

# Professor Caroline Sabin

University College London

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## University College London

COMPETING INTEREST OF FINANCIAL VALUE $\geq$ £1,000:	
Speaker Name	Statement
Professor Caroline Sabin	Over the past five years, Caroline Sabin has received payment for membership of Data Safety and Monitoring Committees or Advisory Boards from Janssen-Cilag, GSK, Gilead Sciences and Abbvie. She has also received funding for the development of educational materials for Gilead Sciences, Janssen and Viiv Healthcare, and for speaking at company-sponsored events for MSD and Abbvie. She has received a personal grant for attending a conference from Bristol-Myers Squibb.
Date	October 2014

# NIHR Health Protection Research Unit in Blood Borne and Sexually Transmitted Infections

Caroline Sabin, UCL



# What are HPRUs?

- Department of Health (DH) proposed that all research funding should be overseen by the Research and Development Directorate (DH RDD)
  - Grant-in-Aid funding that supported R&D
  - R&D projects supported by DH
- Estimated £10M per year R&D spend in Health Protection Agency
- DH proposed the establishment of Health Protection Research Units (HPRUs):
  - to be established in priority health protection areas
  - to be partnerships between universities and Public Health England (PHE)
  - to commence operation from 1<sup>st</sup> April 2014

# HPRUs – the vision

- Create environment in which **world class health protection research** (HPR), focussed on **needs of the public**, can thrive
- Translate advances in HPR into **benefits for patients/public**
- Focus on areas with **greatest impact** on **public health**
- Provide **high-quality** HPR evidence to **inform decision making** by public health professionals
- Increase **volume** and **capacity** of **multi-disciplinary** HPR
- **Flexible** staff capacity (in case of major health protection incident)
- **Responsive** research capacity

# HPRUs – expectations

- **Multi-disciplinary teams** including, where appropriate:
  - Health informatics
  - Modelling
  - Health economic analysis
  - Behavioural science
- Research to impact on **reduction of health inequalities**, including consideration of interventions for **hard-to-reach groups**
- **Communication** of findings to policy makers, practitioners and service users via **work programmes** and **dissemination plans**
- **Collaboration** between NIHR HPRUs

# Establishing the HPRUs

- NIHR open competition for HPRUs launched November 2012
- Partnerships between universities and PHE
  - Led by academic partner
- Funding for 5 years from 1st April 2014
  - Up to £4million for each of the 12 priority areas
- Two stage application process
  - Shortlisting of academic applicants (June 2013)
  - Partnership and proposal development between academic and PHE partners (October 2013)
  - HPRUs awarded in December 2013 with start date of April 2014

# HPRUs Priority Areas

Priority Areas	HPRU
Blood Borne & Sexually Transmitted Infections	University College London
Chemical & Radiation Threats & Hazards	Newcastle University
Development of Modelling Methodology	Imperial College London
Emergency Preparedness & Response	Kings College London
Emerging Infections & Biological Threats	University of Liverpool
Environmental Change & Health	LSHTM*
Evaluations & Interventions	University of Bristol
Gastrointestinal Infections	University of Liverpool
HCAI - Oxford	University of Oxford
HCAI - Imperial	Imperial College London
Health Impact of Environmental Hazards	Kings College London
Immunisation	LSHTM*
Respiratory Infections	Imperial College London



# Who are we?



*National Institute for  
Health Research*

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National Institute for Health Research (NIHR) Health Protection Research Unit (HPRU) in Blood Borne and Sexually Transmitted Infections at University College London (UCL)....



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...in partnership with Public Health England (PHE)...



Public Health  
England

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...in partnership with Public Health England (PHE)...

...in collaboration with the London School of Hygiene and Tropical Medicine (LSHTM)



