St George's
University of London

Substance Misuse in the Undergraduate Medical Curriculum Project Report



International Centre for Drug Policy,
St George's University of London
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Foreword

The Government published its Drug Strategy in 2010. This highlights the importance of identifying dependence on drugs and alcohol and helping people to recover.

The 'Substance Misuse in the Undergraduate Medical Curriculum Project' was funded by the Department of Health, and enabled the development of guidance on the integration of teaching about substance misuse within the medical curriculum. This was delivered through local coordinators and academic champions.

I would like to thank Professor Hamid Ghodse for directing the work described in this report. I would also like to thank the Steering Group, chaired by Professor Peter Kopelman, Principal of St George's Medical School, which oversaw the work. Their work has helped integrate substance misuse teaching within medical disciplines. The recognition that substance misuse is an important part of the undergraduate medical education is testament to the value of the project.

It is important that future students and doctors are well equipped to deal with the harm that substance misuse can cause. Resources such as the Toolkit and Factsheets are vital to help medical schools deliver a strong and integrated approach to substance misuse education.

Anne Milton
Parliamentary Under Secretary of State for Public Health

Foreword

Substance use and dependency and their adverse health and social effects are regularly reported in the media and constitute a serious and growing issue in the UK, and worldwide. Evidence for this is the many published research reports and the recognition given to it by government policies. Unsurprisingly there have been a similar call for a more systematic approach to substance misuse in medical education; it was commendable that this was recognised by the government. The Department of Health funded the work of the Substance Misuse in the Undergraduate Medical Curriculum Project to develop first a national corporate guidance on the integration of substance misuse teaching within the medical curricula and then to implement the guidance through local coordinators, with their academic "champions".

I commend this report which describes the work undertaken. The work has been most successful in embedding substance misuse teaching across medical disciplines; we must not be complacent and consider that our task is done. The changes introduced into undergraduate medical curricula form the core of teaching on substance misuse and provide a firm foundation on which graduates should build as they progress through their medical training. It is pleasing to note that students recognise the continuing importance of learning about substance misuse for their future careers.

Professor Peter Kopelman

Principal, St George's, University of London, and Chair of the National Steering Group for Substance Misuse in the Undergraduate Curriculum

Preface

The misuse of alcohol, tobacco, and both licit and illicit drugs in the UK is one of the major health challenges of today. It affects not just on health but also the wider lives of those using these substances and their families, colleagues and wider society. It lies behind a high proportion of all crime, and it costs the country billions of pounds each year in prevention and treatment programmes, crime and other economic costs.

Part of the government's response to this problem is to address the education of professionals who will deal with substance misuse. This project has comprised two phases. In Phase 1, a UK corporate guidance document was developed that set out core aims and learning outcomes for substance misuse teaching and learning in the undergraduate medical curricula. Phase 2 has focused on implementing the guidance through the appointment of curriculum coordinators in English medical schools to identify substance misuse teaching and recommend changes to ensure that substance misuse issues are fully covered.

This report describes the work of a project, focusing on English medical schools to embed teaching of substance misuse into the undergraduate medical curriculum, the purpose of which is to improve the education of medical students in this area.

Those who misuse substances will, inevitably at some stage, be seen by doctors who therefore have a vital role to play in recognising substance misuse, and in assessing and managing its associated problem. This applies equally to hospital doctors and general practitioners, as much as to hospital and community specialists in addiction, as all these staff will encounter users every day. The generalist doctors are often the only medical staff a patient sees and so they may have a unique opportunity to intervene and, if needed, to refer for more specialist help. This is why undergraduate medical students need the core skills and knowledge to handle substance misuse when they meet it as doctors.

It is important to acknowledge that the use of substances by medical students is a matter for concern as it can affect both their personal health and professional practice. Students' awareness of the risks and consequences of their own, and hence also their colleagues', use of substances needs to be covered during their medical studies.

The issue of attitudes to those who are addicted/dependent both in society, generally and in the medical profession itself is an area that needs addressing within the undergraduate curricula. The stigmatisation of addiction and the marginalisation of those who are affected create barriers to prevention and treatment. Medical curricula must challenge stigma and discrimination, producing doctors who view the problems objectively and compassionately.

Substance misuse can be found in nearly all areas of medicine, which means that the opportunities to learn about it are extensive. However, this also means that the topic risks being fragmented, uncoordinated, spread too thinly, and it is often ultimately therefore barely visible to students.

This project has addressed this risk through the mapping of substance misuse teaching within participating medical schools and implementing changes to fit with the national substance misuse learning outcomes from the corporate guidance.

Although this project has focused on the undergraduate phase of basic medical education, it is of equal importance that learning about substance misuse is developed in the Foundation years and subsequent training.

The very active involvement of English medical schools in reviewing and pursuing changes to their curricula so that all their graduates will be able to play their part in tackling substance misuse is pleasing to see.

Professor Hamid Ghodse
Director, International Centre for Drug Policy

Executive Summary

Substance misuse is a major public health challenge both nationally and globally. The use and misuse of alcohol, drugs (licit and illicit), and of tobacco have impacts on individual patients, their families and communities. Doctors within all branches of medicine are very likely to encounter individuals with substance related health problems. The medical profession has a key role in improving not only the health of their patients but also the nation's public health. This has been recognised by both the World Health Organisation and the United Nations who have recommended to governments that substance misuse should be included in medical teaching.

In the late 90s, research into UK medical schools had demonstrated very low levels of exposure of future doctors to teaching on drug and alcohol misuse issues within UK medical schools. The 'Substance misuse in the undergraduate medical curriculum project' (Phase 1 – 2005-2007) was funded by the Department of Health, to work with all UK medical schools to develop consensus guidance on the integration of alcohol, drugs and tobacco training in medical undergraduate curricula. The guidance included key objectives and recommendations on providing high quality training and assessment.

Phase 2 of the project (2008-2011), which this report describes, had these key aims:

- to support medical schools in integrating and implementing the *Substance misuse in the undergraduate medical curriculum guidance* into their curricula;
- to promote the development of a self-sustaining network of all English medical schools willing to pursue change in their curricula; and
- to complete and validate the teaching and learning resources (Toolkit) produced to advance the implementation programme.

This second phase has focused on implementing the guidance and validating the Toolkit. This was achieved through the funding and appointment of time-limited curriculum coordinators in English medical schools, working with local academic champions, to identify the suitability of the current substance misuse teaching and to recommend and support changes to ensure that substance misuse issues are fully covered in line with national guidance.

A National Steering Group was established that has overseen both phases and is now looking to promote further sustainability of the initiative. A National Coordinator convened an Expert Panel to develop the guidance and resources for the implementation work. The network of local academic champions and curriculum coordinators worked with the schools to deliver the changes needed to implement curriculum changes as appropriate for each school, and are a valuable resource, when in considering future sustainability.

Key Findings

An early part of Phase 2 of the project was a mapping of current teaching in the medical schools by coordinators. The results, when compared with earlier research findings into the teaching of substance misuse in UK medical schools, were already suggesting a positive impact following the process of agreement and publication of the UK-wide curriculum from Phase 1. However, this mapping also pointed to clear variations in delivery between schools and across different learning objectives within schools. The mapping formed an important part of the evidence for developing and enhancing

implementation in Phase 2. This data was, though, considered alongside other evidence available to the local coordinators and champions in each school, and was analysed with support of the Expert Panel and National Steering Group. The wider coordinator networks that developed assisted in the analysis of need and in developing the practical plans and actions that were implemented locally to improve substance misuse curricula and actual training delivery. This needed both a focus on building consensus on the need for a higher priority to be given to drug and alcohol issues, and the provision of practical tools for implementation and integration into existing curricula and training styles. The project Toolkit and the high-quality, practical and flexible Fast Factsheets that were developed, were key tools to engage non-substance misuse specialists and teachers in the schools, to be used in their own particular clinical care setting to address substance misuse learning outcomes.

Mapping of teaching was aligned to the national substance misuse key learning outcomes grouped into six key learning areas:

1. Bio-psycho-social models of addiction
2. Professionalism, fitness to practice, and students' own health
3. Clinical assessment of patients
4. Treatment interventions
5. Epidemiology, public health and society
6. Specific disease and speciality topics

The table below shows the number of teaching sessions that occur for each of the overarching learning outcomes (and the average across the 17 medical schools that contributed to this analysis). Teaching sessions are defined as the number of occasions some formal or timetabled teaching/learning occurs that feature issues relating to substance misuse (such as a lecture, a seminar, a problem-based learning case, special study modules etc.).

Learning outcomes area	**Number of teaching sessions**	**Average per school (17)**
Bio-psycho-social models of addiction	944	55
Professionalism, fitness to practice, and students' own health	408	24
Clinical assessment of patients	929	54
Treatment interventions	911	53
Epidemiology, public health and society	564	33
Specific disease and speciality topics	825	48

The mapping identified variation in the instances of teaching between schools and within schools, and variation of the extent of provision, as well as areas needing further development. Common areas for all schools requiring further development included iatrogenic addiction; professionalism, self–care and fitness to practice; attitudes and issues relating to stigma; child related issues and social consequences.

Changes implemented by the schools ranged from the re-writing of learning objectives to the development of problem based learning scenarios. Workshops and symposiums were developed that covered ethical issues of substance misuse including the use of external speakers to discuss the misuse of substances by the medical profession. Teaching resources were developed or enhanced through the development of web resources such as virtual patient tutorials and video resources playing out clinical scenarios. Independent learning resources were also developed such as an online addictions study guide, and in one school students set up and hosted an 'Alcohol Awareness Week'.

Toolkit & Fast Factsheets

As noted above, a key task at the beginning of Phase 2 was to complete and validate a Toolkit aimed at facilitating implementation of the curriculum improvements, alongside validation of accompanying teaching and learning resources (such as the Fast Factsheets), to assist the coordinators in their work. The Toolkit was designed as flexible resource to provide guidance on mapping and implementing substance misuse into the curriculum. The Fast Factsheets, written by clinicians with in-depth knowledge of substance misuse, provide concise, relevant and up to date information on specific areas of substance misuse teaching. Under the guidance of the Expert Panel this work was completed in June 2009. During the project, using an iterative process, feedback about the Toolkit and the Fast Factsheets was gathered and acted on.

Coordinators found both the Toolkit and Fast Factsheets to be useful resources that could be adapted to meet their local needs. Similarly, teaching staff found the Fast Factsheets to be very valuable resource – and these were highlighted particularly as being 'educational', 'fit for purpose' and 'readable'. They provided a framework for developing current teaching material as well as being used as stand-alone teaching resources. The mapping exercise highlighted the need for new titles, which were then written and produced.

Student views of Substance Misuse Teaching

Students, the future doctors, were actively engaged in the project and in the development of materials, revealing a number of important issues:

- Trainee doctors themselves do consider substance misuse is an important aspect of undergraduate medical education in order to equip them for the future, and they have a high level of interest in this.

- Opportunities to prioritise further learning on substance misuse through special study modules, when available, are popular.

- Direct contact with patients and services through placement are considered the most useful way to learn about the management of substance misuse problems.

The students felt a lack of confidence in performing certain key skills with those who misuse substances, including the taking of a history of illicit substance use, discussing the range of options for patients wishing to cut down or stop use, and in being able to recommend appropriate organisations that could help patients in stopping misuse.

Conclusions

This major initiative has enhanced the training and education of student doctors, and established a solid basis for substance misuse teaching, producing a number of clear and important positive outcomes:

- There is an agreed high-level curriculum established across all UK medical schools for the first time, which has in itself enabled improvements in training of student doctors across the UK

- An innovative project providing a period of focused support for implementation of this new curriculum in to English medical schools at a local level, has contributed to substantial improvements in the extent and quality of teaching and training of all doctors taught in those schools, across a wide range of drug and alcohol issues.

- The changes implemented into the curricula have already impacted upon current medical students, and will have already influenced the learning of at least 47,000 future doctors; and benefits will continue to accumulate over time.

- The development in recent years of local curriculum champions in English medical schools has promoted a raised awareness across the medical school curriculum committees of the importance of including drugs and alcohol learning in order to have a broad and integrated curriculum for future doctors.

- A package of high quality, practical and flexible teaching and training materials has been developed and validated by experts with the support of the trainee doctors.

- The curriculum has been mapped to Tomorrow's Doctors 2009 and where appropriate some learning objectives have been revised and aligned more closely.

- With the experience of a very successful implementation of the new UK-wide curriculum in to English medical schools, it would be appropriate for Scotland, Northern Ireland and Wales to consider a process of implementation support for their medical schools.

- A number of recommendations have also been made aimed at building on the success of this project - in recognition of the importance to health and well-being of both patients and doctors continuing to be able to respond to a rapidly changing landscape of legal and illegal substances and prescribed and over-the-counter medications. They relate to the maintenance and availability of the core resources; the provision of a period of additional support for the network of local champions to embed further the success to date, and to link to other initiatives; and to develop training and new tools based on the approach used in Phase 1 and Phase 2.

Recommendations

To ensure the continued benefits of the investment in this project and to sustain the impact of the outcomes in terms of changes and improvements to medical school curricula on substance misuse the following recommendations are made:

Resources

1. To develop a database resource of all student selected components (SSC) and special study modules (SSM) currently offered by medical schools in the area of substance misuse

2. To develop a resource sharing portal where all project resources can be collated and accessed for teaching purposes, including a core list of recommended addiction teaching and learning resources.

3. To publish the Toolkit and Fast Factsheets as a central resource.

4. To maintain and update the Fast Factsheets.

5. To develop guidance on topics and questions for assessment, and to provide questions for the Medical Schools Council Assessment Alliance (MSCAA) common assessment bank of questions.

Sustainability

6. To continue with the guidance and network support of the National Steering Group for 2-3 years to help embed changes following cessation of the core funding for local coordinators.

7. To continue with, and further develop the network of local academic champions and the Expert Panel network for 2-3 years.

8. To identify a 'link person' for substance misuse teaching in each participating school. This is likely to be the academic champion but if posts change then new people need to be identified. At the very least, this link person is a point of contact for future resource sharing.

9. To take opportunities to ensure the continuity of undergraduate substance misuse related learning outcomes (as defined in the project Toolkit) links through to post-graduate education and with appropriate professional postgraduate medical education initiatives.

10. Given the crucial delivery and leadership roles of doctors, policy makers to consider how best to include adequate monitoring and development of the medical workforce, and student doctors in particular, in workforce development and competency frameworks for substance misuse; so we are able efficiently and cost-effectively to meet the future public health needs and treatment demands from the misuse of substances.

11. Relationships with Third Sector providers and other partners should be built to ensure that teaching via placements continues and builds upon current provision.

12. In the light of on-going changes to drug and alcohol service provision, medical schools should actively seek recognition of the time and resources needed for teaching undergraduate medical students, to be included within service tender documents and service specifications.

Training

13. To commission a substance misuse curriculum mapping and training review course, that could be accessed online or rolled out as a package for others working on similar projects, and that could be extended to the training of other relevant professional groups.

14. To develop specifically designed tools, such as Google desktop or Google box tools that may assist the process of curriculum mapping. Such software might potentially be used to create a database with ability to rate content.

1. Introduction

The 'Substance misuse in the undergraduate medical curriculum project' (Phase 1) worked with all UK medical schools to develop consensus guidance on the integration of alcohol, drugs and tobacco training in medical under-graduate curricula. The guidance that was produced included key objectives and recommendations on providing high quality training and assessment.

Phase 2 of the project had these key aims: (a) to support medical schools in integrating and implementing Substance *misuse in the undergraduate medical curriculum guidance* into their curricula; (b) to promote the development of a self-sustaining network of all English medical schools willing to pursue change in their curricula; and (c) to complete and validate the teaching and learning resources (Toolkit) produced to advance the implementation programme. This second phase has focused on implementing the guidance and validating the Toolkit through the appointment of curriculum coordinators in English medical schools, who identified current substance misuse teaching and recommended and supported changes to ensure that substance misuse issues are properly covered.

The health and educational context in which the project was undertaken is set out below. This report then describes the work of the second phase of the 'Substance misuse in the undergraduate curriculum project' in some detail. It draws on the data and information gathered from coordinators' reports, minuted discussions at curriculum coordinator and academic champions meetings, the evaluation group's reports and other project documentation.

The background to, and setting up of, the project is described first. An analysis of the findings from the mapping of substance misuse teaching with the recommendations and summary of changes implemented across the schools is then presented. Examples of innovative and useful approaches to raising substance misuse in the curriculum are used to show particular ways of working and to highlight good practice. Throughout the project, the issue of sustainability arose and consideration is given to this, and particularly the embedding of changes in the immediate 2-3 years following cessation of the local coordinator posts.

The evaluation section provides a summary of the work undertaken to examine implementation: the processes involved and the outcomes of the project, including the review of the Toolkit that was a key vehicle for supporting change. Finally, a brief conclusion is given with some recommendations, followed by appendices which include the results of the surveys of student on substance misuse teaching and a list of external dissemination activities.

Alcohol, drugs and tobacco - the public health context

The use of legal and illegal drugs, including alcohol and tobacco, by various cultures within different societies, makes the proper training of key professionals in promoting public health an issue of cross-border and global concern. Between 149 and 272 million people (3.3% to 6.1% of the overall population aged 15-64) are estimated to use illicit substances worldwide with cannabis being the most widely used drug. A growing problem is the non–medical use of prescription drugs and more recently, new synthetic

compounds have emerged in illicit drug markets. These substances are known as 'legal highs' and are substitutes for illicit stimulant drugs such as cocaine and ecstasy. [1]

Tobacco is used by about 14% of the world's population (an estimated 1 billion adults) [2] whereas, 2 billion people worldwide are estimated to use alcohol with 76.3 million having a diagnosis of alcohol use disorder. [3, 7]

In the United Kingdom, estimates show that approximately 81,700 adults aged 35 and over in England die annually through smoking. [4] Costs for the NHS for alcohol misuse are estimated by the Department of Health at £2.7 billion per year. [5] About 3 million people in the UK use illicit drugs and over 300,000 are classed as problem drug users (opioid and crack cocaine users). [6]

The global threat of this prevalent use on public health and society in general is enormous and of major concern. [7] Tobacco is believed to be responsible for 6 million deaths per year globally, killing one person every 6 seconds; it acts as a risk factor in six out of the eight leading causes of death worldwide; and, is responsible for 4.1% of disability-adjusted life years. [2, 7, 8, 9] In the UK, smoking costs the NHS alone £2.7 billion each year for treating diseases caused by smoking. [10]

The impacts of alcohol misuse, whether direct or contributory, acute or chronic, are alarming, making problematic use of alcohol a major pressure on society. Worldwide, the harmful use of alcohol is believed to be responsible for 2.5 million deaths each year. Alcohol consumption is the world's third largest risk factor for disease and disability and is a causal factor in 60 types of diseases and injuries and a component cause in 200 others.[11] In England, the overall costs to society are estimated at £25.1 billion per year, with health service costs around £2.7 billion per year. [12]

The global estimate for problem drug users aged 15-64 is between 15 and 39 million with deaths related to or linked to illicit drug use being between 104,000 and 263, 000. [1,7] Illicit drug use contributes significantly to the global burden of disease with those most at risk being injecting drug users with their increased morbidity and mortality from HIV, hepatitis, overdose, and suicide. UK data indicate that there are over 300,000 opioid and crack users. Class A drug use (typically opioids and cocaine) generates an estimated £15.4 billion in crime and health costs each year, of which 99% is accounted for by problem drug users. [6]

Role of Doctors in public health

Doctors play an important role in the development and delivery of public health policy and in advocating for and delivering adequate services for the treatment of individuals with substance misuse problems. Doctors, especially those in senior roles, provide clinical leadership, influencing the attitudes of other health care and other professionals towards those with substance misuse problems, and have a significant impact on the patient experience and the patient journey. Hence, the education and training of health professionals in these areas is considered vital for the future health of the nation.

In the UK, it is estimated that General Practitioners (GP) come across over 350 heavy drinkers each year among their patients. [13] Hospital doctors will see the impact of alcohol misuse in virtually every department. Alcohol is responsible for around 25% of all hospital admissions in the UK [14] and around 35% of Accident and Emergency

Department attendances, [15] increasing to 70% during peak times and weekends. [16] In England and Wales, there are more than 250,000 problem drug users. One in every 12 GP registered patients report using illicit drugs at some time within the previous year. [17] Over a third of a typical GP's patients will be smokers, and most of those will know about the risks of cancer and heart disease and want to cut down or give up. [18]

A gradual change in the society's attitude towards smoking ('de-glamorising') has been observed over last 30 years. This depended heavily on leadership and direction from doctors. [19, 20] Further clinical leadership will be necessary for the future change of society's attitudes towards drinking and towards substance misuse in general.

