

**INFECTIOUS DISEASE RESEARCH NETWORK'S  
RESEARCH STRATEGY WORKSHOP**

**HEALTH RESEARCH NEEDS OF PRISONERS  
BOTH IN AND OUTSIDE PRISONS**

*Report*

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## 1 PREFACE AND SUMMARY OF RECOMMENDATIONS

The Infectious Disease Research Network established a Planning Group in December 2003, to develop a research workshop examining the health research needs of prisoners, both in and outside prisons, with a focus on infectious disease.

The aim of the meeting was to define multidisciplinary, collaborative priority research projects in this population and to take the first steps in establishing working groups that would meet subsequently & draft protocols.

The output from the meeting would be a prioritised list of suggested research projects or project areas that the research community should develop. One to two collaborative projects or project areas would be identified that the IDRN could facilitate post-workshop.

The meeting was held 28 June 2004 at the Institute of Physics, 76 Portland Place, London, W1B 1NT.

### 1.1 Acknowledgements

The IDRN gratefully acknowledges the time of Ms. Caro Millington, for chairing the meeting and for the time of speakers, workshop chairs and discussants, of the participants and of the organising committee.

### 1.2 Summary of recommendations

The areas of research considered most important by the group were:

- The recognition of Tuberculosis in prisons by looking at screening opportunities during the entry process and on exit
- A cross-sectional survey, initially in Young Offenders Institutions, examining injecting and its relationship to the acquisition of hepatitis C
- The tracking of hepatitis C transmission in prisons and examining the effect of preventative interventions
- Mapping of care pathways for prisoners with tuberculosis before, during and after imprisonment to look at improving treatment delivery and continuity of care
- A cross-sectional study of tuberculosis cases using qualitative methodology to enable prisoners to tell the story of their own health care pathway
- A screening and behavioural study to elucidate STI epidemiology in prisoners and better understand what type of care packages during imprisonment could make a difference to that STI epidemiology.

An integrated diseases approach was suggested rather than conducting individual disease studies. Limitations of this approach regarding study design and practical matters would need to be considered.

The issue of tuberculosis in prisons was recognised as complex. It is recommended that a Working Group be established to further discuss and define projects.

It is recommended that studies not only look at epidemiology, but are combined with intervention evaluations.

It is recommended also that studies look at how to benefit prisoners, particularly at the key stages of entry and exit, especially post-exit mortality. Injectable drug use should be the focus, with particular thought given to drivers fuelling injecting drug use.

## 2 ATTENDEES

Research community and other attendees included: prison health-care personnel; mathematical modellers; epidemiologists; statisticians; Consultants in Communicable Disease Control; infectious disease physicians; respiratory, genito-urinary medicine and public health specialists; psychiatry of the addictions and primary care specialists. Members of the Department of Health and divisions of the Health Protection Agency were also in attendance.

<b>Surname</b>	<b>Name</b>	<b>Job role</b>	<b>Institution</b>
Aboulhab	Jamila		
Akintokin	Mary	Staff Nurse	HMP Holloway
Armoogum	Jessie		HMP Highdown
Bannister	Barbara	Consultant in Infectious & Tropical Diseases Consultant	Royal Free & University College Medical School
Bird	Sheila	Statistician	MRC Biostatistics Unit
Boyd	Aileen	Clinical Research Fellow, Respiratory Medicine	Homerton University Hospitals NHS Trust
Burns	Theresa	Health Advisor	HMP Holloway
Cassell	Jackie	Specialist Registrar in Public Health	Royal Free & University College Medical School
Chaloner	Judith	Consultant in Communicable Disease Control	Greater Manchester Health Protection Unit
Conaty	Stephen	Lecturer	Royal Free & University College Medical School
Coudray	Barbara	TB Nurse Specialist	Hammersmith and Fulham PCT
David	Clovel		Bart's and The Royal London Hospital
De Frisching	Arthur	Former member, Research Ethics Committee	
Dhar	Jyoti	Genito-Urinary Medicine Consultant	Leicester Royal Infirmary
Drobniewski	Frances	Director	Public Health Laboratory (Mycobacterium Ref. Unit)
Duggal	H V	Director of Health Protection	Health Protection Agency
Dyson	Andy	External Affairs Manager	Schering-Plough Ltd
Elam	Gillian	Qualitative Research Co-ordinator,	Health Protection Agency - CDSC
Forrester	Sarah	LTBR Operations Officer	Health Protection Agency
Gilbert	Ruth	Prison Surveillance Unit	Health Protection Agency
Gill	Noel	Communicable Disease Surveillance Centre	Health Protection Agency
Gray	Andrew		HMP Bristol
Henson-Green	Sue	Primary Care Manager	Health Care Centre, HMP Bristol
Holcombe	Peri	Hospital Officer, Health Care Centre	HMP Wandsworth
Irish	Charles	Consultant in Communicable Disease Control	Health Protection Agency
Johnson	Anne	Professor of ID Epidemiology, Chair, IDRN	Royal Free & University College Medical School
Kerry	Martha	Health Care Centre	HMP Wandsworth
Lever	Franky	Senior Scientist	Health Protection Agency
MacDonald	Morag	Director	University of Central England
Meltzer	Margaret	Consultant in Communicable Disease Control	Hillingdon PCT
Metrebian	Nicola	Research Fellow	Imperial College School of Medicine
Miles	Christine	Hepatitis B Project Nurse	HMP Bristol
Millington	Caro	Chair	North West London Strategic Health Authority
Mohide	Donna		Health care Centre
Montgomery	Helen		HMP Holloway
Moss	Peter	Consultant in Infectious Diseases	Hull and East Yorkshire Hospitals NHS Trust
Ncube	Fortune	HIV/STI Department	Health Protection Agency - CDSC
Newton	Autilia	Consultant in Communicable Disease Control	Health Protection Agency
Okoro	Cyprian	Specialist Registrar in Public Health Medicine	Portsmouth City PCT
Parke	Julie	Lecturer in Public Health Medicine	University of Southampton
Piper	Mary	Prison Health, Div. of Communicable Disease	Department of Health
Pitman	Richard	Senior Scientist, Modelling Unit, CDSC	Health Protection Agency
Premaratne	Nimal	Consultant in Communicable Disease Control	South East London Health Protection Unit
Ray	Samantha	Public Health Nurse, Communicable Disease Control	National Public Health Service for Wales