Public Health  
England

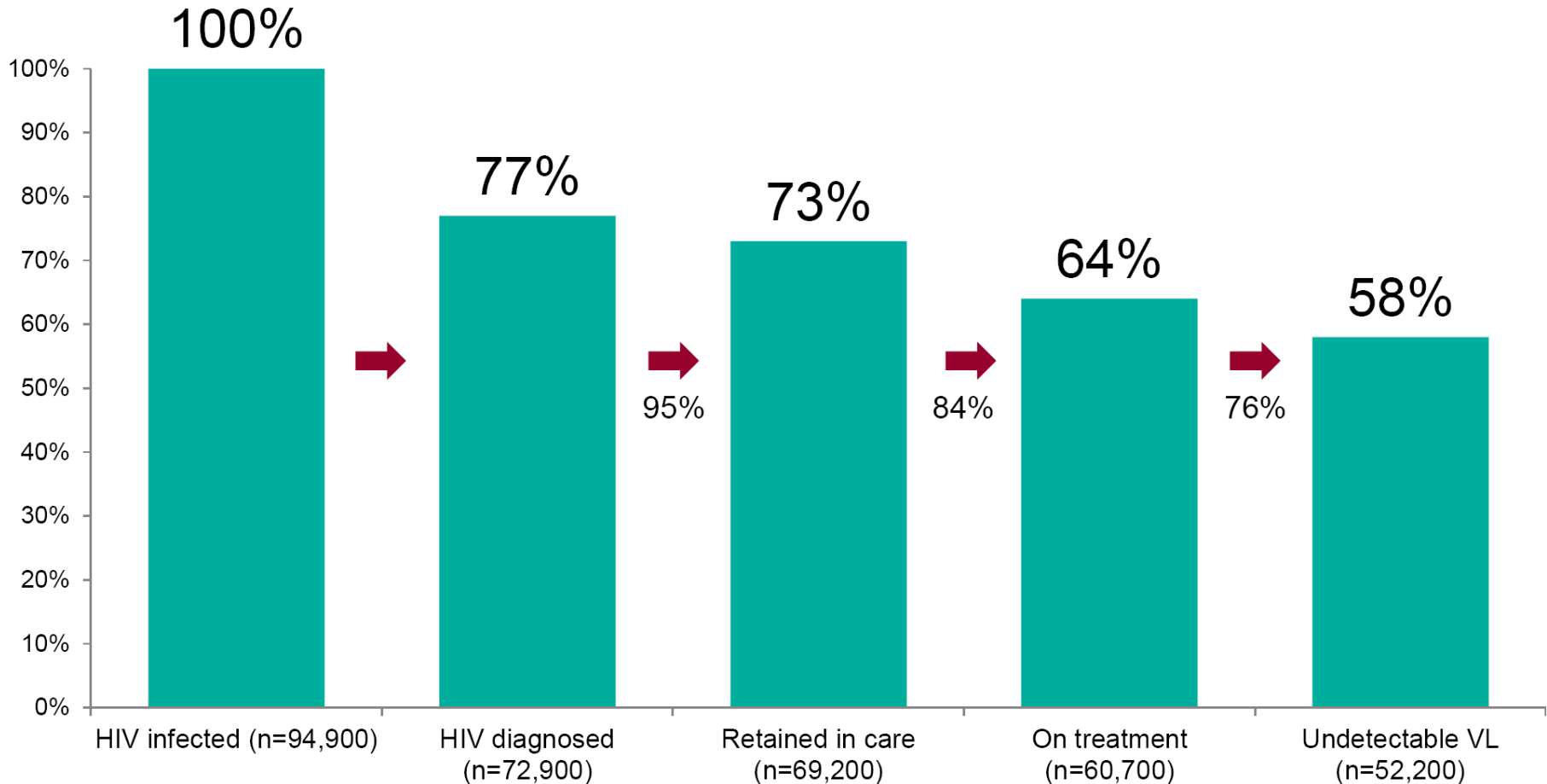
LONDON  
SCHOOL of  
HYGIENE  
& TROPICAL  
MEDICINE



