

# Behavioural and Developmental Psychiatry

Clinical Academic Group

2nd Edition



## King's Health Partners brings together:

- three of the UK's leading NHS Foundation Trusts
- a university ranked 8th in the world for clinical, pre-clinical and health
- 4.2m patient contacts each year
- over 36,000 staff
- more than 25,000 students
- a combined annual turnover of £3.1bn
- services provided across central and south London and beyond, including nine mental health and physical healthcare hospitals and many community sites
- a comprehensive portfolio of high-quality clinical services with international recognition in cancer, diabetes, mental health, regenerative medicine, transplantation, cardiac and clinical neurosciences
- a major trauma centre and two hyper-acute stroke units

# About King's Health Partners

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King's Health Partners Academic Health Sciences Centre brings together one of the world's top research-led universities, King's College London, and three of London's most prestigious and highly regarded NHS Foundation Trusts – Guy's and St Thomas', King's College Hospital and South London and Maudsley.

Our partnership provides a powerful combination of complex clinical specialties that cover a wide range of physical and mental health conditions and a breadth of research expertise that spans disciplines from medicine and biomedical sciences to the social sciences and humanities. There are three parts to our mission: excellence in research, education and clinical care.

To support our mission, we are delivering programmes of work to:

- join up mental and physical healthcare so that we treat the whole person, mind and body

- increase the value of the care we provide and the outcomes we achieve for our patients and service users
- integrate care across local primary, secondary and social care services to make it easier for people to get the care and support they need
- improve the public health of our local community by tackling inequalities and supporting people to live healthy lives
- bring together our collective strength and expertise in a range of specialist areas to deliver world-leading care, research and education.

We are uniquely structured to deliver our mission for excellence. Our 21 Clinical Academic Groups (CAGs) bring together all the clinical services and staff from the three Trusts with the relevant academic departments of King's College London.

# Foreword

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At King's Health Partners we are committed to improving outcomes for our patients and service users and achieving maximum value for money in everything we do. We believe that being open and transparent about the care and outcomes we deliver results in a culture of improvement across our partnership.

This is why we are publishing a series of outcomesbooks that will help patients, service users, carers, referring clinicians and commissioners to make better informed decisions, and our staff to drive up the quality of the care we provide. The books report key outcomes for treatments provided by our 21 clinical academic groups (CAGs). CAGs form the building blocks of our Academic Health Sciences Centre. By bringing together our clinical and academic staff across teaching, training and research, we can use their combined expertise to achieve better outcomes for our patients and service users.

Our books are designed for a clinical and lay audience and contain a summary of patient volumes and measures (e.g. length of stay, re-admissions, patient experience), clinical outcomes, educational activities, technological and research innovations and publications. They also focus on other important measures, such as staff satisfaction and wellbeing.

The primary purpose of King's Health Partners is to improve health and wellbeing locally and globally. We must deliver this goal in a challenging economic environment with rising demand for, and costs of, healthcare. We will only achieve sustainable health improvement if we strive always to increase value. We define value in terms of outcomes that matter to patients, over the full cycle of care divided by the cost of producing those outcomes. By publishing outcomes books, we have more information to support us measuring the value of the healthcare we provide.

Our goal is to increase the depth and breadth of reporting each year. Books will be updated regularly to demonstrate progress against our mission to achieve world-class research, education and clinical care. We hope you find these data valuable. Please send comments and suggestions to us at [kingshealthpartners@kcl.ac.uk](mailto:kingshealthpartners@kcl.ac.uk)

For more information please visit our website at [www.kingshealthpartners.org](http://www.kingshealthpartners.org).

**Professor John Moxham, Director of Clinical Strategy, King's Health Partners**

March 2017

A handwritten signature in black ink, appearing to read 'John Moxham', written in a cursive style.

# Foreword from CAG Leadership

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The Behavioural and Developmental Psychiatry Clinical Academic Group (CAG) exists for one reason and one reason only: to provide patients, service users and their families with a high-quality outcome-focused and evidence-based service. We continue to deliver high quality services within a climate of competition, financial pressure and increasing levels of prevalence and need. Despite this, we remain committed to the demonstrable delivery of high-quality care – in publishing this outcomes book, we are proud to demonstrate to you our achievements following the publication of our first book.

The tripartite model of delivery within the CAG means that we are able to deliver on the operational, clinical and academic priorities of the CAG in a symbiotic manner. Further, it supports the leadership team to define, measure and improve our performance across a wide spectrum of interlinked priorities. This book demonstrates the importance and power of these three elements working together to deliver improved and high-quality outcomes for our patients, service users and their families.

We are proud of this book and the outcomes and achievements that are outlined within it. Please therefore feel free to use it and share it. If you have any questions, or would like to find out more then please do not hesitate to contact us on [eleanor.bateman@slam.nhs.uk](mailto:eleanor.bateman@slam.nhs.uk).

We look forward to updating this book in the coming years, as we continue to demonstrate the importance of outcome-focused mental health services to patients, the public and commissioners.

# Contents

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	The value of partnership at King's Health Partners	<b>05</b>
	Introduction	<b>09</b>
	Team structure	<b>15</b>
	Our pathways	<b>17</b>
	Our priorities	<b>26</b>
	Aims for integrated mental and physical healthcare	<b>27</b>
	Key achievements	<b>32</b>
	Demonstrating our tripartite mission	<b>35</b>
	Where our service users are referred from	<b>37</b>
	Clinical outcomes	<b>45</b>
	Quality of care metrics	<b>66</b>
	Patient experience	<b>77</b>
	Education and training	<b>99</b>
	Academic research and innovations	<b>114</b>
	Research in focus	<b>122</b>
	Selected publications 2014/15	<b>140</b>

# The value of partnership at King's Health Partners

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King's Health Partners aims to create a centre where world-class research, education and clinical practice (the 'tripartite mission') are brought together for the benefit of patients.

We want to make sure that the lessons from research are used swiftly, effectively and systematically to achieve better patient outcomes, improve public health and join up health and care services for people with physical and mental health problems.

By working together in this way, integrating care across different organisations and sectors, we can not only improve the health of the people we care for but we can also achieve better value for money.

## Integrating mental and physical health

The mind and body are inseparable and mental and physical health conditions are often connected.

The average life expectancy for someone with a long-term mental health illness is much shorter than for someone without, often due in part to smoking, obesity, diabetes or alcohol misuse. Likewise, many people with long-term physical health conditions suffer from depression or other mental health conditions.

Despite this, health services separate care into physical and mental and often fail to share patient information.

