Evaluation of NEPTUNE II

An evaluation of NPS and club drug e-learning for clinicians

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Cover image credit: NEPTUNE e-learning modules.

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Glossary and abbreviations

CCQI	College Centre for Quality Improvement (at the Royal College of Psychiatrists)
CNWL	Central and North West London Foundation Trust
CPD	continuing professional development
CQC	Care Quality Commission
GBL	gamma-butyrolactone
GHB	gamma-hydroxybutyrate
MDMA	methylenedioxy-methamphetamine
MSM	men who have sex with men
NEPTUNE	Novel Psychoactive Treatment: UK Network
NEPTUNE II	Novel Psychoactive Treatment: UK Network II (e-learning modules)
NHS	National Health Service
NPIS	National Poison Information Service
NPS	novel psychoactive substances
PHE	Public Health England
SCRA	synthetic Cannabinoid Receptor Agonists
UNODC	United Nations Office on Drugs and Crime

Executive summary

This section summarises project NETPUNE and the evaluation. It then presents an overview of findings, conclusions and implications.

Project NEPTUNE

NPS, 'club drugs' and 'legal highs'

Novel psychoactive substances (NPS) are compounds developed to mimic the effects of existing drugs. Before the Psychoactive Substances Act (2016) came into effect there was no legislation prohibiting trade of NPS in the UK. Hence, they were sometimes referred to as 'legal highs'. 'Club drug' is a short-hand term used to describe a group of psychoactive substances that are typically used in dance venues, at house parties and at music festivals. Some substances are also used in a sexual context. Some club drugs are also NPS.

Nature of the problem

NPS and club drugs can cause limited or no problems for some people. However, some users become acutely or chronically unwell physically, and suffer poor mental health. This causes people to present in a range of clinical settings, including emergency departments, sexual health services and specialist drug services. These presentations can be challenging for clinicians. There is limited knowledge on the pharmacology and toxicity of NPS and club drugs. This, combined with the diversity and proliferation of use and legal ambiguities, has led some clinicians to report a general lack of knowledge and confidence in managing these presentations.

Project NEPTUNE: A response

NEPTUNE (the Novel Psychoactive Treatment UK Network), funded by the Health Foundation, was set up in 2015 in response to this growing need. The project was hosted by the Club Drug Clinic, which is part of the Central and North West London NHS Foundation Trust (CNWL). The overall aim of NEPTUNE was to address the gap in clinicians' knowledge about managing acute and chronic problems resulting from the use of these substances. NEPTUNE established a UK-wide, multi-disciplinary community of professionals and service users with expertise in NPS and club drugs. The network produced guidelines and care bundles that provided advice on NPS and

club drug harms and their reduction, interventions, service models, and psychological and pharmacological treatments.

The Health Foundation funded a subsequent phase of the project (NEPTUNE II) to translate the clinical guidance into a suite of e-learning modules for clinicians, which are the subject of this evaluation. NEPTUNE II aimed to provide an easily accessible and digestible resource for clinicians working in a range of settings. The rationale was that this group of professionals, who are often described as time-poor, would be more likely, and able, to start and complete an e-learning module than to read a clinical guidance document.

Evaluation

Aims and objectives

The NEPTUNE development team wanted to pilot and evaluate their e-learning module to understand how barriers to access and completion could be overcome. The team also wanted to understand how clinicians thought they benefitted from the module. The Health Foundation funded the Royal College of Psychiatrists' College Centre for Quality Improvement (CCQI) to independently evaluate NEPTUNE II resources, specifically to explore:

- The barriers and facilitators to accessing and completing the e-learning module.
- How barriers can be overcome.
- In what settings, and for whom, is it not possible to overcome these barriers.
- Perceived impacts of the module on knowledge and confidence in relation to NPS and club drug presentations.
- What effects, if any, this might this have on clinical practice.

Methods

Qualitative case studies

The NEPTUNE team piloted the e-learning module at six services: two sexual health services, two specialist drugs services and two emergency departments.

We (the evaluation team) used a qualitative case study design to explore participants' views and experiences of the module. Qualitative research enables an in-depth exploration of social phenomenon. It is ideally suited to exploring how different settings respond to the same intervention. We conducted 35 in-depth qualitative interviews with those invited to complete the module and a small number of key stakeholders to test transferability of findings to other settings.[1]

Summary of findings

Overall views and perceived impacts

The NEPTUNE e-learning module worked best for those who had a medical background or an interest in drugs, because they found content most relevant to their jobs. However, non-clinicians, who the module was not primarily aimed at, sometimes ended up completing it. This group found the module less useful.

When the module worked well participants reported new knowledge, for example, specific features of substances and clarification on the legal status of NPS and club drugs. This sometimes increased confidence for participants, who reported:

- Increased credibility with service users, facilitating productive relationships needed to deliver high quality care.
- Junior doctors feeling able to perform with greater autonomy, potentially freeing up senior colleagues.
- Feeling confidently able teach colleagues new NPS and club drugs knowledge
- Increased job satisfaction.

New knowledge and increased confidence sometimes prompted reflection on clinical practice. Participants reported making the following changes in clinical practice:

- Increased efforts to quantify and record use of NPS and club drugs
- Taking toxicity of NPS and club drugs into account, and being more inclined to manage some acute presentations in resuscitation (in emergency departments).

[1] We also conducted a case not audit and survey, but methodological challenges mean these results must be interpreted cautiously. The focus of this report is on qualitative case study findings, but further details of other strands are provided in Appendix D.

- Providing specific advice for users of NPS and club drugs.
- Referring service users to specialist services more.

When an individual's perceived need for NPS and club drug training was sufficiently high it was possible, with time, for them to overcome barriers to completion. However, participants highlighted the necessity that the module was perceived as current, and up to date. Out of date e-learning was seen as less credible, and ultimately less useful. It was important that the module was implemented in a timely manner.

Non-clinical staff, however, found the module difficult to follow and felt its contents were superfluous to their roles. This suggested that there might be a gap in NPS and club drug resources for non-clinical staff. It was vital that the module reached the right people – those who are able to benefit from completing it. Negative experiences of the module could leave people feeling frustrated, which could in turn deter others from completing the module.

Transferability to other settings

We tested the transferability of findings to other settings: prisons, organisations who work with homeless people, and, community and in-patient mental health services. Five key implementation considerations emerged when thinking about the module in these settings.

- **NPS and club drug awareness raising –** staff needed to have a basic understanding of what NPS and club drugs were to be receptive to related training opportunities. Raising awareness was identified as the first step to implementing a training resource when knowledge was especially limited.

- **Training curriculum setters –** stakeholders suggested asking those who set the content of training programmes for different professional backgrounds to promote the module (which is something NEPTUNE have previously done).

- **Strategic buy-in –** the importance of strategic buy-in from the highest relevant authority was highlighted as essential. In prisons this was the governor, in NHS settings it was the trust, and in charitable organisations it

might be HR or the chief executive. There were potential challenges in getting this buy-in across settings.

- **Purpose of resource and target audience –** implementers need to clearly understand the purpose of any resource (and staffing groups for whom it is appropriate). This was especially important in settings with multiple professional backgrounds who had varied levels of contact with NPS and club users.

- **Varied rates of spread –** news might spread more quickly in some settings compared to others. For example, in prisons, informal information networks helped spread news quickly. First impressions of the module might be especially important in these setting.

Recommendations

We make the following recommendations for future implementers (and policy developers) to ensure the module reaches the right people in a timely way.

Targeting

Target audience: Implementers should clearly explain to colleagues that the module is for clinicians (nurses, doctors and psychologists), and specialist drugs workers. If a service or implementer would like those from another professional background to complete the module, it is important first to test how appropriate this is with someone from this professional background.

Meeting needs of other audiences: Non-clinicians should be signposted to other NEPTUNE resources on NPS and club drugs (like care bundles). However, there might also be a need for more research to understand non-clinicians' training needs in the area, which might highlight the need for further resources to be developed for this group.

Spreading and implementing

Implementer: People were more likely to complete the module when they respected the individual who invited them to complete it. It could be helpful for implementers to reflect on who does this role. Additionally, if the role is delegated, it is important to ensure the new person is given plenty of time and involved in early planning.

Spread at larger services: At larger services where staff work across sites with less regular shifts it could be helpful for implementers initially to target a few staff (up to ten) to increase the sense of accountability and make the task feel more manageable.

Overcoming immediate barriers

Allowing time: Diffusion through informal networks was lengthy, it would therefore be important for implementers to allow adequate time for this to happen (where possible), and send reminder emails at regular intervals (even up to six months after the initial invitation).

Provide an outlet for criticism: It could be helpful for implementers to provide staff the opportunity to critique the module to them. Feeling listened to could prevent the need, and desire, to feedback negative comments to colleagues.

Focal event: Arranging a 'focal event' (a teaching session on NPS and club drugs, for example) could help staff prioritise completion, through creating a sense of a deadline.

Individually protected time: Line management supervision could be used to help individuals protect time to complete the module. This was felt to be more effective than protecting time for groups of professionals, because individual clinicians had highly varied workloads and priorities.

Exploiting opportune times: Implementers should reflect on – and exploit – any opportune times. For example, particularly quiet periods or linking to appraisal deadlines.

Future updates

Content: In light of the importance of the module being perceived as up to date, we (the evaluation team), suggest that the module content is regularly updated to reflect changing trends and patterns of use in NPS and club drugs. This would be updates to specific content (most likely additions) rather than structural or methodological changes to the NEPTUNE modules.

Section 1:

Background and context

1. Background and context

This chapter provides an overview of the policy context, to which project NEPTUNE responded, and explains the project.

1.1 NPS, 'legal highs' and 'club drugs'

Most novel psychoactive substances (NPS) are compounds developed to mimic the effects of existing drugs. Before the Psychoactive Substances Act (2016) came into effect there was no legislation prohibiting trade of NPS in the UK.[2] Hence, these substances have been referred to as 'legal highs' in the past. Producers of NPS, aware of this legal framework, manipulated NPS so that they appear not to contain substances prohibited by the Misuse of Drugs Act (1971). 'Legal highs' were marketed as 'plant food', 'bath salts', 'research chemicals', 'incense' or 'herbal highs' and typically labelled as 'not for human consumption', to avoid legal sanction.[3]

However, the term 'legal high' has been highlighted as inaccurate and misleading, even before the Psychoactive Substances Act was introduced. Clinicians have expressed concern that 'legal' implies NPS are safer than existing drugs. This assumption can be erroneous. For instance, some types of synthetic cannabinoid receptor agonists (SCRAs), of which 'spice' is a common example, are significantly more toxic than natural cannabis. Additionally, NPS produce a wide range of effects for the user, as illustrated in the figure below.

Club drug is a short-hand term used to describe a group of psychoactive substances that are typically used in dance venues, at house parties and at music festivals. Some substances are also used in a sexual context. Club drugs include drugs such as ecstasy (methylenedioxy-methamphetamine or MDMA), cocaine, mephedrone, ketamine and gamma-hydroxybutyrate (GHB)/gamma-butyrolactone (GBL).[4]

[2] Tracy, Derek K. Wood, David M., Baumeister, David. (2017) *Novel psychoactive substances: Types, mechanisms of action, and effects.* In: BMJ (Clinical research ed.), Vol. 356, ji6848, 25/01/2017.
[3] Content from NEPTUNE e-learning 'Module 1: An introduction to club drugs and novel psychoactive substances'. Available via the NEPTUNE website: http://neptune-clinical-guidance.co.uk (hereafter referenced as 'NEPTUNE module'.
[4] NEPTUNE module

The figure below illustrates four key types of effect of NPS and club drugs, and some common examples.[5]

Depressants Most common substances are GHB/GBL amongst men who have sex with men (but otherwise rare); ketamine and its analogues; and nitrous oxide)	**Stimulants** Most common substances are MDMA and ecstasy-type substances; and synthetic cathinone, especially mephedrone. Amphetamine-type substances, including methamphetamine are common amongst men who have sex with men;
Hallucinogens Agonists at serotonin 5HT2A receptor	**Synthetic cannabinoid receptor agonists** (SCRAs)

[5] NEPTUNE module

Patterns of use

Certain patterns of NPS and club drug use have emerged amongst different demographic groups.[6]

'Chemsex' and MSM

Chemsex is a term commonly used by men who have sex with men (MSM) to describe the use of certain drugs in a sexual context. Mephedrone, methamphetamine and gammahydroxybutyrate/gammabutyrolactone (GHB/GBL) often taken together, are common chemsex drugs. Chemsex usually involves using these drugs to facilitate or enhance more extreme sex, for longer periods and unsafe sex practices are common. MSM using chemsex differ from other users of drugs and alcohol services: they are often in full-time employment, most use drugs intermittently and generally function well in life. However, MSM who use chemsex reported increasing concerns about the physical harms of these drugs, including dependence, heightened irritability and anxiety, high risks of overdose (especially with GBH/GBL), paranoia, and sleeplessness.

[6] Contents of text boxes were synthesised from the following sources:

- K, Shaun (2016), '*What is Chemsex?',* accessed at: https://www.changegrowlive.org/content/what-is-chemsex;
- Bourne, A; Reid, D; Hickson, F; Torres Rueda, S; Weatherburn, P (2014), *'The Chemsex study: drug use in sexual settings among gay and bisexual men in Lambeth, Southwark & Lewisham.'* London: Sigma research, London School of Hygiene & Tropical Medicine.
- Orsolini L, Papanti GD, Francesconi G, Schifano F. (2015), '*Mind navigators of chemicals' experimenters? A web-based description of e-psychonauts'* Cyber-psychological, Behaviour and Social Networking. May; 18(5):296-300.
- Public Health England (2015), *'New Psychoactive Substances (NPS) in prisons, a toolkit for prison staff'.*
- HM Inspectorate of Prisons (2015), '*Changing patterns of substance misuse in adult prisons and service responses'.*
- User Voice (2016), *'Spice: the bird killer, what prisoners think about the use of spice and other legal highs in prison'.*

SCRAs – prison and homeless populations

Synthetic cannaboid receptor agonists (SCRAs) have presented problems in UK prisons and amongst homeless people. SCRA use amongst street homeless has been highlighted as an area of growing concern, with increased deaths attributable to SCRAs between 2015 and 2016. The HM Chief Inspector of Prisons' Annual Report for 2016-17 describes NPS as 'a significant issue in most adult male prisons', and was linked to violence, debt, organised crime and medical emergencies. User Voice research found SCRAs were popular in prison because of its availability and lack of detectability. SCRAs were used to alleviate boredom, help cope and have fun. However, prisoners were aware of the risks associated with use, including psychological and physical dependence, psychotic episodes, paranoia, delusions, palpitations and seizures.

'Psychonauts'

Psychonauts are NPS and club drug users who test new psychoactive compounds and combinations and share findings in online forums. They sometimes have technical chemistry knowledge, and are willing to experiment on themselves. The risk of overdose is high due to self-experimentation. Psychonauts sometimes believe their efforts can help educate others about dosage and reducing potential negative side effects.

Trends in NPS and club drug use

Available data suggests use of NPS and club drugs has increased in the UK and beyond in recent years. At a global level, the number of NPS increased from 166 in 2009 to 251 by mid-2012 (an increase of more than 50%).[7] From 2009 to 2016, a total of 739 different NPS were reported to the United Nations Office for Drugs and Crime (UNODC World Drug Report 2017).[8] Currently, over 560 NPS are monitored by the European Monitoring Centre for Drugs and Drug Addiction, with 100 new agents identified in 2015 alone.[9] While it is difficult to find accurate data on hospital admissions from NPS and club drugs, inquiries to the National Poisons Information Service (NPIS) by clinicians increased by 24.9% between 2012/3 and 2013/14.[10] In England and Wales, one in 40 (2.6%) young adults aged 16 to 24 reportedly took a new psychoactive substance in 2015-16.[11]

It is too early, at the time of writing, to determine the full effect of the Psychoactive Substance Act (2016) on use (the Home Office is due to evaluate the full impact of the Act in 2018).[12] However, those working in the sector have reflected on early effects. One view is that use has decreased, but that the harms related to substances remain concerning and as Rosanna O'Connor, Director of Alcohol, Drugs and Tobacco at Public Health England (PHE) has said[13]:

> *'Last year's ban has helped reduce their [NPS] easy availability, but we are still seeing the most vulnerable groups, particularly, the homeless, prisoners and some young people, suffering the greatest harm from these substances.'*
>
> **Rosanna O'Connor - PHE**

[7] NEPTUNE (2010), *'Shine 2012, final report',* Central and Northwest London Foundation Trust, Health Foundation. Available at: www.health.org.uk/sites/health/files/Shine2012_NEPTUNE_report.pdf

[8] UNODC (United Nations Office on Drugs and Crime) (2017), '*World Drug Report 2017, Market analysis of synthetic drugs – Ampthetamine-type stimulants, new psychoactive substances'.* Available at: www.unodc.org/wdr2017/field/Booklet_4_ATSNPS.pdf

[9] Tracy Derek K, Wood David M, Baumeister David (2017), '*Novel psychoactive substances: types, mechanisms of action, and effects,'* BMJ 356:i6848.