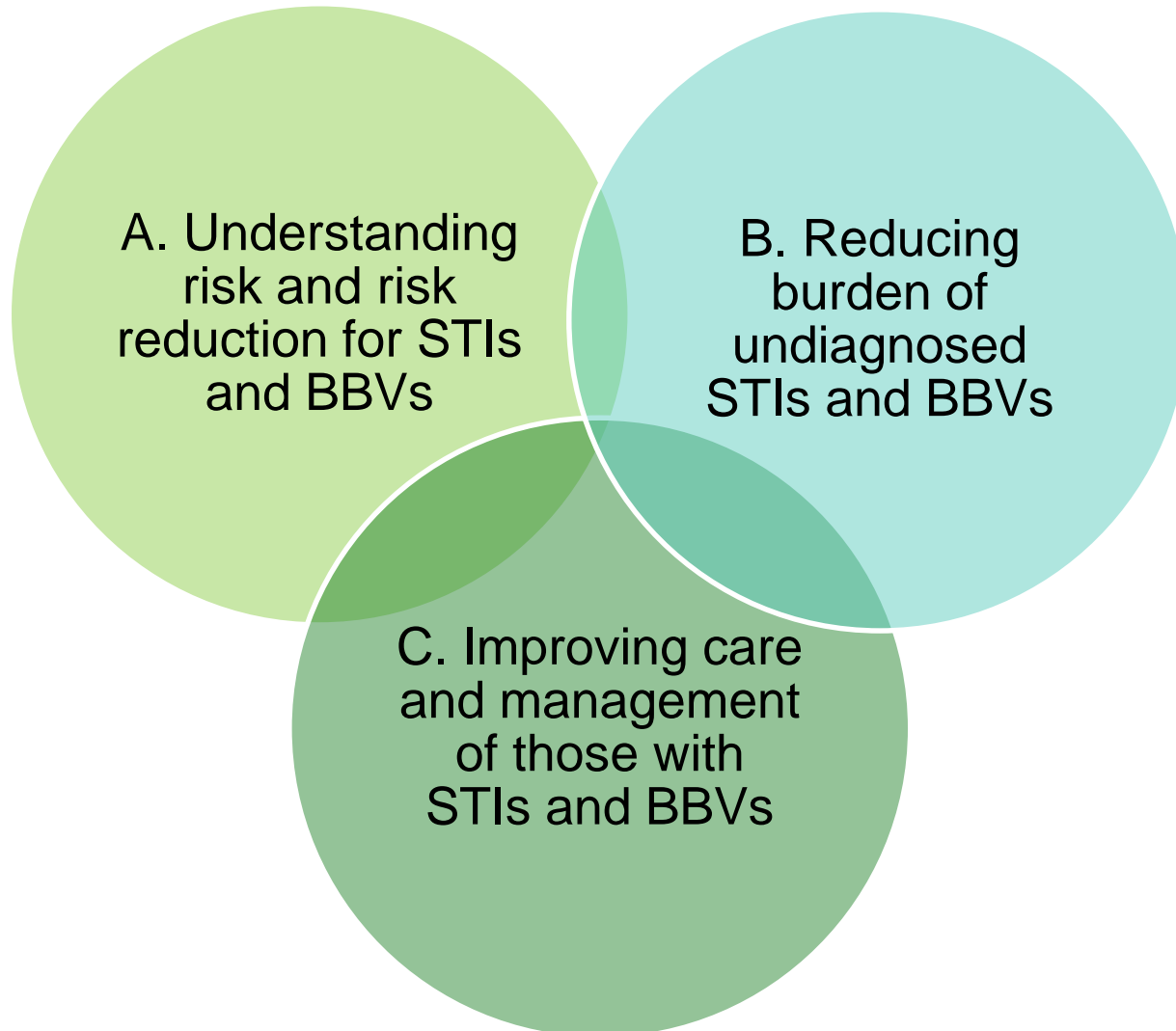
# BBVs and STIs

- **448,422** diagnoses of **STIs** in England in 2012
  - 5% increase from 2011
- **6,280** new **HIV** diagnoses in 2011
  - record levels of new diagnoses in Men who have Sex with Men
- **180,000/215,000** adults with chronic **HBV/HCV** infection
- Many infections in marginalised or disadvantaged populations
- Resistance of major concern