Ruddy	Michael	National Public Health Service Wales	HPA London Regional Epidemiology Services
Sexton	Stephanie		University of Central England
Shakespeare	Ruth	Consultant in Public Health	Department of Health
Smith	Claire	For London Wide Prison & Mental Health	North West London Strategic Health Authority
Steel	Katherine	Network Development Co-ordinator	Infectious Disease Research Network
Story	Alistair	TB section, Respiratory Division	Health Protection Agency - CDSC
Strang	John	Professor of the Psychiatry of the Addictions	Institute of Psychiatry
Sutton	Andrew	Department of Modelling and Economics	Health Protection Agency
Togun	Esther	TB Nurse Specialist	St. Thomas' Hospital
Turner	Katherine	Modelling Unit, CDSC	Health Protection Agency
Watson	John	Head, Respiratory Division	Health Protection Agency - CDSC
Wighton	Susan	Nurse Specialist	Health Protection Agency & LSHTM
Wilmot	Andrew		Aventis-Pasteur MSD
Woodcock	Kevin	Genito-Urinary Medicine Consultant	Winchester NHS Trust
Zuckerman	Jane	Director	Royal Free & University College Medical School

### 3 PROGRAMME

Ms. Caro Millington chaired the meeting.

#### 3.1 Presentations

**Prof. Anne M. Johnson**

**Chair, Infectious Disease Research Network Steering Group**

*Anne Johnson is professor of infectious disease epidemiology at the Royal Free and University College Medical School and chairs the Infectious Disease Research Network's Steering Group.*

##### “Introduction – The Infectious Disease Research Network”

The IDRN has been running research workshops for three years now, to get together practitioners and researchers, and to identify priority research projects.

The IDRN is now funded by the central Department of Health research office in Leeds, the National Co-ordinating Centre for Research Capacity Development (NCCRCDC). The initial idea was to develop research capacity in infectious diseases across London and to promote multidisciplinary research through a range of disciplines that contribute to infectious diseases, right across the board from laboratory science to public health, with the understanding that there were areas of research better carried out through large collaborative studies. The focus has been at the public health and clinical end of infectious disease research.

The IDRN is a collaboration of the London medical schools – the London medical school deans have all signed up to it – the London School of Hygiene and Tropical Medicine, the Health Protection Agency and the MRC Clinical Trials Unit. The Steering Group has representation from all those parties and looks at the strategy of the IDRN. The Co-ordinating Centre is in the Department of Primary Care and Population Sciences at the Royal Free campus of University College London and is run jointly with the MRC Clinical Trials Unit.

The IDRN carried out a consultation of needs across London, which established both areas of research and needs for research infrastructure. The IDRN has a database of researchers so the IDRN can put researchers in touch with each other. We run a series of research strategy workshops. Our aim today is to end the day with key areas of research that we'd like to take forward and to prioritise two or three of these. We will then put together protocol development groups and invite participants to join these.

Workshops have been run in tuberculosis, hepatitis and antimicrobial resistance. This workshop is slightly different in that it focuses on a particular population group at high risk of infectious disease and to consider their priorities.

We will be in discussion with the Department of Health about extending the network nationally and doing so in conjunction with the specialist societies.

We hope very much that this meeting will develop new research areas.

**Dr. Mary Piper**

**Department of Health**

*Mary Piper is with the Department of Health's Prison Health group in the Division of Communicable Disease.*

##### “Overview – Public health and burden of disease in prisoners: the way ahead for research”

There are 134 prisons in England (130) and Wales (4) with 74,500 people in prisons at any time (prevalence). There are 135,000 going through the system each year. 13% are men under the age of 20 years, compared to 500 women, which has public health implications.

By 2003 funding specific to prison health care was identified, at £112m. These funds were transferred to the NHS. Now the first phase of Primary Care Trusts (PCTs) (21) are commissioning healthcare work in prisons (£50m). The budget now overall for 2004 is £140m. By 2006, all prison PCTs will be commissioning services, by which is meant commissioning the primary care team (the General Practitioner may change) but not prison health staff. Mental health in-reach into prisons is funded in addition to the primary care budget.

A new development is health protection services – the PCT and Health Protection Agency (HPA) together. A prison health service level agreement exists with HPA Colindale, monitoring the hepatitis B vaccination programme, doing prison service surveillance and Andrew Sutton has been modelling the impact of the programme on the proportion of substance misusers who have been vaccinated.

The life expectancy of this population – mainly from social class group five – is reduced. They are a disadvantaged group. The gap between social class I and V has widened. Over time, from 1900, a major cause of death was infectious diseases. This was markedly reduced in the 1950s and is now a very minor cause of death. So there has been a shift from infectious disease to chronic diseases, in the general population. This may not be so much the case among those who have ever been in prisons.

In 1997 there was a 26% prevalence dependence on opiates and other drugs among men, and 41% in women. This figure is now 50% for men, and 60% for women.