[10] NEPTUNE (2015), *'Guidance on the Clinical Management of Acute and Chronic Harms of Club Drugs and Novel Psychoactive Substances,'* Health Foundation.

[11] Home Office (2016), '*Drug misuse: Findings from the 2015-16 Crime Survey for England and Wales, 2nd edition'.* Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/564760/drug-misuse-1516.pdf

[12] HM Government (2017), '2017 *Drug strategy'.* Available here: www.gov.uk/government/uploads/system/uploads/attachment_data/file/628148/Drug_strategy_2017.pdf

[13] Public Health England (2017), 'News story: System launched to help tackle harms from new psychoactive substances'. Web page available at: www.gov.uk/government/news/system-launched-to-help-tackle-harms-from-new-psychoactive-substances

1.2 Project NEPTUNE

A response to new challenges

NPS and club drugs can cause limited or no problems for some people. However, some users become acutely or chronically unwell physically, and suffer poor mental health because. This causes people to present in a range of clinical settings, including emergency departments, sexual health services and specialist drug services.[14] These presentations have sometimes been challenging for clinicians. There is limited knowledge on the pharmacology and toxicity of NPS and club drugs.[15] This, combined with the diversity and proliferation of use and legal ambiguities, has led some clinicians to report a general lack of knowledge and confidence in managing these presentations.

NEPTUNE

NEPTUNE (the Novel Psychoactive Treatment UK Network), funded by the Health Foundation, was set up in 2015 in response to this growing need. The project was hosted by the Club Drug Clinic, which is part of Central and North West London NHS Foundation Trust (CNWL). The overall aim of NEPTUNE was to address the gap in clinicians' knowledge about managing acute and chronic problems resulting from the use of these drugs. The project involved developing:

- a clinical community and guideline group
- clinical guidelines
- care bundles (or checklists) to support clinicians during NPS and club drug presentations.

NEPTUNE has established a UK-wide, multi-disciplinary community of professionals and service users with expertise in NPS and club drugs. This included psychiatrists, clinical psychologists, emergency medicine physicians, clinical and analytical toxicologist, sexual health and HIV physicians, GPs, urologists, commissioners and academics. Additionally, Public Health England, the Home Office and the Department for Health sat on the group as observers. Clinical guidelines and care bundles were

[14] NEPTUNE (2015), *'After the party: clinical guidance improves care for users of club drugs',* Health Foundation. Available here: www.health.org.uk/newsletter/after-party-clinical-guidance-improves-care-users-club-drugs

developed to support busy clinicians to deliver treatment in a consistent and safe way. The guidelines provided advice on topics including NPS and club drug harms and their reduction, interventions, service models, and psychological and pharmacological treatments.

NEPTUNE II - Rationale for e-learning in clinical settings

The Health Foundation funded a subsequent phase of the project (NEPTUNE II) to translate the clinical guidance into a suite of e-learning modules for clinicians (which are the subject of this evaluation). NEPTUNE II aimed to provide an easily accessible and digestible resource for clinicians working in a range of settings. The rationale was that this group of professionals, who are often described as time-poor, would be more likely, and able, to start and complete an e-learning module than to read a clinical guidance document. The literature on e-learning approaches in certain clinical settings is limited, as acknowledged by Calder and colleagues.[16] However, as outlined below, there are some benefits of e-learning in clinical settings, as well as challenges that need to be overcome to ensure interventions are successful.

Benefits of e-learning in clinical settings

The scope for individuals to tailor e-learning packages to their needs and preferences is a significant advantage. As explored in the literature, interactive elements in e-learning programmes give users access to a range of different experiences to choose from, depending on their needs (Calder et al.). The individual can also decide when to access e-learning, which is useful when time is limited.[17] From a service management perspective, the literature highlights that e-learning approaches have the potential to reach a large number of clinicians in a cost-effective way, by removing the burden on clinician travel.[18] E-learning also has pedagogical advantages; it can disseminate key learning objectives with *'an accuracy and fidelity'* that can be difficult to guarantee when using large numbers of training staff.[19] Additionally, in their 2008 meta-analysis, Cook and colleagues found

[16] Calder R, Ainscough T, Kimergård A, Witton J & K. R, Dyer (2017), '*Online training for substance misuse workers: A systematic review,'* in 'Drugs, Education, Prevention and Strategy'. (Subsequently 'Calder et al.')
[17] NICE (National Institute of Health and Clinical Excellence) (2014), '*Development of local e-learning for relevant NICE guidance',* Kent and Medway NHS & Social Care Partnership Trust. Available at: www.nice.org.uk/sharedlearning/development-of-local-e-learning-for-relevant-nice-guidance#results
[18] NICE (National Institute of Health and Clinical Excellence) (2016), '*NECS e-learning: antibiotic prescribing and antimicrobial stewardship in primary care',* North of England Commissioning support group. Available at: www.nice.org.uk/sharedlearning/necs-e-learning-antibiotic-prescribing-and-antimicrobial-stewardship-in-primary-care
[19] Martino, S. (2010), '*Strategies for training counsellors in evidence-based treatments*.' In Addiction Science & Clinical Practice, 5, 30 39.

that internet-based learning (which includes e-learning), appears to be just as effective as traditional methods.[20]

Challenges and barriers

While the potential benefits of e-learning are accepted in the literature, they require clinicians to start and complete courses. Wong and colleagues highlight that implementation of internet-based approaches (including e-learning) is the most difficult aspect.[21] Two key challenges that need to be overcome are lack of time and technical access issues. Not having protected time for an e-learning course, coupled with difficulty accessing it, prevents potential users from starting, let alone completing (Calder et al.). A further challenge of the approach is ensuring content is up to date. In general, the content of any training needs to be current to benefit participants.[22] This is especially relevant in the context of NPS, where the rate of change in composition of substance and patterns of use has, so far, been rapid.[23]

Overcoming barriers

The ability to fit e-learning around clinical work was an important facilitator to completion, and giving staff protected time increased completion.[24] When the content was perceived as helpful and resonated with the user's experiences they were more likely to complete the programme (Calder et al). Content was perceived as relevant when it was in line with current practice standards, and developed with experts in the field (Calder et al). Users could sometimes be motivated to start and complete courses when implementers promoted the cost savings, convenience, ease of use and accessibility (in terms of language and literacy) (Wong et al).

[20] Cook, D., Levinson, A., Garside, S., Dupras, D., Erwin, P., & Montori, V.(2008), '*Internet-based learning in the health professions: A meta-analysis.* 'In Journal of the American Medical Association, 300, 1181–1196.

[21] Wong, G., Greenhalgh, T., (2014), '*Internet-based learning for training health care professionals in-service',* Queen Mary, University of London. Available at: www.who.int/ehealth/resources/elearning_inservice.pdf. (Subsequently 'Wong et al.')

[22] Sargsyan, A., Metcalfe, S., Turner, B., Fourts, S., (2013), *Development of an Internet-based Substance Abuse Continuing Education, Course for Practicing Registered Nurses'.* In European International Journal of Science and Technology, Vol. 2. No. 1. (February 2013). Available at: www.cekinfo.org.uk/images/frontImages/gallery/Vol._2_No._1_/9.pdf

[23] Patterson, Z, R., Young, M, M., Vaccarino, F, J. (2016), *'Novel psychoactive substances: What educators need to know'.* In Clinical Pharmacology and Therapeutics, Volume 101, Designer Drugs 2.0, pages 173-175.

[24] Banks, P., Michelle, R., Kane, H., Lauder, W., Jones, M., Kydd, A., Atkinson, J., (2011), '*Flying Start NHS™*: easing the transition from student to registered health professional. In Journal of Clinical Nursing, Volume 20, Issue 23-24, pages 3567-3576, December 2011.

1.3 NEPTUNE e-learning module

The subject of this evaluation was NEPTUNE's introductory module, which was called 'Module 1: An introduction to club drugs and novel psychoactive substances'. This module comprised the following sections:

- A pre-module quiz – ten questions about NPS and club drugs for users to test their base level of knowledge
- Section one: what are NPS and club drugs, and who uses them?
- Section two: drug groups and classifications
- Section three: responding to substance misuse problems
- Summary of key content
- A post-module quiz – the same ten questions asked at the beginning

The module contained text, images and interactive elements, including a video of a clinician delivering a brief intervention and a 'drag/drop' exercise that required users to match-up different substances with categories. The module was expected to take one hour (however, participants sometimes reported needing to spend significantly less time on the module).

NEPTUNE produced six further modules, which were not formally piloted as part of this evaluation. These modules covered the acute and chronic harms of different types of NPS and club drug:

- Module 2: Acute harms and management of depressants
- Module 3: Acute harms and management of stimulants
- Module 4: Acute harms and management of synthetic cannabinoid receptor agonists (SCRAs) and hallucinogens
- Module 5: Chronic harms and management of depressants
- Module 6: Chronic harms and management of stimulants
- Module 7: Chronic harms and management of synthetic cannabinoid receptor agonists (SCRAs) and hallucinogens

NEPTUNE II e-learning modules were designed for clinicians, for example nurses, doctors and psychologists, and, specialist drugs workers (who might not always be clinically trained).

2. Evaluation

This chapter explains the rationale for the evaluation, and, the specific aims and methods, before providing an overview of subsequent chapters.

2.1 Aims and objectives

The NEPTUNE development team wanted to pilot and evaluate their e-learning modules, to understand how barriers to access and completion could be overcome. Additionally, the team wanted to understand how clinicians thought they benefitted when they completed the module. The Health Foundation funded the Royal College of Psychiatrists' College Centre for Quality Improvement to independently evaluate NEPTUNE resources, specifically to explore:

- The barriers and facilitators to accessing and completing the e-learning module.
- How barriers can be overcome.
- In what settings, and for whom, is it not possible to overcome these barriers.
- Perceived impacts of the module on knowledge and confidence in relation to. NPS and club drug presentations.
- What effects, if any, this might this have on clinical practice.

Development team

The wider NEPTUNE community shaped the development of the e-learning resources, but a development team – part of NEPTUNE – had project management responsibility of the resources. This included a project clinical lead, a research/programme manager and a project assistant.

Evaluation team

The evaluation was undertaken by the Royal College of Psychiatrists' Centre for Quality Improvement (CCQI), which is organisationally separate from parts of the College involved in the NEPTUNE project, and so well placed for this role. The Health Foundation recommend that evaluators are close enough to the project to help design and deliver an appropriate evaluation, but also distant enough from the implementation team to be able to provide objectivity, ask challenging questions and

notice insights that those very absorbed in the work may miss. This report is written by the evaluation team.

2.2 Methods

Qualitative case study design

The NEPTUNE team piloted the e-learning module at 6 services: two sexual health services, two specialist drugs services and two emergency departments.
We (the evaluation team) used a qualitative case study design to explore participants' views and experiences of the module. Qualitative research enables an in-depth exploration of social phenomenon. It is ideally suited to exploring how different settings respond to the same intervention. We conducted 35 in-depth qualitative interviews with invited to complete the module and a small number of key stakeholders to test transferability of findings to other settings.

Additional research

This report focuses on qualitative case study findings from the evaluation. Further details (and findings) from other aspects of the evaluation can be found in Appendix D.

2.2.1 Theoretical model

Realist evaluation

Our evaluation was informed by a realist evaluation approach.[25] Realist evaluation is a form of theory-driven evaluation, which aims to answer the question: *'what works for whom in what circumstances'?* At the outset of the study we developed an initial programme theory in collaboration with the development team. This programme theory described how we thought the e-learning module would work (see Appendix C). The subsequent fieldwork period (described below) was used to test and refine this theory. The final programme theory is presented in chapter 8 (p80).

[25] Pawson, R., (2013) *The Science of Evaluation, a realist manifesto,* (London: SAGE Publications).

2.2.2 Sampling and recruitment

Service selection

A total of six services were purposively selected to cover settings where different types of NPS and club drug presentations were known to occur: sexual health services, specialist drugs services and emergency departments.
Two of each service type were included to help explore and explain emergent patterns. Site selection was also underpinned by the assumption in our initial programme theory (see Appendix C) that the frequency of NPS and club drug presentations at a service would influence how the NEPTUNE e-learning module would work. The table below summarises site selection.

	Emergency departments **(x2)**	Sexual health services **(x2)**	Specialist drug services **(x2)**
Frequent presentations			✓
Infrequent presentations	✓	✓	

Evaluation participants

In-depth qualitative interviews were conducted with professionals from these services. Individual participants were purposively sampled to ensure representation across key sampling characteristics: professional background, NPS and club drug exposure and amount of e-learning completed.

Stakeholder participants – interviews to assess transferability

It was beyond the remit of this evaluation to include those who worked in all settings where NEPTUNE e-learning resources might be implemented in the future. We invited a small number of key stakeholders who were known to the NEPTUNE network to help us transfer and interpret findings for additional settings. We interviewed stakeholder participants before and after the pilot period. Stakeholders worked with homeless populations, in prisons and with mental health service users.

The final achieved sample is summarised by the table below:

		Total
Sexual health services	Health advisors	4
	Consultants	3
	Specialist registrar	2
	Nurse (registered general)	2
		11
Emergency departments	Specialist registrar (emergency medicine)	3
	Consultant (emergency medicine)	2
	Nurse (registered general and registered mental health)	3
		8
Specialist drug services	Nurse (registered mental health)	5
	Mix of professional backgrounds *support/recovery worker (range of specialisms), psychologists (including assistant psychologists, clinical trial manager, therapist)*	7
		12
Stakeholders	Included those who worked in in-patient psychiatric settings, community mental health, prisons, homeless populations	5
		4
Total (pilot services and stakeholders)		**35**

2.2.3 Implementation and pilot period

The same broad approach was used to implement the e-learning module at the six services:

- First, services nominated a key contact, who agreed on a timeframe for a target of 20 members of their team to complete the module. The key contact was either the person who initially agreed to the service being a pilot site, or a colleague they delegated it to.
- The NEPTUNE development team visited services to tell staff about NEPTUNE, the module and encourage completion.
- The key contact then circulated a link and instructions of how to complete the module, which was sometimes followed-up and discussed at face-to-face meetings.

A total of 81 people across the six services are known to have completed the module as part of the pilot period. The actual figure is likely to be higher because services reported technical difficulties in generating completion certificates (which meant it was not possible to log).

2.2.4 Fieldwork

In-depth interviews were conducted with participants between 14th December 2016 and 29th June 2017 (with the majority taking place between February and April 2016). They ranged in length between 21 and 60 minutes, but typically lasted 45-60 minutes. Interviews were conducted over the phone or face-to-face depending on the participant's preference. Topic guides were developed to ensure consistent coverage across interviews. The guides were used flexibly and interviewers were responsive to issues raised by participants (details of the topic guides can be found in Appendix A).

2.2.5 Analysis

The data were managed using the Framework approach, supported by the qualitative software package NVivo (version 11). Interviews were recorded and uploaded to NVivo 11. The Framework approach was developed by Jane Ritchie and Jane Lewis (Ritchie et al., 2013). Key steps taken are outlined below.

- Evaluators identified key overarching themes through familiarisation with interview data.
- A thematic framework was developed, which detailed overarching themes and sub-themes.
- A series of matrices were created in NVivo 11 and recordings were imported.
- The columns in each matrix represented the key sub-themes or topics and the rows represented individual participants.
- Data from each recording were then summarised into the appropriate cells. The software enabled the summarised data to be linked to relevant sections of the recording; all data were systematically ordered by theme and accessible.

Analysis involved detecting emergent patterns and interrogating the data to explain the underlying causes as far as possible.

2.2.6 Ethics

NHS ethics approval was not required because this study was an evaluation rather than research. However, to ensure ethical practice was followed the study was reviewed and approved by the CCQI Ethics Committee at the Royal College of Psychiatrists (ref. 2016-1). Site visits were conducted with appropriate approvals from key contacts and data were collected with participants' informed consent.

2.2.7 Scope and limitations

As the findings presented here are qualitative no numerical or statistical significance can be attached to them. It is not possible to explore prevalence of experiences. The focus is on the range and diversity of experiences. As such, numerical language has not been used here.

As with any methodology there were challenges and limitations which should be borne in mind when reading.

- **Emergency department professionals –** due to recruitment challenges it was not possible to include as many participants from emergency departments compared to other services. This potentially limits the extent to which our findings represent the full diversity of those who work in this setting.