At King's Health Partners, we are working to overcome these barriers by treating the whole person. We are committed to caring for vulnerable patients with both physical and mental ill health in an integrated manner with better, faster diagnosis and treatment because we know that addressing mental ill health improves physical health outcomes and vice versa.

Right across our partnership, we are committed to joining up and delivering excellent mental and physical healthcare, research and education so that we treat the whole person by:

- screening all patients with chronic physical diseases for mental health conditions, and using the learning from this to improve the care we provide
- improving our understanding of the physical health needs of people with severe mental ill health
- addressing the traditional distinctions between the mind and body in research and education, allowing us to train students and staff to deliver more integrated care
- better organising and expanding current training provision for physical and psychiatric comorbidity
- working with our local commissioners to find new ways of paying for integrated services

- linking IT systems across our partner trusts so that clinicians have access to a person's physical and mental care records
- investing in innovative programmes such as IMPARTS (Integrated Mental and Physical Healthcare: Research, Training and Services) and 3DfD (3 Dimensions of care for Diabetes)
- recognising the importance of employee mental and physical health and wellbeing.

## Public health

Public health is one of our biggest challenges. At the root of much of the ill health in south London is a high incidence of smoking, alcohol abuse and obesity. With our health and social care partners, we are developing strategies to tackle these public health priorities. We are also developing plans for a new Institute for Urban Population Health, a collaboration with local partners to bring about transformational change to health in local communities. We want to achieve a measurable improvement and impact on health gain and local management of physical and mental health problems through new evidence based interventions.

## Alcohol strategy – key aims

- developing appropriate resources for clinical staff and patients



- developing and implementing training for all staff on harmful drinking supporting early identification and intervention
- establishing ourselves as a centre of excellence for integrated research, training and practice in the management and prevention of alcohol misuse
- attracting funding for future alcohol-related clinical, training and research initiatives
- monitoring the impact of the strategy on indicators of alcohol-related harm.

### Tobacco strategy – key aims

- supporting all clinical sites to be smoke-free
- developing an informatics structure for routinely and systematically recording smoking status
- support, referrals and treatment uptake for smoking cessation across the partnership
- co-producing clinical care pathway for nicotine dependence treatment
- developing and implementing training packages for smoking cessation interventions for all our healthcare professionals
- monitoring the impact of our smoking cessation strategy in relation to knowledge and uptake of skills by staff, uptake of

smoking interventions, outcomes of interventions, user satisfaction, prevalence of smoking, cost-effectiveness of interventions.

## Informatics

Informatics is at the heart of our plans to join up care, research and education. Data is one of our most important assets at King's Health Partners. We are proud of our ability to control information systems for the purpose of data creation, curation and analysis with strong and transparent information governance processes throughout. This control enables our exploration of the relationship between clinical and biological data, extending at one end to clinical decision support embedded in electronic medical records (EMRs), sharing of clinical data to enhance care and outcomes, through to research recruitment and participation, with strong patient engagement throughout. We have developed a clear strategy and action plan to maintain and develop leadership in the field of informatics.

Systems have been developed to enable electronic healthcare records to be shared across our partner organisations and with other healthcare organisations. Our work includes the award-winning 'MyHealthLocker' programme, the Clinical Record Interactive Search (CRIS) and KHP Online. We are working with patients to make electronic patient information available in an anonymised format between partner Trusts, primary care and social care. Together we have a powerful information resource for both practitioners and researchers.



*There's a real potential for people to change their lives at the Maudsley. I'm very grateful for their pioneering work.*

# Introduction

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Mental ill health has the potential to impact on all aspects of life and to undermine everything a person does. Severe mental illness and neurodevelopmental disorders are often long term conditions. Whilst interventions and therapies may help reduce the severity or frequency of symptoms and lead to increased resilience and coping strategies, such mental health disorders can have devastating consequences on family life, relationships, ability to parent, employment and social inclusion. They are often associated with stigma, perceived and actual discrimination and increased vulnerability to abuse, health inequalities, multi-morbidity and premature deaths from treatable conditions.

The CAG's expertise lies in the assessment and treatment of adults with complex, challenging and difficult to manage behaviour. The Behavioural and Developmental Psychiatry CAG brings together a unique combination of adult psychiatric specialities, including forensic services for patients with mental illness and a history of serious offending behaviours, prison health and specialist mental health services for those with neurodevelopmental disorders including intellectual disabilities (also known as learning disabilities), Autism Spectrum Disorder (ASD) and adult Attention Deficit Hyperactivity Disorder

(ADHD). There is increasing recognition of the contribution of neurodevelopmental factors in the aetiology of violent and antisocial behaviours. Our patients are one of the most disadvantaged groups using mental health services, with the highest burden of physical health co-morbidity.

Our aim is to diagnose and treat early, to prevent disorder at a primary, secondary and tertiary level, to assess and manage risk and to promote recovery and social inclusion through a human rights 'equality to health' approach. Our academic agenda is aligned to our clinical services and addresses clinical and public health priorities.

## Epidemiology

The estimated prevalence of intellectual disability (ID) is between 1–3% in the general population (or about 70–210 million people worldwide). People with ID have high levels of physical and mental health morbidity: 30–50% will have a significant mental health need and they are three times more likely to suffer from schizophrenia than the general population, yet only 21% of the ID population are known to services. People with ID are 58 times more likely to die before the age of 50 years; more likely to

be vulnerable to adult safeguarding concerns and receive poorer access to health care and poorer health outcomes. Autism Spectrum Disorder affects 1% of the general population, and the difficulties experienced by a person with ASD go to the core of human experience and socialisation. The prevalence of ASD in people with intellectual disability is between 20–40%. The average worldwide prevalence for ADHD is 5% in children in the general population; in adults it is estimated at 2–4%. Up to 80% of adults who have ADHD also have comorbid mental illness such as anxiety, depression, personality disorders and autism.

Our own research has found a high prevalence of unrecognised ADHD and ASD (17%) in forensic and prison settings even where there are mental health services present. In addition, ADHD is more common in people with intellectual disability. Seven percent of the prison population have an IQ below 70; 23% will have an IQ below 80. 10–13% of adults in touch with ID services will have had contact with the Criminal Justice System at some time in their lives as suspects (mentally disordered offenders) and a larger percentage will exhibit significant behaviours that challenge services. Physical and psychiatric morbidity in prison populations is high. The prevalence of psychiatric disorder, substance misuse and infectious disease in particular are greater than the general population; suicide risk is high and often linked to mental disorder. Our forensic service aims to promote and improve the mental health, well-being and safety of detained patients and involves a dynamic negotiation of the conflicts between detention and care. We model our service on the

recovery approach, involving the patient in the development of, research into and evaluation of our treatments.