# Cascade of Care, 2011, HIV



# HPRU themes



# HPRU themes

A. Understanding  
STIs  
and BBVs

**Reduce incidence**

B. Reducing  
burden  
of  
STIs and BBVs

**Increase testing**

C. Improving care  
and management  
of  
STIs and BBVs

**Reduce morbidity/mortality**

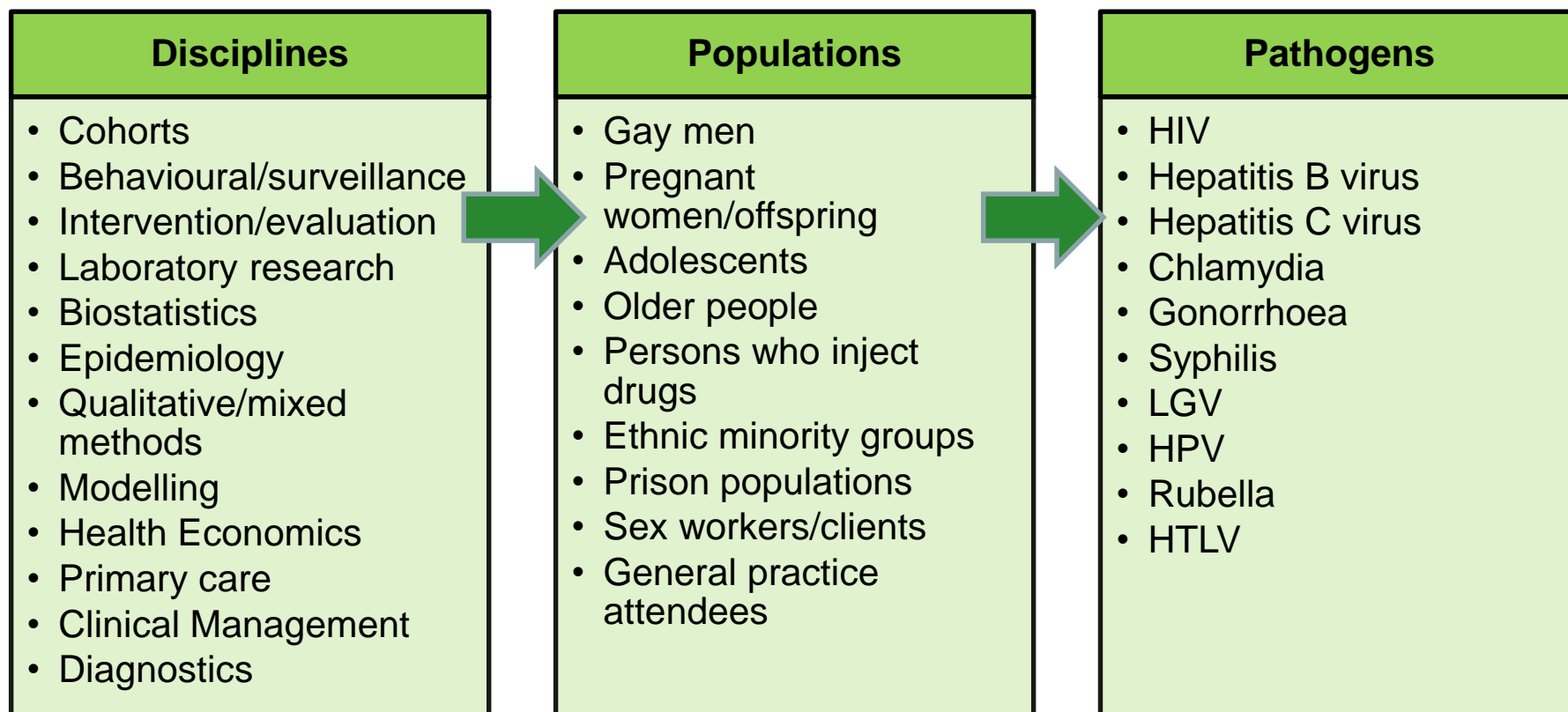


# HPRU aim

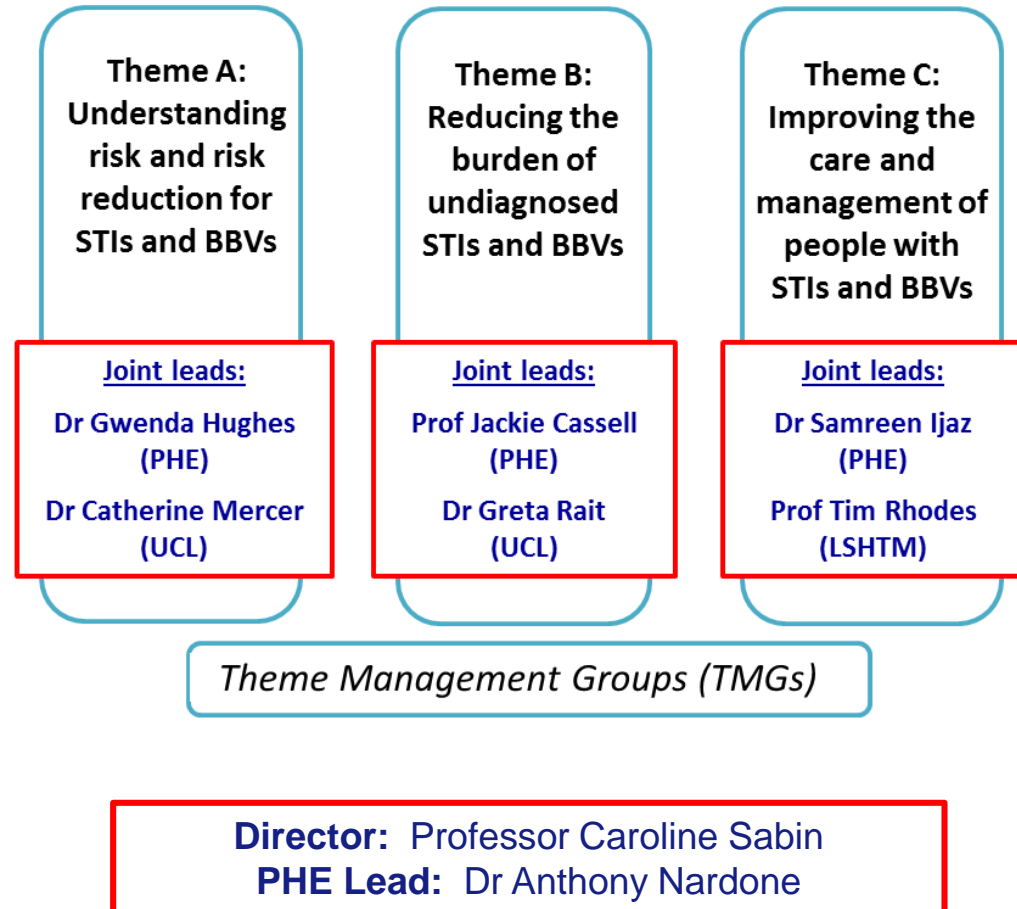
To improve the health of the nation by:

- Conducting research to address key public health priorities
- Translating the research into interventions
- Supporting health policy development
- Creating a culture of working across pathogens, populations, disciplines and institutions