- **Diversity of background** – there was variation in how sexual health and drugs services were configured, which highlighted the diverse professional backgrounds of those who worked in these settings. It is therefore possible that we did not fully capture this diversity.

- **Other relevant settings –** while stakeholders provided important insights into how the NEPTUNE e-learning module might work in other settings, the resource was not tested more widely. Further research and evaluation would be needed to test transferability of our findings to other settings.

- **Pilot and evaluation site selection** – NEPTUNE invited services they had previously worked with to be pilot sites. The sample only includes services interested in NPS and club drugs (who were arguably more likely to be receptive to the module). However, we felt it was necessary to work with services that had an underlying engagement to ensure there was sufficient engagement in the pilot and evaluation.

2.3 Overview of structure

The rest of this report presents findings from the evaluation, the overall structure is summarised below.

- Overall views and perceived impacts
- Perceived need for NPS and club drug training
- Previous experiences of e-learning
- Spreading the NEPTUNE e-learning module
- Barriers and facilitators to completion
- Programme theory
- Transferability to other settings
- Conclusions and recommendation

Interpreting findings

Quotations have been used throughout to help reflect the rich nature of participants' accounts, but identifiable details have been withheld to protect participants' anonymity. Pull out summary boxes are presented at the beginning of each chapter to give the reader an overview of key points.

Section 2:

Main findings

3. Overall views and perceived impact

The module worked best for medics and those interested in drugs.

This chapter explores for whom the NEPTUNE module worked best and participants' overall views of it. The chapter concludes with participants' perceived impacts of the module on their knowledge and confidence in relation to NPS and club drug presentations.

Chapter summary and key findings

- The NEPTUNE e-learning module worked best for those who had a medical background or an interest in drugs, because they found content most relevant for their jobs.
- Non-clinicians, who the module was not primarily aimed at, sometimes ended up completing it. This group found the module less useful.
- When the module worked well, participants reported increased knowledge and confidence levels, which in some cases led to them planning to change their clinical practice.
- New knowledge included specific features of substances and clarification on the legal status of NPS and club drugs.
- This led to increased confidence, which in turn, meant participants:
  - Felt they had more credibility with service users, facilitating productive relationships needed to deliver high quality care
  - Junior doctors felt they could perform with greater autonomy, freeing up senior colleagues
  - Could, confidently, teach new NPS and club drugs knowledge to colleagues
  - Had more job satisfaction
- Planned changes in clinical practice included:
  - Increased efforts to quantify and record use of NPS and club drugs
  - Taking toxicity of NPS and club drugs into account, and being more inclined to manage some acute presentations in resuscitation
  - Providing s pecific advice for users of NPS and club drugs
  - Referring service users to specialist services more

3.1 Explaining varied views of the module

Participants reported two broad experiences of the module:

- **Module broadly worked**
  This group of participants, on balance, liked the module and felt it was worth the time it took them to complete. They could identify tangible benefits to their knowledge, confidence or planned changes in clinical practice in relation to NPS and club drugs.

- **Limited benefits of the module**
  This group were unable to identify any tangible benefits of the module. While these participants might have enjoyed the module, or even found it interesting, they did not always perceive it to have been relevant to their jobs.

Professional background and specialism underpinned which of the two groups participants fell into. Three key factors determined which group participants fell into:

- **A specialist interest in drugs**
  This included participants who worked in specialist drug settings, but also those who worked closely with drugs in sexual health services and emergency department. It also included professionals – from a range of backgrounds – who previously worked with drugs, or wanted to in the future. These participants identified NPS and club drugs as an important area, and sometimes felt that given the recentness of these substances any new knowledge was beneficial. As a participant explained:

> *'It is something we have to be interested in to work here to be honest. It is what people are doing. It's their lives. I'm certainly not going to sit her and kind of dictate to anyone what they should be doing.'* **– consultant, sexual health service**

- **Medical background**

  Those from medical backgrounds (regardless of setting) tended to identify some benefits of the module. One explanation was that medical training made these participants especially receptive to scientific content of the module. Participants described how they felt as though they had a *'hook'* from their medical training which meant they could extrapolate broader implications of content if they worked from first principle. As a participant explained:

> *'I quite like science, I think everything has got a reason. If you have got hyperthermia it is probably because you have got high serotonin, if you have heart palpations one of your hormones is high.'* **– doctor, sexual health service**

- **Non-clinicians**

  The NEPTUNE module was aimed at clinicians, but non-clinicians (health advisers, key workers) sometimes completed it as part of the pilot, because they were interested in the subject matter, or perceived a need. However, on balance, the module did not work for non-clinicians, unless they had expertise or a special interest in drugs more generally. This was because the content was too scientific and therefore superfluous to their need.

> *'I don't need to know this information. To be able to help someone with issues around drug use, psychoactive substance or any other drug use, I don't need to know the ins and outs of kind of specifics of how they affect the body or categorisation. What I need to know is, generally, the highs and the lows. This drug will make someone feel euphoric. I just kind of need more general and then the come downs and dangers are...paranoia and general psychosis. I just kind of need the general headlines.'* **- health, adviser, sexual health service**

The table below summarises overall views of the module by different settings and professional background.

	Sexual health service		Specialist drugs service		Emergency department	
	Broadly worked	Limited benefits	Broadly worked	Limited benefits	Broadly worked	Limited benefits
Professional background and interests	consultants trial medics non-medical staff with special interest in drugs	non-medical staff without specialist interest in drugs (health advisers, nurses)	key workers, consultants, nurses, psychologists	no direct contact with NPS users	medics nurses with specialist interest in drugs	nurses without specialist interest in drugs

3.2 Meeting diverse needs

The evaluation found that there was a lack of appropriate resources on NPS and club drugs for non-clinicians and non-medical staff without a specialist interest in drugs.

Implication: It might be helpful to signpost non-clinicians (without a specialist interest in drugs) to other NEPTUNE resources, like the care bundles, which they can use when with service users. However, the evaluation suggests there might be a gap in resources for this group.

While more research is needed to understand this groups' NPS and club drug training needs, participants highlighted four key points about their needs, as explored below.

- **More detailed advice on patient engagement**
  Participants from non-medical backgrounds and with limited contact with NPS and club drug presentations would have welcomed more coverage on patient engagement. This was especially relevant to those from nursing backgrounds, who identified facilitating patient engagement as central to their role. Content

on how to encourage patient engagement was highlighted as something that might be particularly useful for this group, and related to drugs more broadly.

- **Treatment options**
  Relatedly, participants from different professional backgrounds who worked outside of specialist drugs services reported they would have welcomed more content on specific treatment options for their service users who used NPS and club drugs. Case examples were felt to be a useful way to communicate this information.

- **High level overview of substances**
  Non-medics who worked outside of specialist drug services wanted more high-level information of different substances, with an overview of side effects and risk factors. These participants sometimes wanted a resource they could use while their service user was with them. Participants who had previously seen or heard about the NEPTUNE care bundles thought this would be a helpful resource and suggested clearly signposting clinicians to these.

- **Relevance**
  Participants did not want to engage with content that they perceived as superfluous to their role. For example, participants from a sexual health service felt that statistics about European NPS was not relevant to their day-to-day work.

The rest of this chapter focuses on the group of participants for whom the module broadly worked. It explores their perceptions of how the module changed their knowledge, confidence and clinical practice.

3.3 Perceived impacts

The original aim of the NEPTUNE e-learning module was to increase clinicians' knowledge and confidence in dealing with NPS and club drug presentations, which it was hoped, would lead to changed clinical practice. While it is too early to measure the impact of the module participants reported increased knowledge and confidence which, in some cases, led to changed clinical practice.

3.3.1 New knowledge

General principles about the nature of NPS and club drug knowledge and education were valued. The module impressed on participants the rapid pace of change of NPS and club drugs up until now, and the diverse nature of substances. This reinforced the necessity for participants to keep up to date with developments, and illuminated how quickly their knowledge could become out of date. Moreover, completing the module helped raise awareness of project NEPTUNE as a source which participants could consult in the future to help fill future gaps in knowledge.

It was sometimes difficult for participants to distinguish what knowledge about NPS and club drugs they gained from the NEPTUNE module, and what might have come from other sources, like teaching sessions (particularly if they happened simultaneously). However, when participants experienced this challenge, they acknowledged, at very least, that the module had contributed to what they described as newly found 'deep understanding' about NPS and club drugs in some way. However, participants highlighted specific examples of new knowledge about NPS and club drugs they gained from the NEPTUNE module:

- **Legal status and media coverage**
  There was a degree of confusion amongst participants about the legal status of NPS and club drugs before they completed the module. While there was awareness of the Psychoactive Substances Act (2016), some participants reported that they still used the term 'legal high', because the term was used widely in the media. However, the module clarified the misleading and inaccurate nature of the term. This was especially relevant to participants who worked outside of specialist drugs services (as those who worked in drugs services tended to have a more detailed understanding of the legal status of NPS and club drugs).

- **Substances**
  Participants learned about the science underpinning NPS and club drugs, including which receptor acts on their reactor. For medics, this helped them to draw wider inferences. The module illuminated the high levels of serotonin found in NPS and club drugs use could lead to serotonin syndrome, which had implications for what participants prescribed. Participants who worked in

emergency departments had not always previously appreciated that SCRAs were in a category separate to depressants and stimulants. The module promoted awareness of what people took on the streets, and gave participants an insight into how substances triggered behaviours.

The act of completing the module prompted participants to reflect on gaps in their NPS and club drug knowledge. For example, a participant who worked on drug trials in a sexual health service said the module highlighted that they needed to develop a more nuanced understanding of lesser known symptoms and side-effects of NPS and club drugs to help answer service-user questions. The module also highlighted small gaps in knowledge amongst those who felt they were experts. As a participants explained.

'It polished them [knowledge levels], I thought I was there, but I was just off - it crossed the 'T's and dotted the 'I's, the little intricacies.' **– mental health nurse, specialist drugs service**

3.3.2 Increased confidence

New knowledge led to increased confidence in how to manage NPS and club drug presentations. In general, the more familiar participants felt they were with NPS and club drugs the more able they were to develop structured approach to management, where they felt in control. As a participant explained:

'I felt more confident. I think I would feel more knowledgeable in general, about it, which I think always give you confidence, if you feel a bit more familiar that you understand something. I think it made me feel that I had a more structured approach than I used to, which again makes me feel more confident than I used to. And I think it made me understand the secondary services a bit.' **– senior specialist registrar, emergency department**

However, confidence sometimes increased even when participants did not acquire new knowledge per se. There were a group of participants for whom the module confirmed *'hunches'* about NPS and club drugs, or confirmed that their knowledge was still up to date. As a participant explained:

'I think it was just a lovely refresher from what I worked in and was interested in. And I was absolutely thrilled that I got 100%.' **– mental health nurse, emergency department**

There were four wider benefits of participants being more confident about NPS and club drugs, which can be summarised as:

- **Credibility with service users**
  Participants felt the module gave them more credibility with their service users. Participants across professional backgrounds emphasised the necessity of having credibility with their service users to maintain rapport and facilitate disclosure of sensitive health problems, for example, sexual health. The relationship between clinician and service user was highlighted as central to high quality patient care. The inability to answer questions about NPS and club drugs was perceived as undermining participants' credibility with service users, because they lost their status as *'experts'* in the field. This was a theme in specialist drug and sexual health services because participants developed relationships with service users over a longer time compared to emergency departments.

- **Service delivery**
  Senior clinical colleagues were freed up to support other staff when participants had the confidence to act with more independence with NPS and club drug presentations. In ED, for instance, a junior doctor who managed resuscitation on some shifts, explained that they felt more confident in managing NPS and club drug presentations, partly because of completing the module. In the future, this likely meant that their consultant (who supervised them) could support other junior doctors.

- **Education and training juniors**
  When participants were more confident in their NPS and club drug knowledge, they were more comfortable sharing it with colleagues in the form of training. For example, a participant (in ED) explained they ran some NPS and club drug awareness training since they completed the module, which was attended by approximately ten junior doctors. This participant felt they could give information that was informed by more than just anecdote. It was possible, participants felt, that this educational activity would prompt attendees to do more research into NPS and club drugs and to ask patients or service users about it more directly. Awareness raising was highlighted as

central to improving how clinicians managed NPS and club drug presentations more widely; it is difficult to ask about what you do not know.

- **Job satisfaction**
  There were participants who felt most comfortable in their roles when they knew as much as possible, these participants were unhappy when they felt they needed to perform at the limits of their knowledge. As a participant explained:

> *'I'm the sort of person who likes to know everything about my role, the thing I do...I like to be totally prepared...I don't like to say "I don't know".'*
> **– mental health nurse, specialist drugs service**

  In these cases, confidence in managing NPS and club drug presentations helped participants to find their roles more professionally rewarding.

3.3.3 Changes to clinical practice

When participants reported increased knowledge and confidence it was possible that they had already, or intended, to change their clinical practice in relation to NPS and club drugs. Four key changes emerged:

Detection and data collection

The module emphasised that some populations were more likely to use NPS and club drugs, for example SCRA use amongst homeless people was high. When the module augmented this fact in participants' minds they reported they would be more likely to explore SCRA use with this demographic group. Similarly, the module prompted some participants to reflect on the importance of quantifying and recording NPS and club drug use when service users disclosed what they had taken. For example, a participant from a sexual health service explained that if someone reported GBL/GBH use, they would probe to find out how much they took, the length of a session and with what regularity. This participant would not previously have gone into this level of detail, but after completion of the module felt this information was necessary to avoid overdose and manage withdrawal. Keeping clear, detailed notes

was also identified as helping participants, and their colleagues, to support substance misuse more generally.

Acute management

In emergency departments, participants reported they would be more mindful of the potential toxicity of NPS and club drugs, like GBL/GBH, which they saw more regularly. These participants reported that after completing the module they would be more likely to manage patients who had overdosed on GBL/GBH, in resuscitation (assuming they were not already). For these participants, the module highlighted the possibility of fatalities, and emphasised the need for airwave support.

Advice and information for patients

Participants (outside of a specialist drug setting) said they would be more likely to emphasise that service users should not mix NPS with other drugs because of associated risks, like serotonin syndrome. Service managers, at a sexual health service, also expected that simple information about withdrawals would be more robust when their staff had completed the NEPTUNE module.

Available interventions

Emergency department participants welcomed coverage of different interventions available by setting (GPs, specialist drug services, for example), because it illuminated the diversity of what was available. These participants had not necessarily appreciated the extent of what other services did, but wanted to develop their knowledge because they felt the quality of their intervention was limited when they did not understand what was available more broadly. As a result, these participants were more likely (and able) to refer patients onto other services.

Key finding: While NEPTUNE's target audience reported increased knowledge and confidence when they completed the module, the act of completion was complicated. A range of background factors, as well as, more immediate factors influenced when, and if, the module was completed at all. The following sections explore these factors. The report concludes with recommendations to increase completion.

4. Perceived need for NPS and club drug training

Individuals and service managers had varied views of NPS and club drug training. It is helpful for future implementers to consider both.

This chapter reports the types of NPS and club drug presentations participants experienced. It then outlines service-level responses and contexts. The chapter finishes by exploring participants' perceptions of their NPS and club drug training needs.

Chapter summary and key findings

- NPS and club drug presentations were diverse, with different characteristics by setting:
  - Sexual health services - tended to see GBL/GBH presentations amongst MSM, in the context of sexual health presentations.
  - Emergency departments – managed challenging behaviour linked to SCRA and overdose of GBL/GBH.
  - Drugs services – developed shared goals with service users to address NPS and club drug use over time.
- Service managers perceived a need for NPS and club drug training, but prioritisation varied:
  - It was a high priority when the service already used professional development to improve morale.
  - But, a lower priority when services were disparate and large and multiple managers had responsibility for training.
- It was more effective to target individuals about NPS and club drug training when it was a lower service priority.
- Individuals' perceived need for NPS and club drug training were shaped by four factors:
  - frequency and seriousness of presentation
  - knowledge levels relative colleagues'
  - existing confidence
  - predictions about future NPS and club drug use.

4.1 Nature of NPS and club drug presentations

Ongoing challenges

The rate at which NPS and club drug use changed and developed led participants to think there would always be something new to learn. The previous legal status of NPS presented specific challenges. For example, participants working in specialist drugs services struggled, sometimes, to convince service users of the toxicity of SCRAs because of their previous legal status, which to them implied safety, even after the change in law (as illustrated below). Homeless people who disclosed drug use to housing associations perceived SCRAs (most commonly spice) to be acceptable, which in some cases, could have acted as a disincentive to stop use.