Doctors were until quite recently more than three times more likely to die from cirrhosis than the population as a whole, with higher-risk occupational groups being publicans and bar staff, and seafarers. [21, 22] Ease of access to medication, to prescriptions, work-related professional pressures, a culture of drinking within medical schools, and other factors, contributes to the medical profession being a high-risk group for a number of problems. There is some recent evidence of an interesting fall in such alcohol-related mortality amongst doctors, which could bode well for their role in providing advice to the public.[22] Doctors were ahead of the general public in reducing their smoking as the harms became increasingly apparent. However, a study in one medical school found over half of second year students regularly drank to excess, with one-third using drugs. [23] While tobacco use among doctors is low, perhaps because of widespread appreciation of the medical impact, this has not been the case for alcohol amongst trainee doctors. With alcohol, the health message is less simple, and is complicated by alcohol generally being perceived more like a 'food' purchased from a supermarket or other food retailers. [24] Apart from the impact on their own health, medical students need to be aware of the serious potential consequences of misusing drugs and alcohol, on their career. [25, 26] Within the UK, the General Medical Council's disciplinary procedures over the three-month period in summer 2010, involved twelve cases resulting in impairment through alcohol and drug misuse. [27] The UK General Medical Council records indicate that 199 out of 201 doctors under supervision at the end of 2001 had problems with alcohol, drugs or mental ill health. [28] Similarly, the NHS Practitioner Health Programme report on its work in London between October 2008 – September 2010 shows that of the 405 practitioner patients 134 had addiction diagnoses. [29]

Although hard to quantify, the issue of rational and appropriate prescribing is high on the list of priorities of the medical establishment, and a core outcome for medical graduates in Tomorrow's Doctors.[30] Iatrogenic addiction, i.e. drug abuse is caused through inappropriate prescribing, is another issue directly linked to the role of doctors.[31] A survey undertaken by the Family Doctor Association suggests that nearly 80% of GPs routinely prescribe drugs to which they believe the patient may be addicted such as sleeping pills, antidepressants and painkillers. [32]

Such data highlight the importance of ensuring adequate training of all future doctors in the field of addiction and continued medical education for doctors from all fields of medicine.

Substance misuse is not just a specialised area of practice concerned with treating addicts or an abstract issue of public health; it is one of the worst public health problems doctors' encounter.

The educational context for future doctors

Within medical education and higher education, several important aspects of national policy impinge upon the project.

Quality assurance and regulation of medical education is undertaken by the General Medical Council (GMC). This role was strengthened in April 2010 when the GMC took on responsibility for all stages of medical education and training. Thus for the first time in the UK, every stage of doctors' training and professional development is overseen by a single regulator. The GMC issues recommendations on the outcomes and standards for undergraduate medical education.

Tomorrow's Doctors, was first published in 1993, and marked a change of emphasis from guidance about what knowledge was to be gained in a medical degree to guidance about the overall learning process, including the ability to evaluate data and develop skills of interaction with patients and colleagues. Medical schools embraced these new guidelines and developed new curricula throughout the 1990s. A revised edition of Tomorrow's Doctors was issued in 2003 and in 2009 [30]. The guidelines are not a prescription for medical school curricula, but a framework used to design individual curricula. The knowledge, skills and attributes of a new doctor are outlined in the form of curricular outcomes, including the principles of professional practice, which are laid down in another GMC document, Duties of a Doctor. [33] Specific to substance misuse, there is guidance that graduates must understand the effective and safe use of drugs, the principles of promoting health, and be aware of social issues including alcohol and drug abuse.

The 2009 edition of Tomorrow's Doctors cites the consensus guidance *Substance misuse in the undergraduate medical curriculum*, following recommendation from the National Steering Group to the Chair of the GMC Education Committee, in writing and through the GMC representatives on the project's National Steering Group.

2. The background to, and organisation of, the curriculum development project

Research, including surveys into the undergraduate medical UK curricula between the late 1980s and 2004, found that substance misuse was generally very poorly represented in the training of our future doctors; and the number of hours allocated to teaching in substance misuse was small. It was taught mainly within the disciplines of psychiatry and pharmacology, thus reinforcing the false notion that substance misuse is a niche specialty topic. [34] On the other hand, it was also found that there were numerous initiatives in North America, some establishing a core curriculum and others developing teaching and learning innovations, with very little innovation happening in the UK. The lessons were clear: substance misuse has to be integrated in to the curriculum of medical students, and it has to be a topic introduced from the very beginning of the course – not least for students' own health and professional behaviour.

Previous initiatives undertaken by St George's, University of London and the World Health Organisation (WHO) on substance misuse education for doctors, pharmacists and nurses resulted in the WHO recommending to governments that substance misuse should be included in the medical curricula.

Three international expert groups on medical, pharmacy and nursing education were convened to develop an international guideline for the curriculum development in substance misuse by the Centre for Addiction Studies (now International Centre for Drug Policy - ICDP) on behalf of the WHO.[35] Subsequent to these initiatives, the United Nations requested all governments to include substance misuse teaching and learning in the curriculum of the relevant faculties in the universities.[36] Hence, the ICDP made proposals to the Department of Health to facilitate a consensus approach to the enhancement of substance misuse training in medical and nursing schools in the UK. Funding was awarded in 2005 to improve the education of doctors in substance misuse and to develop a consensus approach to substance misuse training in medical schools, and a national project was set up and led by Professor Hamid Ghodse, Director of the ICDP.

The project finally developed over two phases. The first Phase 1 (2005-2007) involved a review of the state of teaching at the outset of the project; production of the key product of Phase 1, the curriculum consensus guidance agreed by all UK medical schools; and the initial development of flexible learning materials. The second Phase 2 (2008-2011) involved completion of a core Toolkit, alongside teaching and learning resources; support for implementation of the guidance; and improvements to curricula and teaching and learning locally; and evaluation of the implementation.

Because of the innovative and the successful nature of this project, in this report we give substantial detail on the process and methodology involved and details of the materials and approaches to implementation that were developed. The project crucially used an approach of investing in working alongside and supporting medical schools to effect real change in the delivery of their teaching and learning. This innovative approach was justified because the topic of substance misuse was recognised to be both a relatively neglected area of the curriculum and of huge importance to the public health. The report may be of particular interest, in addition to those involved in medical education and those supporting improvements to public health over the longer-term, to other professional training institutions and to other countries that may wish to resolve similar problems or develop the skills and competencies of key clinicians.

Table 1 gives a summary overview of the process of establishing the project, detailing key milestones.

Table 1: 'Substance misuse in the undergraduate medical curriculum project' historical timeline and overview of milestones		
Phase		**Activity**
Phase 1	2005	Review of Substance Misuse Teaching. Literature Review undertaken.
	2005-06	Survey of all medical schools May 2005-Sept 2006 Expert panel established
	2007	UK consensus guidance document published (*Substance misuse in the undergraduate medical curriculum*)
Phase 2 Implementation	2008	Appoint National Coordinator
	2008	Re-establish National Steering Group and Expert Panel
	2008-09	Completion and validation of Toolkit and Fast Factsheets
	2009	Criteria for/and selection of participating medical schools. Identification of academic champions and establishment of Academic Champions Group
	2009-10	Contract process and appointment of coordinators and establishment of coordinators network
	2009-11	Review of current curriculum in participating schools and identification/ implementation of changes
	2010	Academic Champions, Expert Panel merge.
	2010	Evaluation Working Group set up – production of evaluation plan, review process, lessons learnt, use of Fast Factsheets and Toolkit.
	2011	Toolkit review group set up to consider updates to Toolkit and consensus guidance document, *Substance misuse in the undergraduate medical curriculum*.

Phase 1 2005-2007: Review of substance misuse teaching followed by production of curriculum guidance agreed by all UK medical schools

Under the leadership of Professor Ghodse a National Steering Group and Expert Panel was established. The National Steering Committee, chaired by Professor Michael Farthing, then Principal of St George's, University of London, with representatives from

the Council of Heads of Medical Schools, the Department of Health, the Home Office, the General Medical Council, the British Medical Association and its medical student committee, and the World Health Organisation. The Expert Panel had representatives from UK medical schools, professional institutions and UK national agencies.

During this first phase, the project reviewed the ways in which substance misuse problems was being taught in all UK medical schools. It sought to establish the reasons for its identified ineffectiveness and to make recommendations for its improvement in medical schools throughout the country. The project aimed to understand the reasons why medical education is not preparing doctors properly in this respect; specify initiatives that different medical schools could take to improve matters; and make recommendations for further action.

A survey was carried out by ICDP, which provided an overview of the state of substance misuse education in all UK medical schools. The aim of the survey was to gather information about Substance Misuse teaching and learning, including schools' strategies for embedding the topic in the curriculum, and to collect examples of good quality learning materials. The telephone/email survey asked heads of curriculum some general questions. For the purpose of this project the survey aimed to give a broad picture. Responses were obtained from every UK medical school.

The survey findings included the following:

- There was no commonality of approach in what was taught about substance misuse: learning outcomes differed hugely in style, level of detail, and emphasis.
- Many schools covered a lot about alcohol, but relatively few covered teaching about drugs – with this aspect frequently left only to psychiatrists.
- Only two schools planned and coordinated their substance misuse curriculum as a whole. Mostly, the teaching was concentrated in the specialty niches.
- Assessment of substance misuse within curricula was rarely planned. As 'blueprinting' against curriculum outcomes is being increasingly introduced, more formal planning in this area is expected.
- About half the schools had some provision of optional learning about substance misuse through 'student selected components' (SSCs).

The main outcome of Phase 1 of the project was the production of a UK-wide consensus guidance document on substance misuse in the undergraduate medical curriculum that was published in April 2007, agreed by all medical schools. The document, *Substance misuse in the undergraduate medical curriculum* [37] and its associated Toolkit set out core aims and learning outcomes for undergraduate curricula, and good practice on delivery (appendix1). It was developed through the work of the National Steering Group, an active Expert Group, and wide input from medical and curriculum experts across the range of specialties. It was endorsed by the Chief Medical Officer (England) and the General Medical Council, and is specifically cited in Tomorrow's Doctors 2009.

The curriculum guidance document is a milestone in medical education on substance misuse. It provides three core aims for undergraduate medical education in substance misuse:

1. Students should be able to recognise, assess and understand the management of substance misuse and associated health and social problems and contribute to the prevention of addiction.

2. Students should be aware of the effects of substance misuse on their own behaviour and health and on their professional practice and conduct.

3. Students' education and training should challenge the stigma and discrimination that are often experienced by people with addiction problems.

In addition to these three core aims, six high-level learning outcomes were agreed, each of which was subdivided in to component learning outcomes, which could be integrated flexibly across the whole of the curriculum and in varied learning environments.

Phase 2 2008-2011: Implementation Phase

Following publication of S*ubstance misuse in the undergraduate curriculum,* a further proposal for a second phase (Phase 2) was produced and submitted. The intention for this phase was to provide a time-limited period of intensive support for the development and implementation of the new curriculum guidance into the teaching and learning opportunities of the medical schools at a local level, and into their local curriculum planning processes. Funding was made available for a three year period for implementation support in English medical schools from the Department of Health (England).

The aims of this phase were:

- To complete and validate a Toolkit and teaching and learning resources in order to advance the implementation programme.
- To enhance and equip medical schools to further develop substance misuse learning in their curricula.
- To work with medical schools to pilot and evaluate the implementation of the substance misuse curriculum.

Establishment of national coordination

The first task undertaken was to appoint a National Coordinator to oversee the management of this phase, specifically to:

- Complete and validate the Toolkit and teaching and learning resources in order to advance the implementation programme (in collaboration and consultation with the expert panel and other stakeholders)
- Prepare for implementation of Phase 2, including engaging the medical schools to participate
- Maintain an active network and a group(s) of experts in their field, medical school representatives and local academic champions, including those from Phase 1; and to disseminate relevant information across all medical schools
- Provide active support to the sites during the project
- Provide administrative support to the National Steering Group.

Establishment of the National Steering Group and Expert Panel

The National Steering Group from Phase 1 was re-established, as was the Expert Panel. A small sub-group of the Expert Panel was created to take forward the completion and validation of the Toolkit and to develop teaching and learning resources including Fast Factsheets, ready to be used by medical school coordinators, when these posts were established to drive the curriculum change at local level. The Toolkit and first set of Fast Factsheets were ready by June 2009.

Professor Peter Kopelman, Principal of St George's, accepted the invitation to chair the National Steering Group for the second phase of the project. A letter of invitation from Professors Peter Kopelman and Hamid Ghodse was sent to all those who had been on the Steering Group previously, inviting them to re-join or recommend another nominee. The National Steering Group included representatives from the Council of Heads of Medical Schools, the Department of Health, the Home Office, the General Medical Council, the British Medical Association and its medical student committee, Association for the Study of Medical Education and was in correspondence with interested parties from the World Health Organisation. Similarly, members of the Expert Panel, which included representatives from medical schools across UK, Consultant Psychiatrists, and the Medical Council on Alcohol from the first phase of the project, were invited to re-join or recommend a nominee. *(See Acknowledgements)*

The National Steering Group met on a regular basis providing valuable expertise and knowledge regarding the development of medical school curricula, and advised on policy and administrative matters. Having GMC representatives on the Steering Group was an important link for the project, and helped ensure substance misuse education was adequately reflected in the GMC review of the 2003 'Tomorrow's Doctors' guidance. Opportunities to link this work with postgraduate education were considered and most recently the national coordinator participated in the development of drugs and alcohol core competencies for doctors by the Academy of Medical Colleges, summarising the core competencies that all doctors require to adequately identify and manage patients who use drugs or alcohol.

Selection of participating medical schools

The first meeting of the National Steering Group (January 2009) established the criteria and process for including medical schools, and releasing funding support to establish a local coordinator function in each participating school. It was agreed that for a first tranche, a range of medical schools should be considered and this should include a geographical spread, as well as having new schools and traditional ones, and those with differing approaches to curricula, and inter- professional learning.

Initially the involvement of the medical schools was to be run in two tranches. Letters of invitation were then sent to the Deans of the 24 English medical schools inviting them to participate and to appoint academic champions. All the 24 schools showed initial interest and eight were selected to be part of the first tranche. However, at a subsequent National Steering Group meeting it was agreed that the remaining schools should be included and merged in to a single tranche, and for the appointment of local coordinators to start in January 2010.

Establishment of the roles of academic champions and curriculum coordinators

Each medical school was required to identify a local academic champion whose role was to motivate change and to supervise the work of the appointed local curriculum coordinator to implement the integration of substance misuse teaching and assessment in the undergraduate curriculum. Specifically the role of the local curriculum development coordinators was to manage the implementation of the substance misuse Toolkit across the medical school for undergraduate education; to map and review the current curriculum compared to the guidance recommendations and to make recommendations for implementation for each pilot (appendix 2). These roles were supported by the national coordinator whose key task was to oversee the management of the implementation phase and work with the participating schools.

Appointment of coordinators

A standard contract was developed by the St George's contracts officer, setting out the requirements for the medical schools' participation, for each school to sign. This contract package containing set agreements and terms, with all required information, was sent to all institutions. This process took longer than anticipated as some medical schools queried the terms of the contract, whilst staff changes in some of the schools contracting departments further added to the delay. By mid-2009 the first schools had signed contracts and begun to appoint coordinators with the last contract signed in July 2010 and the last coordinator appointed in October 2010. Some medical schools were able to use an existing employee whilst others had to recruit externally with attendant delays. Of the 24 schools there were five that, for various reasons, were unable to participate fully in the project.

Merger of the Academic Champions Group with the Expert Panel

Once the academic champions were identified, an Academic Champions Group was set up. After two meetings, it was recommended, as there was overlap in the membership of this group with the Expert Panel, they should be merged into one. This was agreed and subsequently this group also incorporated the curriculum coordinators. This Expert Panel provided clinical and technical input for the Fast Factsheets and the Toolkit, and operated as a peer review group. It also had a role in advising on technical matters, guiding the form and content of the project, and in supporting the National Steering Group. The role of the National Coordinator and these mechanisms that were developed for mutual support and learning, were pivotal for really promoting and supporting local change, and complemented dedicated support systems for the local coordinators (see below).

Working with and support for the local coordinators

The national coordinator had induction meetings with the local coordinators. The purpose of the meeting was to discuss the work being undertaken in the implementation phase and to answer any queries. Each coordinator was given *Substance misuse in the medical undergraduate curriculum - a toolkit for teaching and learning*. This provided them with guidance and resources to support and facilitate curriculum mapping, and curriculum development and implementation of change. In addition to the toolkit, a set of Fast Factsheets on substance misuse was provided (Table 2) carefully developed with the appropriate experts so as to be relevant to the particular clinical speciality and learning setting. The Fast Factsheets were given to the coordinators to assist them in the process of implementing curriculum change, and to make them available as teaching resources.

Table 2: List of Fast Factsheets provided to coordinators

Fast Facts 1: Alcohol Withdrawal
Fast Facts 2: Drug Misuse in Emergency Medicine
Fast Facts 3: Emerging Substances
Fast Facts 4: Palliative Care and Substance Misuse
Fast Facts 5: Public Health and Addictions
Fast Facts 6: Substance Misuse in Anaesthesia
Fast Facts 7: Substance Misuse and Doctors' Own Health
Fast Facts 8: Substance Misuse in Surgery
Fast Facts 9: Substance Misuse Young People
Fast Facts 10: Substance Misuse and Communication
Fast Facts 11: Alcohol Misuse in Emergency Medicine
Fast Facts 12: Substance Misuse in Gastroenterology
Fast Facts 13: Substance Misuse in General Practice
Fast Facts 14: Substance Misuse in Geriatrics
Fast Facts 15: Substance Misuse and Infectious Diseases
Fast Facts 16: Substance Misuse in Pregnancy
Fast Facts 17: Substance Misuse in Neurology
Fast Facts 18: Pharmacology of Addiction Treatments
Fast Facts 19: Substance Misuse in Psychiatry
Fast Facts 20: Substance Misuse and Systems

Communication with coordinators

Communication with and between coordinators was conducted through e-mail, project website and the coordinators network. This additional network was established in February 2010, with meetings held to discuss common work issues and share best practice. It was found to be a really effective source of support and informal training in addition to involvement in the Expert Panel. Active e-mail discussion between meetings was frequent. A discussion forum was also set up on the project website, and a social bookmarking site was established for coordinators to share information about substance misuse resources. A project newsletter was produced and issued quarterly. Its aim was to provide regular updates on the work of the project. The newsletter (appendix 6) was sent to all coordinators and academic champions and to the Expert Panel and the National Steering Group. Throughout, opportunities to disseminate information about the project were undertaken, at local, national and international levels (appendix 7)

3. Mapping current teaching, recommending and delivering change

This section goes in to considerable detail concerning the process of mapping the available teaching and learning opportunities at the beginning of Phase 2, the recommendations for change that followed and what change was implemented and how. In addition, illustrative examples of good practice are provided in appendices.

It is anticipated that this section will be useful for local champions in their continued delivery of the current project; and for others who may wish to consider initiating a similar model in their area of interest.

Findings from mapping of substance misuse teaching

Background to the mapping

Medical education is regulated by the General Medical Council, with all school curricula being bound by the structures and demands of the key policy documents 'Tomorrow's Doctors' (GMC, 2003, 2009). [29] Although curricula are structured differently across the participating institutions, they all share the aims of providing high quality medical education for students and of producing well trained and competent and doctors.

Within the participating medical schools a range of teaching and learning methods and corresponding range of assessment methods are used. Curricula set around a pre-clinical phase of learning (typically for 2 years) followed by a clinical phase, moving away from purely academic and theoretical studies towards more applied work. Intensive patient contact and clinical experience are used by some of the schools whilst others use the approach of learning through a problem/case based learning (PBL/CBL). This approach typically uses patient 'cases' or particular medical 'problems' to exemplify the learning required of students throughout the course. These cases are likely to link to a spiral curriculum, where layers of learning, for example around physiology, anatomy or basic science, are revisited repeatedly in increasing detail. PBL or CBL course structures are more likely to include clinical placements right from the start of the course.

In each participating medical school, the current teaching and learning of substance misuse within the undergraduate medical curriculum was identified. Coordinators undertook a mapping exercise that enabled them to construct a comprehensive overview of substance misuse teaching within their respective school, and for their findings to be aligned to the substance misuse learning outcomes from the core curriculum guidance (appendix1). This process identified what was covered, not covered, and what could be added to within substance misuse teaching, including areas of commonality across the schools.