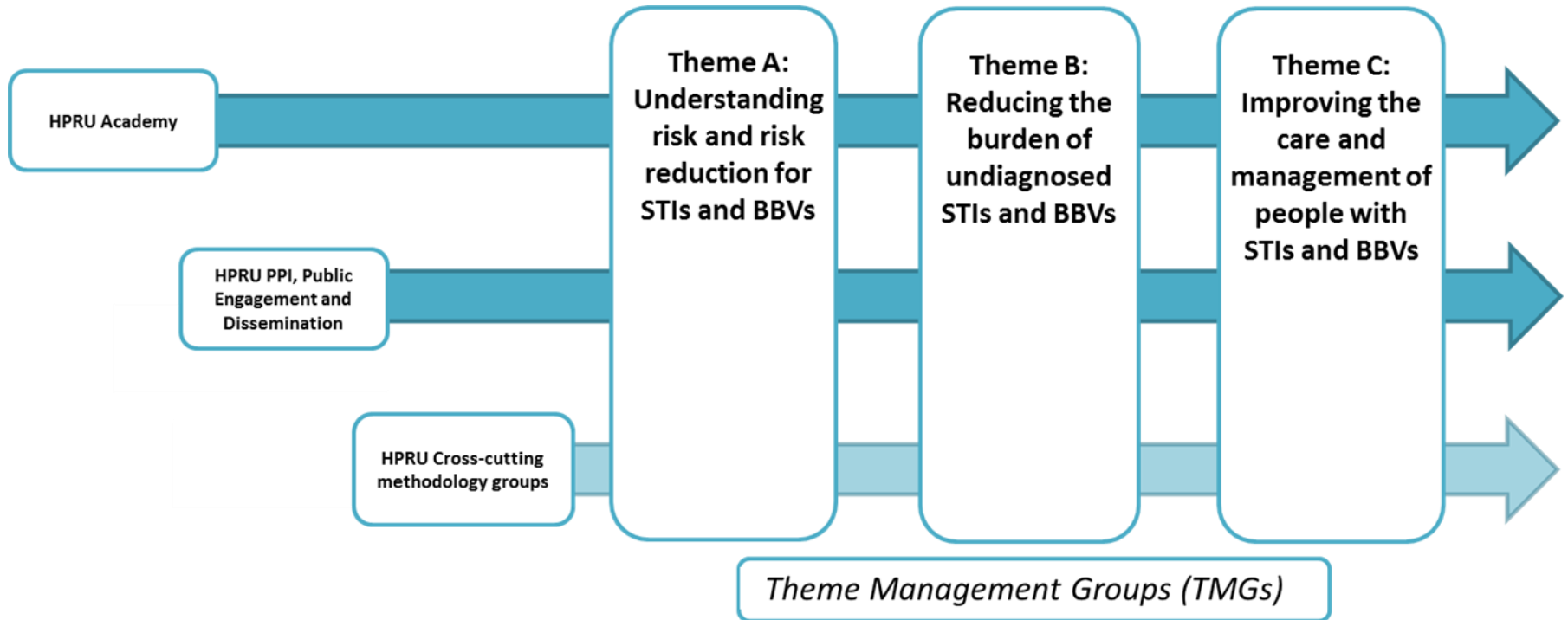
# How?