'There was a time when spice was legal whereas cannabis was illegal…and just frustrating how you hear horror stories of parents finding out their kids were smoking dope and telling them to go out and buy some spice instead because it was legal. And it was just like – huh? No! No! No! If it was between spice and cannabis use I would be advising people to stay away from spice because of the harms.' **– mental health nurse, specialist drugs service**

The evolving patterns of NPS and club drug use were clinically challenging for participants. GBH/GBL was first used by men who have sex with men (MSM) to enhance sexual experience and longevity ('chemsex' – as explored on p16). This was difficult to manage for some female participants who reported difficulty in engaging with this service-user group because they were a *'closed community'* who feared being judged by outsiders. Moreover, they sometimes felt that traditional drug and alcohol services were not for them.

'I think that certainly for very MSM focused outreach work, it can sometimes feel quite difficult being a woman, going into a very MSM environment. And certainly in some previous…outreach work that we've done, there was one [place] in town where we were clearly very unwelcome…and you know actually the whole thing about having sexual health people in this [place] clearly made some people feel very uncomfortable, but that some of us were women also seemed to, that was you know, beyond the pale, that wasn't acceptable, which is quite hard in a professional sense, it is quite hard as a woman.'
– nurse, sexual health service

More recently, participants reported a subsequent increase in GBL/GBH presentations by young heterosexual people who used it in club and party settings.

This newer group of users did not have the same expertise and knowledge about how to use the substances safely. For instance, not understanding the varied potency from batch of GBL/GBH varied in potency led to increased overdoses, leading to increased presentations in emergency departments.

Current presentations

The nature and type of presentations reported by participants were wide-ranging, reflecting the diversity of NPS and club drugs, and the different points at which clinicians saw people who used these substances. Presentations in different settings are summarised below.

<table>
<tr><td>Substances
GBL/GBH, mephedrone, SCRA and ketamine presentations.</td><td rowspan="2">Nature
These ranged significantly in acuity. At one end of the spectrum, if a patient had overdosed on GBL/GBH they might be unconscious and need intubation. At the other end of the spectrum, a patient who had used SCRAs might present with mild anxiety and erratic behaviour.</td></tr>
<tr><td rowspan="2">Emergency Department
Presentations</td></tr>
<tr><td>Management
The focus is primarily on treating immediate symptoms, for example, difficulty breathing, challenging or unusual behaviour. Might deliver a brief psycho-social intervention or refer to a specialist drug service to help manage underlying cause.</td><td>Frequency
The frequency of presentations fluctuated at different times of year, but it was hard to discern patterns or explanations. Some participants speculated that students who used ketamine or GBL/GBH (as a ‘club drug’) were more likely to present during exams, or shortly after, because they used these substances as an escape from pressures and stress associated with exams. Participants from emergency departments estimated they each saw between one and ten NPS and club drug presentations per month. While NPS and club drug presentations might be a small part of overall workload, presentations could be extremely labour intensive.</td></tr>
</table>

Substances

GBL/GBH, sometimes co-ingested with other substances (MDMA, mephedrone or crystal meth), methamphetamine. It was primarily the MSM community who used these substances.

Sexual health service

Presentations

Management

Management was service-user-led. If the service user did not perceive their use as risky or problematic the clinician would not actively pursue drug treatment or onward referral. However, participants said they would explain to their service users, how they could support them if they later changed their mind. Participants described this as 'sewing the seed' for when the time was right. When service users wanted help, sexual health services delivered psycho-social interventions, and sometimes referred to specialist drug services if needed.

Nature

The level of harm caused by NPS and club drugs was varied. On the one hand, the service user and clinician might perceive limited or no harm if use was recreational and not impacting on sexual risk taking. Alternatively, when GBL/GBH use was linked to increased sexual risk taking or encroached on the service user's day-to-day life, use was perceived as problematic. There were also concerns about withdrawal from GBL/GBH, which could be fatal.

Frequency

A large proportion of MSM service-users used GBL/GBH. However, not all those who used these substances necessarily identified their use as problematic, so it would not be managed by the service. Those who worked more closely with MSM saw up to 20 NPS cases a month, those who did not work with MSM saw very few, if any, per month.

Substances

GBL/GBH, sometimes co-ingested with other substances (MDMA, methadone or crystal meth), ketamine (sometimes co-ingested with other substances and alcohol) and SCRAs, (sometimes co-ingested with alcohol and or prescription drugs), methamphetamine.

Specialist drug service

Presentations

Nature

Service users identified their drug use as problematic when they engaged with specialist drug services. Therefore they tended to want to detox or use substances more safely. However, clinicians still needed to overcome challenges to engage their service users. These services have seen an increase in GBL/GBH amongst the MSM community and more SCRA use amongst homeless populations. The effects of SCRAs were described as awful, with extreme paranoia, high anxiety and needing to use regularly.

Management

The approach was underpinned by the service user and their allocated key worker agreeing on a goal (detox, or safer use). Specialist drugs services used a multi-disciplinary approach. It was therefore possible for a service user to encounter a psychiatrist, psychologist and key worker over a treatment period.

Frequency

A large proportion of these participants' caseloads were either currently using or had previously used NPS and club drugs. Those who encountered service users after they had been abstinent for over a month (psychologists and therapists) did not always explore NPS and club drug use because their emphasis was on recovery.

4.2 Service-level need for NPS and club drug training

Managers acknowledged NPS and club drugs posed a significant challenge for their services and identified a need for their staff to understand these substances and how to manage presentations. The extent to which services prioritised training in NPS and club drugs for their staff varied according to two related factors (each explored below in detail):

- Views on the broader role of professional development.
- The size and structure of the service.

Broader role of professional development

At some services managers used professional development to help improve morale amongst staff. These services prioritised NPS and club drug training for their staff.

Perceived causes of low morale

Participants linked service delivery issues to low morale. At sexual health and specialist drugs services, participants reported cyclical re-tendering processes. This resulted in periods of uncertainty when staff worried about job security, which consequently resulted in increased staff turnover. This, coupled with increased pressure to deliver value for money, was said to have damaged morale at these services, if only temporarily. In emergency departments, a key challenge was an increased volume of patients, without increased staffing to match. This led to emergency department staff to feel overwhelmed by their clinical workload.

In addition, participants across settings highlighted general challenges associated with clinical work. These clinical challenges were intensified for participants when their morale was already depleted by service delivery issues. For example, telling patients about new HIV diagnoses was emotionally difficult. Service users who used NPS and club drugs sometimes had complex lives with co-morbid physical and mental health problems, which were difficult to manage.

Professional development to improve morale

Service managers (clinical leads and consultants) prioritised their staffs' broad professional development when they viewed it as a way to address low morale.

'We have all been here for a few years now. The research stuff keeps us stimulated, it's the same for us as a service, as well as for individuals and I think we are lucky to have a strong research heritage in the department.'
– consultant, sexual health service

These managers thought that participation in relevant teaching, training, evaluation and research, promoted a sense of pride amongst clinicians about their work. These services developed an ethos of their staff as *'experts'* in their field, which was celebrated. This in turn, they felt, contributed to overcoming low morale. Therefore, delivering training in NPS and club drugs complemented a broader, existing approach. These service managers were especially proactive in encouraging their staff to complete the module.

Size and structure of services

However, the size and structure of services influenced the extent to which it was possible, or appropriate, for managers to shape professional development content. When services were large and disparate in nature, and included multiple sites and professional backgrounds, it was not possible for service mangers (clinical leads and consultants) to directly influence training content. Here, individual team leaders needed to be engaged in the process. While these service managers agreed that NPS and club drug training was important, they were understandably less inclined to encourage staff to complete the module, since it fell outside of the remit of their job. In these settings, it might be more appropriate – and successful – to appeal to clinicians on an individual level, rather than through service managers.

Recommendation: It is important for future implementers to understand how individuals perceive their need for NPS training and service managers. This will help determine who it is best to target.

Evaluator reflection: The recommissioning of specialist drug and sexual health services has led to partnerships between organisations, sometimes with different structures and policies. These different organisations (and staff) are potential competitors for future contracts. The Advisory Council on the Misuse of Drugs (ACMD) have acknowledged this is costly and disruptive. It could be helpful for future implementers to be mindful related potential instability and uncertainty.[26]

[26] AMCD (Advisory Council on the Misuse of Drugs) (2017), *'Commissioning impact on drug treatment'.*

4.3 Individuals' NPS and club drug training needs

Four factors influenced whether participants felt they needed NPS and club drug training:

Frequency and seriousness of presentations

It was possible for presentations to be serious, but infrequent. As an ED participant explained, NPS and club drug cases represent a small amount of overall caseload, approximately 10% or under. However, they were serious and challenging, for instance when patients needed emergency intervention to help them breath. In contrast, NPS and club drug presentations in sexual health services were more regular, but less serious. Participants estimated that at specialist MSM clinics up to 100% of their service users, used GBH/GBL, but this did not always impact on their day-to-day life, so was not considered serious (by participants and their service users).

Knowledge levels relative to their colleagues'

Participants who had recently started new positions (either as a first job, or from another specialism) were keen to quickly match their colleagues' NPS and club drug knowledge levels if they perceived it as higher than their own. This was especially relevant in specialist drugs services where staff tended to be particularly knowledgeable about NPS and club drugs.

Confidence in response and management

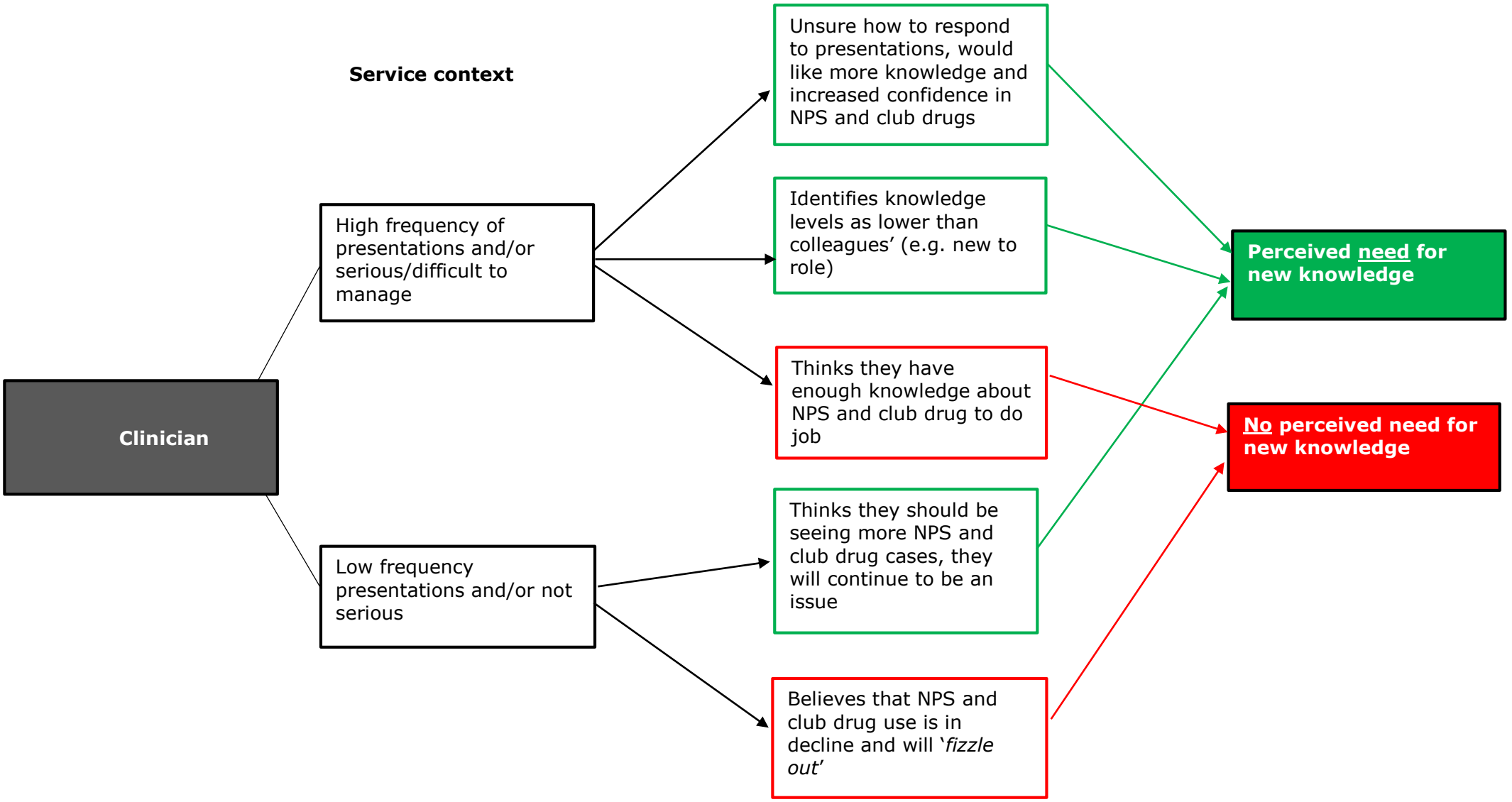
There were examples of participants who felt they had enough knowledge about NPS and club drugs to do their job. For example, a mental health nurse who had developed expertise in NPS and club drugs at a specialist drug service and had regular contact with users over the last 2-3 years was confident in their ability to manage NPS and club drug presentations. In contrast, a junior doctor who had recently started to work in resuscitation and had seen fewer NPS and club drug presentations was less confident in their ability to manage NPS presentations. There were also a group who felt that they knew enough to manage NPS and club drug presentations, but did not have detailed knowledge.

''Your bread and butter presentations of A&E, I think most people wouldn't really want to do any more learning, because I think they would feel that they didn't really need to, whereas I think most people do acknowledge that while they might feel confident tonight managing a patient, they don't know everything about club drugs, they don't know everything about novel psychoactive substances ...and are actively interested in learning about it.' **– junior specialist registrar, emergency department**

Local trends in NPS and club drug use

NPS and club drug use fluctuated in local areas. Participants reported periods when there were far fewer presentations, which they linked to limited availability of certain substances. This, coupled with the Psychoactive Substances Act (2016), led some participants to speculate that NPS and club drug use would decline and ultimately stop. On the other hand, when participants heard about high rates of NPS and club drug use anecdotally from friends and colleagues, they questioned why they did not see more presentations and speculated that referral systems might not be working. These participants believed NPS and club drug use would likely increase with time, and so perceived a need for more knowledge.

The flow diagram below illustrates how the interaction of these factors influenced whether clinicians had a perceived need of NPS and club training.


Service context
Clinician
High frequency of presentations and/or serious/difficult to manage
Low frequency presentations and/or not serious
Unsure how to respond to presentations, would like more knowledge and increased confidence in NPS and club drugs
Identifies knowledge levels as lower than colleagues' (e.g. new to role)
Thinks they have enough knowledge about NPS and club drug to do job
Thinks they should be seeing more NPS and club drug cases, they will continue to be an issue
Believes that NPS and club drug use is in decline and will 'fizzle out'
Perceived need for new knowledge
No perceived need for new knowledge

Participants who identified a need for NPS and club drug training had two main motivations:

To maintain credibility with service users

Service users had questions about NPS and club drugs, which participants felt unable to answer. For example, MSM with HIV who used NPS and club drugs for chemsex wanted to know what substances would have the fewest and least serious effects on pre-existing conditions. A range of clinicians were asked questions of this nature, including doctors and nurses in sexual health and specialist drugs services. While these participants explained abstinence was the safest option, they worried that their inability to answer these questions confidently led to them losing credibility with their service users, and damaging rapport and engagement. Participants felt it was important that they kept abreast of media coverage on patterns of NPS and club drug use and legal status, to help maintain credibility.

Wider clinical management

Mental health nurses and other non-medical staff in specialist drugs services wanted to know what advice to give NPS and club drug users when they were acutely unwell during an appointment because of NPS and club drug intoxication. In these cases, participants were sometimes unsure when to advise service users to go to the emergency department and when to rest at home. Medical staff working on HIV trials in a sexual health service, for example, might want to know how different NPS and club drugs interact with anti-retroviral drugs, and potentially affect viral load levels or the results of a trial.

5. Previous experiences of e-learning

Experience of mandatory trust training and nature of job role shaped wider views of e-learning.

This chapter presents participants' preferred training styles, before exploring their views and experiences of e-learning. The chapter concludes by proposing three different type of e-learning user, which can be described as 'exasperated', 'mixed-feeling' and 'enthusiastic'.