Although not directly comparable, the analysis of the new data collected at the beginning of Phase 2 did actually show convincing evidence of a quite substantial increase in delivery of what was previously a very low level of suitable teaching of substance misuse subjects, and this had occurred after publication of the UK curriculum guidance from Phase 1 (seen particularly when contrasted with the 2005 Phase 1 survey and the previous research in this area described earlier).

Methodology

By analysing the teaching data on the curriculum maps produced by seventeen of the participating medical schools, a count was undertaken of the number of teaching sessions that covered the forty-three core learning outcomes set out in the Toolkit. Data was extracted by manually sifting through the information and counting the number of

teaching sessions that covered each learning objective identified in the Toolkit. Those sessions that covered more than one learning objective were included in each objective. This provided an overview of the number of teaching sessions that focused on each individual learning objective, rather than the number of actual teaching sessions that occurred (e.g. one lecture may include three learning outcomes) providing a more representative picture of the substance misuse outcomes covered within the undergraduate medical curriculum. This compilation of mapping shows that, whilst many of the learning outcomes from the consensus guidance were covered, some of the instances relating to substance misuse might only have been a brief reference. Other instances may reflect an entire teaching session focused on just one key substance misuse learning objective. Hence, the specific recommendations by local coordinators for changes in their own schools relied as much on local knowledge of such specifics, and on other relevant contextual understanding, as on the numerical data.

Overview of current teaching sessions featuring substance misuse

The national substance misuse key learning outcomes were grouped into six overarching topic areas:

1. Bio-psycho-social models of addiction
2. Professionalism, fitness to practice, and students' own health
3. Clinical assessment of patients
4. Treatment interventions
5. Epidemiology, public health and society
6. Specific disease and speciality topics

Within these areas, specific learning outcomes are described and different teaching methods are used to address these outcomes. Table 3 shows the number of teaching sessions that occurred in the main areas and the average for each school. Teaching sessions here are defined as the number of occasions some formal or timetabled teaching/learning occurs that feature issues relating to substance misuse (such as a lecture, a seminar, a problem-based learning case, special study modules etc.).

Learning outcomes area	**Number of teaching sessions**	**Averaged (per school)**
Bio-psycho-social models of addiction	944	55
Professionalism, fitness to practice, and students' own health	408	24
Clinical assessment of patients	929	54
Treatment interventions	911	53
Epidemiology, public health and society	564	33
Specific disease and speciality topics	825	48

Table 3: Number and average of teaching sessions that occur in each specified area of substance misuse

Overall, bio-psycho-social models of addiction was the most frequently covered topic area within substance misuse teaching (a total of 944 across the 17 schools studied; on average 55 sessions per school). The topic area that featured least was professionalism, fitness to practice and students' own health (on average 24 teaching sessions being devoted to this area per school). It was generally more useful for coordinators, when considering need for improvements to the curriculum locally, to identify the breakdown

of numbers of teaching sessions against the component learning outcomes within each of these six over-arching topic areas (detailed below). It is important to understand that judgement was needed, using local knowledge and the national network of experts and coordinators, to assess whether differences seen represented an imbalance in teaching or not. The positive level of coverage, compared to that anticipated from earlier research undertaken prior to completion of phase 1 of the project, was notable. However, local coordinators and academic champions found very substantial need for further improvement.

Bio-psycho-social models of addiction

Table 4 shows the number of teaching sessions that occur for each individual learning outcome located within the bio-psycho-social models of addiction. The most frequently covered area, with an average of 16 teaching sessions per school featuring it, was describing the physical effects of addiction. Fewer teaching sessions covered the psychological, social, biological and genetic causes of dependence and their interactions or the different models used to describe addiction (9 on average), and even fewer for the absorption, distribution, excretion and metabolism of drugs of addiction (7 on average).

Learning outcome	Number of teaching sessions	Averaged (per school)
1a. Define substance misuse, dependence and addictive behaviour and distinguish between acceptable and problematic use	288	16
1b. Demonstrate awareness of the range of substances that can be misused, the different types and classes of addictive substances, their alternative and colloquial names and their effects	141	9
1c. Demonstrate awareness of the psychological, social, biological and genetic causes of dependence and addiction, the interactions between such factors in the individual and the different models used to describe addiction	155	9
1d. Describe the absorption, distribution, excretion and metabolism of drugs of addiction	129	7
1e. Describe the physical effects of addiction, including the key effects of drug addiction on neurotransmitter systems, mechanisms of drug tolerance and the physiological effects of withdrawal	231	13

Table 4: Number and average of teaching sessions in bio-psycho-social models of addiction

Professionalism, fitness to practice and students' own health

Table 5 shows the number of teaching sessions that covered each of the learning outcomes under the theme professionalism, fitness to practice and students' own health. Emphasis in this area is placed on teaching students how to demonstrate a professional attitude towards people who misuse substances and ensuring that they adopt a non-judgemental approach (104 sessions; 6 sessions per school on average). Notably few sessions were identified that explicitly considered the role of iatrogenic addiction despite its importance for all doctors (averaging 2 sessions per school).

Learning objective	Number of teaching sessions	Averaged (per school)
2a. Demonstrate a professional attitude towards substance misusers which incorporates a non-judgemental approach and respect for a patient's autonomy	104	6
2b. Describe the risk factors for substance misuse in themselves, in medical students and in healthcare workers	68	4
2c. Describe the sources of help for students and doctors with drug and alcohol related problems	35	2
2d. Describe how substance misuse problems may affect a healthcare professional's judgement, performance and care for their patients	58	3
2e. Describe the need to balance due concern for the health of a colleague with responsibilities for the safety and welfare of patients	56	3
2f. Outline the role of the GMC and medical schools in ensuring students and doctors' fitness to practice	57	3
2g. Demonstrate understanding of iatrogenic addiction	30	2

Table 5: Number and average of teaching sessions in professionalism, fitness to practice and students' own health

Clinical assessment of patients

Table 6 shows the number of sessions that occurred for the learning outcomes in clinical assessment of patients. Ensuring students are taught the major clinical features of alcohol and drug dependence was undertaken in 261 teaching sessions across all the participating medical schools. However, only 60 sessions focused on teaching students how to carry out a psychological assessment of a patient's readiness to implement change.

Learning objective	Number of teaching sessions	Averaged (per school)
3a. List the major clinical features of alcohol and drug dependence	261	15
3b. Describe the range of clinical outcomes of addiction and discuss the prognosis and management	153	9
3c. Take a focussed drug and alcohol history	133	7
3d. Elicit signs of alcohol or drug misuse through physical and mental state examinations and identify and prioritise medical and psychosocial problems associated with substance misuse	132	7
3e. Demonstrate appropriate skills for communicating sensitively with patients about substance misuse issues and for dealing with difficult, aggressive or intoxicated patients, balancing assessment need with their own safety and that of others	101	5
3f. Appropriately order and interpret urine and blood screening tests for drugs of addiction, use standardised screening and assessment instruments to detect alcohol and drug levels and describe other special investigations and how to interpret results	89	5
3g. Carry out a psychological assessment of a patient's readiness to implement change	60	3

Table 6: Number and average of teaching sessions in clinical assessment of patients

Treatment interventions

Table 7 shows the number of teaching sessions for the learning objectives related to treatment interventions. The learning objective that is most frequently mentioned during teaching sessions for this theme was advising patients on reducing or abstaining from drinking and smoking and implementing a treatment plan (317 sessions; an average of 18 sessions per school). Being able to demonstrate the risk associated with needle use and disposal was the least frequently covered during teaching (an average of 2 sessions per school).

Learning objective	Number of teaching sessions	Averaged (per school)
4a. Describe the basic treatment regimens for various addictions and withdrawal states	132	7
4b. Describe the basis of commonly used therapies for addiction, such as Brief Intervention therapy	66	3
4c. Describe the variety of UK agencies to which patients with addiction problems can be referred and how and where to make appropriate referrals for treatment	45	2
4d. Advise a patient on risk-reduction strategies for drug use	74	4
4e. Demonstrate awareness of risk related to needle use and disposal for healthcare workers and patients	32	1
4f. Advise a patient appropriately on reducing or abstaining from drinking and smoking and implement a treatment plan with the patient	317	18
4g. Advise addicted women on how to stabilise/discontinue substance use to minimise impact on foetal and maternal health	46	2
4h. Demonstrate awareness of the need to assess patients' capacity to consent to treatment	158	9
4i. Describe the impact of substance misuse on concordance with treatment including Discharge Against Medical Advice and drug interactions	41	2

Table 7: Number and average of teaching sessions for treatment interventions

Epidemiology, public health and society

Table 8 describes the number of teaching sessions for the area of epidemiology, public health and society. Teaching students to be able to describe the epidemiology of alcohol consumption, smoking and drug misuse in the general population as well as in the medical profession, was covered in 94 teaching sessions (an average of 5 per school). Only 10 sessions (across 17 schools) included teaching students about the international policies and strategies concerning how to limit drug supply and demand.

Learning objective	Number of teaching sessions	Averaged (per school)
5a. Describe UK policies on drug use, drug dispensing and prescribing and on alcohol and smoking	66	3
5b. Describe UK legislation on controlling drugs, alcohol and tobacco, including the legal limits for alcohol and driving and the recommended maximum limits for alcohol consumption	75	4
5c. Describe UK strategies for the prevention of drug misuse	25	1
5d. Describe international policies and strategies to limit drug supply and demand	10	0.5
5e. Describe the epidemiology of alcohol consumption, smoking, drug misuse in the general population and specifically in doctors and other healthcare professionals	94	5
5f. Describe the problems associated with self-medication	35	2
5g. Demonstrate awareness of the risks in different work environments and the need for employers to have drug and alcohol policies	22	1
5h. Describe the effects of addiction on individuals, their families, friends and colleagues in a range of age-groups; from children and adolescents to older people	65	3
5i. Describe the long-term social consequences of various types of addiction and substance misuse, including the economic consequences and the links between crime and substance misuse	63	3
5j. Describe the risks to the children of addicted parents including child protection policies and a doctor's duty to implement these	59	3
5k. Demonstrate an understanding of the principles of rational prescribing and the use of psycho-active medication	50	2

Table 8: Number and average of teaching sessions for epidemiology, public health and society

Specific disease and speciality topics

Table 9 provides the number of teaching sessions that cover the learning outcomes within the specific disease and speciality topics. Overall, 576 teaching sessions (an average of 33 per school) covered substance misuse and its relationship with specific illnesses such as lung disease, liver disease and mental health. The aetiology associated with substance misuse in neurological conditions was not covered as frequently, with 51 teaching sessions (3 per school) found to include this learning objective.

Learning objective	Number of teaching sessions	Averaged (per school)
6a. Recognising life-threatening complications of substance misuse, including septicaemia, pulmonary emboli and overdose and be able to carry out appropriate interventions	141	8
6b. Describe and explain the links between substance misuse and accidents; lung disease, specifically smoking; anxiety, depression, dementia, schizophrenia; self-harm and suicide; heart disease and hypertension; liver disease, pancreatitis and gastritis; infectious diseases, including HIV and hepatitis B and C; cancers; sleep disorders; weight problems	576	33
6c. Show awareness of substance misuse in the aetiology of neurological conditions including seizures, par aesthesia and stroke	51	3
6d. Describe the effects of addiction, drug and alcohol use on pregnancy	57	3

Table 9: Number and average of teaching sessions for specific disease and speciality topics

As the above tables show, teaching of the component learning outcomes varies quite widely, with some outcomes covered much more than others. Clearly, the significance of such variation depends on the particular outcome in question but collecting the detailed information summarised here did assist coordinators and academic champions in developing their own plans for improvement locally, and was useful information for the expert panel to consider. The process resulted in coordinators making recommendations about amending existing teaching sessions, as well as developing new ways of increasing the delivery of specific substance misuse topic areas that had not been sufficiently covered at a particular school.

Broad areas that were identified as needing more development through this process included: professionalism (e.g. attitudes, values, judgement, coping with substance misuse on placements); iatrogenic addiction; fitness to practice issues; self-care; child-related issues (e.g. parenting, potential neglect, foetal and maternal health); drug policies and work environment; strategies and policies on drug use; treatments for addicts (e.g. engagement, motivation, referrals, risk-reduction strategies); sources of help for students/doctors who misuse substances; specific clinical issues (e.g. needle use, outcomes of addiction, prescribing, neurological issues, complications, drug use/types); and communication issues (including capacity to consent). It was encouraging to note that such a key topic for future public health as ‘advising a patient appropriately on reducing

or abstaining from drinking and smoking and implementing a treatment plan with the patient' was one of the most widely covered topics.

Recommendations made by coordinators to their medical schools

Coordinators made a wide range of recommendations within their respective medical schools for improving the teaching of substance misuse issues in a way consistent with local systems of teaching and learning, and these are summarised below.

Substance Misuse Teaching

Recommendations were made for integrating substance misuse teaching into other general medical teaching modules. For example, biologically-orientated modules were recommended to include social and psychological elements including those relevant to substance misuse, and it was recommended that modules concerned with life sciences or clinical practice should include more on the biological and physiological aspects of substance misuse. It was considered useful to promote the consideration of substance misuse in all modules, in addition to improving the content of specific substance misuse teaching.

Another recommendation was to develop more substance misuse scenarios in problem-based learning, or case-based learning sessions. Focusing specifically on substance misuse was seen as important, and it was suggested by coordinators that plenaries would be a good way of teaching students about issues such as the management of substance misuse patients; professionalism and substance misuse; and the interactions between different drugs.

Alongside formal, structured teaching, it was recommended that schools could provide electives, special study components or specific placements, which focus on substance misuse. Examples proposed included provision of placements with prisoners, addiction workshops, and a number of different substance misuse projects and opportunities that could be used with students in the later years of their training. It was also recommended that substance misuse could be covered particularly usefully in certain disciplines such as primary care and accident and emergency care.

What was prominent in these recommendations was the need to embed substance misuse learning outcomes that had been agreed by the schools in principle at national level, carefully into each medical school's own wider set of learning outcomes for the students. Facilitating this was a key role for the coordinator and a key reason for the success of the project.

More specific learning outcomes

Coordinators particularly recommended all the schools should consider enhancing certain learning outcomes when teaching substance misuse issues.

1. The risk of injecting, needle use and disposal
2. Asking specifically about alcohol, illicit substance use and IV drug use when taking a patient's history
3. Identifying signs or symptoms of substance misuse related illnesses, including the differential diagnosis of loss of consciousness

4. Being aware of the psychological, biological, social and genetic causes of substance misuse in adolescents (and not just in adults)
5. Fitness to practice and the role of the General Medical Council and substance misuse
6. Understanding and knowledge of national and international legislation and substance misuse, including deriving alcohol and drug policies for students during medical school and in the workplace
7. The role of substance misuse in the aetiology of disease and illness
8. Prescribing and illicit drug use
9. To understand the mechanisms of drug action
10. Being aware of and understanding the causes of stigma associated with substance misuse
11. Identifying, ordering and interpreting appropriate physical tests (e.g. urine) and psychological assessments in patients who may misuse substances
12. The relationship between stress and substance misuse
13. To provide a definition of substance misuse that can be used to place information discussed into context
14. The capacity to consent to treatment and subsequent concordance with treatment
15. To understand issues around self-medication

Teaching resources

It was agreed that substance misuse specific teaching resources, both existing and new, should be developed further. This included providing students with suitable specific references concerning substance misuse (located on websites and in libraries); developing a bank of resources that both staff and students could access; integrating substance misuse into the year guides and student handbooks, and into the virtual learning environment; and linking the Fast Factsheets to existing modules and disciplines to develop those study resources further.

Using web-based resources was recommended as most medical schools have a virtual learning environment that can be used to hold substance misuse information. It was recommended that developing e-learning resources might increase students' use of substance misuse information and documents, and it was suggested that an e-learning application on substance misuse and addictions might be one way of doing this.

Regardless of how teaching resources were developed or improved, it was recommended that more substance misuse related resources were needed, and that improving the dissemination of these was essential to students learning. It was noted that some information would need to be kept up-to-date and current thereafter

Care of self and others

Adding learning outcomes to existing modules that related to self-care was recommended. And that these should include the trainee doctors being able to recognise the signs of substance misuse in themselves, in colleagues and they should know where to go for help. Addressing the issue of health professionals self-medicating was also included.

Substance misuse treatment

Concerning the topic of substance misuse treatment in general, 'assessing a patient's readiness to change their behaviour', 'being able to develop an appropriate treatment plan that will enable the patient to reduce or completely stop their substance misuse', and 'providing relevant advice regarding discharge' were all highlighted as key areas for improvement of learning. 'Effective engagement' and 'addressing issues of capacity and consent' were also identified as important.

Iatrogenic illness

Specific recommendations concerning the importance of teaching students about iatrogenic illness were made, as this was found to be only infrequently covered in school curricula. It was recommended that its development and responses to it could be addressed within sessions such as problem-based learning, for example by discussing appropriate opiate prescribing.

Substance misuse during pregnancy and childhood

Various recommendations were made concerning substance misuse in pregnancy and during childhood. Teaching on how to advise women on substance misuse and foetal/maternal health, the effects of substance misuse during pregnancy and the risks and dangers associated with this, were all recommended to be improved. Other topics recommended were how substance misuse affects children, including the risks it poses to them such as injury; the causes of substance misuse in children and adolescents; and how to take a substance misuse history from an adolescent.

Assessment of the substance misuse teaching

An over-arching recommendation was that if substance misuse teaching was going to be improved, it should be explicitly assessed within curricula reviews and in formative and summative assessments.

Implementing curriculum change

In response to the recommendations outlined above, a wide spectrum of changes was introduced into the medical schools' curricula. Coordinators reported a variety of methods that they had adopted in order to implement necessary curriculum changes after mapping the current curriculum to the key learning outcomes identified in the consensus guidance previously agreed by the schools in Phase 1. However, change was mostly effected through a process of networking and by working through curriculum committees, following a process of clear analysis of need and identification of objectives.

A summary of the changes implemented is set out below

Re-writing problem-based learning (PBL) scenarios

PBL scenarios were adapted to include key substance misuse learning outcomes. These included introducing learning outcomes around doctors' self-care and sources of help, substance misuse in children and adolescents, adolescent diabetes and substance misuse, and the physiological effects of substance misuse. New PBL cases such as chronic back pain self-harm and pain medication prescriptions were written alongside integrating

learning outcomes in existing cases, for example eliciting signs of substance misuse and mental state examinations into nutrition, metabolism, digestion and excretion scenarios. Totally new PBLs were also developed, for example on brain and behaviour (with a special focus on alcohol and substance misuse), so that students could learn more about general signs and symptoms of neurological disorders but including some specific substance-related causes.

Re-writing of existing learning outcomes

Incorporating changes to learning outcomes was often done by expanding existing ones to include substance misuse. This approach was taken for a variety of modules – including renal pathology, central nervous system, obstetrics and gynaecology, mental health, respiratory, cardiology, dermatology, cancer, psychological health, nutrition/metabolism/digestion/excretion, and human cell modules. Areas of substance misuse that were typically included in these modules were the mechanisms of action of drugs, the UK agencies that provided sources of help, creating a treatment plan for patients, balancing the need of others and patient's safety, and being able to communicate effectively with patients who misuse substances. Changes were made to relate existing topics to substance misuse, such as changing learning outcomes concerning the development of deep-vein thrombosis to include the important influence of substance misuse. Learning outcomes relating to pregnancy were a key focus for adding relevant learning about the importance of substance misuse and linking to key guidance on prevention and responses to problems. Learning outcomes concerning professional behaviour were also modified to emphasise the need for a non-judgemental attitude towards patients who misuse substances. The changes were made in different disciplines, such as public health, medical ethics and clinical communication showing that substance misuse could be integrated across multiple disciplines.

Inclusion of Fast Factsheets into modules as extra resources

The Fast Factsheets that were designed during the project were used as extra resources to supplement existing teaching material. These were often used in sessions that focused on gastroenterology, pregnancy and adolescent behaviour. Substance misuse Fast Factsheets were written for these areas as well as being used to help formulate assessment questions. Additional Fast Factsheets were developed in response to demands from individual teaching staff.

Substance misuse lecture learning outcomes

Lecture learning outcomes were either created or modified to include substance misuse. Areas in which this was done included drugs of abuse, pregnancy and substance misuse, eliciting signs of substance misuse, adolescent risk taking, dopamine and natural reward circuitry, epidemiology of childhood illness, case/care pathways focus, self-care, substance misuse in doctors, non-medical use of drugs and dependence, and clinical therapeutics. Specific learning outcomes incorporated into these areas included understanding the impact of substance misuse on NHS resources, substance misuse because of life events, the range of drugs used in non-medical contexts, and fitness-to-practice issues.