## Education and training/research and development

The CAG delivers education and training (E&T) programmes to a range of professionals from undergraduate and postgraduate students to community support workers and other practitioners. We secured a grant from Health Education South London (HESL) to map current education and training provision across KHP, signpost and raise awareness through E&T approaches to address health inequalities and premature deaths. We publish our research in high impact journals and our clinicians and academics serve on numerous committees – including US, EU, and UK Government advisory boards. We won an MRC case grant jointly with Eli Lilly, an American global pharmaceutical company, to link our clinical work to basic work in Industry; fostered links with ROCHE, deCODE (a genetics company based in Iceland) and NOLDUS (a software company). We are funded by Shire to discover novel biomarkers predicting treatment outcome in ADHD. King's College London has now patented and is licensing a new genetic diagnostic aid for autism that we developed. This work won the Innovation of the Year Award, as part of the NHS Healthcare, Excellence and Leadership (HEAL) Awards 2010.

We also won the only Sackler Centre of Translational Neurodevelopment, headed by Professor Declan Murphy, our CAG Lead and Academic Director. He leads EU-AIMS (€29.9million), the largest autism research network in Europe, EU Metrics (€4.5million) exploring the biology and outcomes of children with conduct disorder, and co-leads for a US\$12.5 million NIH award on the genetics of learning disabilities and mental health problems in Velocardiofacial Syndrome. In addition, we lead/co-lead three European networks on autism, inhibition, and aggression. We are the first UK service to win an MRC/EME grant to test the effectiveness of mental health treatment for ADHD in prisons for reducing aggression and improving engagement in therapies.

## Collaborative working

We work with CAGs across King's Health Partners, adopting a 'life-span' approach to our research. We are working with The Centre for the Developing Brain in St Thomas' Hospital to examine infants at risk of neurodevelopmental disorders in foetal and neonatal stages of development in the search for risk and protective factors. We are also working with the BRC for Mental Health to contribute to genetics profiling of individuals with ASD and ADHD; with neuroscientists at the James Black Centre to generate stem cells from hair cells from our patients with neurodevelopmental conditions to develop new treatment targets and drug screening assays and with Medical Genetics at Guy's Hospital to develop a research and clinical service moving

towards personalised medicine for individuals with neurodevelopmental disorders.

## Value based healthcare

Since the publication of our first outcomes book in 2014, the CAG has continued to work on reducing costs whilst maintaining or improving quality of care and patient experience. Examples include:

- Forensic Service transformation (skill mix review, introduction of technology, introduction of a mobile dental clinic and video court links leading to reduced escort costs) has reduced our CAG expenditure by £2.2million pa.
- CAG-wide management review in two phases has reduced CAG overheads by £1.25million pa.
- NAU (National Autism Unit) redesign (skill mix review, reduction of bed numbers and introduction of day services) has returned this unit to a healthy financial position, running at 100% occupancy with a waiting list and making £500k surplus over the past two years. The unit was rated 'outstanding' by the Care Quality Commission (2016).
- Mental Health in Learning Disabilities (MHL) service redesign is now in its implementation phase, and has released £600k cost savings whilst improving the pathway and service model to better meet the NHSE's 'Transforming Care' agenda (2015).

- Our Care Quality Commission full inspection visit coincided with the beginning of this implementation phase. The pathway across our four local boroughs was rated by the CQC as 'outstanding' (2016).
- Our Southwark Enhanced Intervention Service for adults with intellectual disabilities has made preventative savings in 2015/2016 of over £250k by avoiding out-of-area placements for three individuals. We are hoping this pilot project will secure funding to continue its work.

We have also worked on integrating outcomes and quality data into routine forums for front line staff, performance, quality and management meetings, as well as staff and patient engagement events. Some examples are the introduction of 'My Shared Pathway' – supporting forensic patients to identify and work toward their own goals/outcomes; introduction of a standardised Occupational Therapy measure (MOHOST) within our secure forensic services; learning from our funded employment and social inclusion project (ESIP); piloting patient reported outcomes measures (PROMS) in our community MHL D services to inform commissioning discussions and future CQUINs, and sharing patient recovery stories from across our CAG.

## Easy read summary

The format below gives an example of how we attempt to make complex content more accessible for our patients with intellectual disabilities.

The images in the easy read document were reviewed and tested with a reference group of our current service users. We will continue to work with our service users to improve accessibility.

South London and Maudsley NHS  
 South London and Maudsley NHS

### Behavioural and Developmental Psychiatry

#### Clinical Academic Group

#### (B&D CAG)

This book is about one part of South London & Maudsley Mental Health NHS Trust – the Behavioural and Developmental Psychiatry CAG or B&D CAG.



The B&D CAG is a group of services for people with a learning disability, autism, people with mental health problems who have been in prison, and more.



This book is about what we have done well and what we could do better.

### Our strengths



Strengths.  
 The things we do well.



We have been given lots of money to do research in autism.



Our research will help us understand and support people with autism better.



We educate and train other professionals, students and support staff.

We ask our service users to help us do this training.

Things we could do better



We work together with other services so our service users can keep healthy and feel included in society.



Things we could do better.



The CQC said our learning disability and autism services are outstanding!



We want our wards to be safer for everyone.



We have new services for people in prison and for people who were in the army who have mental health problems.



Stop people from going in to hospital when they don't really need to.



We stopped people smoking in our hospitals and grounds to improve everyone's health.



Do more work together with service users and listen to them more to make our services better.



We use new technology to improve our service users' lives.



Show our work makes a real difference for people.



We make sure we spend our money wisely.



*The service provides invaluable support to those who need it, and in certain cases has undoubtedly been a lifesaver. I know that it has become a critical lifeline for me.*



# Team structure



**Dr Jean O'Hara**  
Clinical Director



**Prof Tom Fahy**  
Clinical Director



**Prof Declan Murphy**  
CAG Lead/  
Academic Director



**Ellie Bateman**  
CAG Lead/  
Service Director

**Dr Susie Whitwell**  
Head of Education  
& Training

**Dr Grainne McAlonan**  
Head of Research

**Julie Heyward**  
Deputy Director,  
Nursing and Forensic  
Offender health

**Feizal Mohubally**  
Deputy Director,  
neurodevelopmental  
pathways, Business  
& Strategy

**Lyn Edwards**  
Head of  
Occupational  
Therapy

**Dr Rai Turton**  
Head of Psychology and  
Neurodevelopmental  
pathway

**Dr Gerard Drennan**  
Head of Psychology  
Forensic Offender  
Health

**Christine Hemmings**  
Head of Nursing  
& Quality  
Assurance

**Emma Porter**  
Head of  
Social Work

## Forensic Offender Health Pathway (FOHP)

**Dr Andrew Forrester** Lead consultant,  
Offender Health  
**Dr Tim McInemy** Lead Consultant, Forensic Health  
**Dr Colin Campbell** Lead Consultant, Personality  
Disorder Offender Health  
**Wilmart Tsiga, Edward Kanu & Sally Ann Bailey**  
Clinical Service Leads