Chapter summary and key findings

- E-learning approaches were considered to be most beneficial when used in combination with other training methods, like face-to-face training.
- E-learning mandated by trusts was unpopular and sometimes made it hard for participants to identify benefits of e-learning.
- Those in job roles that presented new knowledge gaps regularly (like emergency medicine) were more receptive to e-learning because it had previously been useful.
- We propose three types of e-learning user:
    - '**Exasperated**' – struggled to see any benefits of e-learning approaches because of previous frustrating experiences
    - '**Mixed-feeling**' – acknowledged there were good and bad examples of e-learning
    - '**Enthusiastic**' – had positive experiences of e-learning, and proactively looked for new modules
- 'Exasperated' users needed to be interested in the subject matter or perceive a need to complete a non-mandatory e-learning module. This group were significantly harder to persuade to complete the NEPTUNE module.

5.1 Training preferences and styles

Different training approaches suited certain topics. Information governance, for example, worked well as an e-learning module because participants could test their understanding of specific policies and work through large amounts of text at their own pace. On the other hand, participants felt face-to-face sessions were more appropriate for complex medical emergencies because a senior clinician could test their understanding. However, participants sometimes had what can be described as an innate, default preference for a learning style. Three different preferences emerged: face-to-face learning, independent reading and e-learning approaches. As a participant explained:

> *'I used to mark each and every line when I read a book, and somehow that leaves an imprint in my brain and I never forget what I have marked with pen or paper. It makes it much easier to retain everything in my brain, rather than just reading and scrolling down on the computer screen.'* – **senior specialist registrar, emergency department**

However, participants tended to agree that a combination of approaches was preferable. The chance to read, interact and be tested made participants feel more confident that they had understood new information and, moreover, would be able to apply it in the future.

✔ **Recommendation:** The NEPTUNE e-learning module would be most beneficial for clinicians if used in combination with other training approaches.

5.2 General e-learning views and experiences

Regardless of their preferred training style, participants had to complete a range of e-learning as part of their roles. This e-learning fell into three broad categories:

- mandated by NHS trusts
- completed as part of specialist training, courses or clinical trials
- non-mandatory modules which participants chose to complete.

Experience and exposure to different types of e-learning shaped general receptiveness to the approach. The different types of e-learning are presented below.

Mandated by NHS trusts

NHS trusts required all employees to complete a set number of mandatory e-learning modules. This helped trusts ensure staff received basic statutory training in subjects including fire safety, manual handling, infection control, patient handling, clinical risk and information governance. The exact number of mandatory modules staff were required to complete ranged from 6-11, depending on trust and setting. Some modules needed to be completed once, others repeated annually and other every three years. They typically took participants between 15 minutes and an hour to complete.

Mandated modules caused frustration amongst participants when they were already familiar with the content. For example, an information governance module was described as covering '*ludicrous, ridiculous things you would never do*' like sharing patient details with third parties. This sense of frustration was exacerbated when participants experienced technical difficulties in accessing modules. The IT infrastructure used to support these modules was perceived as unreliable and difficult to navigate. Managers were further frustrated by having to ensure their teams completed the modules, and, their perception that trust managers' prioritised completion targets over learning and engagement with the content of mandatory e-learning. As a participant elaborated:

'You get a chart saying 'oh no, you're still at 74%' and I say no all these eight people are dead, so actually we're not at 74%, and therefore they are skewing our figures. It's crazy…instead of going how can we do this, how can we get people to do it, it is you must get it done.' **– manager, sexual health service.**

On the other hand, participants acknowledged some benefits of mandatory e-learning. It helped managers (and NHS trust managers) ensure mandatory training was completed in a cost-effective way. While the modules were problematic for some, participants still preferred to access this training through an e-learning module rather than attending face-to-face sessions, which were perceived as being

more time consuming. There was also a view that the structure and format of these mandatory modules had improved over the last few years.

Specialist training, courses and trials

Participants reported a wide-range of e-learning training they were required to do as part of professional courses. This included training for specialisms, for example, emergency medicine or HIV nursing. It also included professional training and development opportunities participants had decided to undertake to complement their role, for example, counselling. Participants who worked on clinical trials were sometimes required to complete e-learning at the start of a new trial to ensure a consistent understanding of stopping rules across different trial centres. These courses ranged in format, some were modular, and others were one-offs. They were mandated by the course provider, or trial leader, rather than the NHS trust.

In comparison to mandatory trust modules, participants tended to find these more relevant to their roles. These modules were technically mandatory, but were in fields which participants had chosen to work or specialise. Perhaps, for this reason, participants were more interested in the content and reported less significant challenges, with some even highlighting positive examples of e-learning. For example, a distance learning qualification to become an HIV counsellor was identified as succinct and effective.

Non-mandatory training

Non-mandatory courses were sometimes found by chance or actively looked for, to fill a perceived knowledge gap. In some cases, modules were recommended by colleagues. For example, the Royal College of Emergency Medicine (RCEM) recently re-launched their e-learning platform and have encouraged those training in emergency medicine to complete more training. Non-mandatory modules can sometimes be used to meet continuing professional development (CPD) requirements for revalidtion.[27]

Non-mandatory training was completed because of a specific need or interest, as a participant explained it was because they *'actually want to do it, rather than being forced'.* For example, a participant training in emergency medicine wanted to learn more about fractures after they initially missed one. In this case, the participant felt

[27] Nurses and doctors are required to undergo revalidation to renew their qualification. For example, nurses are required to undertake 35 hours of CPD over the three years before their revalidation date. Specialisms for doctors vary.

e-learning was a good way to develop knowledge, and demonstrate it at their appraisal through certification provided at the end of the module.

5.3 Types of e-learning users

Overall views and attitudes towards e-learning were influenced by two overarching factors:

- Professional backgrounds
  Those who worked in settings which required breadth of knowledge across a wide range of topics, like emergency department medics, were especially likely to regularly need to fill gaps in their knowledge. Similarly, those who often started to work on new projects, like those managing trials, also frequently had gaps in their knowledge they needed to fill. This made those from these professional backgrounds keen to use resources which quickly and reliably filled gaps in their knowledge. For this group, e-learning was sometimes a welcomed alternative to journal articles and other sources, which had not synthesised available evidence and knowledge. Those who were new to their role also had knowledge gaps they wanted, and needed, to quickly fill.

- Relationship with mandatory trust training
  It was harder for participants to compartmentalise feelings of frustration associated with mandatory training when they reported especially stressful experiences. For example, if a service had to complete a large volume of e-learning in advance of a Care Quality Commission (CQC) inspection. These participants were likely to be inherently less receptive to e-learning, and in some cases made it difficult for participants to identify any potential merits in the approach.

As illustrated in the table below, the interaction between these factors produced three different types of e-learning user, which can be described as: ‘exasperated’, ‘mixed feelings’ and ‘enthusiastic’.

	Professional background		Mandatory training	
	Frequent, new knowledge gaps	Infrequent new knowledge gaps	Can isolate any frustration with mandatory modules	Cannot isolate frustration with mandatory modules
'Exasperated'		✓		✓
'Mixed feelings'	✓	✓	✓	
'Enthusiastic'	✓		✓	

'Exasperated' user

This type of user had a particularly challenging relationship with mandatory e-learning, which was linked to stressful experiences of completing or asking others to complete modules. This made it hard to compartmentalise negative views associated with e-learning, to the point where it was sometimes difficult to identify any benefits. This type of user instead favoured face-to-face training or reading. They were unlikely to proactively seek new e-learning opportunities, and would need to be highly interested in the subject matter of a non-mandatory module to complete it.

'Mixed feelings' user

E-learning was not always this type of users' preferred training style, but even when it was not they identified some benefits, for instance that it was convenient and saved time. They acknowledged there were good and bad quality packages, and could compartmentalise any negative experiences associated with mandatory modules. These users were more likely to do non-mandatory e-learning compared to 'exasperated' users, but would not necessarily go out of their way to find e-learning opportunities.

'Enthusiastic' user

For this type of user, any negative views of mandatory e-learning were offset by positive experiences of e-learning where they had quickly filled a knowledge gap. This type of user could separate negative experiences of mandatory e-learning, and sometimes adopted an '*I just have to do it'* approach. This group were most likely to proactively look for non-mandatory e-learning modules to fill knowledge gaps, and circulated them to colleagues when they were helpful. This group frequently had

new knowledge gaps to fill. The group included emergency department medical staff, those working on clinical trials, and those who were new to their roles.

The 'exasperated' and 'mixed feelings' users included participants across settings (sexual health, drugs services and emergency departments), and from a range of professional backgrounds (doctors, nurses, psychologists, psychiatrists and health advisers).

Implication: 'Exasperated' users needed to be interested in the subject matter or perceive a need to complete a non-mandatory e-learning module. 'Exasperated' users need to be persuaded of the merit of e-learning by implementers.

6. Spreading the NEPTUNE e-learning module

The module spread most quickly in smaller teams who mainly worked at one site.

This chapter provides an overview of how the NEPTUNE e-learning module was spread at pilot sites. It then explores three key stages of this process in detail.

Chapter summary and key findings

- General brand awareness of NEPTUNE increased receptiveness to the e-learning module.
- When the role of implementing the module was delegated, it was helpful for the new person to be involved in early planning stages.
- It was easier to ask someone to complete the module when they had the same (or similar) role as the implementer.
- It could be helpful for implementers to initially target a small number of staff if the service was large.
- The spread of the e-learning module through informal networks was lengthy (it took up to six months).
- Providing an outlet for criticism or feedback could mean the spread of the module was not impeded.

6.1 Overview of process

Diffusion of innovation theory seeks to explain how, why, and at what rate new ideas and technology spreads through organisations.[28] Greenhalgh and colleagues identify three ways in which new ideas are spread in organisations, they can be described as:

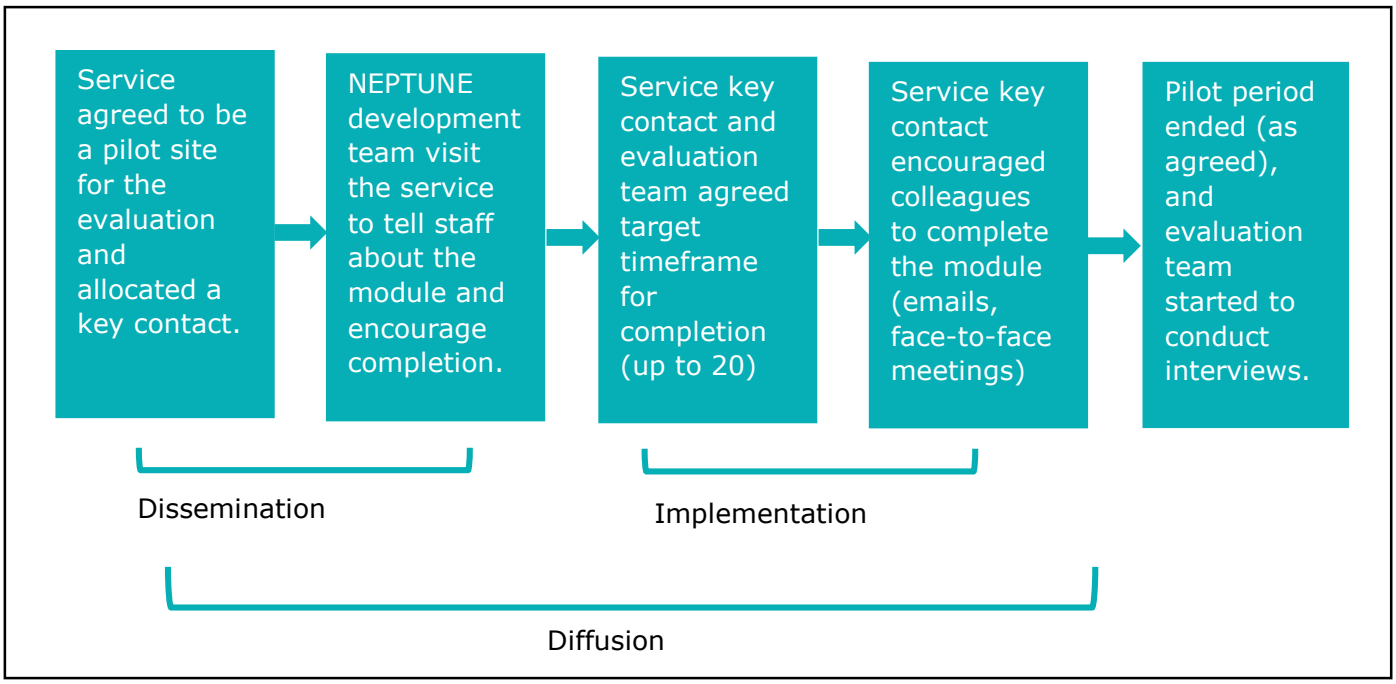
- **Dissemination** – refers to formal and planned efforts to persuade target groups to participate. This is done through vertical hierarchies.

- **Implementation** – these are activities which encourage direct engagement with the idea (or in this case, completing the module).

- **Diffusion** – this involves innovations being spread informally and largely horizontally.

The NEPTUNE e-learning module was disseminated at a national and service level, before services implemented it. The module was also 'diffused' informally through word of mouth. The diagram below illustrates how the three methods of spreading ideas map onto the implementation process.

[28] Greenhalgh T, Robert G, Bate P, (2004) '*How to spread good ideas. A systematic review of the literature on diffusion, dissemination and sustainability of innovations in health service delivery and organisation',* Report for the National Co-ordinating Centre for NHS Service Delivery Organisation R&D (NCCSDO).



The rest of this section explores dissemination, implementation and diffusion in detail, highlighting key issues and implications for wider roll out of NEPTUNE resources.

6.2 Dissemination

Process

National: The NEPTUNE team promoted the module and the network through a range of conferences and national events (see appendix B for detailed list). Through these events service leads learned about NEPTUNE and agreed to be involved in some capacity because they had been persuaded of the potential value.

Services: NEPTUNE subsequently invited services to take part in the evaluation of the e-learning module. When these services agreed the NEPTUNE development team visited the service to explain who they were and promote the e-learning modules, and, explain the evaluation. In some cases, the NEPTUNE development team made subsequent visits to the service to disseminate the modules to different staff groups, or to speak to those who had not previously been able to attend.

Brand awareness

This dissemination activities worked well for participants when they raised awareness of the NEPTUNE brand. While this alone was not enough to persuade clinicians to complete the module, participants explained that it had made them more receptive to the module. The NEPTUNE teams' physical presence at services (when giving presentations about the e-learning module), helped make the module credible. Participants welcomed the opportunity to see and meet people involved in the development of the module, which reinforced the perception that the resource was produced by experts in the field.

'People from NEPTUNE came to one of our…meetings to discuss what they were about and what the module was about and being a part of the trial. So that was when I first heard about it. And then I signed up to do the module…it sounded brilliant to do, there wasn't kind of anything like it beforehand.' – **mental health nurse, specialist drugs service**

Long-term implications

However, there were limitations of this approach, not least because it proved challenging to arrange presentations with busy services. Those who worked at pilot services sometimes had full clinical workloads in addition to other demands on their time. Moreover, when the e-learning modules are made freely available beyond the pilot and evaluation it would not be practical, nor possible, for the NEPTUNE team to visit all services that implement their resources. Additionally, some participants highlighted that they were sometimes unable to attend presentations, and did not always understand who NEPTUNE were and what the module aimed to do.

Implication: Wider awareness and understanding of NEPTUNE was important because it increased receptiveness to engagement, but it is not sustainable to individually visit services outside of the pilot. This highlights the value of NEPTUNE's previous, and ongoing, national dissemination activity in raising awareness and promoting credibility of the resources.

6.3 Implementation

The right implementation approach could offset future challenges related to dissemination opportunities. There were four key influences which should be borne in mind.

Process

Delegation: The person who initially agreed to take part in the pilot and evaluation either continued in this role, or delegated if it was no longer feasible (if they changed role, got unexpectedly busy or went on long-term leave).

Circulate link: The key contacts, or those deputising for them, circulated an email to their teams, asking them to complete the module. Group email lists were used for convenience. Email lists ranged in size between 20-100+ members of staff.

Meetings Key contacts used face-to-face team meetings and individual meetings with staff to encourage them to complete the module.

NEPTUNE support: The NEPTUNE development team offered to visit services with a laptop to give staff the opportunity to 'drop-in' to complete the module. A small number of participants (3) completed the module this way.