Handbooks

Another change that was introduced was the production of booklets and guides that specifically featured substance misuse. An electronic induction booklet was designed and given to all students in one medical school whereas some coordinators modified existing booklets. One example of this is the inclusion of drug assessment skills and history taking in the clinical skills section of a mental health handbook. Other handbooks were modified to include substance misuse and sexual behaviour and patients' adherence and barriers to clinical attendance. Some handbooks included specific substance misuse statements for students and identified explicit learning outcomes for the topic.

Workshops and symposiums

Some of the medical schools introduced workshops or symposiums into the curriculum in order to address some of the recommendations made and to help improve the content of existing substance misuse teaching sessions. These activities included raising students' awareness of the potential ethical issues surrounding substance misuse (e.g. confidentiality), self-care, and risk identification and its amelioration (e.g. reduction of risk and harm strategies). Not only did the workshops and symposiums raise specific issues but they also provided students, in some cases, with the opportunity to speak to someone who had actually misused substances. Roadshows were also devised to provide students with the opportunity to discuss ethical situations they have encountered, focusing particularly on the treatment of patients who misuse drugs or alcohol. Special interest groups were also established (e.g. a psychiatry focused group) and these were promoted to students in the early years of training to enable them to gain experience in a specialist subject early on.

Special study modules

New special study modules or new components were introduced to raise substance misuse issues in the curriculum. Modules were introduced for smoking, prisoner health, pregnancy, and for internet interventions. An example of a special study module is given in box 1. The modules covered a range of learning outcomes, such as understanding the social determinants of addiction, the identification of national legislation and drug use, the effects of substance misuse during pregnancy and understanding the effectiveness of different treatment interventions.

Portrayal of Substance Misuse within the Media

The misuse of both legal and illegal substances has been widely reported within the media. For example, binge-drinking and smoking around children have received much attention in the media and it is well known that alcohol and cigarettes are the cause of more deaths than illegal drugs (Department of Health, 2009). Facts, images, opinions and other methods are often used by newspapers, television programmes and the internet to portray substance misuse but how these are used varies greatly depending on the focus of the article. It is unclear how general substance misuse, or the individuals who misuse the substances, are depicted by the media and whether some substances are portrayed more negatively than others. This SSM considers the portrayal of substance misuse within the media.

References: Department of Health (2009), Accessed on 25.10.10 from, http://www.nhs.uk/conditions/Drug-misuse/Pages/Introduction.aspx

Box 1: Example of substance misuse special study module

Placements

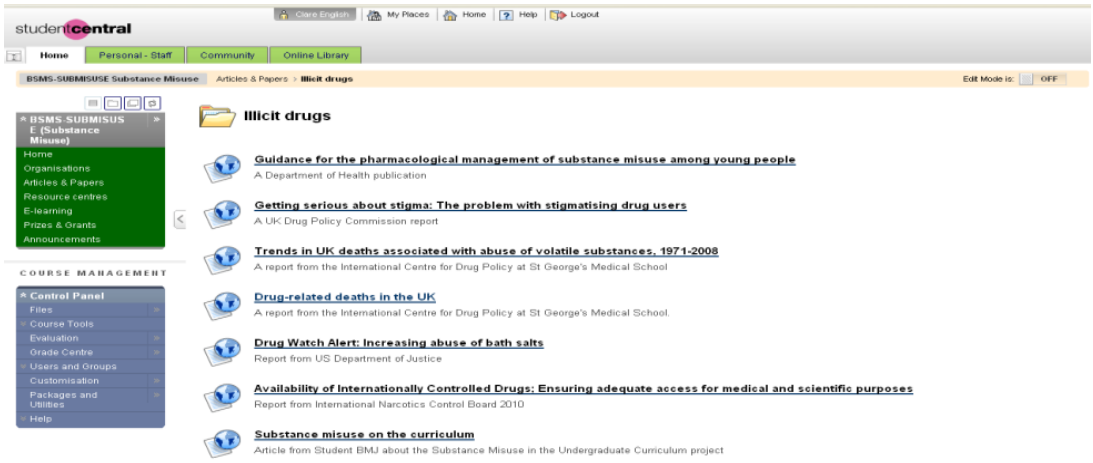
Placements were introduced into medical curricula that addressed self-care and issues of the consequences and treatment of substance misuse patients. One placement that was arranged was for students to attend a homeless health centre which enabled students to learn about the potential public health and social consequences of substance misuse. Another placement offered students the opportunity to attend substance misuse services so that they could learn about the health benefits for the families of people who misuse substances. These placements addressed issues surrounding the treatment of people who misuse substances and their families as well as raising students' awareness of the risks and consequences that may occur in drug misuse.

Additional resources

Coordinators made changes to their local curricula by introducing additional resources that complemented existing teaching material. These resources included developing new online substance misuse case studies, facilitating the use of FRAME as a consultation skills tool, devising or updating a list of substance misuse textbooks for students to refer to during their training, and developing web resources (e.g. virtual patient tutorials). The additional resources covered a variety of substance misuse learning outcomes and supported both formal teaching and independent study.

Examples include development of resources on existing virtual learning environments and working with medical school libraries to enhance and update the texts held on substance misuse. In one medical school, substance misuse as a subject is raised through library induction and information research exercises.

Screen Shot of VLE



Another medical school developed a series of video resources with real doctors and simulated patients playing out real clinical scenarios. The videos capture various interview techniques simulating real-life scenarios that a doctor might encounter on a day-to-day basis. New e-learning scenarios were developed, including a case study about a student who is having problems with alcohol/drugs, and deals with professionalism issues in this context.

Purchase of the Medical Council on Alcohol 2010 edition of *Alcohol and Health: a guide for Students and Medical Practitioners* was recommended by coordinators to their schools. Some schools obtained copies for distribution to students.

Independent Learning Resources

One school developed an online study resource to challenge stigma and discriminatory attitudes towards dependent individuals. Another developed an online addiction study guide, which on completion will enable students to take an addiction history from a patient, make a standardised diagnosis, assess a patient's readiness for change and devise a treatment plan.

Assessment

Enquiries were made to identify the number of substance misuse related examination questions held in Medical Schools Council Assessment Alliance (MSCAA) common assessment bank of questions to which medical schools contribute questions. This process found 3,690 multiple-choice questions (MCQ) and 1,704 extended matching questions (EMQ) related to substance misuse. Within these, 144 MCQ and 183 EMQ focused on alcohol, 55 MCQ and 55 EMQ focused on smoking and 4 MCQ and 4 EMQ focused on drug misuse. The team responsible for the database acknowledged that some questions that examined other areas of the curriculum might incorporate substance misuse issues but will not have been identified in the numbers given.

A recommendation that arose following the mapping process was the need for the learning on substance misuse to be explicitly incorporated within the systems of assessment, particularly in light of the numerous changes that were to be made to be made to schools' learning outcomes. Assessing students' knowledge and understanding of substance misuse was seen as necessary to ensure they have the correct skills required for their roles in prevention and public health, as well as in diagnosing, treating and managing patients who misuse substances. Some of the areas that were suggested could be explicitly assessed were, among others, the effects of taking legal and illegal substances, the clinical features of alcohol dependence, the identification of specific neurotransmitters in substance misuse and pathological diagnoses.

Substance misuse learning is also assessed through special study modules or components, as well as independent research projects. These projects are marked by examiners and for those students who conduct a substance misuse based project, their learning will be formally examined in this way.

Although substance misuse teaching is assessed in different ways, it did appear that explicit assessment of substance misuse learning outcomes was sometimes quite limited. This was identified as an area for ongoing development that would itself tend to be supported by the increased use of explicit substance misuse learning outcomes following

this project but it was considered that more attention may be needed to incorporate the specific learning outcomes in summative assessments, and this could be a key role for future local champions.

Additional Initiatives

Coordinators involved in the mapping process undertook other activities to address areas of substance misuse that required further attention or to raise students' awareness of substance misuse issues, including surveys of students to seek views and experiences of substance misuse teaching *(*appendix 3). A selection of initiatives that coordinators developed to improve the teaching and learning of substance misuse issues are described below. These were offered in addition to formal teaching and enabled students and staff to become aware of the importance of addressing substance misuse issues within the undergraduate medical curriculum.

Participatory boards

Participatory boards were set up in a public area (such as the entrance hall of a medical school). The idea is to allow students to post comments regarding substance misuse teaching and learning and specifically asked them to include comments about their knowledge, attitudes, sources of knowledge, and effects of substance misuse. Comments were free-text and focused on knowledge of addiction, media orientated information (e.g. people should go to rehab), key terms associated with substance misuse (e.g. alcohol, drugs), the bio-psycho-social nature of addiction, reflection on practice, clinical reasoning (e.g. alcohol is systemic) and social references (see appendix 4 box 2 for an example showing students' comments). Discussions were generated as later comments were put onto the board in response to earlier comments. Using participatory boards appears to encourage students to think about substance misuse, and to question what they already know about the subject. It also allowed students to anonymously begin and join discussions. Participatory boards therefore appear to be a unique method of engaging students in the topic without constraining their thoughts or ideas.

Substance misuse workshops

Workshops were set up for students to attend if they were interested in speaking to a doctor who had misused substances and to find out more about substance misuse in general. They were designed to raise students' awareness of substance misuse issues in themselves and colleagues, where they can go to get help and the steps that can be taken, and how to recognise when they or others might have a substance misuse problem. These were run on a voluntary basis and a certificate was given to students once they had completed a reflective piece on the workshop. Workshops lasted 1 - 2 hours and incorporated a short presentation by the speaker who then spoke about their experience of substance misuse. Time was given for students to ask questions. Workshops included 7 - 10 students in order for all to have a chance to ask any questions they may have (appendix 4, box 3 gives an example of the presentation used in the workshop and box 4 provides comments students made concerning their experience).

Special interest groups

A Psychiatry Special Interest Group (PSI) was created to involve all students, and in particular Year 1 to 2 medical students. The aim is to provide a hub for students to gain more interest in a specialist subject, including substance misuse, in their early years. The PSI was launched in October 2010 with its first meeting on "Socks, Drugs and Rock and Roll". It brought together students, doctors and two people who were homeless for a

question and answer session, with the chance for students to get further involved. Over 50 students from all years attended the first meeting. The group has met regularly since and the number of students joining the group has risen to more than 120. To maintain the impetus relevant interactive learning resources are hosted on the schools virtual learning environment platform, for students to gain more knowledge and experience in substance misuse.

Visits to and work with external organisations

Medical schools use outside organisations to offer placements and visits that medical students can engage in. Some of these, however, are voluntary and can only be accessed by a limited number of students. Nevertheless, these visits are often directly related to substance misuse and have been regarded as useful by students. Examples of these include visits to a prison which involves a talk with the Medical Director and tour of the facilities for prisoners who have substance misuse issues; and a homeless centre, which caters for people who misuse substances and offers different sources of help. This provides students with the opportunity to learn about the different types of health care available to those who use the service. These voluntary visits were often well attended by students who appreciated the opportunity to have direct access to people who misuse substances outside of the clinical workplace.

An important aspect to implementing curriculum change for some coordinators was working with others from external organisations. Case studies *(see appendix 4)* exemplify how this process was initiated and concluded, showing evidence of effective partnership working which was seen as a particularly valuable in the context of this curriculum development project.

Student Initiated Changes

One example of student-led change is a project from Imperial College, at which the Medics Union set up and hosted an Alcohol Awareness Week with a keynote lecture focusing on the impact that excessive consumption of alcohol has on Accident & Emergency departments and on the NHS (appendix 4).

Addiction information teaching and learning resources

A key area of interest for the national project concerned the sources of information about substance misuse used within the medical schools to support teaching. Coordinators were asked, as part of the process of reviewing and developing substance misuse education, to map key learning resources such as books, journals, and multimedia resources used to support teaching and self -directed learning. Coordinators shared information about key resources through a project group knowledge repository set up in Diigo, a social bookmarking application.

At the project meetings of the Expert Panel and coordinators consideration was given to how each institution could share its teaching resources for the project (and if possible under the creative commons licence), and it was agreed that a list of key resources should be compiled. Those schools that were willing advised where their resources could be found. Examples included use of the Jorum Open Educational Resources (OER) website, where learning and teaching resources are made available by the UK Further and Higher Education community; and the eViP Programme (Electronic Virtual Patients), a repository of virtual patients learning tools. Coordinators also submitted key teaching resources for listing in the revised Toolkit.

In schools, virtual learning environment resource repositories on substance misuse were developed or enhanced as part of the project, with others mapping the holdings of their medical school library collections on substance misuse and making recommendations for withdrawals, purchase of new or updated texts and the inclusion of links to key free downloadable reports on library systems.

Conclusion

The process that was begun in Phase 1 of this project, in obtaining full consensus of all UK medical schools on the detailed substance misuse learning outcomes needed for the training of our future doctors, already appeared to have had some impact on improved levels of training in substance misuse by the beginning of Phase 2.

The active work of Phase 2 to support locally-relevant implementation in English medical schools took this much further. The success of this project clearly involved a combination of active local analysis of need and development of local solutions to improving implementation. Time-limited funding for the local coordinators to effect this substantial change across their own medical school curriculum was a key element to address the need in the short time-frame of the project. However, coordination and support by the National Coordinator and from the Expert Panel and the National Steering Group had originally initiated and then closely supported these local developments. This was achieved both by the support network of wide clinical and academic expertise, and by development of the support materials. It became clear that the mutual support network for academic champions and coordinators, sustained by the national coordinator, was also a crucial element in providing information and hands-on expertise on how to get things done.

This approach used in Phase 2 enabled the changes made by the coordinators to their curricula to be delivered over a rapid timescale, and has led to real and important changes to the teaching and learning opportunities for our future doctors. These changes address key recommendations that were made to improve substance misuse learning. As well as modifying the learning outcomes, the coordinators, supported by the academic champions, introduced a range of initiatives, including new lectures and special study components, and provided additional substance misuse resources for students to use, which support the taught sessions. Initiatives were undertaken to raise awareness of substance misuse issues including workshops, quizzes and working with external organisations. The Toolkit and Fast Factsheets that were developed across the two phases of the project were also important in providing useful materials for use in a wide variety of settings, disciplines and learning opportunities, and for integration across all years of training. The outcomes associated with this project are extensive and the method used delivered enhancement in the training of future doctors regarding substance misuse. This was achieved through establishment and reference to nationally agreed standards, evaluation of local need and a careful approach to implementing change. We now have a much more solid basis for the future training and professional development of medical students concerning substance misuse. They will be able to take the enhanced knowledge and skills with them as they become medical practitioners across the whole field of medicine and public health. And this forms a firmer basis for ongoing professional development.

4. Evaluation of the project

Although a formal evaluation of the project was not part of the grant application, the Director with approval of the National Steering Group, decided to incorporate this within the life of the project. Therefore, in September 2010 a working group (see acknowledgements for members) was established to evaluate the development, implementation and short-term outcome of the substance misuse undergraduate medical curriculum project (appendix 5 Evaluation Brief). The views of both curriculum coordinators and academic champions were collected through interviews, questionnaires and a focus group. Data was also drawn from coordinators final reports, and from informal (minuted) discussions at curriculum coordinator and academic champion meetings. Concurrently a review of the Toolkit was also undertaken

Data and information was sought on the recruitment of academic champions and coordinators, their work backgrounds, experience and working relationship; project initiation; mapping of the curriculum, identifying and implementing changes, and sustainability.

A summary of the key issues identified through this evaluation is given below. This will be particularly of interest to anyone wishing to pursue any similar initiative in future, and to anyone at a local level considering how best to maintain or enhance the improvements from this project.

Process

Contracting

Getting contracts agreed by the university or medical schools authorities took time and was not a linear process. Having the expert resource of a contracts manager to work with the national coordinator was invaluable as often they were able to answer any contractual queries that were raised.

Recruiting, backgrounds and experience of academic champions and coordinators

Most of the academic champions were already in academic posts in their respective medical schools, such as professors or senior lecturers, principally in psychiatry (most often addiction psychiatry), or accident and emergency medicine. Others were senior clinicians in the substance misuse treatment field (mainly medical doctors) and been involved in the medical school through teaching of substance misuse in their psychiatric element of the curriculum.

Recruitment of coordinators varied due to institutional restraints and timing: for example, some medical schools had to recruit internally because of restrictions on external recruitment, whilst others were able to recruit directly from outside. In some medical schools potential coordinators were identified by academic champions and in a few other situations the role of curriculum coordinator and academic champion was combined, so that the work was undertaken by a member of the current faculty staff with an expertise or interest in both substance misuse and curriculum development. Where academic champions were involved in recruiting coordinators it was felt that it had been beneficial in the project initiation and subsequent working relationships

Due to the rolling nature of the project, and the agreement to participate from different institutions at different times, the timing of coordinator appointments varied. The spread of appointments over a period was viewed both positively and as drawback. For example those in post felt that they were working a little 'in the dark' whilst those who came into post later benefited from the experiences of others, and were supported especially in the curriculum mapping process. However, both coordinators and academic champions considered the staggered employment to be a strength of the project.

Experience in curriculum development was not widespread amongst academic champions, whose backgrounds were mainly clinical or academic within psychiatry or substance misuse, rather than specifically involved with curriculum development.

Coordinators tended to have both a background in and experience of undertaking curriculum development, but limited experience or knowledge of substance misuse or expertise in substance misuse as a subject but limited experience of curriculum development work.

Many of the coordinators appreciated the project-based nature of the post and having a discrete task for a set period. This enabled them to work on their own initiative whilst valuing the support and guidance of their academic champions.

None of the respondents had had their role or the work as academic champion specifically recognised in their job plans, though recognition of the role by important people in the medical school enabled involvement in the project. The work was variously not seen as particularly burdensome and was fitted in around other commitments, whereas others found it difficult to fit in, because of competing priorities during times of change. Because dedicated (extra) time was not allocated to the role of academic champion, it was not easy for some of them to attend Academic Champions/ Expert Group meetings.

During the project some academic champions retired or returned to clinical work full time. In each of these situations a replacement was found.

Working relationships

Both academic champions and coordinators reported being content with their respective working relationships, although the degree of involvement between them coordinator was variable. For example, one academic champion needed only two meetings with the coordinator after which, the coordinator was independent, resourceful and competent. Face to face meetings did occur, as frequently as once per month on average in some cases, with email contact and telephone conversations being the usual means of communication. It was noted by a number of academic champions that their time commitment varied during the course of the project because of fluctuation competing demands on their time. A number of the academic champions expressed regret that they had not been able to contribute more.

Curriculum coordinators met frequently on a national basis, face to face, to share experiences. Coordinators reported that this was invaluable in providing support and guidance on the project and work being undertaken. The coordinators network meetings enabled working relationships to develop between coordinators both locally and nationally. Whilst these meetings provided some informal training it was suggested that a generic online training module could be developed. Contact between coordinators was by e-mail, telephone contact, and via a shared website. E-mail contact was the preferred and most convenient method of communication for coordinators.

All coordinators identified the important role of the national project manager, in facilitating communication. The project manager acted as a central point of contact for all coordinators, offering support and guidance in the early stages of the post, and ensuring that relevant and necessary links were made with other coordinators.

The combined group meetings comprising the expert panel, academic champions and curriculum coordinators enabled more effective communication and the coordinators stated that this group provided essential advice and guidance.

Project initiation locally and mapping of substance misuse teaching in the curriculum

The academic champions helped with the initiation of the project by informing coordinators about useful contacts and by introducing them to key colleagues in the medical school, especially curriculum leads with responsibility for areas of curricula. Subsequently these various individuals referred coordinators on to other colleagues who were thought to be knowledgeable about the information being sought. This was experienced by coordinators as extremely beneficial.

A challenge for both coordinator and academic champion and in some of the older medical schools was identifying what was delivered, and by whom, as there was no formal overview available, whereas in some of the newer medical schools a full overview of the curriculum was available. This reflects the differences in how curricula either have grown organically or been designed systematically. The academic champions' duration of tenure was also important, in terms of knowledge of the medical school, and familiarity with other academics, especially the education department of the institution.

The process of curriculum mapping was done in various ways such as working through key teaching leads, working through published course handbooks, or by searching curriculum databases using keywords. This reflected the need for the task to be approached in ways that were appropriate for each medical school. Generally, though the coordinators used a mix of these methods, and the mapping process was undertaken iteratively. Coordinators reported that it was helpful, particularly for those who came into post at the later stages of the project, to have access to the advice and resources developed by existing coordinators.

Managing change/implementation

Most effective changes were carried out by means of working closely with key course personnel. For example, one coordinator noted that the majority of curriculum changes at her institution were made within the theme of professional development. This was facilitated by the close working proximity of the coordinator with colleagues working on the professional development theme. Therefore the working relationship between coordinators and teaching staff was important in maximising the impact of implementing curriculum change. Networking was therefore an essential requirement of successful curriculum change.