## Neurodevelopmental Disorders (NDD)

**Dr Dene Robertson** Service Line Lead  
**David Weir & Vin Ghansam**  
Clinical Service Leads

### FOHP Inpatients

Norbury ward (Bethlem Royal Hospital)  
 Thames Ward (Bethlem Royal Hospital)  
 Brook Ward (Bethlem Royal Hospital)  
 Effra Ward (Bethlem Royal Hospital)  
 Spring Ward (Bethlem Royal Hospital)  
 Chaffinch Ward (Bethlem Royal Hospital)  
 Waddon Ward (Bethlem Royal Hospital)  
 HMP Wandsworth

### National Autism & ADHD Services for Adults (NAASA)

National Autism Unit (Bethlem Royal Hospital)  
 Adult Attention Deficit Hyperactivity Disorder (Maudsley Clinic)  
 Adult Attention Deficit Hyperactivity Disorder (Kent Clinics)  
 Behavioural Genetics Clinic (Maudsley)  
 Community Neurodevelopmental Disorders Pathway (Croydon, Lambeth, Lewisham)

### FOHP Community

Lambeth Forensic A&T Team  
 Croydon Forensic A&T Team  
 Southwark Forensic A&T Team  
 Lewisham Forensic A&T Team  
 Ward in the Community (Bethlem Royal Hospital)  
 Criminal Justice Team (Croydon, Lambeth, Southwark and Lewisham)  
 Forensic Intensive Psychological Therapy Services (FIPTS)

### Mental Health Learning Disabilities (MHL D)

MHL D Croydon  
 MHL D Lambeth  
 MHL D Lewisham  
 MHL D Southwark  
 MHL D Out of Area placement monitoring  
 Early Intervention Service (Southwark pilot)

**Forensic and Neurodevelopmental Sciences – Teaching Unit (FANS-TU)** The BDP CAG works closely with the Department of Forensic and Neurodevelopmental Science at the Institute of Psychiatry. Our academics and clinicians run MSc, Postgraduate Diplomas and Doctorate degrees for graduates in psychiatry and psychology in addition to delivering an original research programme. FANS-TU oversees higher psychiatric training in forensic psychiatry across South London and offers training and conferences nationally.

**The Estia Centre** delivers a portfolio of training offered routinely, via MHL D clinicians, to staff in social care, community homes and mental health services in SE London to increase local capacity to support adults with MHL D needs. It has a long history of collaboration with other countries and with people with intellectual disabilities. The Estia Centre oversees higher psychiatric training in the psychiatry of intellectual disability across South London, publishes books, training packs and the 'Advances in Mental Health and Intellectual Disabilities' journal.

# Our pathways

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The Behavioural and Developmental Psychiatry CAG has a mixture of block and cost per case contracts for the provision of services. Local commissioners are Bexley, Bromley, Croydon, Greenwich, Lambeth, Lewisham and Southwark, with national and international commissioners (e.g. Gibraltar, Guernsey, Jersey, Scotland and Wales). The CAG has an active caseload of 4,400: 730 patients are supported within a mental health Care Programme Approach (CPA) framework. We

have an average of 1,580 attended community appointments a month, and in addition an average of 300 phone contacts and 400 group contacts per month.

Three of our pathways were subject to a full Care Quality Commission (CQC) inspection when the regulatory body visited the South London and Maudsley NHS Foundation Trust. The ratings were published in 2016.

**Figure 1** | Care Quality Commission Full Inspection Ratings for the Trust

Name of Provider	SLAM					
	Safe	Effective	Caring	Responsive	Well-led	Overall
Acute wards for adults of working age and psychiatric intensive care units (PICUs)	Inadequate	Requires Improvement	Good	Good	Requires Improvement	Requires Improvement
Long stay/rehabilitation mental health wards for working age adults	Requires Improvement	Good	Good	Good	Good	Good
Forensic inpatient/secure wards	Requires Improvement	Good	Good	Requires Improvement	Good	Requires Improvement
Child and adolescent mental health wards	Good	Good	Good	Good	Good	Good
Wards for older people with mental health problems	Requires Improvement	Requires Improvement	Requires Improvement	Requires Improvement	Good	Requires Improvement
Wards for people with a learning disability or autism	Good	Outstanding	Outstanding	Good	Outstanding	Outstanding
Community-based mental health services for adults of working age	Requires Improvement	Good	Good	Good	Good	Good
Mental health crisis services and health based places of safety	Requires Improvement	Good	Good	Good	Good	Good
Specialist community mental health services for children and young people	Good	Good	Good	Good	Good	Good
Community-based mental health services for older people	Requires Improvement	Good	Good	Good	Good	Good
Community mental health services for people with a learning disability or autism	Good	Outstanding	Outstanding	Good	Outstanding	Outstanding
Overall	Requires Improvement	Good	Good	Good	Good	Good

## Forensic Offender Health Pathway (FOHP)

Our Forensic Offender Health service line includes eight medium secure wards (MSU) and one low secure (LSU) community ward that between them offer 120 beds. One of our MSU wards is one of three national Personality Disorder (PD) inpatient services with an associated PD community team known as FIPTS (Forensic Intensive Psychological Treatment Service). Since 2015, as part of our Forensic Offender Health Pathway, we now deliver Community Forensic teams across the boroughs of Lambeth, Southwark, Lewisham and Croydon. We also deliver Criminal Justice and Liaison services in court and in local police stations within Lambeth, Southwark and Lewisham. Prison services are delivered at HMP Wandsworth; the largest prison in Europe.

The purpose of our service is to ensure mentally disordered offenders are assessed and treated effectively, in the least restrictive environment. This includes providing responsive assessments in court and police stations, resulting in diversion at the earliest opportunity from the criminal justice systems where appropriate. On our secure wards, we aim to manage risk, reduce further offending and support recovery throughout a person's stay.

Whereas our admissions and intensive care ward offers enhanced physical, procedural and relational security, our pre-discharge unit offers a high level of independence with a lower level of security, increased access to community programmes and community outreach services,

fostering the development of living skills before moving to independent settings in the community. We also offer time-limited inpatient stays and community assessments.