Targets: Each key contact aimed to persuade at least 20 people from their service to complete the module, over a two-period. Approximately 81 people completed the module.[29]

Role of the key contact

The person responsible for implementing the module played an important role; they influenced an individual's likelihood to engage and complete the module. When participants valued the key contacts' judgement they were more likely to complete. This was especially relevant for those who did not necessarily perceive a personal need for more NPS and club drug knowledge, did not enjoy e-learning, or might have been particularly busy. In these cases, it could be a significant motivating factor if the key contact was perceived as someone who would only recommend training with service-user needs in mind. As a participant explained, that the

[29] Participants reported completing or almost completing the module, but were unable to generate a completion certificate due to technical problems, there was no way to record these attempts. Therefore, the figure should be viewed as an estimate, and is likely higher.

invitation to complete the module came from a colleague they respected made them more inclined to complete the module:

> *'It made me more keen to do it… I think that's because it's somebody who I've got a very good working relationship with, it's somebody I've got a lot of professional respect for, it's someone who has really changed the face of…health care in the clinic…it was his request…it was more meaningful than if it had been, kind of a mail shot…he's good intent, he is about delivering great care to patients and that is really important to me.'* **– senior nurse, sexual health service**

When the implementer was valued by staff, they were sometimes happy to complete the module as a favour to a colleague they liked and respected, even if they did not perceive a need or have an interest in the subject. However, this did not seem to be the case for 'exasperated' users (see page 55), who needed to be interested in the subject matter or perceive a need for new knowledge to complete the module.

Delegation

It did not necessarily hinder implementation if the initial contact delegated responsibility. However, it was important that the new person was involved in early planning stages and clearly understood what they were being asked to do.
If someone felt the role had been *'sprung'* on them it could be difficult to find time to promote and encourage others to complete it. However, while those who deputised did not necessarily opt-into the role, they were sometimes subsequently glad that they did it. These participants valued the NEPTUNE e-learning module, and felt their colleagues, and in turn service users, would benefit from additional knowledge.

✔ **Recommendation:** If the role of implementing is delegated it is important to ensure the new person is given plenty of time and involved in early planning

Tailored approach

A tailored approach to implementation worked well. Key contacts naturally adjusted their approach depending on their relationship with the person they were targeting. For example, when a key contact approached someone who had the same role as them, they framed the invitation to complete the module as optional. In contrast,

when key contacts approached those they supervised, the module was sometimes presented as something they thought would help their professional development. This tailoring seemed to facilitate engagement and completion of the module because they perceived it as something that they were obliged to do as part of their job.

However, it was more challenging for participants to approach those from different professional backgrounds, especially when they did not work with them closely, for example a nurse struggled to get a consultant to engage with the module. These participants sometimes reported non-responsiveness, which they attributed to colleagues being especially busy. Additionally, participants appeared to be more receptive to the module when asked by someone from the same professional background. Completion rates appeared to be fastest when people from multiple professional backgrounds and grades were responsible for asking colleagues to complete the module.

✔ **Recommendation:** Implementers could ask clinicians from different professional backgrounds to help persuade their peers to complete the module (for example, nurses, doctors, psychologists).

Service structure

The service configuration of pilot sites influenced the speed and extent to which the module was completed. The module was completed more quickly by smaller teams who worked primarily at one site, compared to large teams that worked across sites. This is likely because there was a greater sense of accountability to key contacts because of more regular contact.

✔ **Recommendation:** At larger services, which work across sites with less regular shifts it could be helpful for implementers to initially target a few staff (up to ten) to increase the sense of accountability and make the task feel more manageable.

6.4 Diffusion

There were examples where participants heard about the NEPTUNE module through informal face-to-face conversations with colleagues and subsequently asked to be sent the initial email invitation to complete the module. However, there were also examples where informal conversations might have prevented the spread of the module.

There were two key findings that should be borne in mind for wider roll out of the NEPTUNE module.

Allowing time

In pilot sites it took up to six months for those who had been sent the email invitation to complete the module, and forward it to those not part of the email group. The delay can be explained by a range of factors (explored in chapter 7).

Implication: This implies that spread through informal networks can be a lengthy process, which is helpful to keep in mind when implementing in the future.

Providing an outlet for criticism

The diffusion of the module was inhibited when participants disliked it. An example of this was when a participant from a sexual health service disagreed with some specific content in the module, which they felt undervalued their role. This created '*a strong emotional reaction'* for this participant, who stopped doing the module immediately. There was a risk that these participants told colleagues of their view, which deterred them from engaging with it. The opportunity to give feedback to developers about criticism was highlighted as something which could, in theory, prevent the spread of negative views. These participants said it was important they felt listened to.

Recommendation: Providing an outlet for criticism or feedback could mean the spread of the module is not impeded. A participant for whom this applied would have welcomed the option of a feedback button on the module itself.

Working patterns and structures sometimes made it difficult for participants to tell whether there was a 'buzz' around the module. For example, if someone worked part-time, or across multiple sites they regularly saw different people over shifts. While this might have prevented detailed conversations about the module, it seemed to facilitate shorter conversations with staff from a broad range of settings.

7. Barriers and facilitators to completion

Immediate day-to-day events influenced if and when participants completed the module.

This chapter outlines participants' experiences of accessing and completing the NEPTUNE-e-learning module, as well as the more immediate barriers and facilitators to completion they experienced.

Chapter summary and key findings

- There were a range immediate barriers and facilitators that shaped whether, and when, participants completed the module.
- Even those who were most receptive to an NPS and club drug e-learning module could struggle to complete it because of immediate barriers.
- Suggestions of ways to overcome these barriers included:
  - **Focal events** – services could arrange internal teaching events on NPS and club drug. Setting a deadline for completion would help some clinicians to prioritise this task.
  - **Line management planning** – line managers could work closely with staff on an individual basis to identify a time when they could complete the module.
  - **Timing** – implementers should reflect on, and exploit, any opportune times. For example, inviting staff to complete the module over particularly quiet periods or close to appraisal deadlines.

7.1 Experiences of accessing and completing the module

As outlined below there was significant variation in how and when the module was completed.

Process

The length of time between first hearing about the module and completion ranged from straight away (within moments of receiving the invitation email) to up to six months, with it typically being between two to three weeks. This sometimes involved multiple abortive attempts to complete the module. For example, a participant sat down to complete the module shortly after they received the invitation, but soon had to stop to respond to a clinical emergency (the number of attempts ranged from one to five). Sometimes a couple of days elapsed between sittings, other times it was a couple of months. The settings participants worked in influenced where they completed the module. Emergency department participants either did the module in shared office space before their shift started, or completed the module at home, outside of contracted hours. This was explained by shifts being centred on direct and urgent contact with patients, which would have made it inappropriate to do an e-learning module.

'I have tried even myself to do the module while sitting in the urgent care centre and that was very difficult for me. Every three, five minutes there was an interruption. Someone wanting to come up for EG or anything needed, and obviously that is what we are there for, but definitely if there were plenty of interruptions after about ten minutes you would say, ok let's close it…it is definitely impossible to do while on the shop floor, it can either be done at home or at the end of your shift.' **- senior specialist registrar, emergency department**

In sexual health and specialist drugs services participants reported completing the module during working hours, sometimes over their lunch hour, or during a shift. Participants spent between 15 minutes and two hours to on the module, with it typically taking between 30-60 minutes to complete the module.

7.2 Receptiveness to the module

There were a range of factors which shaped a participants' receptiveness towards the module. As explored in previous chapters, these included perceived need for NPS and club drug training, type of e-learning user, and nature of implementation. It is possible to view this receptiveness on a continuum, as illustrated below.

Highly unreceptive — **Highly receptive**

- **NPS training:** No perceived need. NPS will fizzle out.
- **Service managers:** Large service, lots of sub-teams, no one manager has responsibility for training.
- **E-learner type:** 'Exasperated'.
- **Spread:** A colleague disliked the module, told others they should not waste time on it.

- **NPS training:** High perceived need, sees lots of presentations, and will likely only see more.
- **Service managers:** Committed to upskilling staff about NPS for multiple reasons.
- **E-learner type: '**Enthusiastic'.
- **Spread:** Trusts the implementer's judgement, colleagues like the module – there is a 'buzz' around it.

There were examples of participants being highly receptive end of the continuum who took a long time to complete the module, while those at the other end completed it on opening the email. This can be explained by more immediate barriers to completion as well facilitators, which nudged participants to complete the module.

7.3 Immediate barriers and facilitators

There were three broad categories of immediate barriers and facilitators to accessing and completing the e-learning module:

- prioritisation

- the timing of the invitation to complete the module
- ease of access to the module (including technical difficulties).

Each is explored below in turn.

Prioritisation of NEPTUNE e-learning

Barriers

The view that there would always be something more pressing to do than a non-mandatory e-learning module, regardless of subject matter, was reported across services. In a context where participants struggled to find time to meet the requirements of their job, anything non-mandatory was a low priority. As a participant explained:

> *'When people are really stretched for time if they are informed something is optional, it doesn't always become a priority if they've already got ten priorities they need to do and something is optional unfortunately they don't always then add that into the priority list…[other priorities include] mandatory training, managing the service.'* **– mental health nurse, specialist drugs service.**

The control participants had over prioritising tasks was further limited by the nature of their clinical roles. For instance, when senior clinicians managed junior clinicians' workloads, they had limited autonomy in how they spent their professional time. Equally, senior clinicians reported difficulty planning their time when they needed to respond to the support needs and requirements of those they supervised. For example, an emergency department consultant explained how part of their role was to support wide-ranging needs of junior doctors while on shift. This ranged from management of patients to issues around performance and competency.

There were also external events that required participants to prioritise new work at short notice. For example, services needed to prepare for Care Quality Commission (CQC) inspections at relatively short notice, or needed to reflect and develop service polices in response to heightened security risks linked to national terrorist incidents.

Facilitators

However, participants across settings agreed that the time to complete the NEPTUNE module (typically 30-60 minutes) was not prohibitively long in theory, and it should be possible for most clinicians to find this amount of time, if prioritised. Although, those who worked in emergency departments expressed a preference for modules that took 15-20 minutes to complete. A key challenge to completion, for the reasons explored above, was prioritising the module. Three different facilitators prompted participants to prioritise completion of the module.

Having a focal event

Completion was more likely when participants had a scheduled event for which it was necessary, or at least beneficial, for them to have completed the NEPTUNE module. These events included NPS and club drug training or teaching sessions, for which it was helpful for participants to have a basic level of understanding to help them identify knowledge gaps. Participation in an evaluation interview also acted as a focal event. While, in theory, the implementation and evaluation activity periods were separate, it was possible for participants to opt-in to the evaluation before they completed the module. In some cases, taking part in an interview about the module was what prompted participants to prioritise, and ultimately, complete the module. As a participant explained:

'I looked at it and thought, 'yes' that will be really useful to do, and I made a note of it, but in the end I only did it just before, maybe like a week before, or a few days before…we were having the teaching [on NPS and club drugs]…so in a sense it actually worked really will because it helped with engagement in the teaching topic and everything, but I think there was probably quite a big time lag.' **– senior specialist registrar**

✓ **Recommendation:** While it might not be possible to replicate an evaluation interview when the module is freely available, it could help completion rates if services arranged internal teaching events on NPS and club drugs. The evaluation suggests that a deadline, of sorts, would help clinicians prioritise completing the module.

Having protected time for completion

Participants reported that having time protected by their line managers to complete the module would be helpful, in theory. However, it relied on participants not having other, more pressing, priorities that clashed with the allocated time. For example, a participant explained that they were unable to attend the weekly teaching session which had been protected for them to complete module because of an urgent deadline for another project.

✔ **Recommendation:** A suggestion, in some settings, was for line managers to work closely with their supervisees on an individual basis to identify a time when they could complete the module. This was especially relevant when time resource management tools were used, where line managers could ensure supervisees had enough office sessions booked in to support completion.

Conflicting priorities appeared likely to be a constant, background issue, but could potentially by offset, or worsened, by the timing of the invitation to complete the module.

Timing of the invitation

Barriers

There was a danger of e-mail invitations to complete e-learning modules getting lost in participants' inboxes. Participants explained that e-mail inboxes were generally full of emails from a range of sources, including: Royal Colleges and other professional bodies, emails about covering shifts at short notice and trust-wide emails. If the invitation to complete the module was received at a clinically busy time, the participant might quickly skim and delete the email on realising it was not mandatory. Up to a point, participants felt it was difficult to predict clinically busy periods, and in some cases, participants described there never really being a '*good*' time to receive this sort of invitation.

Facilitators

There were instances which participants identified as more opportune to receive an email about the NEPTUNE module compared to others. For example, in specialist

drugs services Christmas was identified as a quiet period because it tended to be a time when service users did not want to address substance misuse problems. The NEPTUNE module was used as a *'treat'* by participants, when they perceived it as something distinct from the challenges of clinical work, while still technically being work. This was most effective and possible when participants were not overly busy. The timing of the invitation to complete the module (around December) helped these participants do it more quickly. The shorter the gap between hearing about the module and accessing it, the less the opportunity for barriers to delay or prevent completion.

The invitation was particularly well-timed when participants heard about it shortly after relevant events. For example, a participant explained how they heard about the module from a colleague, shortly after seeing a difficult NPS presentation and then received an email reminder to complete the module.

> *The first time I heard about NEPTUNE, the project, was from a colleague who mentioned it…I guess she tried to access the module online and she couldn't access it, and then she gave up, and then…I got an email and then I had a look at the project and I found that really interesting and I guess at the same time that happened I saw a patient who was admitted to A&E…he had like a bladder complication due to ketamine and things, so basically in front of me it is like he is falling apart and he is 29 years old, and I thought oh god…when you see this…it's a problem.'* **– doctor, sexual health service.**

These simultaneous events were unique to individuals, and therefore difficult for service managers and implementers to exploit through protecting time for groups of staff. It could be useful for service mangers and future implementers of the module to highlight recent NPS and club drug presentations at the service when inviting staff to complete the module.

Receiving the invitation close to appraisals also facilitated participants in completing the module. Being able to evidence completion of the module was used to demonstrate 'self-motivation' and 'keeping up to date', for example. The continuing professional development (CPD) credit attached was a further motivating factor for doctors and nurses when close to revalidation deadlines (see page 53). However, another view was that incentivising non-mandatory modules with CPD points meant people did not engage with the content, but completed just for the points.

Recommendation: Implementers should reflect on – and exploit – any opportune times. For example, particularly quiet periods or linking to appraisal deadlines.

Ease of access to the module

Barriers

Technical difficulties sometimes prevented participants from completing the module. This included the page crashing, difficulty logging-in and not being able to return to where they left the module if interrupted. This resulted in lengthy delays in completion (up to six months), or in some cases not completing the module at all. Relatedly, participants reported problems with NHS IT infrastructure which supported mandatory e-learning modules, which sometimes led them to expect the module to not work, before their first attempt. If completing the module during working hours, while in a clinical setting, it could be difficult to concentrate in noisy office environments or to avoid interruptions from colleagues. There was acknowledgment that while interruptions were difficult to manage, they were part of clinical work.

'It is very difficult [to find time alone]…we do have some offices across the road…but we feel very much as jobbing doctors we should be accessible. There is a balance isn't there. If we're invisible people aren't going to come and find us when they need some help, and actually we're here for the patients. Whereas if we're visible all the time that's frustrating because we're constantly being disturbed and it's difficult to organise things, like doing mandatory training and all that stuff. But you've got to think about why we are here in the first place.' **– consultant, sexual health service**

Facilitators

While participants acknowledged cost implications of effecting changes, they reported that having their own laptop, and the ability to complete the module in a quiet space that was clearly separated from clinical activity helped overcome these issues. Additionally, those who were prepared to complete the module at home felt

they sidestepped potential technical and access issues because they had more control of their immediate environment.

8. Programme theory

We propose a programme theory, illustrating what happens when the NEPTUNE e-learning module is implemented in different settings.