Coordinators reported that working through their academic champion or another senior academic was effective in seeking and discussing curriculum changes.

During the period of the project some schools were undertaking major reviews of their curricula. This was experienced as a positive as it could enable all changes to be incorporated through a single review process. Others were able to feed recommendations for change into on-going reviews.

All coordinators reported the greatest successes at implementing curriculum change occurred when they were able to produce appropriate materials and resources to support the recommended changes. For example, a coordinator wrote course materials on substance misuse to be included within an obstetrics module, and found that these resources were well received and appreciated when provided in this way. Course personnel were generally accepting and interested in the project, and acknowledged its importance, but were able to incorporate more direct curriculum changes where they were directly supported in doing so. It was clear that to ensure adequate curriculum change, the curriculum coordinator posts were essential in providing the direct support and resources to make the change happen.

Implementing and identifying changes is seen by academic champions as an on-going process with the implementation of changes needing to be built on, year-on-year: as they cannot all be achieved straight away.

Curricula are generally very full, so adding more materials to lectures in some schools was harder to achieve. A solution to this was to provide additional resources through schools virtual learning environments.

An Academic Champion to lead the project and embed it within curriculum development meetings was critical, as is their role in maintaining the future sustainability of curriculum changes implemented.

Toolkit and Fast Factsheets

The Toolkit

A key activity of the project was to review and update the resource provided to coordinators: *Substance misuse in the undergraduate curriculum – a toolkit for teaching and learning*. This was designed as a flexible resource that could be used in a number of ways. Its main function was to provide expert guidance and resources on the mapping, development and implementation of substance misuse teaching/training within the undergraduate curriculum.

A small working group was established to undertake the review of the Toolkit *(see acknowledgements for members).* The group drew on the feedback provided about how the Toolkit was used from the written final and interim reports of the local coordinators, from minuted discussions at curriculum coordinators meetings and from a focus group of curriculum coordinators held in March 2011. Additional meetings were held to discuss the structure and content in more detail and make suggestions for changes. Dr Susanna Galea who had worked on the original Toolkit was also involved in the review process and suggestions for changes were discussed with her.

The coordinators reported that they found the Toolkit contained valuable guidance and background information, particularly for those curriculum coordinators without an academic background and/or experience in curriculum development/management. The mapping matrix provided a useful framework for mapping substance misuse teaching, and it was appreciated that it could be adapted to fit with local needs.

Specific recommendations for changes

It was suggested that the hints and tips shared amongst coordinators should be incorporated into the Toolkit. Guidance on mapping of assessments was recommended as some coordinators were not able to access examination questions easily, or at all. Some learning objectives from the consensus curriculum were identified for possible revision/rewording. And it was recognised that the core curriculum outcomes and the matrix needed to be mapped to key equivalent outcomes from the new 2009 *Tomorrow's Doctors* document.

General recommendations for changes

The structure of the Toolkit was considered to need some amendments to reflect the process of mapping. This was to mirror more closely how one would actually approach the task; for updating of references and further reading; and to have an appendix comprising Fast Factsheets, a list of key teaching resources and a glossary of terms.

The Toolkit was subsequently revised accordingly.

Fast Factsheets

The Fast Factsheets were prepared by members of the Expert Panel, with in-depth knowledge of both substance misuse field and the relevant clinical specialty, and reviewed in consultation with other Expert Panel members. The individual factsheets identify a minimum set of requirements from the substance misuse field that a specialty teacher, such as an emergency medicine consultant, would expect of the students on completion of the module.

The Fast Factsheets were very well received by coordinators and teaching staff. Coordinators and teaching staff found the factsheets to be very 'readable'. Not only did they provide a framework for developing teaching material but were described as being valuable teaching resources. The further recommended reading references on the Fast Factsheets provided additional useful resources for teaching. Schools also used the factsheets to supplement existing material by making them available to students through virtual learning environments. Coordinators found the Fast Factsheets to be a valuable resource in helping to identify areas where teaching in specific areas of substance misuse was missing or insufficiently represented. The mapping exercise highlighted the need for additional titles.

5. Sustainability of the project

A key aim of the project was to enhance and equip medical schools to develop and enhance substance misuse learning in their curricula. This aim has been realised through the work of the curriculum coordinators whose role has been to facilitate the inclusion of substance misuse across the schools' curriculum. This has been achieved in partnership with an academic champion in each school, with support from the national project manager and through meetings and networking with other coordinators, guided by the Director of the Project and steered by the National Steering Group.

A key question now, given the success of the project, is how best to sustain the positive changes implemented in the teaching of substance misuse to our future doctors, so that future graduating medical students continue to be better equipped to deal with substance misuse and to meet the requirements specified by the GMC. From both phases of the project we estimate that there has already been a real impact on the education at least 47,000 future doctors and the challenge now is to maintain this in future years.

Continued championing of substance misuse in curriculum development

The academic champion has been identified as the key role to maintain the profile and quality of substance misuse teaching locally. The level of involvement by the academic champions varied from institution to institution but was often an influential role. Several curriculum coordinators are permanent members of the medical school teaching staff, which will enable them to continue 'championing' substance misuse teaching and to work with colleagues to consider the inclusion of appropriate teaching in any part of the curriculum. But their formal function was funded only for the life of the project. It is possible that by having involved other members of teaching staff in the development of the substance misuse teaching materials, there will also be other enthusiastic individuals in each medical school who will recognise the improvements made to date and will want to ensure they persist from one academic year to the next. However, for an additional transition period, the current momentum could benefit from being actively facilitated and embedded in the normal school processes. A transitional coordinating and network support role linking to current local champions, and others locally, could minimise any fall off in momentum as the system adjusts to any loss of formal local coordinator roles.

Continuation and updating of resources

For some schools, implementation has included the development of a range of e-learning and online resources, and these resources, particularly if adequately maintained and updated, will aid sustainability. Some central coordination of new resources may assist this. The Fast Factsheets do provide useful information but some on-going development and updating of them is required. If some of this can be coordinated by a network of interested champions, it becomes a more feasible mechanism.

Looking for new opportunities to effect further change locally

Major changes or re-structuring of curricula in the future will pose both opportunities and pitfalls for substance misuse teaching. New recommendations made during a re-structuring may build on developments to date, potentially with additional substance misuse learning opportunities, but positive changes introduced by this project might also fall by the wayside, especially if local enthusiasm and championing of the issue falters.

Taking new opportunities as they arise may enable sustainability. Making use of those areas of teaching which are currently 'hot topics' could be helpful, such as the question of

professionalism, which could for example lead to incorporating matters appertaining to the use of substances by students and doctors. Similarly, a focus on issues of public concern, such as addiction to prescribed drugs, might help maintain and highlight the need for substance misuse teaching to be clearly evident in the curriculum.

Some specific proposals already pursued

Some individual initiatives by schools taken to ensure the continuity of the substance misuse project in the curriculum include:

- An e-learning addiction study guide.
- Establishment of a local substance misuse teaching learning working group.
- The setting up of a PBL development working group comprising basic science and clinical teachers to focus on integrating substance misuse and other under-represented areas of the curriculum. These PBLs will be included in 2012-13 academic teaching.
- A programme of continuing updates to the virtual learning environment and website on substance misuse for students.
- Inclusion of substance misuse as an agenda item at on-going course review meetings.

Other suggested options for sustainability

Other suggestions for sustainability have been made:

- Locally, champions to continue to focus on embedding questions about substance misuse within the undergraduate examinations, as this should prove a significant motivator to students to learn about the consequences of substance misuse.
- Give consideration to an evaluation within 12-24 months after the project's completion, or for a future re-mapping project to check on the status of the changes implemented.
- Build upon and continue the resources and networks developed as part of this project as a means of support to continuing academic champions promoting a high profile for substance misuse within the undergraduate curriculum.
- Medical schools to identify new academics with the desire to champion the cause as the current key personnel change posts.
- Maintenance of a national coordinator for a transition period of 3 years to support the continuing network of academic champions, to support incremental improvements of current resources by the network, and to support sharing of useful materials for sustaining local implementation.

6. Conclusions and recommendations

This project, implemented across the participating English medical schools, has built on the consensus guidance on substance misuse in the undergraduate curriculum developed with all UK medical schools during the first phase, and has improved the training and education of our student doctors over a rapid timeframe. This has been achieved through the commitment and collaboration of all involved, and particularly from the participating schools.

The participating English medical schools, supported by the project team, have worked enthusiastically to achieve the project's aims:

- To complete and validate a Toolkit and teaching and learning resources in order to advance the implementation programme.
- To enhance and equip medical schools to further develop substance misuse learning in their curricula.
- To work with medical schools to pilot and evaluate the implementation of the substance misuse curriculum.

Conclusions

This major initiative has enhanced the training and education of student doctors, and established a solid basis for substance misuse teaching, producing a number of clear and important positive outcomes:

- There is an agreed high-level curriculum established across all UK medical schools for the first time, which has in itself enabled improvements in training of student doctors across the UK
- An innovative project providing a period of focused support for implementation of this new curriculum in to English medical schools at a local level, has contributed to substantial improvements in the extent and quality of teaching and training of all doctors taught in those schools, across a wide range of drug and alcohol issues.
- The changes implemented into the curricula have already impacted upon current medical students, and will have already influenced the learning of at least 47,000 future doctors; and benefits will continue to accumulate over time.
- The development in recent years of local curriculum champions in English medical schools has promoted a raised awareness across the medical school curriculum committees of the importance of including drugs and alcohol learning in order to have a broad and integrated curriculum for future doctors.

- A package of high quality, practical and flexible teaching and training materials has been developed and validated by experts with the support of the trainee doctors.

- The curriculum has been mapped to Tomorrow's Doctors 2009 and where appropriate some learning objectives have been revised and aligned more closely.

- With the experience of a very successful implementation of the new UK-wide curriculum in to English medical schools, it would be appropriate for Scotland, Northern Ireland and Wales to consider a process of implementation support for their medical schools.

- A number of recommendations have also been made aimed at building on the success of this project - in recognition of the importance to health and well-being of both patients and doctors continuing to be able to respond to a rapidly changing landscape of legal and illegal substances and prescribed and over-the-counter medications. They relate to the maintenance and availability of the core resources; the provision of a period of additional support for the network of local champions to embed further the success to date, and to link to other initiatives; and to develop training and new tools based on the approach used in Phase 1 and Phase 2.

Recommendations

To ensure the continued benefits of the investment in this project and to sustain the impact of the outcomes in terms of changes and improvements to medical school curricula on substance misuse the following recommendations are made:

Resources

1. To develop a database resource of all student selected components (SSC) and special study modules (SSM) currently offered by medical schools in the area of substance misuse

2. To develop a resource sharing portal where all project resources can be collated and accessed for teaching purposes, including a core list of recommended addiction teaching and learning resources.

3. To publish the Toolkit and Fast Factsheets as a central resource.

4. To maintain and update the Fast Factsheets.

5. To develop guidance on topics and questions for assessment, and to provide questions for the Medical Schools Council Assessment Alliance (MSCAA) common assessment bank of questions.

Sustainability

6. To continue with the guidance and network support of the National Steering Group for 2-3 years to help embed changes following cessation of the core funding for local coordinators.

7. To continue with, and further develop the network of local academic champions and the Expert Panel network for 2-3 years.

8. To identify a ‘link person’ for substance misuse teaching in each participating school. This is likely to be the academic champion but if posts change then new people need to be identified. At the very least, this link person is a point of contact for future resource sharing.

9. To take opportunities to ensure the continuity of undergraduate substance misuse related learning outcomes (as defined in the project Toolkit) links through to post-graduate education and with appropriate professional postgraduate medical education initiatives.

10. Given the crucial delivery and leadership roles of doctors, policy makers to consider how best to include adequate monitoring and development of the medical workforce, and student doctors in particular, in workforce development and competency frameworks for substance misuse; so we are able efficiently and cost-effectively to meet the future public health needs and treatment demands from the misuse of substances.

11. Relationships with Third Sector providers and other partners should be built to ensure that teaching via placements continues and builds upon current provision.

12. In the light of on-going changes to drug and alcohol service provision, medical schools should actively seek recognition of the time and resources needed for teaching undergraduate medical students, to be included within service tender documents and service specifications.

Training

13. To commission a substance misuse curriculum mapping and training review course, that could be accessed online or rolled out as a package for others working on similar projects, and that could be extended to the training of other relevant professional groups.

14. To develop specifically designed tools, such as Google desktop or Google box tools that may assist the process of curriculum mapping. Such software might potentially be used to create a database with ability to rate content.

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Appendices

Appendix 1: Substance misuse core curriculum aims and learning outcomes

This guidance is intended to provide a definition of the aims and core learning outcomes in substance misuse, which medical students should achieve during the undergraduate stage of their basic medical education.

Three overall aims are given, addressing three important issues: firstly, the need to ensure that graduates have a basic competence in dealing with substance misuse; secondly, the need to improve students' own understanding of the threat of substance misuse to their own health and behaviour and to their professional practice; and thirdly, to challenge common attitudes towards substance misuse.

It is acknowledged that one of the difficulties in mapping and tracking the teaching of substance misuse is that topics associated with substance misuse permeate the whole curriculum and are not simply confined to certain clinical specialties or basic science subject disciplines. In order to aid curriculum planning and integration of substance misuse topics into appropriate course areas, the outcomes have therefore been grouped under six key areas:

- Bio-psycho-social models of addiction
- Professionalism and self-care
- Clinical assessment of patients
- Treatment interventions
- Epidemiology, public health and society
- Specific disease and specialty topics

It is hoped that medical schools will find the guidance useful in reviewing the content of their curricula in the area of substance misuse. The outcomes are presented as high level outcomes, so as to make them as flexible as possible in comparing them with and applying them to the diversity of UK curricula. Each area is mapped on to the outcomes prescribed by the General Medical Council in *Tomorrow's Doctors 2003* (paragraphs 4-10), the relevant sections of which are summarised under each of the areas. Key words are highlighted in bold within each of the learning outcomes so as to help curriculum mapping.

Aims for undergraduate medical students: professional, personal and societal

1. Students should be able to recognise, assess and understand the management of substance misuse and associated health and social problems and contribute to the prevention of addiction.

2. Students should be aware of the effects of substance misuse on their own behaviour and health and on their professional practice and conduct.

3. Students' education and training should challenge the stigma and discrimination that are often experienced by people with addiction problems.

Core topics and learning outcomes

Bio-psycho-social models of addiction

On graduation, students should be able to:

- Define: **substance misuse**, mechanisms of dependence (both physical and psychological), tolerance, withdrawal and addictive behaviour
- Demonstrate awareness of the range of substances that can be misused, the different **types and classes of licit, illicit and over-the-counter substances**, and other colloquial names and their effects
- Demonstrate awareness of the psychological, social and biological aspects of **dependence**, the interactions between such factors in the individual and the different **models** used to describe addiction
- Describe the **mechanisms of tolerance, dependence and withdrawal** of different drugs and the involvement of different neurotransmitter systems

Meets GMC outcome:
4b - *Know about, understand and be able to apply and integrate the clinical, basic, behavioural and social sciences on which medial practice is based*

Professionalism, fitness to practise, and students' own health

On graduation, students should be able to:

- Describe the **principles of rational prescribing** and the use of psychoactive medication
- Demonstrate **professional behaviour** towards individuals with problems of addiction which incorporates a non-judgemental compassionate approach and respect for a patient's autonomy
- Describe the **ethical and legal issues** associated with dealing with cases of substance misuse
- Explain and outline the problems of **iatrogenic addiction**
- Describe the **risk factors** for substance misuse in medical students and in health professionals
- Describe how substance misuse problems may affect a **health professional's** judgement, performance and care of their patients
- Describe the need to balance due concern for the health of a colleague with responsibilities for the **safety and welfare of patients**
- Outline the role of the medical schools and the GMC in ensuring students and doctors' **fitness to practice**
- Describe the **sources of help** for students and doctors with drug and alcohol related problems

Meets GMC outcomes:
4a (i) – *Know and understand our guidance on the principles of good medical practice and the standards of competence, care and conduct expected of doctors in the UK*
4d – *recognise personal and professional limits and be willing to ask for help where necessary and recognise the duty to protect patients and others by taking action if a colleague's health, performance or conduct is putting patients at risk*
5c – *be willing to respond constructively to the outcome of appraisal, performance review and assessment*
10 – *graduates must be aware of the health hazards of medical practice, the importance of their own health and the effect that their health has on their ability to practice safely and effectively as a doctor*

Clinical Assessment of Patients

On graduation, students should be able to:

- Describe the major **clinical features** of alcohol abuse, drug dependence and tobacco use
- Describe the possible **outcomes of different treatment regimes for substance misuse** and discuss the prognosis and management
- Take a focussed drug and alcohol **history**
- Elicit signs of misuse of alcohol, tobacco and illicit or over-the-counter (OTC) drugs through **physical and mental state examinations** and identify and prioritise medical and psychosocial problems associated with substance misuse
- Demonstrate appropriate skills for communicating sensitively with patients about substance misuse issues and know how to **deal with challenging, aggressive or intoxicated patients**, balancing assessment need with their own safety and that of others
- Appropriately order and interpret **urine, blood and other appropriate tests** for drugs of addiction, use standardised **screening and assessment instruments** to detect alcohol and drug levels and describe other special investigations and how to interpret results
- Carry out a **psychological assessment** of a patient's readiness to implement change

Meets GMC outcomes:
4a(iii) – *know about and understand how errors can happen in practice and the principles of managing risks*
4c – *be able to perform clinical and practical skills safely*
6b – *be able to communicate effectively with individuals and groups*
6c – *understand the principles of audit and the importance of using the results of audit to improve practice*

Treatment Interventions

On graduation, students should be able to:

- Describe the **common treatment regimes** for various types of addictions and withdrawal states
- Describe the basis of **commonly used therapies** for addiction
- Describe the variety of UK agencies to which patients with addiction problems can be referred and how and where to make appropriate **referrals for treatment**
- Demonstrate awareness of risk related to **needle use and disposal** for healthcare workers and patients and risk prevention
- Advise a patient appropriately on **reducing or abstaining from drinking and smoking** and list appropriate agencies or individuals to which patients can be referred to create a treatment plan
- Advise women on the effect of substance use and the impact on **foetal and maternal health**
- Demonstrate awareness of the need to assess patients' **capacity to consent** to treatment
- Describe the impact of substance misuse on **drug interactions** and a patient's compliance with treatment

Meets GMC outcomes:
4b - *Know about, understand and be able to apply and integrate the clinical, basic, behavioural and social sciences on which medial practice is based*
7a – *know about, understand and respect the roles and expertise of other health and social care professionals*

Epidemiology, Public Health and Society

On graduation, students should be able to:

- Outline **UK policies** on misuse of drugs, drug prescribing and dispensing, and on alcohol and smoking
- Outline **UK legislation** controlling drugs, alcohol and tobacco, including the legal alcohol limits for driving
- Explain **hazardous and harmful levels of alcohol consumption**, and the **recommended limits for alcohol consumption**
- Outline UK **strategies for the prevention and treatment of drug misuse**
- Outline **international policies and strategies** to limit drug supply and demand
- Describe the **epidemiology** of alcohol consumption, smoking, drug misuse in the general population, vulnerable groups and specifically in doctors and other health care professionals
- Describe the problems associated with **self-medication**
- Demonstrate awareness of the risks in different **work environments** and the need for employers to have **drug and alcohol policies**
- Describe the **effects of addiction** on individuals, their families, friends and colleagues in a range of age-groups; from children and adolescents to older people
- Describe the long-term **physical, psychological and social consequences** of various types of addiction and substance misuse, including the economic consequences and the links between crime and substance misuse
- Describe the risks to the children of addicted parents including **child protection policies** and a doctor's duty to implement these

Meets GMC outcomes:
4a(ii) – *know about and understand the environment in which medicine is practised in the UK*
4a(iii) – *know about and understand how errors can happen in practice and the principles of managing risks*
4b – *Know about, understand and be able to apply and integrate the clinical, basic, behavioural and social sciences on which medial practice is based*
6c – *understand the principles of audit and the importance of using the results of audit to improve practice*

Specific Disease and Speciality topics

On graduation, students should be able to:

- Recognise **life-threatening complications** of substance misuse, including septicaemia, pulmonary emboli and overdose and be able to carry out appropriate interventions
- Describe and explain the links between substance misuse and:
  - Accidents and violence (including sexual assault and STDs)
  - Lung disease, specifically tobacco, "crack" cocaine and cannabis
  - Anxiety, depression, dementia, schizophrenia
  - Acute psychotic episodes
  - Self-harm and suicide
  - Heart disease and hypertension (MI and cocaine use)
  - Liver disease, pancreatitis and gastritis
  - Infectious diseases, inc HIV and hepatitis B and C virus infections
  - Cancers
  - Sleep disorders
  - Weight problems
  - Neurological conditions
- Describe the **effects on pregnancy and on the new-born** of misuse or dependence on alcohol, tobacco or illicit drugs.