Our innovative service utilises the Buddi tracker system, using GPS to monitor patients on leave. People are individually risk assessed and each person consents to the use of the Buddi system as part of their therapeutic leave programme. We also run HCR-20 patient groups, applying the recovery model to both risk assessment and management. HCR-20 is a violence risk assessment scheme, the Historical Clinical Risk Management – 20, which has a good predictive value for violence and other offences following discharge. This is now embedded into a collaborative risk assessment CQUIN (Commissioning for Quality and Innovation) target called 'Safety Planning' and also includes a My Shared Pathway safety planning book, owned by our forensic patients. Our women's ward (Spring) supports a pathway to recovery from acute admission through to discharge in the community, using an holistic approach that accounts for their health, security and level of risk. We specialise in discharging women to suitable placements, many of whom have spent considerable time in secure facilities.

We also provide assessment, treatment and care for adults who have severe and ongoing mental health problems who have been remanded in prison to ensure they receive the same care they maintain their health. We work with other mental health teams to co-ordinate and plan people's care for

when they leave prison. We have sought (through our research) to introduce specialist nursing support into pressurised prison reception areas as some prisoners with mental health and neurodevelopmental problems can be missed. Our published work on suicide reduction at HMP Brixton (Slade, K & Forrester, A. 2015) has recently been picked up by government health advisory bodies.

The changing commissioning landscape and the re-categorisation of prisons resulted in the CAG leaving HMP Brixton. In 2015, the CAG successfully won the bid to provide services in HMP Wandsworth, the largest prison in Europe. This also included an innovative adult neurodevelopmental disorders clinic and, very recently (summer 2016), funding to introduce screening for intellectual disabilities as part of our offer. We have also been funded by NHS England (NHSE) to set up a new pilot veteran inreach service in HMP Wandsworth. The service model is based on the Veterans in Custody Support model with interagency working across NHS, statutory and third sector organisations. The pilot started in May 2015.

Our services are driven by a philosophy that prioritises effectiveness, efficient use of resources, safety and respect for patients, their families and the community. We seek to translate research into practice and to develop and evaluate innovative assessments and interventions. Our Personality Disorder Pathways model (FIPTS community team and Waddon Ward) is a joint initiative between the Department of Health and National

Offender Management Services as part of the Dangerous and Severe Personality Disorder (DSPD) programme to divert from high security hospitals (e.g Broadmoor and Rampton hospitals) in favour of increased provision in the criminal justice system and community. In 2016, the FIPTS community team is to pilot an Intensive Intervention and Risk Management Service (IRMS) which has been commissioned by the National Offender Management Service (NOMS) and NHSE. This is likely to form the basis of a national service specification.

As a result of our successful education and training pilot Psychologically Informed Practice (PIP), we are rolling out this work across South East London, seeking to develop and evaluate a psychologically-informed workforce for managing high risk offenders with personality disorder residing in a London Approved Premise. We are also working with partners across three London courts (in south, west and east London) to explore ways of offering alternatives to custodial remand for women who have been charged, as part of a Department of Health-funded project

## Neurodevelopmental Disorders (NDD) Pathway

This clinical pathway includes services that provide national, international and local care. We are very proud of our neurodevelopmental services; they benefit enormously from their relationships with the Institute of Psychiatry,

Psychology and Neuroscience (IoPPN), the expertise and commitment of our clinicians, and the collaborative ethos within the neurodevelopmental services as a whole. The pathway includes four specialist mental health teams for adults with intellectual disabilities, a 15-bedded National Autism Unit, new community NDD diagnostic pathways in Lambeth and Croydon delivered from local GP sites, modelling learning from our Kent NDD services, and national outpatient diagnostic clinics for ADHD, ASD, Behavioural Genetics and Female Hormone Clinic, as well as innovations in offender health.

## National Autism and Attention Deficit Hyperactivity Services for Adults (NAASA)

We provide assessment and treatment for adults with Attention Deficit Hyperactivity Disorder (ADHD). Since the clinic's inception in the early 1990s, we have developed a specialist service providing diagnostic ADHD assessment and treatment for over 3,000 people. We undertake over 50 assessments each month, with a follow-up caseload of between 350 and 400 patients. This allows us to provide a unique, accomplished service in an area where there is currently little clinical experience or service provision in the NHS. Psychologists in our service have developed ADHD-specific, psycho-education workshops and

individual cognitive behavioural therapy (CBT) to improve long-term outcomes.

We also offer evidence-based treatment and collaborative care for people who present with high functioning Autism Spectrum Disorder (ASD) and co-morbid mental health or behavioural problems. We offer skills-building packages designed to address some of the core features of ASD. On admission, over 50% of patients were detained under the Mental Health Act. This fell to 27% on discharge. Patients no longer detained under the Act are able to move to less restrictive settings, avoiding the high costs associated with secure accommodation.

Our National Autism Unit (NAU) at Bethlem Royal Hospital is one of only two NHS units in the country that specialise in this area. The NAU provides the most intensive treatment environment within our neurodevelopmental pathway. Its aim is to make sure that people with complex difficulties have access to outstanding assessment and treatment to support them to have as high a quality of life as possible and to live as independently as possible.

Neurodevelopmental disorders are very common (ASD: 1% of the general population; ADHD: 2.5% of the general population in adulthood) but nationally patients with these difficulties have had great difficulty accessing diagnostic services or expeditious treatment. The overall aim of our pathway is to provide services for people with neurodevelopmental disorders that meet as much unmet need as possible, as soon as possible, as close to the patient's home as possible – ideally

from within a primary care context. Where this is not possible as a result of local commissioning arrangements, we aim to provide truly expert local and national services that are responsive to individual needs, that are informed by the best possible understanding of the evidence base and that take an active part in research and the dissemination of best practice.

The Behavioural Genetics Clinic and Female Hormone Clinic are national, specialist services based at the Maudsley Hospital. Our unique clinical and research-led service offers an evidence-based approach to the assessment and treatment of people with neurodevelopmental disorders associated with cognitive abnormalities, behavioural problems or both. We serve two patient groups who have complex genetic neurodevelopmental disorders.

The first group are people with ASD, including autism and Asperger's syndrome. We offer a diagnostic service for both the main disorder and co-morbid mental health and behavioural problems. We have identified up to 50% of people referred to us have previously undiagnosed mental health problems and have responded favourably to our treatment.

The second group of people are those with specific chromosomal abnormalities and single gene disorders, who present with difficulties, behavioural problems or cognitive abnormalities. For example, we assess people with a significantly increased risk of dementia or age-related cognitive decline (Down syndrome and premature menopause), social abnormalities and autism

(Fragile X Syndrome, Tuberous Sclerosis, Turner Syndrome, Klinefelter Syndrome), psychosis (Velo-Cardio Facial Syndrome) and depression (Myotonic Dystrophy, Congenital Adrenal Hyperplasia). Our clinical team is renowned nationally and internationally, and is leading the way in this field of work. Many of the treatments we use are ones developed by us. They are evidence-based, with published results in peer reviewed journals.