There has been a trend in substance misuse therefore, with increasing injecting drug use, and resultant effects on communicable diseases. A 2001 study of injecting drug users at clinics indicated that 60% of these in the community had 'ever' been in prison, and of these 48% had been in prison before they started injecting. There is therefore a very important health promotion message here.

The drug-related death cohort study, done by the Office of National Statistics (ONS) and colleagues at the Institute of Psychiatry (IOP), involved follow-up over two years. During that period there were 79 drug-related deaths and 5 from other (accidental) causes. There was a high mortality rate (40x those of their peers in the community) associated with drugs in the first week following release from prison. So we might think in our studies of outcomes other than strictly infectious disease outcomes, i.e. looking at reduced mortality, criminal justice outcomes i.e. reduced time in prison (as well as reduction in blood-borne viruses). If our collaborative studies can look at both re-offending rates *and* infectious disease outcomes, it is more likely that they will be considered of greater benefit and worthy of being funded.

In a recent follow-up of a prison cohort, hepatitis C was shown to have increased in a six-month prison period. Accessible methadone maintenance programmes were recommended and easy needle exchange access. Such programmes may be able also to reduce the frequency of injecting. The hepatitis C action plan should be published this week.

Prisoners are part of the general population. The National Institute of Clinical Excellence (NICE) guidelines apply to prisoners. The Department of Health is developing promotional material on a CD.

By vaccinating prisoners in Doncaster, the incidence of hepatitis A in the community was decreased. Juvenile and young offender establishments should be encouraged to consider juvenile vaccination programmes.

Ways forward:

Regarding research funding, the Department of Health has a small amount of funding, for quality research to reduce inequalities, using multidisciplinary collaboration. The Home Office and the Health Protection Agency (Policy Research Programme for public health research) have funding. Hepatitis C, vaccines, sexual health, HIV and AIDS, inequalities and health promotion are the priority areas for funding.

A prison research collaboration has recently been established, with Manchester, Sheffield and Southampton. This collaboration could be expanded to infectious diseases, in addition to primary care and substance misuse.

The MREC in London has well-established expertise. It meets monthly and is efficient, so ethics approval can be obtained efficiently.

Possible future developments:

The Department of Health public health research area will be considering infectious disease research bids in the coming year.

The prison service and probation service are getting together to establish NOMS, the National Offender Management Service. If we as researchers can include a criminal justice outcome in our research, as well as infectious disease outcomes, then funding is more likely to be obtained.

**Prof. John Strang**  
**National Addiction Centre, Institute of Psychiatry**

*John Strang is Professor of the Psychiatry of the Addictions at the Institute of Psychiatry and is also Clinical Director of the Drug, Alcohol and Smoking Cessation services at the South London and Maudsley NHS Trust. As Director of the National Addiction Centre, he leads the Addictions research and teaching activities. He has been the Chief Medical Officer's consultant adviser (Drugs) for five consecutive terms (1986 to 2001).*

**“Role of drug management in preventing blood-borne virus transmission (including HIV)”**

John Strang spoke of the unexpected importance of the prison opportunity. What makes prisons such an interesting place from the point of view of infectious diseases and substance misuse is the concentration of these factors in prisons. The concentration creates some of the problems that are of interest to researchers, but the concentration also means that there is an opportunity in prisons of tackling them.

Substance misuse, infectious diseases and overdose risk, which are all of interest for study, are all different at different times of imprisonment: issues around entry – withdrawal or break of a habit may lead to atypical risk behaviour – issues around management during a prisoner's sentence e.g. availability of the exchange scheme, issues of the pattern of use during the middle of someone's sentence may be different from patterns of use in the community, i.e. may follow a pattern of impulsive excess when the opportunity arises (reflecting search for oblivion/escape during imprisonment), issues around release from prison – which is extremely hazardous.

Within the prison system, there is an opportunity for treatment. The system needs to start thinking of itself as a treatment ‘agency’ and develop the standards and diversity of provision that one would expect elsewhere.

Two major points for research to consider, rather than just studying infectious diseases:

What are the points of influence? How can we identify these?

Where is it that we can make a difference? Where we can study the extent to which we can alter the course that would otherwise occur.

Injecting drug misuse is at ~40% in the prison population, vs. 1% in the community, so the concentration matters.

From the point-of-view of the imprisoned drug misuser, their environment has changed. This is a time when healthy changes can occur: quitting drug use; transition period moving to a less harmful way of using drugs; or could be transition to unhealthy drug misuse – inadvertently the system may aggravate the risk... The seeking of excess, a more deviant pattern of injecting when it occurs, or the more likely sharing of needles when injecting occurs. So when injecting still occurs, the behaviour may become more risky.

Drug use differs and changes. Simple categories are not the case in reality. There are different patterns of drug use, different degrees in drug use. Infectious disease researchers will be

interested primarily in injecting drug misuse, especially where there may be impulsive drug use, a driven use. The driven nature of the behaviour means that common sense hygiene or adherence to common sense advice may break down. 50% of heroin users do so by injecting. Some heroin users may never have injected. They may only be chasers. A study has shown that overdose risk is almost exclusively associated with injecting heroin use and not with chasing. Users may change their route of use of heroin. So the dose, frequency and way of using may change. Between chasing and injecting heroin, there is a lot of movement in the prison population.

So when heroin users come into prisons, frequency of injecting and number of users injecting decreases, but when injecting use occurs, the risks associated are much higher.

So any drug that is potentially injectable or that can be injected is of interest.

Persistence of drug use on imprisonment has also been studied. How likely is it that the pre-imprisonment use of drugs persists into imprisonment? Inmates report that it is opiates that they are more likely to persist using during their imprisonment. It may be related to the drive created by withdrawal effects or to other causes.