- Describe the effects of substance misuse in the family on children.

Meets GMC outcome:
4b - *Know about, understand and be able to apply and integrate the clinical, basic, behavioural and social sciences on which medial practice is based*

From: International Centre for Drug Policy (2007) Substance Misuse in the Undergraduate Curriculum. http://www.sgul.ac.uk/research/projects/icdp/our-work-programmes/substance-misuse-book.pdf

Appendix 2: Role statement 2009 curriculum coordinator

Job Description

Main Purpose: the role of the school curriculum development officers is to manage the implementation of the substance misuse toolkit across the medical school for undergraduate education. Specifically;

- To map and review the current curriculum in both medical and foundation schools compared to the guidance recommendations, and to make recommendations for each pilot.
- To participate in the development of the toolkit and fact sheets and coordinate the implementation of the substance misuse toolkit across the medical school for undergraduate education.
- To participate in completion and validation of the toolkit and learning resources in order to advance the implementation programme.
- To participate in the evaluation of the toolkit designed for the development of substance misuse in undergraduate medical education.
- To identify, through the pilot, the training needs of those covering substance abuse and addictive behaviour, including feedback from the staff and input from the expert group, project team and Steering Committee.
- To coordinate the delivery of a model for substance misuse on the undergraduate curriculum development project utilising the toolkit.
- To attend national curriculum cocoordinators meetings and link with the network of cocoordinators to share good practice and learning.
- To facilitate the inclusion of substance misuse across the curricula.
- To provide quarterly reports to ICDP on progress.
- Produce with colleagues a range of learning and teaching materials to support the effective delivery of the toolkit and substance misuse in the curriculum.

NB This job description is not intended to be an extensive document but is an outline of the current role and may be subject to changes in detail or emphasis in the light of future changes or developments.
January 2009

Appendix 3: Student surveys and views

This appendix reports on additional work undertaken by the curriculum coordinators to ascertain student views and experiences of substance misuse teaching from surveys undertaken with students, including a survey done by a medical student for a special study module. The first was a national telephone survey in 2009. The second was an analysis of surveys undertaken by nine curriculum coordinators with students from their schools to gather their perceptions of substance misuse teaching that occurs in the undergraduate medical curriculum

National telephone survey

In 2009 a national telephone survey of medical student views on substance misuse teaching was done by a medical student for a special study module. The aim was to evaluate students' views about the importance of substance misuse in relation to patient treatment and their own behaviour and health, and to establish students' perceptions of the current level of related teaching input in the undergraduate medical curriculum across English medical schools.

A semi-structured telephone survey was conducted with nominated medical student representatives from each of the English medical schools, who were identified by the respective student union and/or British Medical Association (BMA) Medical Students Committee. The survey contained questions about substance misuse in patients, including questions about the teaching of the assessment and management of patients, as well as questions about substance misuse by medical students, its importance and the teaching they have received in this subject area. Twenty one out of twenty four schools took part. The findings are summarised below.

Substance misuse amongst patients was acknowledged to be of relevance to all specialities, but the level of teaching reported in each clinical speciality did not reflect the breadth of importance. For example, a higher proportion of teaching of substance misuse issues is given in psychiatry than in other specialities such as geriatrics. It is also notable that in a third of the surveyed institutions, substance misuse was not regarded as part of the core curriculum.

Nineteen (90.4%) out of the twenty one student representatives thought that substance misuse by students was an important issue, whilst 23.8% (5) of schools were reported not to have discussed it. The majority of those institutions that did discuss substance misuse in medical students were reported to spend less than three hours on the subject.

Students' suggestions for more effective teaching included more community placements and the use of expert and virtual patients with substance misuse issues. In relation to formal teaching it was suggested that more core lectures or interactive small group sessions directly about substance misuse were needed.

Surveys from medical schools

Nine schools were able to conduct surveys with students to gather their perceptions of substance misuse teaching that occurs in the undergraduate medical curriculum. Although the surveys were tailored to meet individual curricula, some questions were generic across the schools and these are reported on below. Two thousand one hundred and thirty three students completed the generic questions with some providing further detailed views through focus groups and qualitative open-ended questions.

Methodology - information was obtained from the curriculum coordinators who had conducted a survey with their students regarding their perceptions of substance misuse. The number of participants who completed the survey were added together to obtain an overall total, and for each question, the number of responses from each medical school were combined. Frequencies were used, as this was more descriptive than percentages or averages. It should be noted that not all medical schools asked the same questions as some tailored them to meet their specific requirements therefore those that were fairly generic are reported here (that is, those questions which were included in the survey in at least two medical schools).

1. Perceptions of Substance Misuse Teaching

Students were asked to state whether they perceived substance misuse teaching to be important or not, and sufficient in their course. From those who completed the question, 927 students perceived substance misuse to be an important topic that should be part of the undergraduate curriculum. Only 340 students thought that it was not very/not at all important or did not hold a particular view on the subject. Concerning whether or not students perceived the teaching to be sufficient or comprehensive, 960 thought it was whilst 673 thought there was not enough (figure 1).

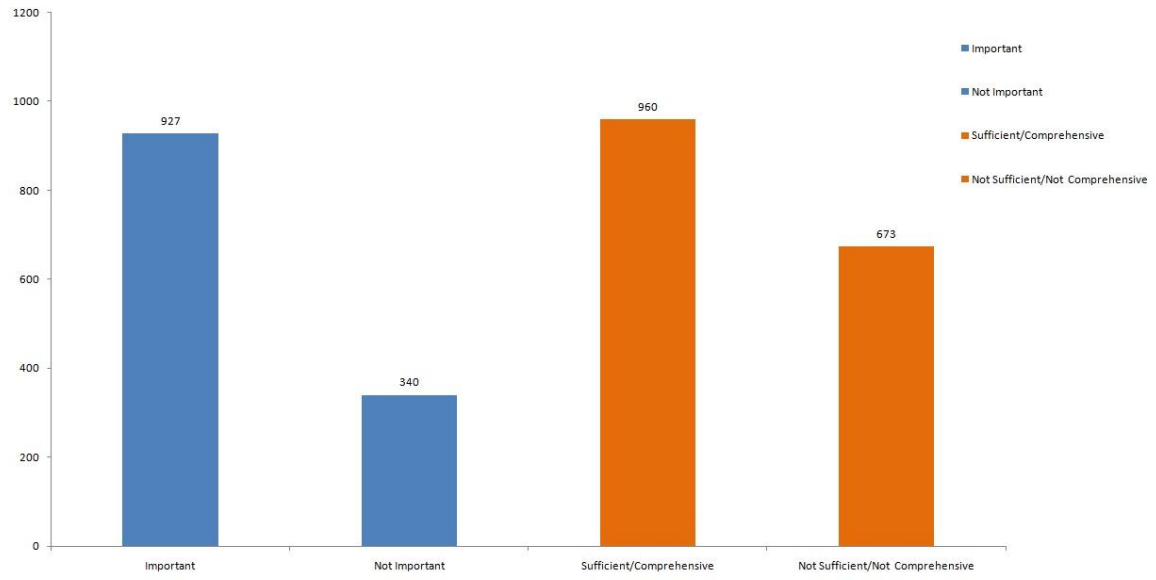


Figure 1: Number of students who thought substance misuse teaching was important and sufficient/comprehensive

Students were asked about the five areas that the undergraduate teaching covers and featured within the Toolkit (bio-psycho-social models of addiction; professionalism and self-care; clinical assessments of patients; treatment interventions; epidemiology, public health and society; and specific diseases and speciality topics related to substance misuse). Figure 2 shows most students perceive bio-psycho-social models of addiction were well covered within their curricula (n = 1011) whereas clinical assessments of patients was not (n = 674).

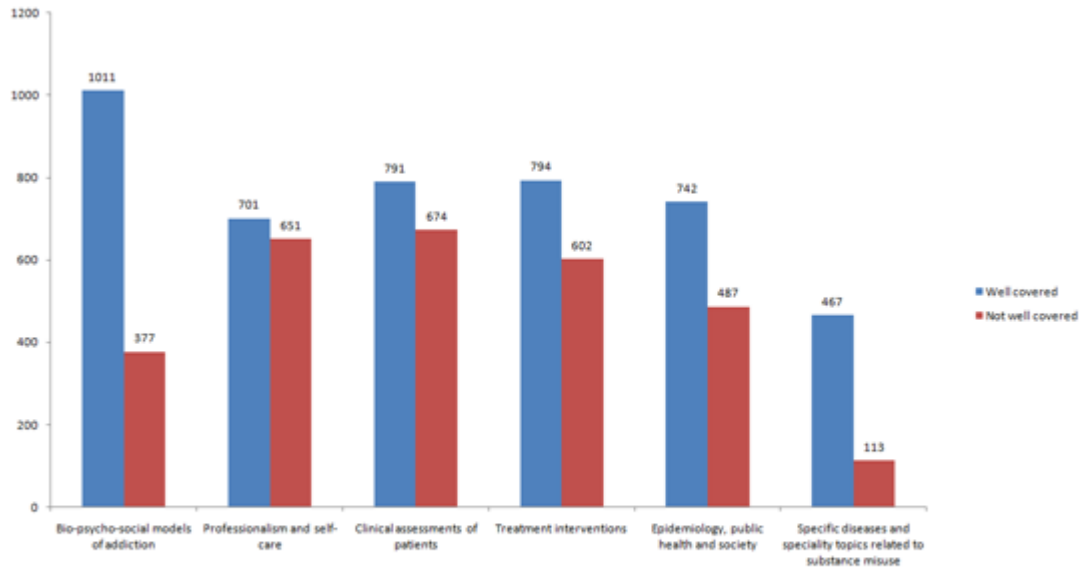


Figure 2: Number of students who perceive the five areas of substance misuse teaching to be well or not so well covered in the curriculum

Students were asked to identify specific teaching sessions they recalled featured substance misuse (figure 3). The majority recalled substance misuse issues being taught during formal teaching such as lectures, problem-based learning and case-based modules (n = 541). Some expressed the wish for more formal teaching in connection to substance misuse issues such as *"in-depth lectures"*, with one student reporting, *"I think understanding substance misuse is vital for any doctor, especially when working in A&E. I do not think we get enough training in this, especially given the prevalence of substance misuse today. I think all medical students would gain a lot from some more formal teaching in this area"*.

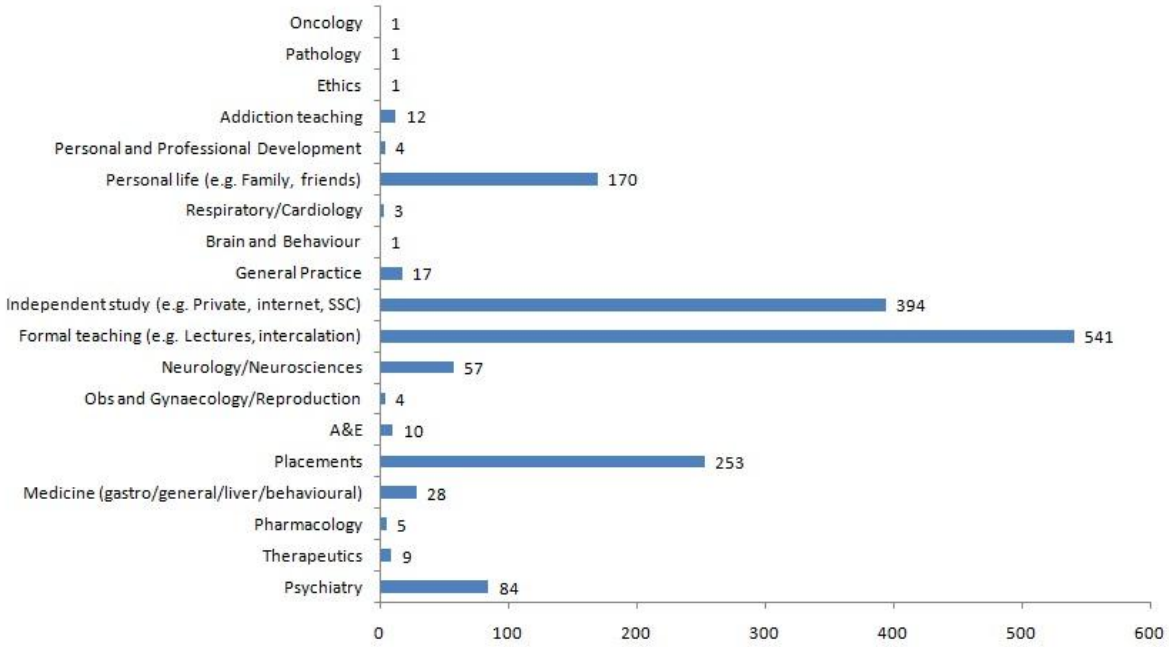


Figure 3: Number of students who mentioned an area in the curriculum where they learnt about substance misuse

Independent study was also found to be an area most students reported learning about substance misuse (n = 394). Some students commented that special study modules or components particularly had helped them understand substance misuse issues.

> *"I did the toxicology SCC and they dealt with overdose and that SSC was the key for me understanding signs for the first time, what it would look like if someone came in the door who was an opioid user and someone who had been taking amphetamines and the signs you would look for if someone was using them" [4th year student]*

> *"I think that the SSC which I did in Acute Medicine which covered overdoses and general toxicology was very valuable in giving me the skills to recognise the potential signs and symptoms of many types of substance abuse in overdose and non-overdose quantities." [5th year student]*

Despite this, what essentially appeared to be important to students was having direct access to those who misused substances which could be done in a number of different ways, such as in a lecture or by spending time with drug and alcohol workers.

> *"Our talk was actually done by a codeine addict so it was effective, not just someone who stood there lecturing you but someone who knew about it and they could say how it affect them and he was quite honest about it so that was really good." [1st year student]*

> *"more time dedicated with drug and alcohol team" [5th year student]*

> *"I think more opportunities to talk with former addicts and understand what it is like for them to break the cycle (including the bad things like for example realising how crap your life is when withdrawing because before you were blocking it out with drugs/alcohol) would be helpful." [4th year student]*

> *"Have had opportunistic exposure to patients with substance misuse issues but no specific substance misuse placement, which would have been useful to see how these patients are managed." [4th year student]*

2. Curriculum topics and recommendations

Curricula topics cover a range of substances, such as alcohol, smoking and illicit drugs. The students were asked to consider how comprehensively they believed these topics, as well as over-the-counter drug misuse and prescription drug-use is covered in the curriculum. Smoking (n = 914) and alcohol (n = 963) are perceived to be comprehensively covered in the curriculum whereas students believed prescription drug misuse (n = 565) and misuse of over-the-counter drugs (n = 422) were not well-covered (figure 4).

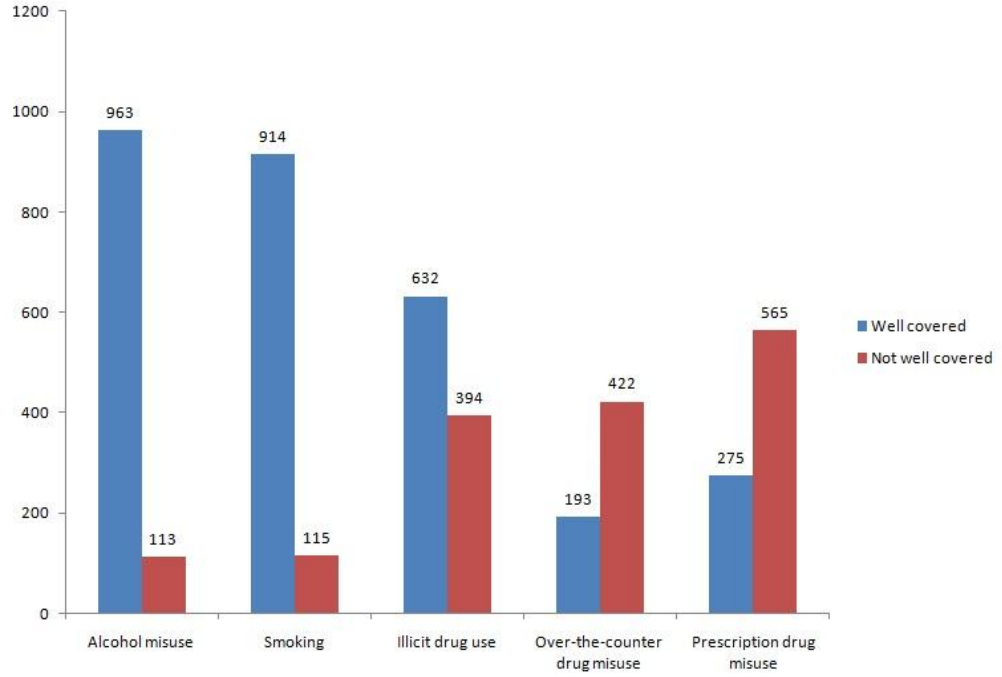


Figure 4: Topics students feel are well covered or not well covered in the undergraduate curriculum

This was supported by one student reflecting that substance misuse should have *"less of a focus simply alcohol misuse, but also on illicit drugs; more contact time in the psychiatry block on this week would be appropriate with more teaching"*.

Figure 5 shows managing addicts were the most frequently mentioned topic that students felt should be emphasised in the curriculum (n = 22) and more explicit teaching on the effects of different substances (both on their own and together, physiological and social effects; n = 22).

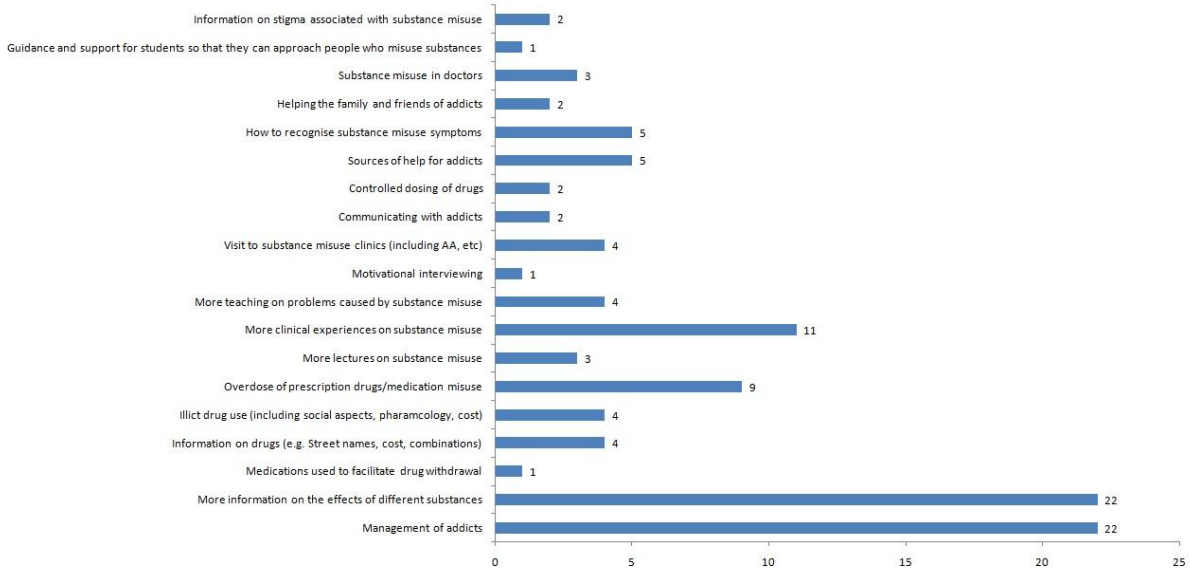


Figure 5: Number of students who recommended topics to be introduced into the undergraduate curriculum

Students reported that managing patients who misuse substances was not an area of patient care they were particularly confident in performing. One student also reflected s/he would *"like to get a further grip on the complexities of alcohol misuse management and a better idea of specific local services which are available."*

"I am confident in recognising and assessing but definitely not in giving advice in management: [5th year student]

"More teaching on how to recognise substance misuse and how to help patients and their families e.g. support and action groups available" [5th year student]

"More information about the management of patients on methadone...More information about the services to which patients who misuse substances can be referred for help" [5th year student]

3. Confidence in own skills

3a. Taking a focused history

In relation to being able to take a focused history from a patient misusing substances, the majority felt confident that they would be able to do so if a patient was misusing alcohol or smoking (n = 320 and n = 338) but not when a patient was misusing illicit drugs (n = 330, figure 6).