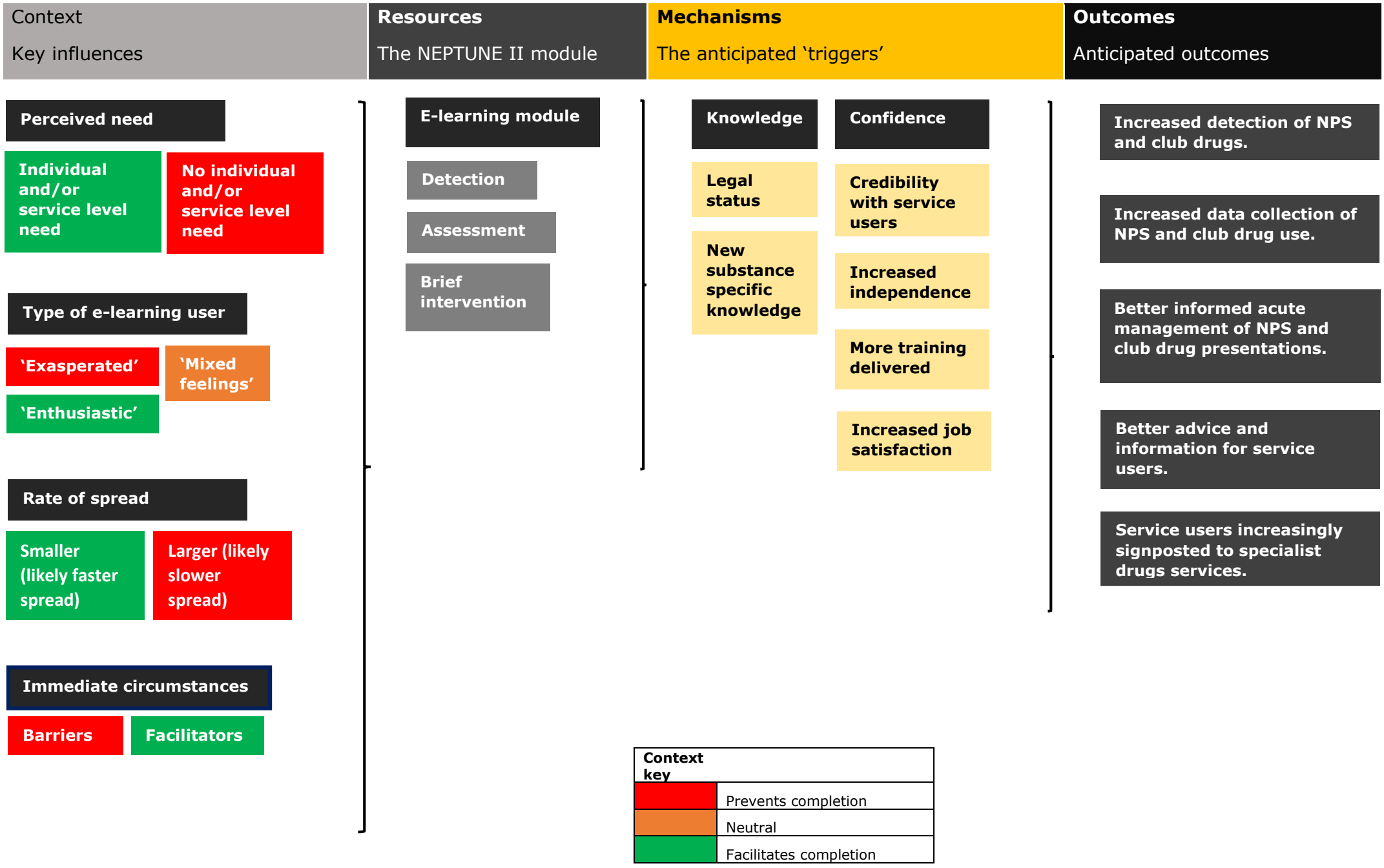
In this chapter we present our programme theory, describing what we think happens when the NEPTUNE e-learning module is implemented in different settings, as informed by our findings from the evaluation.

In keeping with a realist evaluation approach, an initial programme theory was developed, in collaboration with the development team, at the outset of the project. As fieldwork progressed this programme theory was refined. The aim of a programme theory is to articulate, diagrammatically, *'what works for whom in what circumstances'.* The programme theory can be viewed in three distinct parts:

- **Context:** contextual factors which influence how and why people complete the module.
- **Mechanisms:** what mechanisms or 'triggers' are activated when it is completed.
- **Outcomes:** what happens as a result of completion.

Interpreting the diagram

The green context boxes indicate factors that make it more likely that someone will complete the NEPTUNE e-learning module, and the red context boxes represent factors that impede or prevent completion. When the target user (clinicians or those with a specialist interest in NPS and club drugs) complete the module it is possible that they will achieve increased knowledge and/or confidence in managing presentations related to these substances. Those who reported increased confidence and knowledge, sometimes reported planned changes in their clinical practice too, which can be described as outcomes.


Context
Key influences
Resources
The NEPTUNE II module
Mechanisms
The anticipated 'triggers'
Outcomes
Anticipated outcomes
Perceived need
Individual and/or service level need
No individual and/or service level need
Type of e-learning user
'Exasperated'
'Mixed feelings'
'Enthusiastic'
Rate of spread
Smaller (likely faster spread)
Larger (likely slower spread)
Immediate circumstances
Barriers
Facilitators
E-learning module
Detection
Assessment
Brief intervention
Knowledge
Legal status
New substance specific knowledge
Confidence
Credibility with service users
Increased independence
More training delivered
Increased job satisfaction
Increased detection of NPS and club drugs.
Increased data collection of NPS and club drug use.
Better informed acute management of NPS and club drug presentations.
Better advice and information for service users.
Service users increasingly signposted to specialist drugs services.
Context key
Prevents completion
Neutral
Facilitates completion

Caveats

While efforts have been made to test the transferability of these findings in other settings, the module was only piloted in three different clinical settings (sexual health services, specialist drugs services and emergency departments). Therefore, it might be possible to refine this theory further following full testing of the module across a broader range of settings.

9. Transferability to other settings

Our findings appear to be transferable to other settings, but some unique implications emerged.

This chapter explores NPS and club drug presentations in different settings, staff training needs, e-learning in different settings and key implications for wider roll-out of the NEPTUNE module.

9.1 NPS and club drug challenges in other settings

NPS and club drugs posed a range of challenges for those working in other settings, as summarised below.

In prisons

SCARs were used in prisons. They were described as 'dangerous and available'. Other NPS did not pose a problem. A key challenge was the difficulty in gauging how widely SCRAs were used in prison. Prison services were reliant on self-disclosure by those who used SCRAs, which was sometimes hindered by concerns over possible repercussions of telling prison staff about their use. Patterns of use were difficult to discern for prison staff, which made it hard to plan response. When prisoners became unwell as a result of SCRA use, drug and alcohol teams found it difficult to know at what point they should send people to emergency department, and previously had prisoners sent back without any treatment administered. This was frustrating because of the resource invested in hospital admission (prison officer escorts, for example).

Homeless people

SCRA use was also reported as being widely used by homeless populations. Homeless people were identified as sometimes being the last group of people patterns of drug use filter down to. Therefore, it was felt to be important for those who worked with homeless people to reflect on NPS patterns of use more widely to help predict and plan how it might affect homeless people later. As with prisons, other NPS did not pose a problem. Increased prevalence of SCRA use at No Second

Night Out centres was reported. There was significant variation in batches of SCRA used by homeless people. There were examples of people taking a few puffs and consequently collapsing, and those who only got a high after consuming a larger amount.

Community mental health service-users

The main NPS used by this group was also SCRAs. However, the focus was often on long-term recovery from mental health problems. Hence, when people were stable, there tended to be less focus on substance related problems, because they were not preventing their recovery. While NPS and club drug use was rarely seen in this setting, when it did happen it was sometimes serious. For example, people collapsing as a result of SCRA use.

In-patient mental health settings

SCRAs, GBH/GBL and other unidentifiable white powders, which were likely a form of NPS or club drug were reported in this setting. Here, in contrast to community mental health services, the aim was to find out why the person was unwell. Therefore, NPS and club drug use was more of a natural focus. A key challenge in this setting was identifying what had been taken and the need to respond to difficult side-effects, for example extreme self-harm/mutilation.

A broader challenge of NPS and club drugs across settings was the limited data collected, which made it difficult to understand the indicators of these substances. The rest of this chapter provides an overview of anticipated NPS and club drug training needs by setting, views to e-learning approaches and considerations for implementation.

9.2 Training needs

Prisons

- There were a broad range of professional backgrounds in prisons (prison officers, educators, mental health/substance misuse teams, physical health teams). All have varied levels of NPS training need. Therefore any NPS training should clearly explain what people in different job roles were responsible for.
- It would be helpful to have more guidance on safety and treatment options – when do prisons need to send SCRA users to emergency departments, when is it safe for them not to?*

Mental health services

- There were varied levels of need; in some services staff were felt to be highly aware about NPS and club drug associated harms, however, in other settings there was felt to be a general lack of knowledge.
- There was a lack of awareness about what NPS and club dugs were, for example, that SCRAs were different to cannabis. Explaining this difference was identified as key.
- Similarly, there was sometimes felt to be limited understanding of the toxicity and harms associated with SCRAs.
- When serious incidents happened (for example, someone collapsing because of SCRAs), it was very easy for the next clinical emergency to happen and for people to move on fairly quickly, because NPS incidents were seen relatively rarely.

Homeless people

- Again, there were varied levels of interest and need for NPS and club drug training amongst those who worked with homeless people.
- Those who had worked with homeless people who had used SCRAs were far more likely to perceive a need, yet those who had limited direct contact with SCRA users were unlikely to.

***Existing resources:** NEPTUNE have published guidance on 'Harms of Synthetic Cannabinoid Receptor Agonists (SCRAs) and Their Management', which can be accessed at the below link.
http://neptune-clinical-guidance.co.uk/wp-content/uploads/2016/07/Synthetic-Cannabinoid-Receptor-Agonists.pdf

9.3 E-learning in other settings

Prisons

- An important benefit of e-learning approaches in prisons was that it made training more accessible for those in remotely located prisons (attending face-to-face training was challenging).
- However, it would be important that prison staff were away from the 'shop floor' when they did the module, to avoid interruptions (which can require urgent attention). A protected, separate space would be helpful.
- It can be difficult for prison officers to find time to sit at a desk because of the structure of the regime. While it would not be impossible for them to do e-learning, there would need to be careful planning.
- Computer access itself was not identified as problematic (for staff).

Homeless people

- One experience amongst staff in this setting was having a relatively limited amount of e-learning, and were relatively open to e-learning.
- However, e-learning like any other type of training – needs to be engaging and interesting for it to work.

In-patient/community

- There was an increasing amount of medical and psychiatry training delivered by e-learning. A possible related challenge was that some had developed a *'just click and pass'* mentality without really engaging with the content.
- Anything that helped users feel as they had control over the pace was felt to facilitate engagement.

9.4 Key implementation considerations

Five key implementation considerations emerged when thinking about implementing the module in other settings:

- **NPS and club drug awareness raising**
  People needed to have a basic understanding of NPS and club drugs to be receptive to related training opportunities. Raising awareness was identified as the first step to implementing a training resource when knowledge was especially limited. One way of doing this was using language people were familiar with, even if inaccurate, to help communicate the subject matter. For example, *'training on NPS (formally known as 'legal highs')'.* Or 'training on synthetic cannabinoid receptor agonists (SCRAs), *(for example, spice).* There were examples, over time, of people learning terms, and information filtering down to different groups, so that eventually terms like 'legal highs' could be phased out.

- **Training curriculum setters**
  Stakeholders suggested asking those who set the content of training programmes for different professional backgrounds to promote the module (which is something NEPTUNE have previously done). For example, medical and psychiatry trainees attended regular regional academic sessions. Those who set the curriculum for these sessions could potentially be far-reaching and persuasive in invitations to complete an e-learning module.

- **Strategic buy-in**
  The importance of strategic buy-in from the highest relevant authority was highlighted as essential. In prisons this was the governor, trusts in NHS settings and HR/chief executives in charitable organisations. There were potential challenges in getting this buy-in across settings.

- **Purpose of resource and target audience**
  Implementers need to clearly understand the purpose of any resource (and staffing groups for whom it is appropriate). This was especially important in settings with multiple professional backgrounds who had varied levels of

contact with NPS and club drug users. To increase uptake implementers need to understand the purpose of any resource they implement (for example, whether it is designed to raise awareness, or more about learning).

- **Varied rates of spread**
  News might spread more quickly in some settings compared to others. For example, in prisons, informal information networks helped spread news quickly. This was facilitated through prisoner-to-prisoner, prison officer-to-prisoner and prisoner-to-prison officer communications. Therefore, first impressions of the module might be especially important in this setting. For example, if those who first complete view it favourably, this view might quickly spread. Equally, if early completers dislike the module, this news could spread quickly too.

Section 3:

Conclusions and recommendations

10. Conclusions and recommendations

There was a clear need for e-learning training on NPS and club drug presentations, but it was important the right people are targeted in a timely manner.

10.1 Conclusions

Our evaluation found that there was a clear need for training in NPS and club drugs amongst NEPTUNE's target audience for the module: clinicians and some specialist drugs workers. This group wanted to learn more about specific substances, be better able to answer their service users' questions and generally be more confident in their management of presentations. As explored in previous chapters, three key factors determined likelihood of accessing and completing the module:

- type of e-learning user
- rate and nature of spread
- immediate barriers and facilitators

When an individual's perceived need for NPS and club drug training was sufficiently high, with time, it appeared possible to overcome challenges to completion. As explored in chapter 6, there were a number of factors which also facilitated completion. When this group accessed the module they reported important benefits; increased knowledge and confidence, and in some cases, planned changes to clinical practice. For example, participants reported feelings of increased credibility with service users and said they would be more likely to quantify NPS and club drug use in their notes. This was linked to better patient and service user outcomes, and increased job satisfaction for staff.

However, participants highlighted the necessity for the module to be perceived as current, and up to date. Out of date e-learning was seen as less credible, and ultimately less useful. The rapidly changing nature in relation to legal status, substances and patterns of use were highlighted as potential issues.

Key finding: It was important that the module was implemented in a timely manner.

When non-clinical staff (who were not NEPTUNE's target audience) completed the module, they did not report such benefits. Instead, they reported that the module was difficult to follow and felt its contents were superfluous to their roles. This group of participants were interested in NPS and club drugs, hence their decision to complete the module. Yet, this did not provide what they needed, which was a high-level account of different NPS and club drugs and practical advice on how to engage service users in discussions about these substances. This suggested that there might be a gap in NPS and club drug resources for non-clinical staff. When this group completed the module, and did not find it helpful they, sometimes, told colleagues their view, which could prevent the spread of the module, including amongst the target audience.

Key finding: It was vital that the module reached the right people – those who are able to benefit from completion.

10.2 Recommendations

The text box below presents recommendations (informed by evaluation findings) for future implementers of the module, to help ensure implementation is timely, and, that the module reaches those who are most able to benefit from it. Wider recommendations for policy makers and funders have been highlighted where relevant.

Targeting

Target audience: Implementers should clearly explain to colleagues that the module is for clinicians (nurses, doctors and psychologists), and specialist drugs workers. If a service or implementer would like those from another professional background to complete the module, it is important to first test how appropriate this is with someone from this professional background.

Meeting needs of other audiences: Non-clinicians should be signposted to other NEPTUNE resources on NPS and club drugs (like care bundles). However, there might also be a need for more research to understand non-clinicians' training needs in the area, which might highlight the need for further resources to be developed for this group.

Spreading and implementing

Implementer: People were more likely to complete the module when they respected the individual who invited them to complete it. It could be helpful for implementers to reflect on who does this role. Additionally, if the role is delegated, it is important to ensure the new person is given plenty of time and involved in early planning.

Spread at larger services: At larger services, which work across sites with less regular shifts it could be helpful for implementers to initially target a few staff (up to ten) to increase the sense of accountability and make the task feel more manageable.

Overcoming immediate barriers

Allowing time: Diffusion through informal networks was lengthy, it would therefore be important for implementers to allow adequate time for this to happen (where possible), and send reminder emails at regular intervals (even up to six months after the initial invitation).

Provide an outlet for criticism: It could be helpful for implementers to provide staff the opportunity to critique the module to them. Feeling listened to could prevent the need, and desire, to feedback negative comments to colleagues.

Focal event: Arranging a 'focal event' (a teaching session on NPS and club drugs, for example) could help staff prioritise completion, through creating a sense of a deadline.

Individually protected time: Line management supervision could be used to help individuals protect time to complete the module. This was felt to be more effective than protecting time for groups of professionals, because individual clinicians had highly varied workloads and priorities.

Exploiting opportune times: Implementers should reflect on – and exploit – any opportune times. For example, particularly quiet periods or linking to appraisal deadlines.

Future updates

Content: In light of the importance participants placed on perceiving the module as up to date, we (the evaluation team), suggest that the module content is regularly updated to reflect changing trends and patterns of use in NPS and club drugs. This would be updates to specific content (most likely additions) rather than structural or methodological changes to the NEPTUNE modules.

Appendices

Appendix A: Interview topic guide

A topic guide was developed to ensure consistent coverage across interviews. The guide was used flexibly and interviewers were responsive to issues raised by participants. Key coverage included:

Section 1: Introduction

Aim: Explain the research, ensure informed consent (get consent form signed) and answer any questions.