Talking about the 'drive':

The focus of researchers should be around withdrawal and dependence, as a key point of potential influence. In the prison setting, this is the reception period to prison. Studies that focus on this time focus on a key point of influence, particularly as this is a period of change in any case for the person being imprisoned.

About the 'open door' as you leave prison:

Leaving prison is a very high-risk time for injecting drug users. As an injecting drug user, you have a 10-fold mortality rate compared to non-injecting drug users. Coming out of prison multiplies this rate again by about seven in the immediate weeks after release.

It is not known exactly why this is the case. There may be a deliberate 'going right to the edge', on release, having been locked up. Pamphlets are unlikely to make any difference to behaviour on release.

This is an area which we need to get a better handle on.

What should we do about it?

1. The prison system – there is a massive task to be undertaken. Constructive opportunities should be taken up, i.e. vaccination of inmates. The climate needs to be developed that permits and encourages self-disclosure (also of sensitive information) and help seeking. Having a treatment system in place (and for example condoms) is pointless if the services are not taken up.
2. Injectable drugs, injectable forms of heroin. We should hone in on the injectable forms of drugs.
3. Availability of needles and syringes is difficult. In the situation where substantial change in drug use can be occurring, introducing availability of needles and syringes may produce negative effects. Cleaning equipment availability is not such an issue, in that it is less likely to produce unplanned negative effects.
4. Can we blunten the drivers that lead people to atypical, greater-risk behaviours? By providing easily accessible competent detox; by maintenance programs; by training staff in resuscitation skills and administering naloxone (change the regulations) (to avoid unnecessary deaths occurring); equipping people with the emergency antidote (to the inmate on leaving or to their loved ones) in case of overdose. Maintenance programs may be the most realistic way in which we could protect people from the risk behaviours on the inside and the overdose risk when they leave.

Recommended foci of study are:

1. How could our treatment alter injecting risk behaviours and overdose deaths, particularly around how competent detox could affect things in the early prison period,

2. Feasibility and impact of staff training in resuscitation and naloxone administration training – by the time the GP gets to the prison, it is too late and the inmate may have died
3. Pre-release preparation to reduce the haemorrhage of deaths in the post-release period, naloxone and maintenance programs being the preferred approaches.

**Dr. Peter Moss**

**Department of Infectious Diseases, Hull and East Yorkshire Hospitals NHS Trust**

*Peter Moss is Consultant in Infectious Diseases. He has developed a particular interest in the management of infections in injecting drug users. As well as being at high risk of acquiring bacterial, fungal, and viral infections through injecting, Injecting Drug Users often have complex social and psychological issues, which make provision of appropriate treatment very difficult. Very little research has been done on the management of infections in this patient group, and there are many questions to be answered in terms of both optimising clinical management, and improving delivery of care. In Hull (which has a large population of injecting drug users) their department is trying to address some of these issues. Peter Moss has also been looking at novel ways of providing a service for the management of chronic disease in Injecting Drug Users. This has included outreach work with substance misuse and community agencies, and the establishment of a prison-based management programme for hepatitis C. The prison-based service in particular has proved to be an effective intervention, and is being looked at as a model for similar services in other parts of the country. Preliminary outcome data from this work has been widely presented, and now that the clinical system is well established the group are planning to look in more detail at factors that influence the effective delivery of hepatitis C care in this setting.*

**“Research questions in the prison context: NICE guidelines and managing HCV infection”**

Priority areas for managing hepatitis C are to be considered. The treatment strategy is known, although not very satisfactory with invasive and potentially dangerous liver biopsy followed by treatment with a high failure rate and adverse event rate. The question is rather who, when and where to treat.

There are 200m people worldwide with hepatitis C. In the UK, although the prevalence is one of the lowest, there are still approximately 250,000. A fifth of these may develop fatal liver disease if not treated. The epidemic is unlikely yet to have peaked, and it is injecting drug users in the UK and prisoners who are still acquiring the disease. On entry, the prevalence of hepatitis C among prisoners is very high. Imprisonment is then an additional risk factor for acquiring hepatitis C.

Treating hepatitis C whilst in prison may be part of a substance misuse program in prisons. Treatment in clinics in prison is much more satisfactory for the patient than having to attend clinics outside accompanied by prison security guards.

There are only two studies of cases where the NICE guidelines were applied regarding provision of treatment for hepatitis C. The studies showed that a great many were lost to follow-up. Only 18 out of 329 successfully completed therapy in the Rhode Island study.

Peter Moss related the details of their management of prisoners regarding hepatitis C, that they have been building up over the last three years. The programme has succeeded in achieving high levels of compliance with the programme. A reasonable number do come back to the community clinic after being released. There is also greater awareness amongst prisoners before coming to health services of hepatitis C.

Regarding research:

- We still don't know basic information such as **prevalence** figures.

- Still less is known about **transmission** within prisons and how this occurs.
- We need to know what would **prevent** transmission in prisons. Switzerland has started needle exchange prospective trials in prisons, which they report to be successful. Substitute prescribing needs to be looked up.
- **Management interventions** need to be examined systematically, whether the NICE guidelines can be applied in the prison context and whether it is a cost-effective way to do it. We also need to look at how information is transferred between prisons and primary care.