Our NAASA portfolio is our CAG's premier research platform and we were awarded €29.9 million, the world's largest research grant for autism (EU-AIMS) as well as winning the NHS Innovation Of The Year Award for inventing the first 'brain scan' diagnostic tool for ASD, demonstrating early translation of research from 'bench to bedside'. We are the first UK service to win a MRC/EME grant to test the effectiveness of mental health treatment for ADHD in prisons, aimed at reducing aggression and improving engagement in therapies.

## Mental Health of Learning Disabilities (MHL D)

Our MHL D service model has led the way nationally and internationally as a specialist service focused on adults with learning (intellectual) disabilities suffering from severe mental illness who are unable, because of the complexity of their health and social care needs, atypical presentations or level of disability, to access mainstream mental health services. Many have co-morbid ASD, ADHD or severe challenging behaviours that put



themselves or others at risk; some may come into contact with the criminal justice system and have a forensic history. Many also have communication difficulties, significant co-morbid physical health problems and are vulnerable to exploitation and abuse. We aim to facilitate and support individuals with learning disabilities and mental health needs to access mainstream services wherever possible, to co-work with other mental health services and to provide specialist services and care coordination where needed.

Our structures and clinical practice are embedded within a mental health framework, and have benefitted from a real focus and expertise on mental health. Our team of Community Psychiatric Nurses (CPNs), a mix of RMN and RNLD trained nurses, provide adapted clinical interventions for people with learning disabilities and mental health needs, as well as care co-ordination under the Care Programme Approach (CPA). Referrals to MHL D have increased in complexity, including those with severe challenging behaviours, co-morbid neurodevelopmental disorders such as autism and ADHD, complex physical health problems and offending/risky behaviours. We have undertaken a fundamental review of MHL D services, to build clinical and financial resilience and to deliver a new service offer which will be more responsive to the demands of NHSE's 'Transforming Care' agenda. We are exploring potential evaluation options with King's Improvement Science (KIS).

Our enhanced community offer for adults with severe challenging behaviours aimed at reducing hospital admissions locally and out of

area has received additional funding from local commissioners and is being examined as a model of good practice by NHSE.

Our teams are multi-professional and community-based. Most of our assessments and interventions are delivered in the community, in people's homes, educational colleges and day centres, as well as outpatient settings. The MHL D Service uses all the facilities of mainstream mental health services, including home treatment teams, acute and medium stay in-patient beds and a variety of community resources. The service offers a range of interventions and therapies such as pharmacological therapy, CBT, counselling and positive behavioural interventions. We work closely with service users directly and/or with parents, partners, carers or support staff depending on the reasons for referral. We work collaboratively with primary care, social care, third sector providers, family carers and individuals with learning disabilities, promoting social inclusion and patient engagement in all that we do.

The team provides two distinct but intertwined functions; clinical and training/consultancy-related activity. We deliver education and training for students on placement (medicine, psychology, nursing), qualified doctors and nurses as well as community support workers. We are the lead provider for higher psychiatric training in South London. In addition, psychologists and behaviour support practitioners offer up to 12 placements a year to trainee clinical psychologists from the IoPPN and Salomons doctorate in clinical psychology training courses and MSc student

behaviour support practitioners from the Tizard Centre (University of Kent). Our nursing team offer regular placements to Learning Disability Nursing students from London South Bank University (LSBU) and receive consistently positive feedback on the quality of the clinical learning environment.

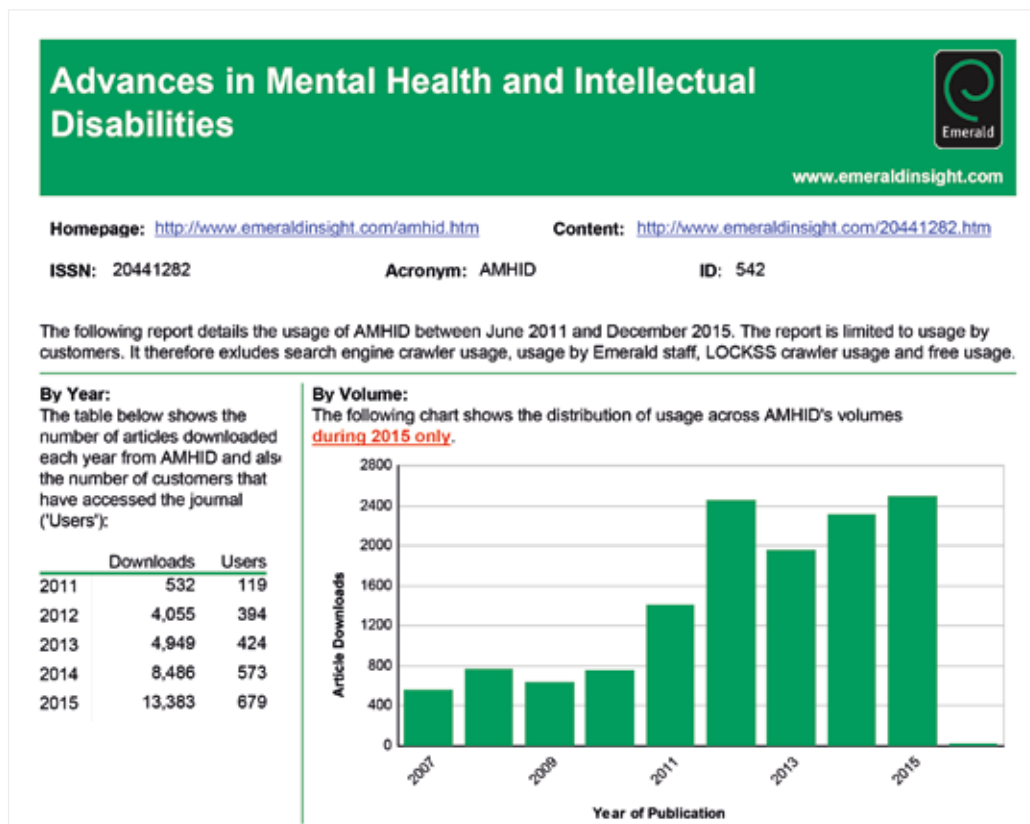
Our clinicians, via the Estia (Evaluation, Services, Training, Intervention, and Assessment) Centre set up in 1999 ([www.estiacentre.org](http://www.estiacentre.org)), provide training and consultancy to local community providers to promote a 'capable environment' and network of support for highly vulnerable individuals. This remains an innovative concept combining clinical services, training, research and development and is well aligned to KHP's AHSC ambitions. To promote user, carer and practitioner awareness, a number of our publications are freely available via our website for improving care and standards for adults with intellectual disability and mental health problems. An example is autism awareness literature developed by the Estia Centre, produced

on behalf of the Department of Health by the Royal College of Nursing in partnership with other key health and social care organisations and circulated by the RCN to every nurse in England.