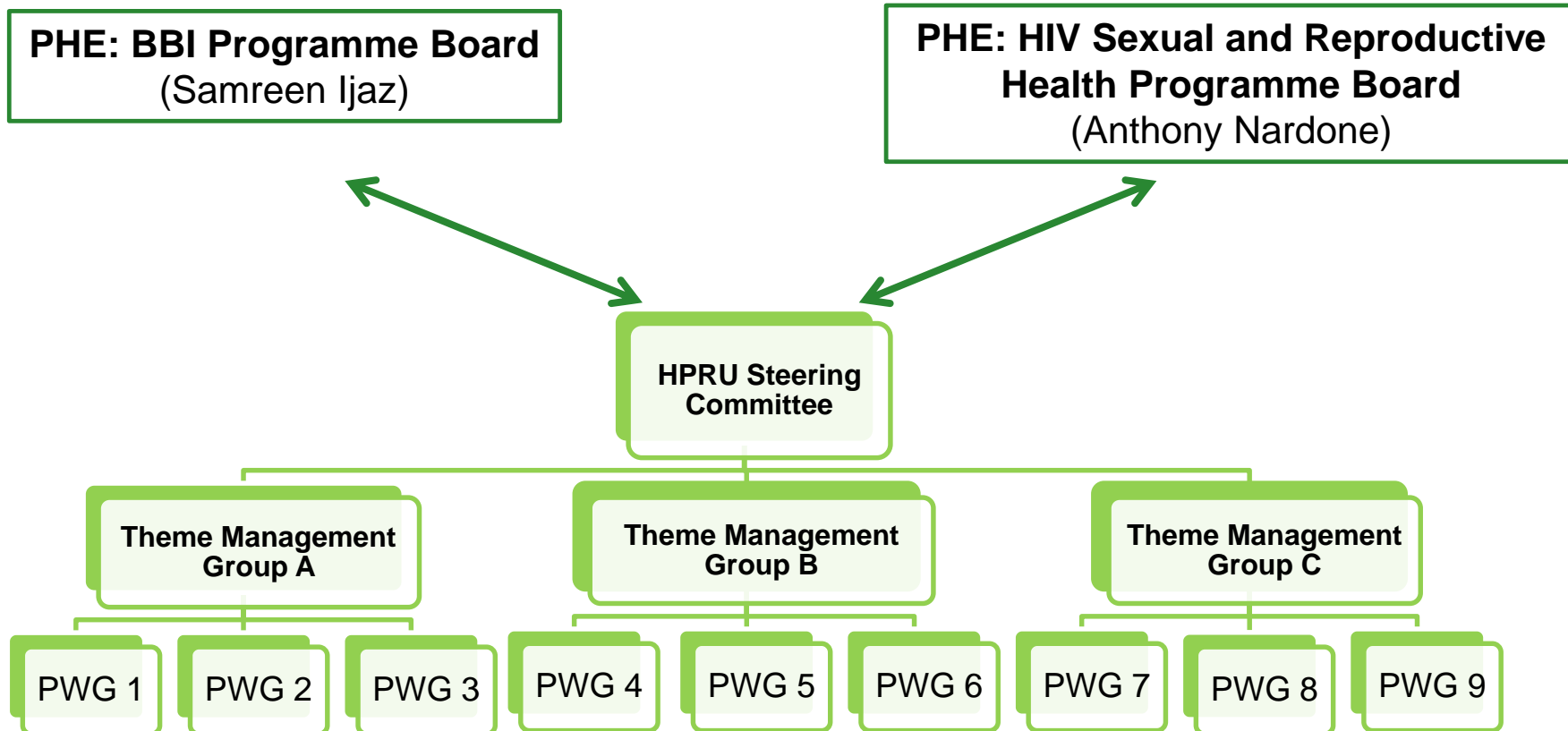
# The HPRU



# The HPRU



# Governance



# Theme A – Aim and projects

To improve our understanding and knowledge base of the behaviours, attitudes and factors that influence the risk of STI and BBV acquisition and transmission in key population groups

# Key population groups

- Black Caribbean (BC) populations
  - Highest rates of STI diagnosis
  - 12 to 20-fold more likely to be diagnosed with gonorrhoea than general population, not explained by socioeconomic deprivation
  - Causes poorly understood
  - Information on partnership types, attitudes to risk, and partner notification urgently needed
- MSM
  - Greater risk of acquiring HIV, other STIs and BBVs
  - Recent emergence of epidemics (LGV, *Shigella flexneri*)
  - Increasing role of sero-adaptive behaviours, dense sexual networks, simultaneous casual contacts, sex parties, recreational drug use etc.
  - Need for development of relevant and timely interventions

# The evidence gap

- World class national surveillance and behavioural research data
  - GUMCADv2 (Genitourinary Medicine Clinic Activity Dataset)
  - GRASP (Gonococcal Resistance to Antimicrobials)
  - Natsal 1-3 (National Survey of Sexual Attitudes and Lifestyles)
- Despite this, limited information on:
  - contextual factors which influence risk and risk reduction capacity
  - how sexual risk interplays with partnership types, social and sexual networks, drug and alcohol use
- Need for:
  - evidence on potential for social, behavioural and clinical interventions, to foster behaviour change
  - health protection messaging tailored to BCs and MSM



# Theme A – Aim and projects

To improve our understanding and knowledge base of the behaviours, attitudes and factors that influence the risk of STI and BBV acquisition and transmission in key population groups

## **Short-term**

Develop system for in-depth exploration of behaviours, attitudes, decision-making, and risk factors related to STI and BBV in key population groups

## **Medium-term**

Pilot and demonstrate implementation of translational bio-behavioural rapid risk assessment tool (RRAS)

## **Long-term**

Identify strategies for enhancing health promotion messaging and improving service-based prevention activities

# Theme B – Aim and projects

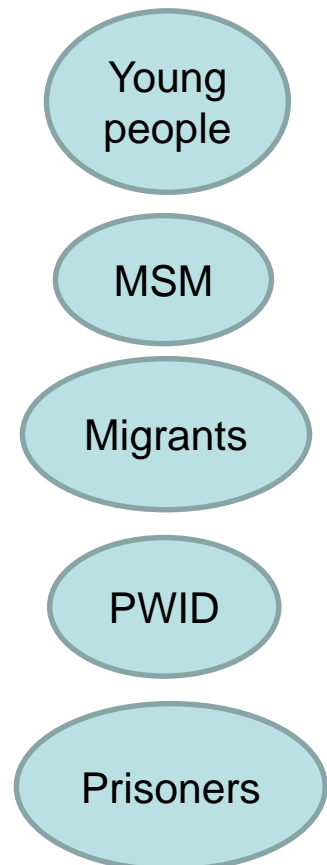
To inform the development of interventions and diagnostic tools that will facilitate effective and efficient early access to care and treatment for STIs and BBVs

# Undiagnosed infections

- STIs (chlamydia)
  - Most infection is asymptomatic (70% of women, 50% of men, 7-8% of 15-24 year olds)
- HIV
  - Around a quarter of people remain undiagnosed
- BBV
  - HBV: 10.7/1000 tests in antenatal clinic attendees, almost half of which were new diagnoses
  - HCV: half of those living with HIV in UK undiagnosed; 3% of those diagnosed receive treatment each year

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  - HBV: 10.7/1000 tests in antenatal clinic attendees, almost half of which were new diagnoses
  - HCV: half of those living with HIV in UK undiagnosed; 3% of those diagnosed receive treatment each year
- Mainly affect marginalised or 'hard to reach' groups
- High costs of not diagnosing these individuals



Young people

MSM

Migrants

PWID

Prisoners

# Theme B – Aim and projects

To inform the development of interventions and diagnostic tools that will facilitate effective and efficient early access to care and treatment for STIs and BBVs

## **Short-term**

Identify methods to increase diagnosis rates for STIs in primary care and community settings, with a focus on young people

## **Medium-term**

Develop and evaluate evidence based interventions aimed at reducing undiagnosed BBV in A&E, while assessing phylogenetic and serological approaches to evaluation