**Prof. Sheila M. Bird**  
**Medical Research Council Biostatistics Unit, Cambridge**

*Sheila Bird is part of the MRC Biostatistics Unit's 'Statistical science and the public health' group and is visiting professor at the University of Strathclyde.*

*The Unit concentrates on defining the key data for analysis and on the development of general-purpose algorithms, such as the software BUGS (Bayesian inference Using Gibbs Sampling), for obtaining realistic inferences and predictions in analytically difficult problems.*

*The Unit has worked on hepatitis C and illegal drugs epidemiology.*

*In this talk, Sheila Bird will use the example of injectors to discuss prison-based surveillance & interventions ranging from the ABC of hepatitis, initiation into injecting, methadone substitution & overdose deaths soon after release.*

**"Research in the prisoner setting"**

Research on needle exchange has not been of high quality, and has not had sufficient numbers. If we are going to reduce hepatitis C we must reduce injecting drug use, if we are to reduce drugs-related mortality we must not encourage injecting.

Liaison with intelligent prison inspectors, e.g. Clive Fairweather, is recommended to researchers. A lot can be learned from the reports of the Inspector of Prisons. No research should be conducted without the voluntary consent of prisoners.

Sheila Bird spoke about:

- The history of the WASH surveillance: W=Willing, A=Anonymous, S=Salivary sample to test for antibodies to HIV and hepatitis C.
- Some lessons from the outbreak at Glenogle Prison of HIV and hepatitis, because of the research methodologies raised
- The riskiness of inside injecting
- Drugs-related deaths after release from prison – and what to do about them, especially the possibility of a randomised controlled trial of naloxone for prisoners on release who have a history of injecting drug use.

A programme was developed from the early 1990s in Scotland, with three components:

- The prevalence design (WASH study) was to measure HIV prevalence in prisoners, how many were infected including undiagnosed infection and how they became infected – whether by sexual transmission or through injecting drug use inside or outside prisons
- An incidence design aimed at looking at hepatitis C incidence
- Does being in prison affect HIV and now hepatitis C progression or mortality?

The practical matters taken into account in the WASH programme and, in some cases, learnt from running this study were as follows:

- Anonymity meant that there was no deductive disclosure of risk behaviour or HIV status of the prisoners taking part
- Salivary samples vs. blood encourages a high volunteer rate

- Self completion of questionnaires encouraged frank answers, but a volunteer team also was available for those who had difficulty reading
- Participant selected an envelope with identification labels – for sample and questionnaire – so that only the participant would note the number. Participants may initially be suspicious and self-selection helped.
- Some participants may not want to get their fingerprints on the questionnaires.

The WASH surveillance study answers about frequencies of inside injecting and looked at the implications for mandatory random drugs testing. Injectors could organise themselves to inject on Thursdays and Fridays. As random testing did not occur at the weekend (at that time), they would be less likely to test positive in the following week. This testing program underestimated by a factor of two in fact the use of injecting heroin in the prison.

Other lessons learnt from Scottish research studies were that:

- One should be very wary of molecular epidemiological testing in a captive population, as a case has occurred where a subject was found guilty of transmitting HIV partially on the basis of molecular results from research data
- Injecting drug users may inject less frequently when in prison, than injecting drug users on the outside. Inside injecting (in a jurisdiction where sterilisation tablets are available and used) is finally 2-7 times more risky for hepatitis C than on the outside per shared injection. This multiple may be a proxy for the size of the sharing ring.

Needle exchange effectiveness is questionable, due to the issue of the eight-fold higher risk on release from prison (in those still injecting). One in two hundred of adult injectors die within two weeks of being released from prisons. Are judges aware? Will we have drug-dependent offenders diverted from the courts – and if so will their blood-borne infections be treated as well in the community as they are in prisons.

Leaflets are good but not sufficient. Naloxone on release for adults with a history of injecting drug use should be studied. In order to demonstrate a 50% reduction in mortality, 16000 adults with a history of injecting drug use would have to be randomised in a trial of leaflet only vs. leaflet plus naloxone, if looking at mortality in the fortnight following release. If naloxone only produced a 25% reduction in mortality then nearer 80,000 would need to be randomised.

If the time period were extended beyond the first two weeks following release to 12 weeks, 50-60,000 would need to be enrolled. Such a study would need international cooperation. New South Wales is interested in participating in such a study.

### **Dr. Alistair Story**

**TB section, Respiratory Division, Communicable Disease Surveillance Centre, Health Protection Agency**

“TB work in prisons and continuity of care”

TB: challenges for control in the prison setting:

- Changing epidemiology/recent trends
- Is it a problem in UK prison populations, how can we measure it?
- Regaining control – internationally – what works?

Epidemiology:

In England & Wales, the driving force behind the resurgence of tuberculosis has come from London, with 40% of notifications from England and Wales coming from London.

Services remain largely hospital-based. Services have yet to adapt to the changing needs of those groups now worst affected. The case-load has become harder to reach and harder to treat.

Prisons represent a convergence of risk factors for tuberculosis:

- High proportion of foreign born and UK-borne black and ethnic minority groups – associated with higher background rates of latency
- Higher rates of alcohol and drug abuse and of HIV
- Extremely high rates of homelessness

Is TB a problem in UK prison populations?

It is well recognised as a problem internationally and that TB in prisons is an integral part of TB epidemiology in the surrounding community.

Nationally, there is no routine surveillance data in England & Wales to measure the problem. A pilot system was recently introduced in London, measuring new cases occurring within the system, cases coming from the community into the system, which should be on treatment, and cases being transferred between facilities, which should be on treatment.

A pan-London needs assessment (cross-sectional survey) was performed last year by the TB Nurses group. Thirty-four centres (all centres) participated. Relevant data included:

- Risk factors for poor compliance and for being lost-to-follow-up included a history of imprisonment
- Imprisonment was also a univariate risk factor for multi-drug resistance (isoniazid and rifampicin)
- 17.6% (prevalence) had some level of drug resistance, 12% isoniazid resistant and 5.7% multiple drug resistant (MDR) tuberculosis
- 11% of those with tuberculosis who were now or had ever been homeless had MDR TB
- Of the prison group, 17% had MDR TB
- In the multivariate model looking at UK-borne patients, two factors remain significant – use of crack cocaine and a history of imprisonment in a UK prison.