The UK is the only country to have specific training in the psychiatry of intellectual disabilities. The Estia Centre continues to attract overseas visitors to our services, to exchange ideas and learn about service models, philosophy of care and collaborate on research and training initiatives. Clinicians within our services develop and publish teaching materials and training packs.

We publish the only journal in the world devoted specifically to integrating research into mental health clinical practice in this population, called *Advances in Mental Health and Intellectual Disabilities*, published by Emerald Publishers. We are working closely with our editorial board and publishers and are well on our way to gaining an impact factor for the journal.

**Figure 2** | Advances in Mental Health and Intellectual Disabilities Journal



# Our priorities

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## Personalised medicine and individualised therapies

We aim to prevent disorder by identifying infants at risk. Basic scientists, clinician scientists, clinicians and health economists are encouraged to work together at every level of research for patient benefit from discovery, through Proof of Concept testing (i.e demonstrating a scientific discovery has the potential for real-world application) to evaluating clinical outcomes including cost-benefit analysis. We have a BRC- and EU-funded infant, child and adult research programme, launched in April 2012 and aimed at identifying novel treatment targets for individuals with or at risk of a neurodevelopmental disorder.

We have used MRI to show depleting brain serotonin restores the pattern of brain activity in Autism Spectrum Disorders (ASD) towards a 'typical' control profile. We can now exploit

this discovery for the benefit of patients.

We are exploring ways to measure drug response in autism using MRI – a safe and painless brain scanning technique. The aim is to develop this tool to test whether new pharmacological treatments might work in autism and to help predict who might respond best to new treatments.

We have applied computer assisted classification tools (such as the Support Vector Mechanism [SVM]) in diverse clinical settings to assist the diagnosis of autism.

We are examining predictors of absconding behaviour from medium secure forensic units, and predictors of community recall of patients detained under S37/41 of the Mental Health Act, with a view to developing risk screening tools.

# Aims for integrated mental and physical healthcare

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People with severe mental illness and people with intellectual disabilities have poorer health outcomes and are likely to die 15–20 years prematurely from preventable causes.

We aim to address the underlying physical health risk factors contributing to excessive morbidity and premature deaths in our patients with severe and enduring mental illness and in our patients with intellectual disabilities by:

- Working with other CAGs across KHP to better integrate mental and physical healthcare research, education and clinical delivery
- With the Psychosis CAG, we have developed IMPACT Therapy which includes a training programme to improve physical health in people with serious mental illness
- Implementing a training strategy to improve staff awareness and knowledge of physical health in people with serious mental illness
- Appointing Physical Health Champions, who maintain quality standards in their local service area
- Ensuring all patients are registered with a GP and working closely with primary and secondary care and the local community to facilitate access to physical healthcare in the most appropriate way for the individual
- Assessing cardiovascular risk and developing a register and exercise clinic for high risk patients. We are also examining care pathways for people with intellectual disabilities and respiratory problems, as this is the most common cause of premature deaths.

## Co-morbid physical health problems

The CAG is committed to reducing these health inequalities and worked intensively in 2012/2013 to prepare for our smoking ban which was implemented across all our inpatient services in March 2013. To assess cardiovascular risk, we have implemented the QRISK2 tool on our inpatient wards which guides the interventions offered and we are effectively meeting our CQUIN targets (smoking status, lifestyle such as exercise and diet, body mass index, blood pressure, glucose regulation and blood lipids). We are piloting CQUIN targets in our community services in discussion with our commissioners. On our forensic units, we have established a chronic diseases register to better understand the health needs of our patients so that we can focus attention on where we can have the most significant impact. We also offer dental and sexual health screening via our links with primary care services and increased physical activity within our units and hospital grounds. We can measure improvements in service users physical healthcare and disability through HoNOS-Secure and HoNOS-LD metrics.

Our service models and prison tenders now include wider collaboration and partnerships. We focus on a 'through the prison gates and back into the community' model, offering robust and effective screening and early intervention for physical and mental health disorders to a subgroup of the population which is largely non-

seeking in the community (McKinnon et al 2015; Brown et al 2015; Jarrett et al 2012).

In 2016, we will be working with Quality Improvement methodology to focus on addressing physical health inequalities for people who are supported by our inpatient and community teams.

## Public health

For our CAG, public health means health promotion, early interventions and effective responses to mental and physical health crises. Our aim is to diagnose and treat early, to prevent disorder at a primary, secondary and tertiary level, to assess and manage risk and to promote recovery and social inclusion through a human rights 'equality to health' approach. Our patients often experience perceived and actual discrimination and are one of the most disadvantaged groups using mental health services, with the highest burden of physical health co-morbidity, health inequalities and premature deaths from treatable conditions.

Helping our patients to stop smoking is the most significant physical health gain we can influence. Our smoking cessation pilot which began in March 2013 resulted in all our inpatient services being smoke-free, without an increase in untoward incidents. The learning from this encouraged our mental health Trust to work towards going smoke-free in 2014. This early work paved the way to King's Health Partners going smoke-free across its NHS organisations and piloting initiatives in its university partner.

We are sharing our experiences with other healthcare organisations – contributing to the NICE guidelines (2013), presenting this work at national conferences (e.g. International Congress, Royal College of Psychiatrists 2014) and embarking on a multi-centre research study with other medium secure units in the UK.

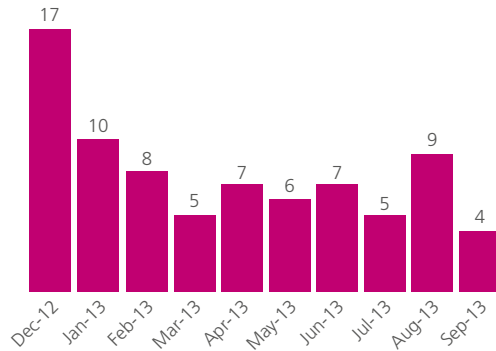
We aim to raise the quality of care for people with intellectual disabilities by increasing awareness, promoting 'reasonable adjustments' and targeted education and training initiatives. In response to 'Healthcare for All' (2008) and Winterbourne View (2011) we work closely with families, other service providers and commissioners to address safeguarding concerns and to support a more capable environment so people with intellectual disabilities and complex challenging needs can remain in their local communities. Our patients are often socially

disadvantaged and a significant part of our approach is value-based and focussed on enhancing well-being and social inclusion. In 2015, we were awarded funds from Health Education South London (HESL) to use education and training approaches to enhance awareness and skills amongst clinicians, aimed at addressing premature mortality in individuals with ID. This has led to a number of stakeholder events delivered in collaboration with people with ID, scoping the availability and content of training and learning opportunities within our partner organisations, a staff survey (with 570 respondents), the formation of a KHP Education Academy Intellectual Disabilities workstream to take the learning forward and currently the drafting of a development framework for our workforce. In summer 2016, our three partner NHS Trusts formally committed to reducing health inequalities by signing the Mencap Pledge.