- Introduce self
- Brief explanation of NEPTUNE II:
- Outline purpose
- Explain voluntary nature
- Confidentiality and anonymity
- Recording – would like to audio record with permission, data stored in accordance with the Data Protection Act
- Timings – reiterate start and finish times
- Ask participant to sign consent form and start recording

Section 2: Background and context

Aim: To establish rapport, make participant feel at ease and gather important context

- Professional background
- Current issues/pressures of role

Section 3: Previous experience of e-learning and NPS

Aim: To explore previous experience of e-learning (generally) and NPS presentations

- E-learning
    - Front of mind responses
    - Previous experience
    - Pros and cons

- NPS and club drugs
    - Experience and interest levels
    - How it is an issue in their day-to-day work
    - Knowledge and research gaps

Section 4: Hearing about the module and NEPTUNE

Aim: To develop a detailed understanding of how participants first heard about the module

- Process of finding out about the module and NEPTUNE
- First response to module and NEPTUNE
- Explore what expectations they had of the module
- Overall views of first hearing

Section 5: Doing the module

Aim: To explore experiences of completing the module

- Decision to attempt/complete the module
- Process of attempting/completing the module
- Overall views of completing

Section 6: Perceived impacts

Aim: To explore perceived impacts on knowledge/confidence in NPS and clinical behaviour

- Knowledge
- Confidence
- Clinical practice

Section 7: Conclusion and wind down

Aim: To give participants a chance to wind-down and share any final reflections

- Final thoughts
- Single most important barrier to module being used
- How to overcome this?
- Anything else to add?

END RECORDING

- Wind down
- Reassure about confidentiality
- Check whether any questions
- Confirm permission to re-contact in case of clarifications

Appendix B. NEPTUNE national impact and dissemination

The development team have disseminated NEPTUNE at a national level. It was not always possible for participants to discern specific events or media coverage (although some could and did). However, there was sometimes a general awareness of NEPTUNE and their purpose. This brand awareness seemed to make participants more receptive to completing the module. The following dissemination activity and events, listed below, might have contributed to brand awareness.

Recent conferences and presentations

Date	Title
February 2017	Home Office, Homelessness Roundtable
February 2017	Camden and Islington Specialist Drug Services NHS
November 2016	Annual conference of substance misuse non-medical prescribers
November 2016	Andrew Sims Centre, Learning and Organisational Development, Leeds and York Partnership NHS Foundation Trust
November 2016	Royal College of Psychiatrists' Quality Network for Prison Mental Health Services' event on Managing Dual Diagnosis and New Psychoactive Substances in Prisons
November 2016	Berlin Nacht - Stad Nach
November 2016	University of Hertfordshire, NPS conference
October 2016	Royal Society of Medicine
September 2016	Westminster Rough Sleeper Provider Network
September 2016	Paramedic Training Day- London Southwark Fire Station
August 2016	United Nations Office on Drugs and Crime (UNODC)
July 2016	Ministry of Sound
July 2016	National Aids Trust- Roundtable
June 2016	EMCDDA Summer School- Lisbon
June 2016	Homelessness and Inclusion Health UK
May 2016	Faculty of Liaison Psychiatry, Guidance on the management of acute and chronic harms of club drugs and novel psychoactive substances
April 2016	'Chemsex' European forum
March 2016	Royal College of Psychiatrists; Substance misuse faculty conference
March 2016	NPS conference Addaction
March 2016	Royal College of GPs Certificate of management of drug misuse- regional Masterclass Birmingham
March 2016	Forensic psychiatry
February 2016	British Association of Social Workers
January 2016	Brent Civic Centre Treatment

Media coverage

- Victoria Derbyshire BBC (September 2016)
- Panorama BBC (November 2016)

Social media

- NEPTUNE has been commented on in social media, some illustrative screen shots are provided below:

Appendix C: Initial programme theory

This section provides more detail on the initial programme theory.

Our evaluation was informed by a realist evaluation approach.[30] Realist evaluation is a form of theory-driven evaluation, which aims to answer the question: *'what works for whom in what circumstances'?* At the outset of the study we developed an initial programme theory in collaboration with the development team. The programme theory described how we thought the e-learning module would work in different settings.

Context

We theorised that two contextual factors would shape the likelihood of a clinician completing the module:

- Frequency of NPS and club drug presentations
  We speculated that the more NPS and club drug presentations clinicians saw, the more likely they would be to want to complete an e-learning module on the subject, because of greater perceived need.

- Saturation of e-learning modules
  We also speculated that if clinicians felt saturated with e-learning modules, in general, they would be less likely to complete the module.

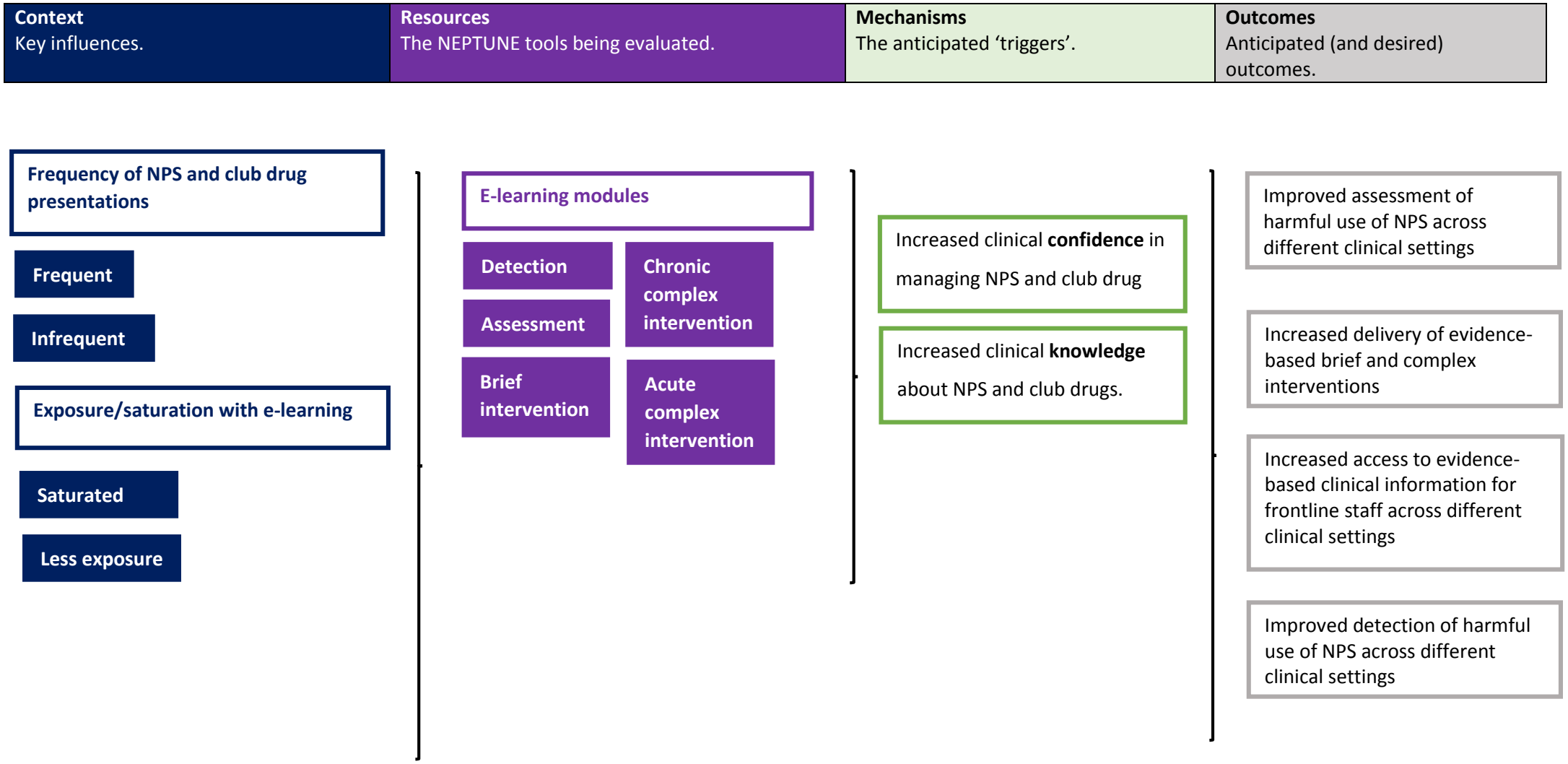
Mechanism and outcomes

We theorised that if clinicians completed the module they would develop more confidence and knowledge in NPS and club drugs, which would in turn lead to improved assessment, more access to evidence based interventions and improved detection of harmful use.

Our initial programme theory is summarised by the diagram below. Over the course of fieldwork we refined and developed our programme theory. The final programme theory is presented in chapter 9.

[30] http://www.betterevaluation.org/en/approach/realist_evaluation

Initial programme theory



Appendix D: Additional research

In addition to in-depth qualitative interviews, the evaluation team used two other methods to evaluate the NEPTUNE e-learning module:

- **Case note audit:** A case note audit was done at a specialist drugs service to compare how clinicians managed NPS and club drug presentations before and after they completed the module.

- **End of module survey:** Everyone who did the module as part of the pilot was invited to complete a survey**,** comparing their knowledge and confidence levels on NPS and club drugs before and after the module.

Methodological challenges emerged with both methods (as explored below). As such, the results from these strands must be interpreted cautiously. Moreover, no statistical significance was found in relationships between variables. Therefore, it is not possible to attribute apparent improvements in knowledge or confidence to the NEPTUNE module because they could be explained by random chance. The methods, findings and caveats of each strand are explored below.

Case note audit

Design

A case note audit was used to collect data on the assessment and management of NPS to compare clinical practice before and after completion of the NEPTUNE module. To ensure there were enough cases the audit focused on a specialist drugs service which received 30+ referrals for NPS presentations over a period of three months.

Data collection tool

The evaluation team developed a data collection tool (please see image below). The audit involved looking at four key documents:

- The National Drug Treatment Monitoring System (NDTMS) data registration form: Public Health England require drug treatment agencies to provide a basic level of information to the NDTMS on their activities each month. Services do this through a data registration form, which is used for each new treatment episode.

- Treatment Outcomes Profile (TOP): The TOP form (which Public Health England manage) measures changes and progress in key areas of the lives of people being treated in drug and alcohol services. It comprises 20 questions on substance use, injecting risk behaviour, crime and health and quality of life.

- Individual case notes: For the purpose of this audit, we took case notes to mean any notes taken by staff members following meaningful interactions with the patient

- Individual care plan: A 'care plan' is here defined as a plan of support provided by professionals involved in the patient's care including which/when treatment will be provided.

The data collection tool asked the following eight questions of each case selected.

1. Has 'problem substance' section been completed?
2. Are NPS or club drugs recorded as any of the patient's problem substances?
3. Has 'substance use' section been completed?
4. Are NPS or club drugs recorded as any of the patient's problem substances?
5. Do the patient's case notes contain any reference to 'novel psychoactive substances', 'NPS', 'club drugs', or any named substances which fall into this category?
6. Do the patient's case notes contain a care plan?
7. Does the care plan contain harm reduction advice relating to the use of NPS/club drugs (e.g. safer injecting; safer sex, sexual health)?
8. Does the care plan include evidence-based interventions relating to the management of NPS/club drugs (i.e. motivation enhancement/interviewing if still using, or relapse prevention if abstaining)?

Data collection

Inclusion criteria and approach

- Patients were included if they had an NDTMS and TOP form in their records, and if NPS was mentioned in their care plan.
- Case notes and care plans were checked to see if two of the most widely used interventions featured in the care plan:
  - Harm reduction advice
  - Evidence-based interventions relating to the management of NPS/club drugs (motivation enhancement/interviewing if still using, or relapse prevention such as symptomatic treatment if abstaining).

Process

Thirty consecutive sets of notes were selected retrospectively from the period immediately prior to implementation of the NEPTUNE module (October 2016).
All patients were seeking help for NPS-related harm and undergoing their first treatment episode at the service. The data were collected over a three-day period by the NEPTUNE development teams' project assistant.

A window of five months was allowed after implementation was complete at the service (approximately 13 members of staff had completed the module, this was 100% of staff who had direct contact with patients). During this time the service received 23 new referrals for NPS-related harm. Notes for all of these patients were audited. However, data for the first five items in the audit (relating to NDTMS and TOP forms, and case notes) were removed for seven post-implementation patients due to an organisational change in the recording of this information.

Analysis and results

The audit data were divided into pre and post implementation. Paired samples T tests were performed on each of the 8 questions in the audit (see above). Only one question was found to have a statistically significant relationship between variables: whether or not the patient's file contained a care plan ($df = 22$; $p < 0.05$). Significantly more patients within the post-implementation cohort had a written care plan than those

audited prior to staff's completion of the NEPTUNE module. However, it is not possible to attribute this to the completion of the NEPTUNE module. As the giving of neither harm reduction advice nor evidence-based interventions relating to the management of NPS/club drugs improved significantly in the second cohort, we can assume that this result is independent and anomalous.

In any case, it is important to note that sample sizes were extremely small and so results must be interpreted cautiously. As mentioned above, some results were removed for 7 of the 23 patients audited post-implementation. This is the result of an initiative to streamline documentation and avoid duplication of efforts within the service.

Survey

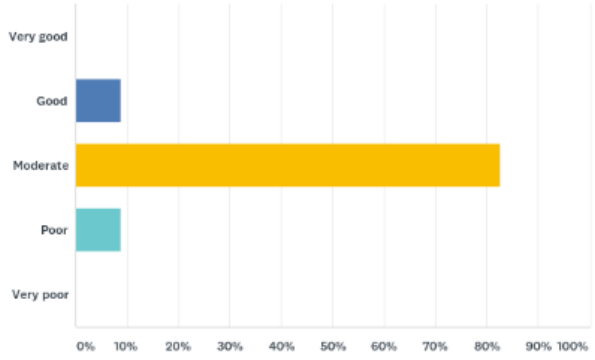
A survey was used to measure respondents' perceived changes in confidence and knowledge in managing NPS and club drug presentations. A link to the survey was provided on the last page of the pilot module. The response rate was 41%. A total of 33 respondents completed the survey, out of a possible 81 who were invited to complete the survey when finished the module and generated a certificate.

However, it is likely that more people completed the module, but were not able to complete the survey because of technical difficulties in generating the certificate. Therefore the response rate is likely to be lower. As with the case note audit, there was no statistical significance between variables. Therefore, while results (presented below) appear to suggest the module improved knowledge and confidence, this could be explained by random chance.

Knowledge

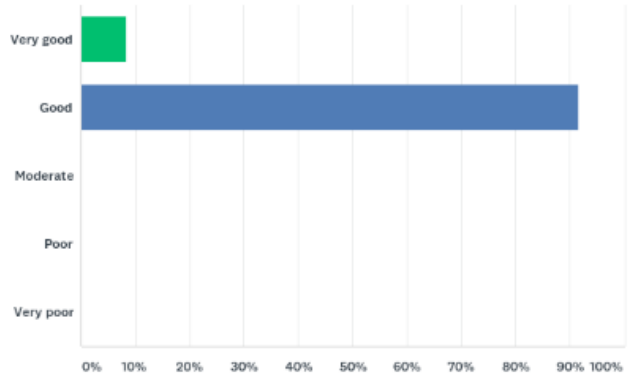
Q5 How would you rate your overall knowledge of these substances BEFORE completing the module?

Answered: 23 Skipped: 10



Q6 How would you rate your overall knowledge of these substances AFTER completing the module?

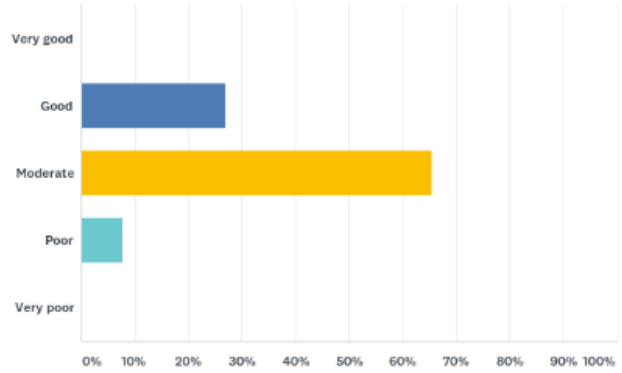
Answered: 24 Skipped: 9



Confidence

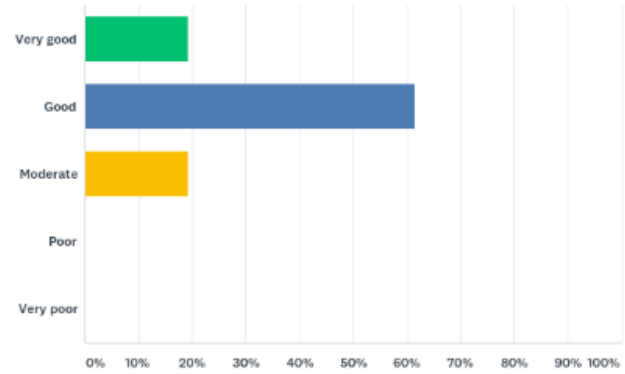
Q7 How would you rate your confidence in assessing and managing harms related to these substances BEFORE completing the module?

Answered: 26 Skipped: 7



Q8 How would you rate your confidence in assessing and managing harms related to these substances AFTER completing the module?

Answered: 26 Skipped: 7



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