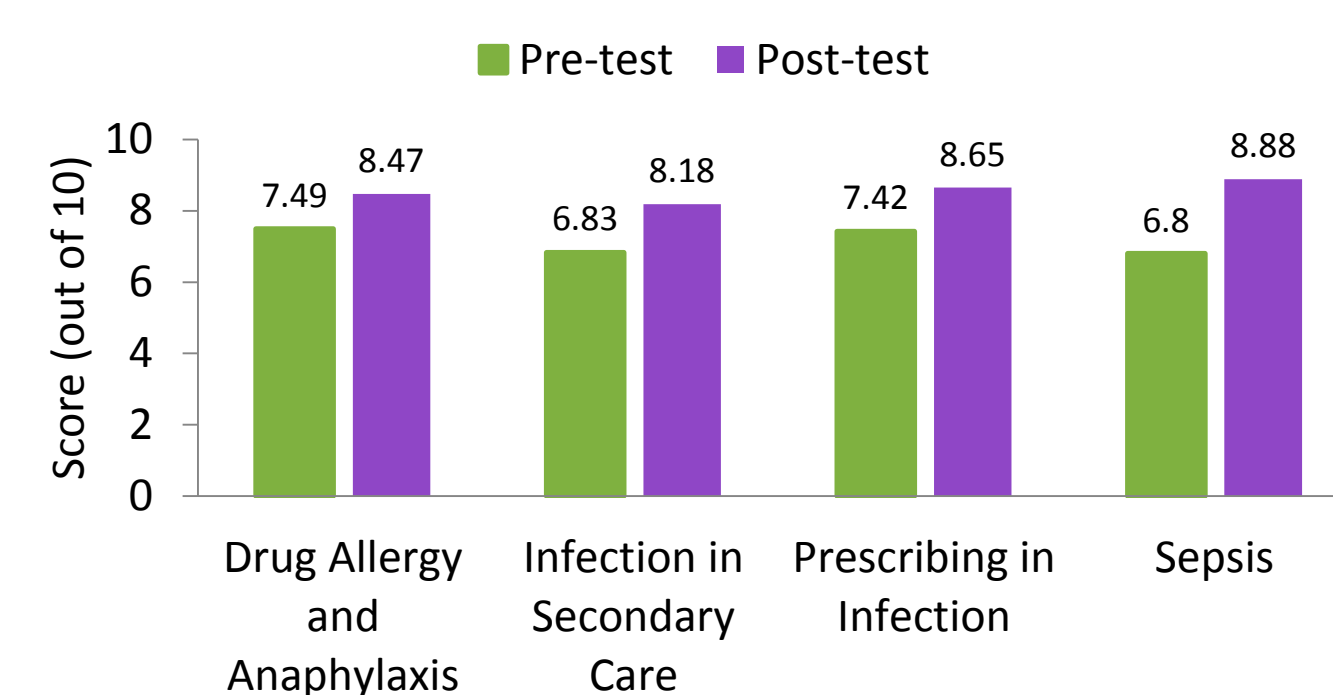


Figure 4: Mean pre- and post-test scores for Foundation trainees across AMS modules

The Sepsis module achieved the highest improvement in post-test scores. Analysis found that 80% of Foundation trainees and 87% of undergraduate medical students increased their post-test score. An average increase of 2.1 points for foundation trainees (Figure 4) and 2.5 points for medical students was identified (mean pre-test score 6.46, mean post-test score 8.93).

Discussion and Conclusion

Discussion

Informal feedback and peer-reviewed studies^{4,5,6} have demonstrated that SCRIPT eLearning improves knowledge and has a positive impact on prescribing behaviours in clinical practice. These provisional results from the Medicine and Surgery version indicate that SCRIPT eLearning can improve knowledge of AMS and sepsis.

Recognition

Best practice guidance on AMS education^{7,8} and the Public Health England Dental AMS toolkit⁹ (Figure 5) recommend SCRIPT as a key resource.

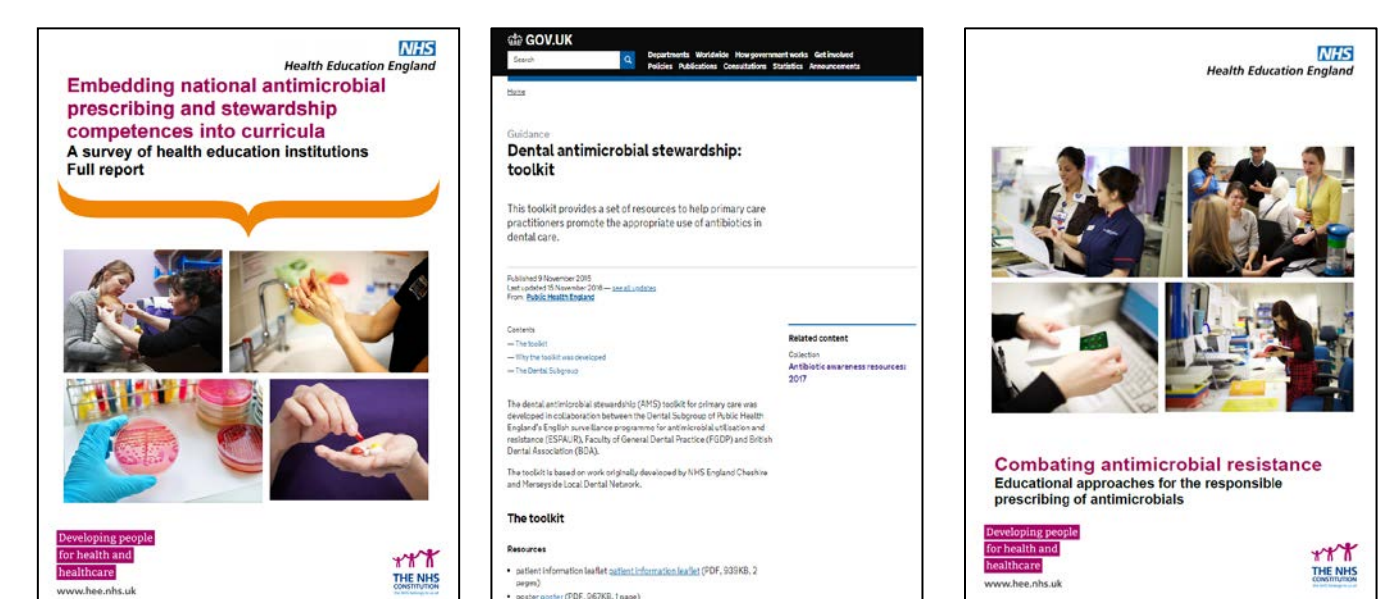


Figure 5: National AMS guidance recommending SCRIPT

Reach and Expansion

SCRIPT is now available to over 20,000 trainees and 5,000 medical students in the UK. It has helped to embed education relating to AMS and sepsis into national postgraduate training with modules now mandatory for many Foundation trainee doctors.

The SCRIPT team have also recently made targeted training packages of AMS modules for doctors, non-medical prescribers, and nurses. These support NHS Trusts in achieving the CQUIN 2017/19 indicator on 'Reducing the impact of serious infections (Antimicrobial resistance and Sepsis)'. We plan to adapt the AMS training package for international healthcare sectors.

Conclusion

Over the past seven years, SCRIPT has established itself as a nationally recognised key resource within medical education. The national uptake of SCRIPT means it can support a new generation of healthcare professionals to undertake education relating to appropriate antimicrobial prescribing and stewardship.

References

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