## **Long-term**

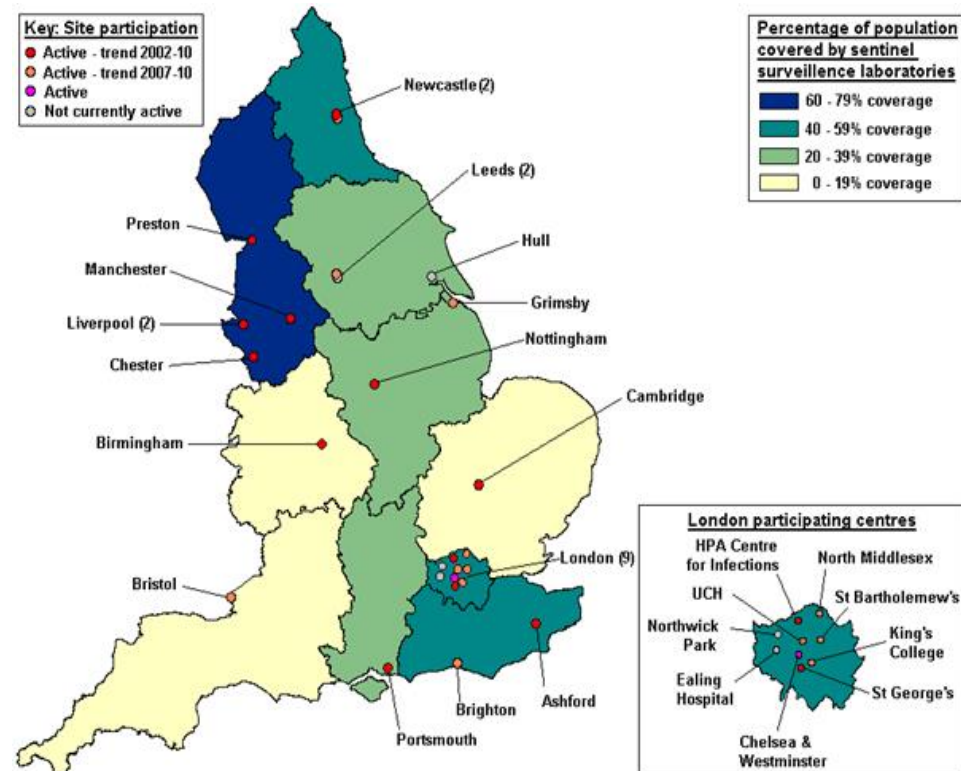
Assess public health impact of testing interventions for STI/BBV in primary care/A&E