In the ongoing outbreak of MDR TB in London, only half have completed treatment and 30% have been lost to follow-up.

How do we regain control? What works?

- Early diagnosis
- Complete treatment

Early diagnosis:

In the prison context, for early diagnosis we need screening and good access to clinical and laboratory expertise, and increasingly laboratory technology such as rapid diagnostics for this population. For early diagnosis – self-referral requires a positive health-seeking behaviour, which is not exhibited by prisoners. Tuberculosis is also associated with a fear of being stigmatised and isolated on recognition of the disease. A high index of clinical suspicion is required on the behalf of staff – but this is difficult to achieve let alone maintain. Health services within the system need to be accessible.

The British Thoracic Guidelines are difficult to follow in terms of the prison system. For example, what is a ‘casual contact’?

Entry screening is widely recommended, to find infectious cases and those already diagnosed who should be on treatment. However, this is inconvenient for staff and there are problems with recognition in that there is a lack of isolation facilities.

Mass screening is not recommended. It does identify a prevalent case-load, but is highly resource intensive.

Symptom recognition is cheap if one has a trained staff, but has a very low positive predictive value: cough, weight loss and night sweats are common among a crack-smoking population.

PPD test – in this population group up to 25% may have false negative skin tests.

Chest radiography has a broad sensitivity and specificity. Some evidence does exist of cost-effectiveness. The recent technological innovations (e.g. digital mobile screening) mean that results are obtainable at high speed. It is convenient and low dose.

Complete treatment:

The larger challenge is that of complete treatment. In order to achieve good completion rates, an integrated multidisciplinary service is needed and is critical: firstly, high level of expertise in terms of care providers, people to engage with and maintain a link with this population group. There is a large mobility in the prison population. Directly Observed Therapy is yet to be successfully carried out in the prison population.

Surveillance is only just beginning. There may also be a role for register matching, following people from prison to the community.

In summary:

- Incarceration should provide an opportunity for active case finding and treatment
- An **effective targeted screening strategy** is needed to identify, not least, the infectious cases
- Staff require a **high index of suspicion** for tuberculosis, which is difficult to achieve and maintain with many competing priorities
- Fundamentally, efforts to control tuberculosis in the prison system must be an **integrated** part of efforts to control tuberculosis in the community.

**Dr. Kevin Woodcock**  
**Winchester NHS Trust**

*'Kevin Woodcock is Genito-Urinary Medicine Consultant, Winchester NHS Trust*

“Chlamydia, and condom usage”

Sexual activity in prisons:

- By a US anonymous postal questionnaire, 20% of respondents said they'd been involved in coerced sexual activity
- In the New South Wales study, the condom distribution programme seemed to suggest that 14% - as opposed to 7% from a previous study – had been involved in sexual activity in prison.
- Only 2.2% of a large sample admitted sexual activity, but this data was collected by face-to-face interview.

In one study, where there was a wing of the prison for homosexual men, there was a 3% prevalence of chlamydia. Most were not using condoms and HIV prevalence was high at 12%. There is very good evidence that condoms prevent viral infections, but the evidence for protection for bacterial infections – chlamydia – is less clear.

In counselling services in the US, data show that use of condoms reduced rates by 1%. But if one looks at use of condoms when an infection is present, use of condoms reduce rates by 15%. The absolute infection rates were still high, however, which begs the question whether it is worthwhile promoting condom usage if infection rates are still at 30% subsequently.

Much of the existing data is nine years old, however.

Sources of error in studies looking at condom usage and infection rates, which could influence the results, included:

- Incorrect use of condoms – either not putting them on in time or such that slips occurred
- Girls saying they used condoms when in fact they did not.

Sexual activity in prisons will vary by prison, population sub-group and over time. Condoms will protect against chlamydia, but to what extent is not clear. The effect of promoting condom usage is therefore not clear.

Rates of chlamydia are 3% overall, with rates higher among the <25s. The spontaneous resolution of chlamydia in adults who have been infected, has not been studied. This resolution should perhaps be incorporated in the study of chlamydia rates.

Those who have been in prisons have higher than the national average level of sexual activity and a higher use of paid sex and the reported use of condoms is down.

Summary of suggestions

- Does Chlamydia resolve spontaneously and, if so, with what frequency?
- Interventions to affect sexual behaviour – beginning with a disease free cohort and working with probation officers
- Prevalence of chlamydia

**Dr. Jyoti Dhar**  
**Leicester Royal Infirmary**

*Jyoti Dhar is Genito-Urinary Medicine Consultant Physician, University Hospitals of Leicester*

“Sexually Transmitted Infections”

In 2001 a postal survey revealed that only 21% of GU consultants provided a prison service – through either a Trust contract or private contract. The level of service provided varied by provider, institution and sex of prisoners, females receiving better services than men.

Since 1993, there has been a doubling in new cases of STIs (gonorrhoea, infectious syphilis, chlamydia) in both men and women, and among men who have sex with men. There is a disproportionate burden of infection in ethnic groups, especially among those describing their race as ‘black other’.

STI rates are comparable in fact between young offender institutions and GUM clinics.

It is recommended to map STIs, analyse and make available the data to support local decision-making.