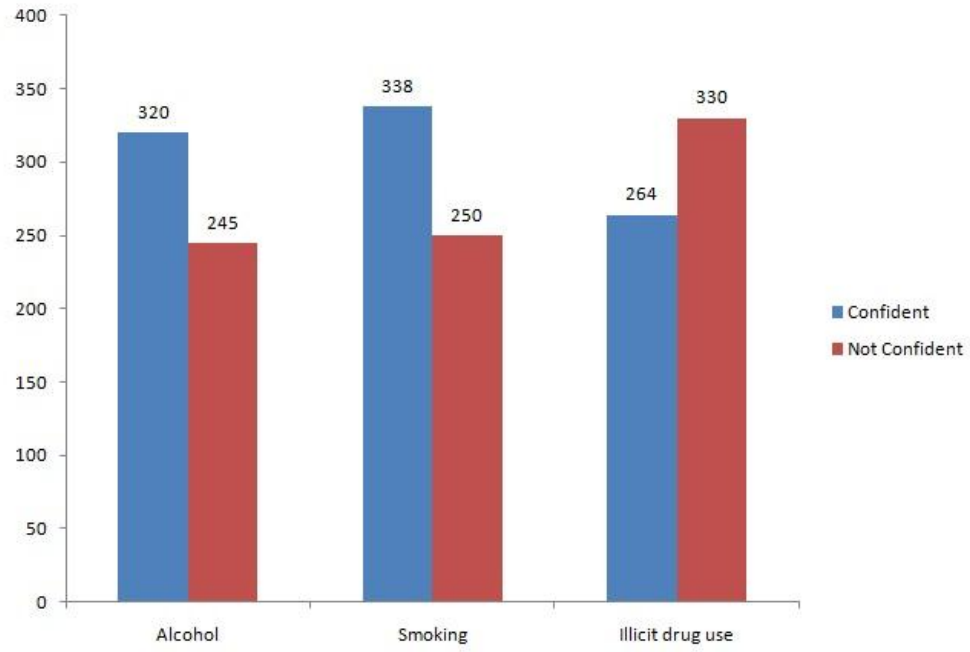


Figure 6: Number of students who reported feeling confident or not confident with regards to taking a focused history from a patient who misuse alcohol, tobacco or illicit drugs

3b. Discussing options for cutting down or stopping

When it came to reported confidence in discussing the options for cutting down or stopping substance misuse, the majority of students reported confident that they would be able to do this for those patients smoking (n = 371), but not for those misusing alcohol or illicit drugs (n = 370 and n = 414, figure 7).

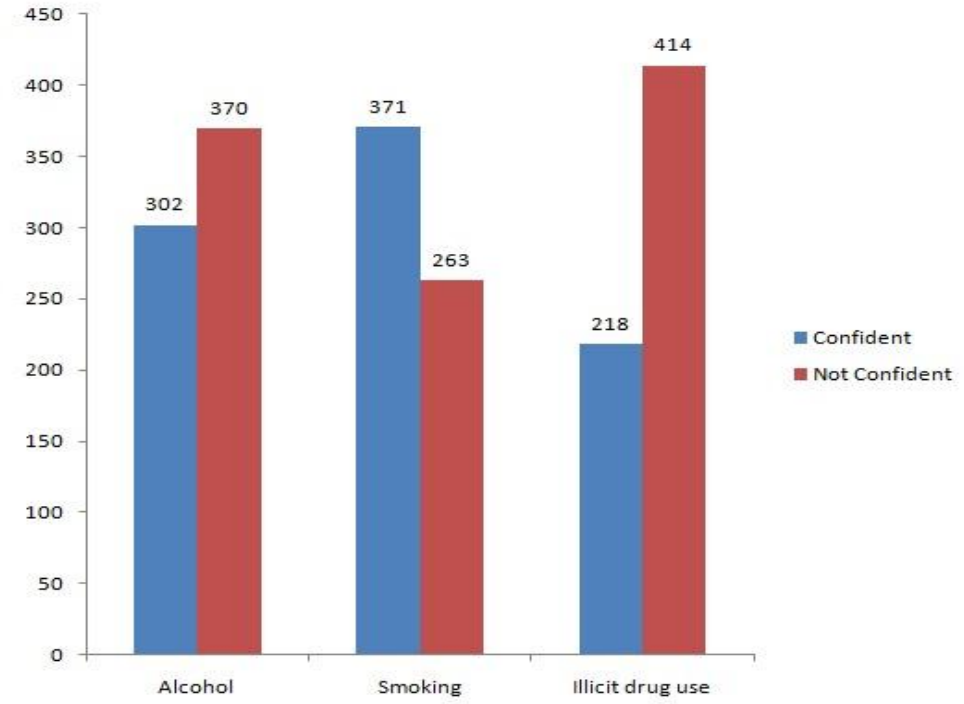


Figure 7: Number of students who reported feeling confident or not confident about discussing options for cutting down or stopping substance use with patients who misuse alcohol, tobacco or illicit drugs

3c. Recommending appropriate organisations that could help

Figure 8 shows the majority of students did not feel confident in recommending appropriate organisations that could help, regardless of the substance.

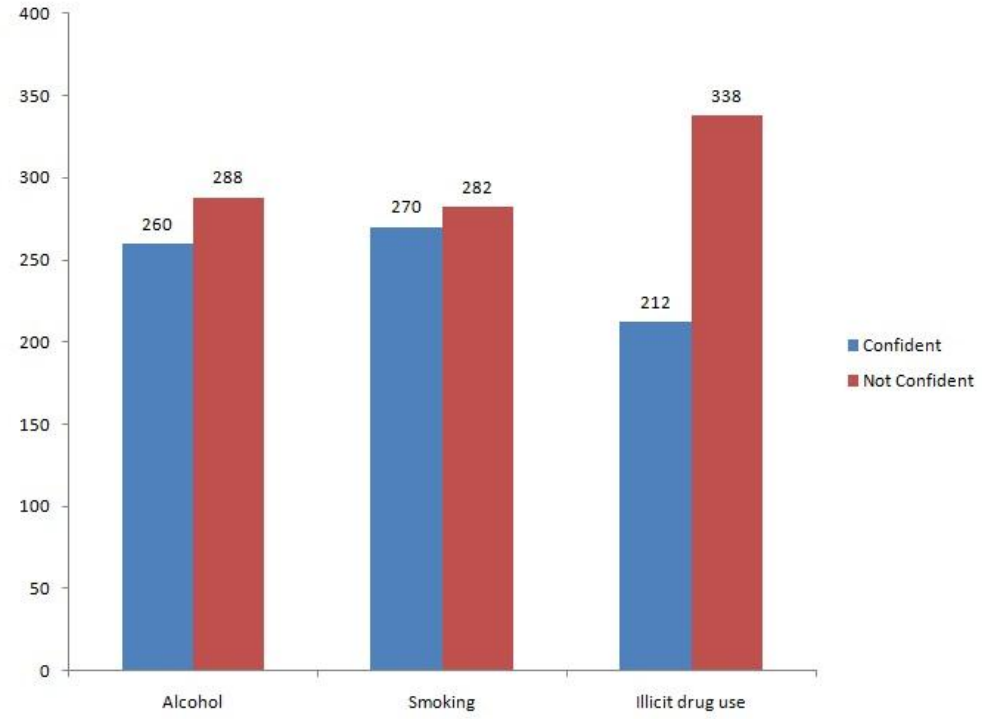


Figure 8: Number of students who reported feeling confident or not confident about recommending appropriate organisations that could help a patient who misuses alcohol, tobacco or illicit drugs

4. Perceptions of people who misuse substances

Figure 9 suggests the majority of students disagree that drug addicts tend to be violent or aggressive, and should be treated the same as patients who do not misuse substances when it comes to providing medical care. The majority agree however that substance misuse is linked to social deprivation and that addiction should be treated as an illness.

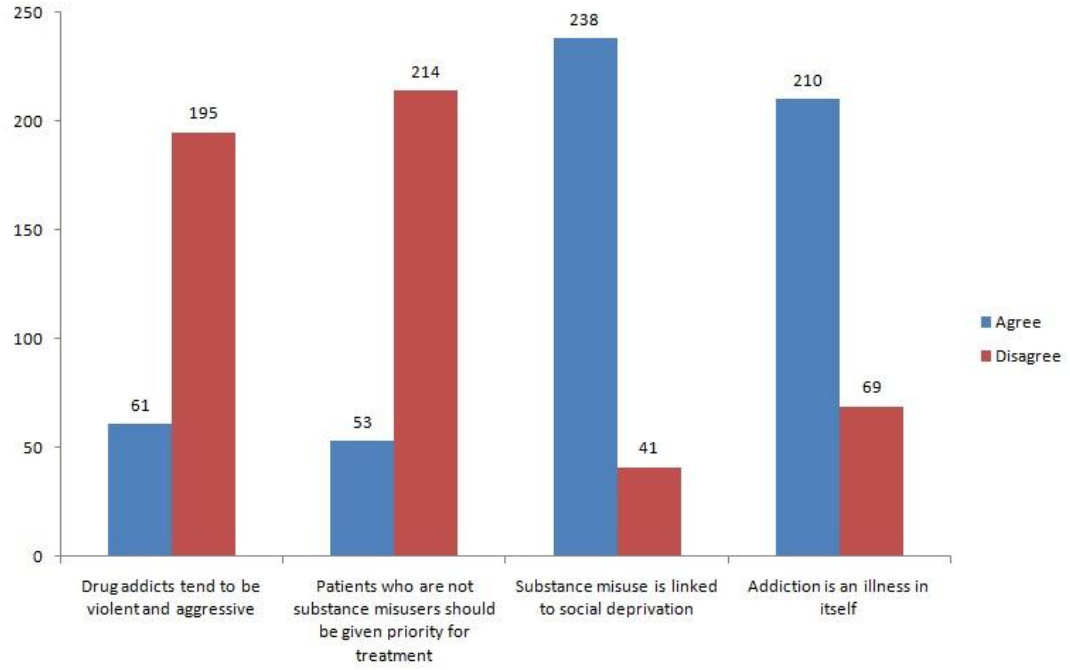


Figure 9: The number of students who agree or disagree with each statement that corresponds to patients who misuse substances

Conclusion

Students perceive substance misuse to be an important aspect of undergraduate medical education, with the teaching being comprehensive and sufficient. Overall, the bio-psycho-social aspects of addiction are covered well in teaching sessions but more could be done regarding the clinical assessment of patients. Most of the teaching and learning was perceived to occur through independent study or via formal sessions, such as lectures or intercalation degrees.

Students perceived the teaching of alcohol, smoking and illicit drug use to be well covered; however, they felt that they could be taught more about over-the-counter drugs and prescription drug misuse. Students also recommended that more teaching on how to manage addicts and what the effects of different substances when used on their own or combined. Students varied in their confidence of performing different skills with patients who misuse substances and did not feel particularly confident in taking an illicit drug history, discussing options for patients to cut down to stop alcohol or illicit drug use, and in recommending appropriate organisations which could help patients stop misusing substances.

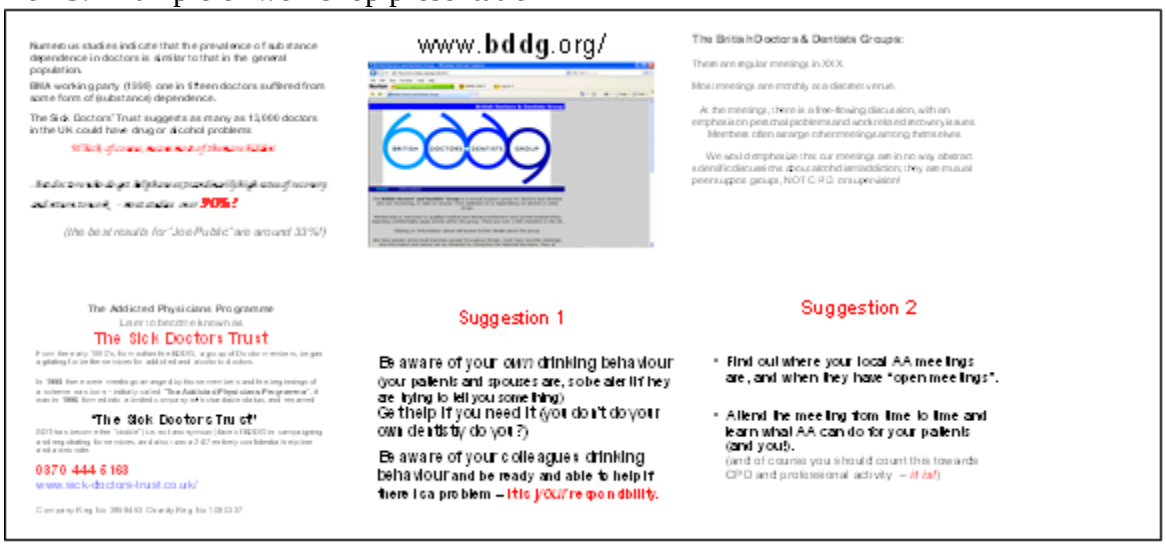
Appendix 4 Case Studies and Examples of additional activities

Box 2: Examples of comments left by students on a participatory board about substance misuse

Participatory board: Knowledge, Attitudes, Sources of Knowledge, Effects

Alcohol Drugs homelessness Detox Social issues Mesolimbic pathway Units of alcohol
Misconceptions of the public multifactorial Addiction= positive reinforcement Heroin
People addicted to illegal substances can be my age and well educated smoking Stages of change model
Risky behaviour associated with drug taking negative viewpoint from media – criminal rather than treat
Not enough support on general medical wards for those with addiction You can become addicted to anything
I think learning about addiction is massively important because it is so prevalent in our society Duty to report
People that don't go unemployed Depression broken families withdrawal symptoms needles
Lectures, seminars, block work psychiatric help Edward Myers Lifestyle habits Trainspotting

Box 3: Example of workshop presentation



Box 4: Example comments made by students who attended the workshop

Selection of students' reflections:

"I found the workshop really eye opening. It changed my preconceptions of what I thought a 'drunk Doctor' would be like; when we were all sat around the table I was wondering to myself when the Doctor would be coming to speak to us and why he wasn't there already, so I was taken by surprise when it turned out he was sitting right opposite me! I think that shows that this really is an issue that needs to be put in front of medical students as most like me will only have come into contact with alcoholism through seeing patients on wards, or seeing people in the street."

"It's also useful to know about the organisations such as the Sick Doctors Trust and British Doctors and Dentists Group. I notice that although many numbers are included in the back of the clinical logbook, the contact details of these two organisations are not. Perhaps this is something that faculty should include in future copies."

"I feel that this opportunity has definitely opened my eyes to just how many people from all walks of life struggle with addiction and I hope that having listened to the speaker's story I will be better equipped in some small way in order to help anybody that I should come across with similar problems."

"I feel that medical students should have teaching around substance misuse because even at medical school now there is a big culture around social life and drinking. If people are not aware of the dangers and signs of alcoholism, then when problems start to arise from this drinking culture, real harm could be done."

"From attending the workshop I felt that I was exposed to a different approach to learning about substance/alcohol misuse. I think that the workshop was useful especially with the presence of the Dr who was a previous alcoholic and it allowed us to see how alcohol can affect everybody and not just those in lower social classes and the unemployed. I feel that it would be beneficial to incorporate this workshop into the normal medical curriculum"

Case Study 1: Working with External Organisations

One of the methods used to address substance misuse issues that may arise in medical students and doctors was to ask an external speaker to come in and discuss the problems that can occur within the medical profession. The Sick Doctors Trust was contacted with a request to work with the School to highlight substance misuse issues relating to students themselves and wondered if this was an issue the Trust could help with. The response obtained was extremely positive and helpful. The person who replied to my email made suggestions of how this could be done and provided examples that were often used in other organisations such as lectures, small group work, and video conferencing. Through emails and telephone conversations, the coordinator and person(who became the speaker) from the Trust discussed ideas for workshops and how that could be run and what would be covered, adapting a strategy that the speaker had previously used; doing a short presentation, talking about their own experience with misusing substances and taking questions from the students. It was decided that a small group workshop would be the best way of piloting this. The speaker was very flexible, open to ideas, and had a thorough knowledge of how medical education is delivered ensuring that what was devised would work both on a practical and on an educational level. Arranging for the speaker to attend a workshop was straightforward, as suggested potential dates were in periods when the students were free and had no other educational activities timetabled (e.g. lunchtime). Permission from the year directors was obtained and none had any problems with the workshops being run. The speaker suggested the times that were most suitable and all practical issues were resolved.

Working with a colleague who delivered the Communication for Clinical Practice course in year three, an invitation was issued to all students to attend the 1-hour workshop. Initially, interest was high although not all who expressed their interest in attending actually did so on the day. Those who did said they found the experience useful and were glad of the opportunity of being able to listen to someone who had experience of substance misuse. The speaker was very honest about his experiences, and provided details of useful organisations for students to access if they have any concerns that their patients, colleagues or they themselves may be misusing substances. This information included other organisations as well as the Sick Doctors Trust and the speaker made suggestions to the students regarding what meetings they could attend (as a medical student or as a member), such as Alcoholics Anonymous. The only problem that we found conducting the workshop was that the time allocated was not enough and we over-ran quite considerably in both sessions. This is something that would need addressing in future workshops.

Working with an external speaker was an enjoyable and worthwhile experience. The time taken and given by the speaker was much appreciated by both the coordinator and the students particularly. The workshop was easily and quickly arranged, and the professionalism exhibited by the speaker and the Sick Doctors Trust was exceptional. Using external organisations and speakers is something I would definitely recommend to anyone who is interested in the area of substance misuse and medical education.

Case Study 2: Working with outside organisations:

Early meetings between the curriculum coordinator with module and phase leaders to explore ways to improve and increase substance misuse teaching in the didactic curriculum were promising and changes to individual teaching sessions and module handbooks were made. However, in autumn 2010, after these initial successes, it became apparent that the scope for significant curriculum change was limited. The curriculum was already crowded and competition for space among the number of other vertical themes was fierce. Although some module leaders were enthusiastic about the substance misuse project, inclusion of more structured teaching on the topic would mean leaving something else out. It became evident that exploring other ways of increasing substance misuse teaching was needed.

There are a number of academics and researchers working in the substance misuse field within the University. A Senior Lecturer in Substance Misuse convened a small education and research network and to discuss what we were doing and how to share information about our work.

In November 2010, a number of substance misuse professionals from local services were invited to an event '*Bridging the gap'*. The aim was to forge links between substance misuse professionals and those working in substance misuse education. The event was attended by professionals working in a wide variety of substance misuse services across the local region and contact was made with people who wanted to be involved in teaching. In the next few weeks this was followed up with meetings about how to could include their work in substance misuse teaching at the medical school.

The contacts made proved very useful and several substance misuse professionals will feature in medical school teaching during this and next academic years. One has agreed to talk about the opportunities for brief intervention in the GP surgery and to provide a number of service users who have received treatment at Action for Change for a symposium on risk identification and amelioration in the year 4 module on General Practice and Population Medicine. The symposium will also feature expert patients with a history of drug abuse who have been recruited through a contact at the local MIND that the coordinator made via the Substance Misuse Service. Both Action for Change and MIND reported that former substance misusers who have had treatment at their organisations are keen to volunteer to speak about their experiences at events in the community and to take part in teaching. An external speaker will also contribute to a year 1 symposium on alcoholic liver disease and alcoholism in the Year 1 Nutrition and Excretion module later in the year.