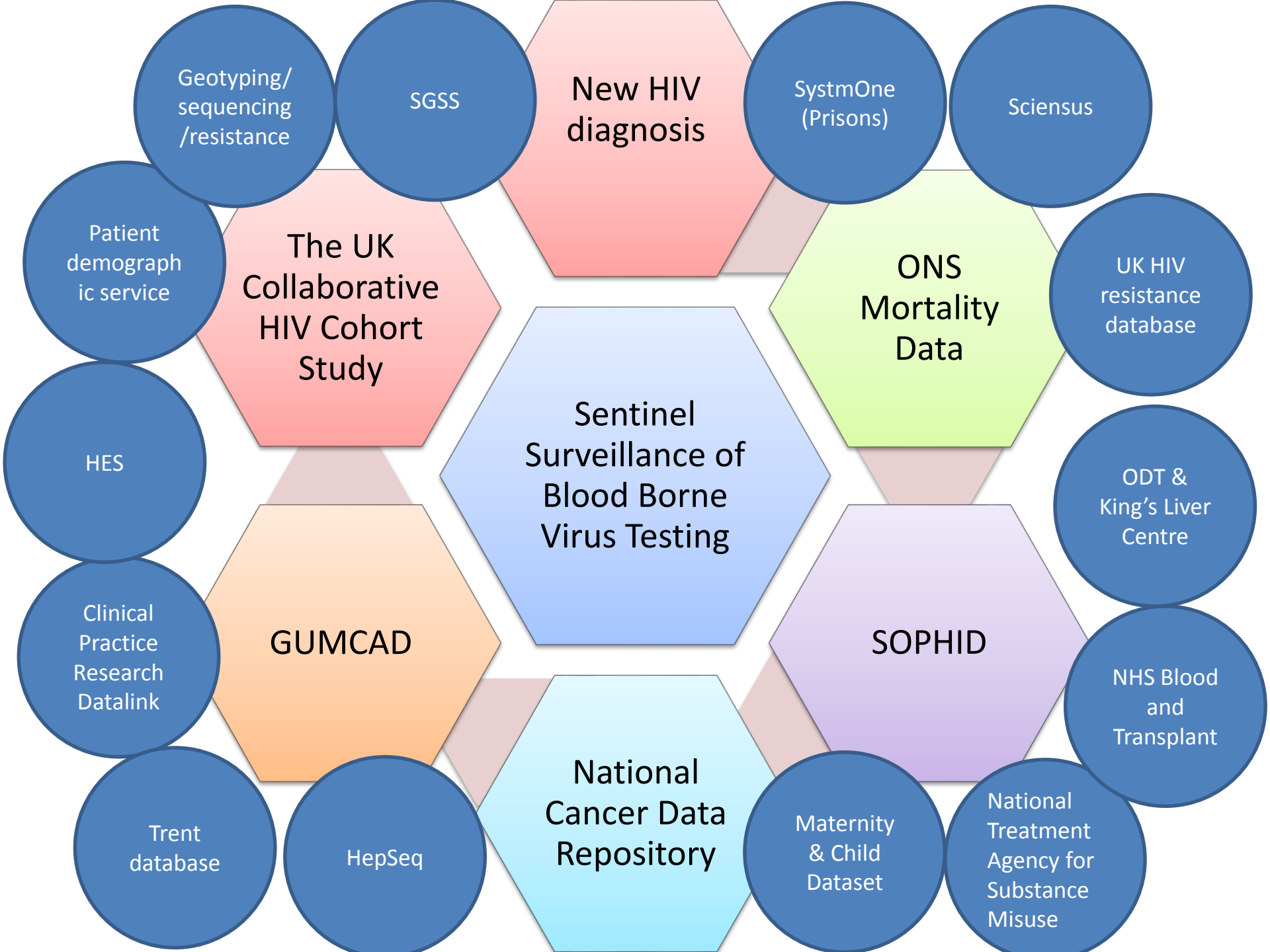
# Theme C – Aim and projects

To define the care pathways for people living with HIV, HBV and HCV, to identify key factors influencing their care, and to develop recommendations for care improvements, if needed

# Sentinel Surveillance of BBV Testing (DENOM)

- Collects all testing undertaken for hepatitis A, B, C, D & E, as well as HIV and HTLV
- 26 laboratories across England
- 150,000 tests each month
- Since 2002, 6 million individuals, 8 million tests
- Each test mapped to specific service provider (GPs, GUM, prison etc.)
- Tests for individuals linked over time to provide comprehensive testing histories





Geotyping/  
sequencing  
/resistance

SGSS

New HIV  
diagnosis

SystemOne  
(Prisons)

Sciensus

The UK  
Collaborative  
HIV Cohort  
Study

ONS  
Mortality  
Data

UK HIV  
resistance  
database

Sentinel  
Surveillance of  
Blood Borne  
Virus Testing

ODT &  
King's Liver  
Centre

GUMCAD

SOPHID

NHS Blood  
and  
Transplant

National  
Cancer Data  
Repository

Maternity  
& Child  
Dataset

National  
Treatment  
Agency for  
Substance  
Misuse

HepSeq

Trent  
database

Clinical  
Practice  
Research  
Datalink

HES

Patient  
demograph  
ic service



# Additional studies

- Qualitative longitudinal study among ‘harder-to-engage’ and ‘vulnerable’ to care disruption groups
  - People living with HIV, HCV and HBV
  - Young people transitioning from paediatric to adult care
  - People who inject drugs with HIV and HCV co-infection
  - Adults >50 years with long-term HIV care experience
  - Women who are pregnant
  - People of ethnic minority identity
- Molecular characterisation studies to determine:
  - Rate of TDR in ART-naïve HIV-positive people
  - Description of majority/minority virus populations
  - Phylogenetic analyses to identify nationwide transmission networks and the dynamics of TDR mutations

# Theme C – Aim and projects

To define the care pathways for people living with HIV, HBV and HCV, to identify key factors influencing their care, and to develop recommendations for care improvements, if needed

## **Short-term**

Define the care pathways for people living with HIV, HBV and HCV and identify key factors influencing their care

## **Medium-term**

Establish validated HIV/HBV/HCV database linkages and algorithms and undertake virological studies of drug-related motifs

## **Long-term**

Establish functional database, linked with surveillance/research datasets, to assess the potential for early diagnosis/intervention in HBV/HCV/HIV

# HPRU contributors

- HPRU SC:** Caroline Sabin, Tony Nardone, Gwenda Hughes, Cath Mercer, Jackie Cassell, Greta Rait, Samreen Ijaz, Tim Rhodes, Kholoud Porter, William Rosenberg.
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- Theme B:** Jackie Cassell, Greta Rait, Julia Bailey, Judy Breuer, Kevin Dunbar, Sema Mandal, Autilia Newton, Mary Ramsay, Alison Rodger, William Rosenberg, Tariq Sadiq, Kate Soldan, Jo Waller, Kaye Wellings, Fiona Burns, Rebecca French, Samreen Ijaz, Sam Lattimore, Clodna McNulty, Tamyo Mbisa, Danielle Mercey, Tony Nardone, John Parry, Richard Tedder, Claire Thorne, Pat Tookey, Sarah Woodhall.
- Theme C:** Samreen Ijaz, Tim Rhodes, Fiona Burns, Valerie Delpech, David Dunn, Ali Judd, Sam Lattimore, Sema Mandal, Tamyo Mbisa, Alec Miners, Andrew Phillips, Deenan Pillay, Kholoud Porter, William Rosenberg, Lorraine Sherr, Richard Tedder, Peter Vickerman, Alison Brown, Alison Rodger, Mary Ramsay, Caroline Sabin.

# Further information

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