Suggested models of service delivery are:

- Piggy back STI services on to blood borne virus services
- Nurse led clinics (a clinical governance framework would be needed)
- Facilitate provision of Level 1 Service by prison staff if possible

Behavioural factors contributing to STIs and blood-borne viruses in prisoners include:

- 1 in 4 reported behaviours putting them at high risk for blood-borne viruses
- 1 in 2 reported having 2-7 sexual partners in the last year
- 3% reported homosexual activity
- 11% in Young Offenders Institutions are injecting
- Tattooing (for HCV)

Interventions in national settings may not be entirely appropriate for the prison population. There is a disproportionate number from ethnic minorities in prisons vs. the general population.

Recommendations made were:

- Care pathways/protocols need to be established that are adapted to each setting
- Infection control protocols (including those for STIs) could be shared, as done by Leicestershire and Rutland prisons
- Targeted interventions are urgently needed – for risk reduction and harm minimisation. To inform this data from the UK is needed. Currently there is very little STI data.

Within the prison setting, a confidentiality policy is required.

There are barriers to services in prisons. However, the following recommendations for improvement are given:

- Improving existing services by capturing, expanding, collecting workload, KC60 statistics and through Monk's visits (visits that report back on the service provided)
- Improving existing care provision by encouraging staff attendance at training courses such as the STI Foundation Course, the Prison Medicine Course (University of Nottingham) and by working with educators e.g. Amersham and Wycombe College.
- Positive sexual health promotion messages, local health protection team

One key question is how we can create a Sexual Health Plan for individuals in and outside prisons.

## **3.2 Workshops**

### **Prof. Sheila M. Bird (chairing) Blood-borne viruses workshop**

The starting point of those attending the blood-borne viruses Workshop was that a precursor to collaborative research in the prison setting was the requirement for improved research infrastructure. Capabilities such as the tracking of prisoners, the standardisation of recording of data in IMRs and prospective flagging of, for instance, known chronic diseases, would greatly facilitate research.

It was taken as writ that a cohort study of hepatitis C in prisons was required, with attention to confidentiality/data protection issues and looking at continuity of transfer of care.

In the order of most-supported first, the four further projects recommended by this workshop group were as follows, with the number of participants in support of the project in parentheses:

#### **Study of the epidemiology of HCV and of injecting (n=15)**

- A cross-sectional study
- Initially in Young Offender Institutions, looking at juvenile substance misuse

#### **Transmission of hepatitis C within prisons and preventative interventions (n=13)**

#### **Study of the efficacy of vaccination policy on the incidence of acute hepatitis B**

- With prison evaluation used for surveillance purposes
- An alternative would be to compare the efficacy of different vaccination regimes by, for example, a randomised trial of super-accelerated vs. accelerated vaccination.

#### **Monitoring of standards in individual prisons**

- Whether detox policy mechanisms are in place and whether they are being adhered to in the prison
- Whether vaccination uptake rates are as required, etc.

#### **Other projects**

- A study looking at whether treatment for HCV influences future substance misuse
- Comparison of models of NHS/prison joint working
- An investigation into routes of transmission in hepatitis A (faeco-oral, faeco-venous, blood blood or contaminated heroin)
- An overview of hepatitis A outbreaks in the UK, in injecting drug users and in prisons
- Integration of hepatitis A vaccination into the hepatitis B vaccination schedules

## **Dr. John Watson (chairing)**

### **Tuberculosis and respiratory infections workshop**

It was noted as an impediment to research that, currently, too little was known about the range of methods being used to diagnose TB and to treat prisoners once diagnosed. The issue of tackling tuberculosis in prisoners was acknowledged as being complex and it was recommended by this workshop group that a working group be established post-workshop to discuss projects further.

Three main areas for research, in order (most supported first) were suggested as follows:

#### **Screening for tuberculosis during the entry process into prisons (n=21)**

- Screening on exit would also be considered
- Screening, diagnosis, drug resistance and transmission issues should be addressed
- A package of interventions could be examined, e.g. screening questionnaire, chest X-ray

#### **Examination of treatment delivery and continuity of care (n=12)**

- The care pathway during and after imprisonment would be mapped
- The types of staff involved would be examined
- A package of interventions would be investigated

#### **Cross-sectional study of tuberculosis cases using qualitative methodology (n=12)**

- Prisoners themselves would talk about their health care pathway, in and outside prisons
- Focus groups could also be used
- This study could potentially be combined with the examination of treatment delivery and continuity of care

## **Dr. Fortune Ncube (chairing)**

### **Sexually transmitted infections**

It was noted that holistic approaches were considered of importance here. Two research strands were highlighted, one being epidemiological – looking at STI epidemiology on entry to prisons and on exit and thereby identifying the extent of any difference that can be made by prison setting-based interventions - the other cultural – asking why existing policies do not seem to be effective.

Suggested projects were as follows:

#### **Screening and behavioural study (n=11)**

- A study of entry screening (tests – urine/saliva - and interviews in the week after entry) and exit screening, coupled with prison-based randomisation to particular care packages designed to increase access to care in and outside of prisons
- The study would involve post-exit follow-up
- There was a question as to whether the HAD was running a similar study

#### **One-day survey of entrants/leavers of all prisoners nationally (n=9)**

- Involving screening tests and interviews

#### **Cultural study of the barriers to the effectiveness of existing policy, in the area of infection (n=4)**

- Studying the knowledge, attitudes and beliefs of all stakeholders – nurses, RMNs, prisoners, prison officers, PMOs, governors
- Exploring the effect of rules and regulations

### **Routine data and data linkage (n=1)**

- Review of what routine data exist
- Optimisation of the use of data, to identify the needs of this population

### **Dr. Julie Parkes (chairing)**

#### **Clinical management and vaccination**

### **Introduction of a hepatitis A/hepatitis B combination vaccination programme in prisons (n=10)**

- The rationale for this study is based on the known mortality, co-infection in terms of liver disease and vaccine efficacy
- Seroprevalence and cost-effectiveness would be evaluated

### **Study of the effectiveness of flu vaccination in the prison setting against influenza (n=6)**

- Staff and prisoner vaccination would apply
- Morbidity outcomes would be examined and health economics
- Other diseases/vaccinations could be examined i.e. MMR, meningitis, diphtheria, etc.