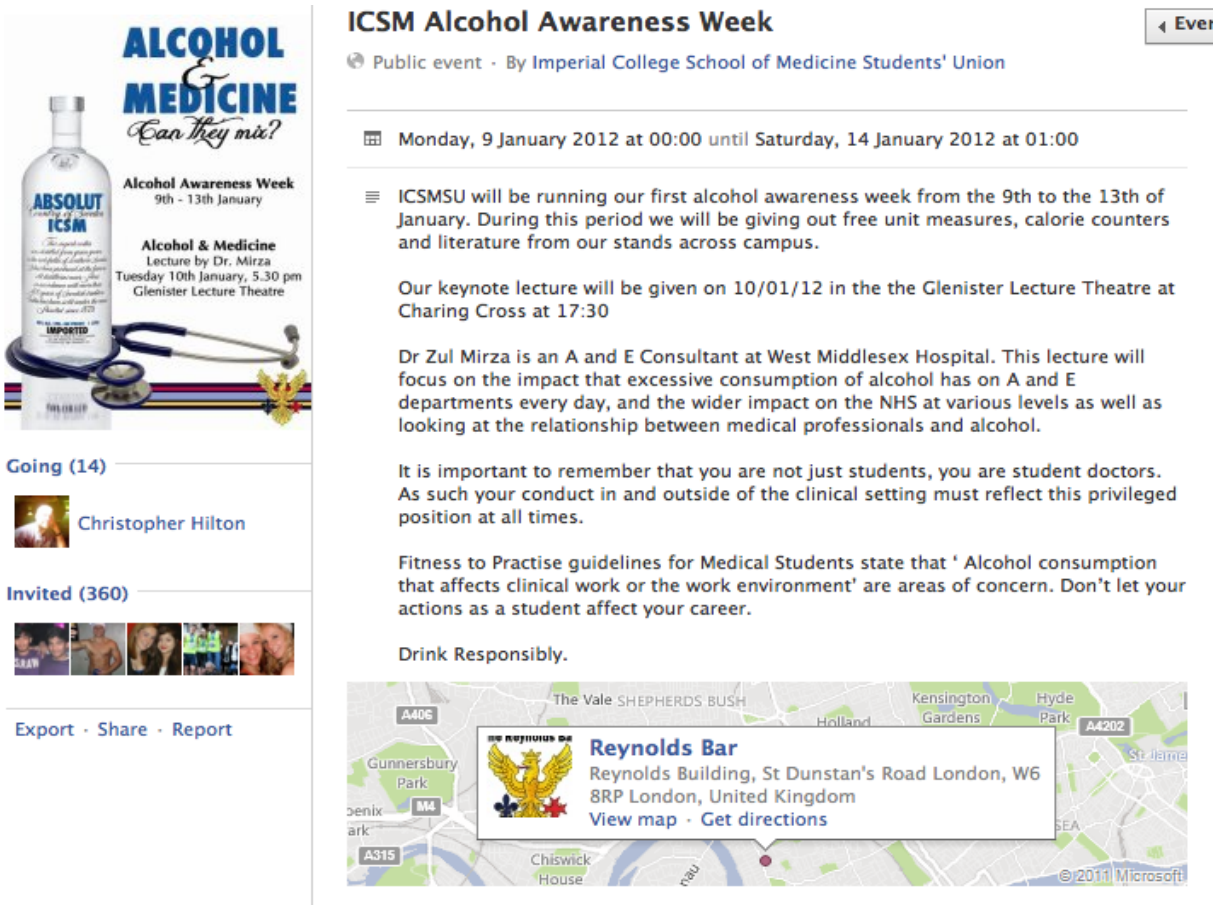
An Individual Research Project (IRP) to be undertaken by one Year 4 student has been agreed. The project will investigate the health benefits to families of substance misusers of accessing the DAAT's PATCHED services. It is hoped that the project will include a cost-benefit analysis and the outcomes will show that the service saves the city and the NHS money. It is also hoped that the project will be the first of many IRPs on substance misuse and consequences conducted by medical students using data obtained via the DAAT.

The contacts with substance misuse professionals meant that I was able to offer module leaders and teachers the opportunity to include substance misuse in their teaching at very

little cost to themselves. The leader of the Year 2 Neuroscience and Behaviour module would like to feature a substance misuse professional in a lecture on reward and addictive behaviours so contact with a local Health Promotion Adviser, has been made with a view to them contributing to this lecture.

The experience, working with substance misuse-related organisations outside of the University and NHS Trust has been useful and has given my work on the Substance Misuse in the Undergraduate Medical Curriculum an extra dimension. Being able to approach module leaders with suggestions for ways in which substance misuse could be included in existing teaching without new material being required or other subjects being displaced has been positive. The school is very keen on interdisciplinary and multi-professional learning so inclusion of professionals in symposium-type teaching sessions is popular with module leaders. It is hoped that the introductions made this year will be successful and may lead to substance misuse professionals contributing to teaching in the future.

Student Initiated Changes



Appendix 5 Project evaluation brief

International Centre for Drug Policy **Paper E**

Substance Misuse in the Undergraduate Medical Curriculum

Project Evaluation Brief

Background

One of the requirements of the Substance Misuse in the Undergraduate Medical Curriculum project is for an evaluation to be undertaken. This brief provides an outline for achieving this requirement.

Aims and objectives

The aim of the evaluation is to examine the development, implementation and short-term outcome of substance misuse undergraduate medical curriculum project. There will be three elements to this evaluation. We will examine the following:

1. How this project fits in with the range of undergraduate medical curricula in England (contextual evaluation).
2. The planning, setting up and implementation of the range of project deliverables and milestones as well the documentation of the various resources developed within the project (implementation evaluation)
3. The short-term outcome of the project (outcome evaluation).

Contextual evaluation

The objective of this component is to examine the policy environment in which the curriculum was introduced. Issues to be addressed will include the gap between the content of the new substance misuse curriculum and existing modules; the nature and quality of existing infrastructure that supported the development of the new curriculum in each medical school; the political, social and infrastructural strengths and weaknesses of participating medical schools and the ability of the project management group to deal with these. Data collection for this component will include semi-structured interviews of champions, coordinators and relevant principal officers of medical schools, and a review of relevant documents.

Implementation evaluation

The objective of implementation evaluation is to examine the core activities undertaken to achieve the development and implementation of the new curriculum. The following questions will be answered:

What were the critical components and activities that resulted in successful implementation?
What aspects of implementation resulted in progress or stumbling blocks?
Were there enough resources?
What was the performance and perception of staff involved in implementation?

How was the relationship between participating sites and the project management group (ICDP)?
What was the nature of partnership arrangements between participating medical schools?
Which project components worked best? Which didn't work? Why and why not?
How effective was the organisational structure that supported project implementation?
What changes were made to the initial implementation plan and why?
What were the outcomes of these changes?
How did the different project components interact and fit together to form a coherent whole?
What lessons were learned?
How should these lessons be used in future curriculum revision?
What resources were available to facilitate implementation and how adequate were these?

Outcome evaluation

This component will examine the extent to which final year medical students exposed to the curriculum are able to recognise, assess and understand the management of substance misuse and associated health and social problems. A short answer question format will be used to assess a random sample of students in each medical school. A committee of champions will determine the benchmark for satisfactory performance. Individual students will be assessed against the benchmark. Individual and school-level comparisons will be made.

Expected output

It is anticipated that different models of implementation will emerge from this evaluation. The ability of these models to yield acceptable outcomes will be examined.

June 2010

Appendix 6 Project newsletter

Substance Misuse in the Undergraduate Medical Curriculum Newsletter October 2010

News

to the third edition of this which updates on the work of this project. This issue gives news about on-going work and introduces you to those coordinators who have joined the project since the second issue in July.

Website The Substance Misuse in the Undergraduate Curriculum Website is now live and content is being added. To access the site please email Christine Goodair for a user name cgoodair@sgul.ac.uk

Meetings – the Academic Champions & Expert Panel met at Brighton & Sussex on October 14th. Clare English gave a presentation on the mapping work and her presentation is available on the website. Dick Terry, Peninsula Medical School, gave a presentation on evaluation and this is on the website.

Future Meetings – the next meeting of the Academic Champions & Expert Panel will be in February 2011 at Nottingham University, details in due course.

Fact Sheets –Alcohol Withdrawals; Public Health; Young People; Anaesthesia; and Palliative Care have been circulated to the coordinators and are available on the website.

Evaluation Working Group 16th September saw the first meeting of the SMUG Project's Evaluation Working Group. At present, the group comprises Dr Andrew Chaytor (Durham), Mrs Christine Goodair (ICDP), Dr Caitlin Notley (UEA), Dr Andrew Sandor (Imperial) and Dr Dick Terry (Peninsula). The group has been formed to provide guidance for procedures and processes surrounding the evaluation of the project as a whole. Initial efforts will concentrate on gathering data looking at the different ways in which the SMUG project has been embraced by participating institutions and the ways in which participation in the project may inform teaching/medical practice in the future. The expectation is that curriculum coordinators will be able to help contribute to the evaluation process both through their regular progress reports and through participation in Focus Groups.

Given the distinctive nature of the SMUG project - in terms of the cross-institutional nature of its development and implementation – the project has already attracted interest from a wide-ranging group of practitioners, policy makers and medical educators with an interest in monitoring the project's roll-out. Evaluation is seen as a crucial part of the monitoring of project's effectiveness and it is hoped that the results of the evaluation will be widely disseminated. ***Dick Terry***

Welcome - to the new coordinators now in post Dr Keren Bielby-Clarke (Sheffield); Anna Foakes (Kings IOP, London); Janine Carroll (Liverpool)

Around the schools

Keele Mapping the curriculum is progressing with identification of both specific references to addiction and areas where it is feasible that this may be raised. There is some repetition of key words in the curriculum documentation; this reflects the progressive/building blocks approach where subjects are introduced and developed year on year. As an example a subject such as 'Drug Therapy' introduced in year 3 'Assessment' would be developed in year 4 where the focus is 'Intervention'. An electronic survey tool, the University web site and key documents and reports are forming the basis of the data set at this stage. It has been identified from addiction specific lectures that students have a significant level of pre-clinical knowledge with reference to addiction (e.g. mu receptors, effects of

alcohol). This will be part of the scope for focus groups with students across years. A semi-structured interview will be used to support comparability. An electronic survey will be circulated to medical staff to assess where they deliver addiction related content (formal, informal, classroom, clinical area etc.). The survey will also reflect the areas covered by the course mapping matrix. ***Steve Freeman***

Peninsula - Mapping has identified a number of teaching opportunities within various case units/trigger cases where SM teaching might be usefully (and relatively easily) incorporated. Discussions are on-going with the various teaching staff involved with a view to taking forward an appropriate programme of teaching materials/programme development, using the fact-sheets to provide the basis for these discussions. ***Dick Terry***

Imperial – the first couple of months have been spent mapping the curriculum and by the end of October the pre-clinical years (1, 2 and part of 3) will be completed. The medical students union have undertaken a survey on "alcohol does it have too high a priority in events" –results indicate that 2/3rds of students felt it did but this may reflect the ethnic mix of students. Discussions are underway with those teaching on professional health and issues to consider how to advise students on the consequences of being in possession of illicit drugs. ***Dr Chris Hilton***

Brighton and Sussex Medical School The Curriculum Coordinator has spent the summer meeting with module and discipline leaders to discuss the substance misuse curriculum map and how teaching can be improved. A number of curriculum changes have been implemented for the 2010/11 academic year including enhanced lecture learning outcomes, additional clinical skills and a new lecture by the substance misuse midwife during the year 3 reproductive health module. The mapping process and curriculum revision is on-going. Over the next couple of months BSMS is planning to collaborate with colleagues at other Schools on a student survey. We are also looking opportunities for student selected opportunities and extracurricular activities such as a debate and a substance misuse-related film showing and discussion of the issues raised. ***Clare English***

Birmingham –A questionnaire has been designed and is being circulated via Survey Monkey to 5th year students. A meeting has been had with researchers in the university who are looking at the use of neuro-enhancing drugs by students and further meetings are planned with relevant medical school tutors about this issue. Assessment is being looked at and a meeting with the 2014 curriculum review team to advise them of findings relating to substance misuse is planned. ***Jackie Beavan***

Newcastle University Medical School- has created a comprehensive substance misuse curriculum map through the highlighting of relevant learning outcomes, opportunities, locations and resources. Our activities have resulted in a map of the delivered curriculum to a high level of granularity. Over 40 instances of focused substance misuse teaching have been identified, with a further 200 instances of relevant teaching documented. We now have a clearer understanding of where and how substance misuse is taught across the Newcastle MBBS curriculum, demonstrating that substance misuse is taught throughout all stages of the curriculum. We have made good progress with the preliminary alignment of substance misuse teaching instances to the national learning outcomes. Discussions with fellow curriculum coordinators, academic champions and teaching staff have, and continue to, facilitate the alignment process. A collection of project peer reviewed online resources has been added to our local Dynamic Learning Maps project, under the relevant national learning outcomes. Future work includes meeting substance misuse teachers, disseminating our mapping activities locally and negotiating an agreed alignment of the Newcastle MBBS to the national learning outcomes. Additionally, mapping of summative assessment within our curriculum will be carried out to complement the formative assessment we have already documented. We wish to capture the student perspective on where students themselves feel that they have learnt about substance misuse. One of our approaches to this is to search the bank of Student Selected Component projects to analyse the motivations and experiences of students selecting a substance misuse related topic. ***Lindsay Wood***

University of East Anglia UEA) Mapping is complete. Final report covering the work undertaken at UEA is written and is ready for submission. The curriculum is rich in substance misuse and is covered in all areas. ***Caitlin Notley***

Hull York Medical Schools (HYMS) – Overall the timing of this project has been

good as it has fitted in with a review of HYMS curriculum. Feedback from students has been sought about substance misuse content and teaching. A mapping of assessments has been done. The final report is now being prepared. ***Gloria Oikelome***

Kings IOP- the first five weeks in post have been spent coordinator has been in post for 5 weeks and is currently looking at course content for phases 1&2. Plotting identified substance misuse teaching and have meetings set up with year leads. ***Anna Foakes***

St George's - work on mapping is complete. Assessment is being looked at and a meeting with the Undergraduate course leader to feedback the findings is planned. Contact has been made with the Student Union regarding their policies on alcohol and links for their website have been given. ***Christine Goodair***

Liverpool-started at the beginning of October so reading through the toolkit and have meetings set up with year coordinators to get an overview of the curriculum. ***Janine Carroll***

Sheffield – since starting in September the main focus is on mapping the curriculum, which involves trawling through lecture notes, timetables and handbooks. ***Dr Keren Bielby-Clarke***

QMUL - the approach taken has been to work from a solid base of web and IT skills. A collection of simulated cases with patients have been developed on DVD based on East London scenarios. An open access website Addiction education.co.uk has been developed. ***Dr Vanessa Crawford***

http://www.addictioneducation.co.uk/.

University College London- Currently looking at assessment and working with the Head of Assessment to ensure that resources and learning objectives for substance misuse which have been implemented through the project are anchored in assessment tasks. ***Kim Brown***

Who's who?

Biographies of those who have joined the project since the July issue of the newsletter.

Steve Freeman, **Curriculum Coordinator** Keele **University Medical School** qualified as a nurse in mental health in 1994 and went on to complete his nursing degree at Keele University (UK) in 1999 and MA at Birmingham in 2006. His clinical background is in Addictions and Mental Health, working as a practitioner, supervisor, educator and manager. He holds the posts of Research Nurse, Lecturer/Teaching Fellow and Solution Focused Approaches Manager in a joint post between Combined Healthcare NHS Trust and Keele University in North Staffordshire. His current caseload is made up of people with a range of mental health and addiction problems who have exhausted their available intervention options. He has taken part in presentations in several parts of the world and has published in the fields of research and Solution Focused Practice.

Dr Roger Bloor MD. M.Psy.Med. FRCPsych, Academic Champion, Keele University Medical School formerly a RAF psychiatrist who returned to the NHS in 1984 as a consultant with special responsibility for Drugs and Alcohol and was Medical Director of an NHS Trust and Senior Lecturer in Addiction Psychiatry at Keele University Medical School until retiring in 2009. Since then he has been e been involved in research into a variety of addiction related topics and is a co-author of several chapters in textbooks on addiction. Is a member of the GMC QABME team and have taken part in assessments of Aberdeen, Newcastle on Tyne, Brighton & Sussex, Warwick, KCL, Cambridge and Oxford medical schools. Currently, a Teaching Fellow at Keele with a weekly clinical session in an NHS Addiction Unit.

Dr Keren Bielby-Clarke, Coordinator Sheffield University Medical School - following an undergraduate degree in Biomedical Chemistry she changed subjects having discovered a great interest in neuroscience. After completion of a PhD (Sheffield University) in the Neuropathology of Alzheimer's Disease & Down Syndrome, Keren undertook post-doctoral research studying cerebellar granule cell signalling at Nottingham University. The last 5 years has been spent as a Teaching Only lecturer teaching Neuroscience, including 2 years as Programme Leader (Neuroscience) at Leeds University, where she developed a keen interest in teaching and in curriculum development. Keren is working part-time, 2 days a week, as the coordinator for University of Sheffield, as well as being a part-time lecturer position in Physiology & Pharmacology at Nottingham Trent

University. She is looking forward to exploring what is (for her) a relatively uncharted area of undergraduate education.

Anna Foakes– Institute of Psychiatry/ King's College London – has a background in project management and marketing working previously in the communications and legal sectors. From 2007 she has worked in Medical Education in various roles for St George's and now at King's, including the Limerick project, MBBS project and as Student Recruitment Officer for undergraduate medical and healthcare courses. She is currently training to be a Psychodynamic therapist - her placement is in a recovery centre for addiction, working with adult clients.

Janine Carroll, University of Liverpool - has a background in psychology and became involved in medical education in 2003 when at the University of Liverpool as a Communication Skills Technician for the undergraduate and postgraduate MBChB course, supporting the teaching of and research into clinical communication. For the past three years she has been a PhD student at the University of Manchester researching the psychological and contextual factors associated with personal and professional development in medical students. This has now been submitted and is awaiting examination.

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Please send news items to
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Appendix 7: Dissemination activities

Throughout the project efforts have been made to disseminate curriculum development activities and emergent outcomes of the project. Dissemination activities have been localised, within each individual participating medical school, as well as aimed at a wider audience. Dissemination activities on completion of the final project are also planned.

Examples of localised dissemination activities

As part of on-going requirements of the curriculum coordinator posts, individuals undertook various dissemination activities within their own institutions. For example, at one institution, the coordinator presented at the (monthly) MBBS curriculum design and development meetings, attended by faculty members teaching across specialty topics on the MBBS. Other schools presented details of the project at departmental meetings, to the student union of the university, and disseminated awareness of the project to external agencies, including NHS drug and alcohol treatment services, and voluntary agencies. One of the medical schools, as exemplified in the case study presented earlier, worked with the Sick Doctor's trust, for example, to incorporate new teaching on the medical degree. This contact also had the mirror effect of disseminating knowledge of the curriculum development project wider than the university itself.

A poster about the outcomes of the mapping and changes implemented was presented to one of the medical school's annual Clinical Teaching Forum.

External Dissemination activities

Over the period of the project opportunities were taken to disseminate its activities. These included conference presentations, for example the University of East Anglia presented a poster giving an overview of the project as it was undertaken within the Norwich Medical School, at the Academy of Medical Educators Annual Academic meeting (January 2011) entitled 'Substance misuse in the undergraduate medical curriculum – local implementation of a national curriculum priority'.

Durham University presented a poster at the AMEE international conference in Vienna in 2001, entitled 'Teaching of substance misuse in the undergraduate medical curriculum'. This reported on the national project, its aims and implementation.

A student at St George's undertook a national telephone survey of Medical Student representatives to gather views on substance misuse teaching. The results were subsequently presented as a poster at a conference for Addiction Psychiatrists. (2010).

An article was written by a student from St Georges about the project, published in the student BMJ in 2010 [(38)]. An article was also written for the newsletter of the Medical Council on Alcohol in 2011. [(39)]

The 2009 report of the International Narcotics Control Board under the national legislation, policy and action for the UK refers to the corporate curriculum and its implementation. [(36)]

Presentations about the project were given by the national Coordinator to the BMA Medical Students Committee (Dec 2010); Education Committee of the Medical Council on Alcohol (May2011); Royal College of Psychiatrists (March 2011).

A project newsletter was issued on a quarterly basis as a means of sharing information and keeping the academic champions and National Steering Group informed of progress.

Future dissemination plans include a conference presentation reporting on the national project completion at a Medical Educators conference (National or International) and a final project report paper to be submitted to the BMJ or the Lancet in 2012.

The International Centre for Drug Policy (ICDP), formerly known as the Centre for Addiction Studies, has a national and international reputation for its activities. It is based at St. George's, University of London.

The Centre's Director is Professor Hamid Ghodse, who is a world leader in international drug policy and addictions and is a member (Immediate past President) of the International Narcotics Control Board.

Launched in November 2004, the Centre works with international organisations including the World Health Organisation, the European Union and the United Nations Drug Control Programme to advise, develop and deliver high quality multi-professional education programmes in the prevention and management of tobacco, alcohol and drug misuse.

The ICDP promotes excellence in the field of substance misuse particularly within the international arena, in supporting the development of effective drug policy and initiatives in the areas of treatment and prevention, education and training, research and development. It provides a number of activities, both national and international, relating to treatment and prevention of tobacco, alcohol and drugs, including:-

- *education and training*
- *research and development*
- *policy development*
- *consultancy and advice*

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