### **Study of the cost-effectiveness and delivery of chlamydia screening and treatment services (n=6)**

### **Evaluation of the patient healthcare pathway and staff-to-staff referral (n=4)**

- The study would aim to improve communication between prison health staff and primary care GPs
- The pathway evaluated would be that held by the inmate

## **SUMMARY**

There was some overlap between workshop suggestions regarding projects. The Chair summarised and integrated the workshop recommendations by highlighting the importance of:

- Diagnosis of several diseases on entry to prisons, with studies linked to the testing of interventions. An important question would be, for example, does offering more in terms of care influence injecting drug use?
- Evaluation of the care pathway of prisoners, both in prisons and in the community, recognising that the prison population is a part of the community and reflects lifestyles present in the community
- Confidentiality issues, particularly around the study of sexually transmitted infections.

## 4 EXPRESSIONS OF INTEREST IN COLLABORATING

### 4.1 Expressions of interest

#### 4.1.1 Workshop studies

*Study of the epidemiology of HCV and of injecting*

Bannister, Barbara; Newton, Autilia; Wighton, Suzy; Elam, Gillian; Parkes, Julie; Sutton, Andrew; Ncube, Fortune; Moss, Peter; Bird, Sheila; Gilbert, Ruth

*Transmission of hepatitis C within prisons and preventative interventions*

Bannister, Barbara; Newton, Autilia; Wighton, Suzy; Sutton, Andrew; MacDonald, Morag; Ncube, Fortune; Moss, Peter; Bird, Sheila; Gilbert, Ruth

*Study of the efficacy of vaccination policy on the incidence of acute hepatitis B*

Bannister, Barbara; Miles, Christine; Wighton, Suzy; Elam, Gillian; Sutton, Andrew; Moss, Peter; Bird, Sheila

*Monitoring of standards in individual prisons*

*A study looking at whether treatment for HCV influences future substance misuse*

Bannister, Barbara; Wighton, Suzy; Parkes, Julie; Sutton, Andrew; Moss, Peter; Bird, Sheila

*Comparison of models of NHS/prison joint working*

*An investigation into routes of transmission in hepatitis A*

*An overview of hepatitis A outbreaks in the UK, in injecting drug users and in prisons*

Sutton, Andrew; Moss, Peter; Bird, Sheila

*Screening for tuberculosis during the entry process into prisons*

Bannister, Barbara; Elam, Gillian; Pitman, Richard; Turner, Katy; Boyd, Aileen; Holcombe, Peri; Kerry, Martha; Drobniowski, Francis; Ruddy, M.; Gilbert, Ruth

*Examination of (tuberculosis) treatment delivery and continuity of care*

Bannister, Barbara; Elam, Gillian; Pitman, Richard; Turner, Katy; Holcombe, Peri; Kerry, Martha; Drobniowski, Francis; Ruddy, M.; Coudray, Barbara; Sexton, Stephanie; MacDonald, Morag

*Cross-sectional study of tuberculosis cases using qualitative methodology*

Bannister, Barbara; Elam, Gillian; Pitman, Richard; Turner, Katy; Holcombe, Peri; Kerry, Martha; Drobniowski, Francis; Ruddy, M.; Sexton, Stephanie; MacDonald, Morag

*Screening and behavioural study (STIs, other diseases possibly)*

Okoro, Cyprian; Woodcock, Kevin; Cassell, Jackie; Turner, Katy

*One-day survey of entrants/leavers of all prisoners nationally (STIs)*

Okoro, Cyprian; Woodcock, Kevin; Turner, Katy

*Cultural study of the barriers to the effectiveness of existing policy, in the area of infection (STIs)*

Turner, Katy

*Routine data and data linkage (STIs)*

Turner, Katy

*Introduction of a hepatitis A/hepatitis B combination vaccination programme in prisons*

Miles, Christine; Wighton, Suzy; Bannister, Barbara

*Study of the effectiveness of flu vaccination in the prison setting against influenza*

Elam, Gillian

*Study of the cost-effectiveness and delivery of chlamydia screening and treatment services*

Newton, Autilia

*Evaluation of the patient healthcare pathway and staff-to-staff referral, aiming to improve communication between prison health care staff and primary care GPs*

Miles, Christine; Wighton, Suzy; Sexton, Stephanie; MacDonald, Morag

#### 4.1.2 General areas

*HIV studies*

Woodcock, Kevin; Turner, Katy

*TB/HIV studies*

Bannister, Barbara

*STI epidemiology*

Okoro, Cyprian; Woodcock, Kevin

#### 4.1.3 Support offered to all projects

Piper, Mary; Henson-Green, Sue

## 4.2 Points of contact

Email and/or telephone details are given below. See Section 2 table of Attendees for institutional affiliation.

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## APPENDICES

### Appendix 1: Members of the Planning Group

Arthur de Frisching, Dr. Ruth Gilbert, Dr. Noel Gill, Prof. Anne M. Johnson, Dr. Mary Piper

### Appendix 2: Members of the IDRN Steering Group

The current list of members of the IDRN Steering Group is available at  
<http://www.idrn.org/steeringgroup.cfm>