**Figure 3 |** Going smoke-free across all our inpatient services

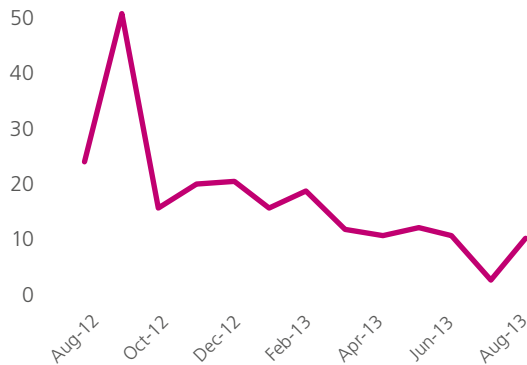
**B&DP CAG smoking incident data  
(violent incidents related to smoking)**



**Contributing to the evidence base**

- The learning from our pilot will be rolled out to other mental health CAGs and across our hospital sites
- Collaboration across CAGs and multi-centre research and educational projects e.g. respiratory health outcomes for our forensic patients; premature deaths in adults with learning disabilities and respiratory disease
- Understanding and managing risks associated with patients' creative attempts to circumvent the smoking ban
- Establishing a chronic disease register for our forensic inpatient services

**Percentage of UDSs that were Positive or Refusals**

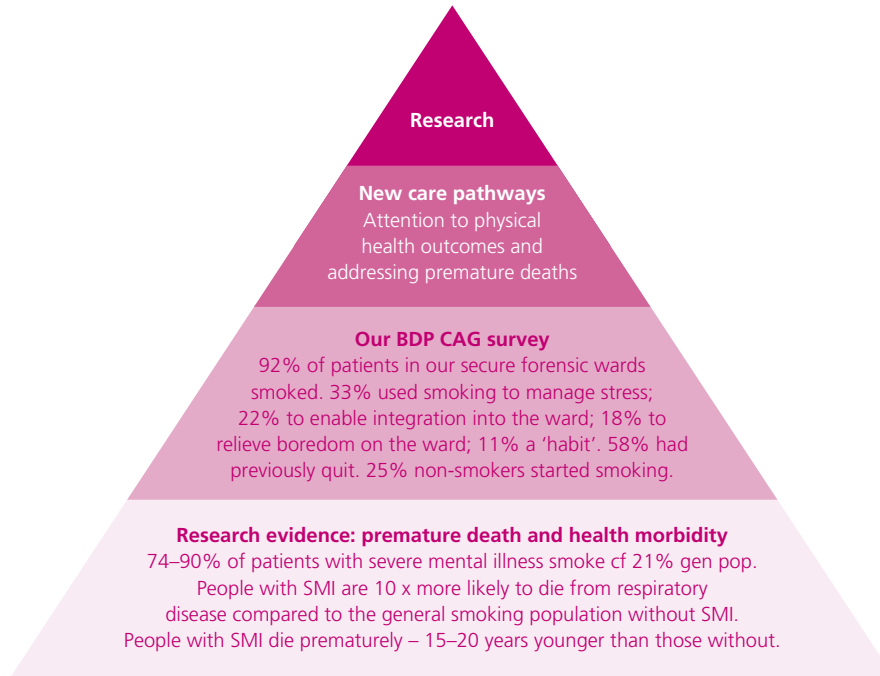


**Outcomes**

- Releasing 90 minutes nursing time per shift to focus on therapeutic work
- Reducing co-morbid illicit substance use (as measured by positive urine drug screens (USD) shown in the graph)
- Fewer incidents of violence and aggression related to smoking
- Cleaner environment and reduced passive smoking for patients and staff
- Increase in therapeutic activities offered and taken up
- Positive individual patient stories of physical and mental health benefit



**Figure 4** | Going smoke-free across all our inpatient services



**Transforming the workforce and ward environment**

- Securing Trust support to implement smoking ban as a pilot (based on research evidence)
- Ensuring all staff groups were engaged with implementing strategy via staff and patient focus groups, communication plan
- Active listening – to patients, staff and carers leading to creative solutions and individual focus to manage risks/issues
- E-learning one smoking cessation training rolled out to staff (target number = 174, staff trained 276); CQUIN monies for meeting targets used to purchase indoor and outdoor activity equipment
- Medical staff updated knowledge of Nicotine Replacement Therapy and interface with antipsychotic medication
- Multi-professional team approach to support lifestyle changes, address boredom, manage stress
- Identified project leads with consistent and visible leadership at senior CAG level

# Key achievements

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- Winning the Healthcare, Excellence and Leadership (HEAL) 'NHS Innovation of the year' award (2010), and named one of the 'Top 10 Science findings of the year' (2011) for inventing the first 'brain scan' diagnostic tool for Autism Spectrum Disorder.
- Winning the only Sackler Centre for Neurodevelopmental Translational Research in the world to take research 'from the bench to the bedside'.
- Leading EU-AIMS: Autism Research in Europe, which is the world's biggest grant (€29.9 million) in autism to discover new treatments for autism in collaboration with industry. Our Behavioural Genetics Clinic (BGC) is now leading and recruiting to this research project.
- Leading EU Metrics (€4.5million) which is exploring the biology and outcomes of children with conduct disorder.
- London lead for a US\$12.5 million NIH award on the genetics of learning disabilities and mental health problems in Velocardiofacial Syndrome.
- New research projects looking at neurodevelopmental disorders in forensic and prison settings. We are the first UK service to win a MRC/EME grant to test the effectiveness of mental health treatment for ADHD in prisons aimed at reducing aggression and improving engagement in therapies.
- e-Obs, developed and piloted by front line staff in our NAU service, was used as the basis for the Trust's successful £1million grant application to develop this for roll out across the organisation with the introduction of GPS tracking in our medium secure forensic inpatient services. The aim is to improve risk management by reducing episodes of leave violation (absconding and failure to return) and to increase the proportion of unescorted leave in episodes of leave granted. It has benefits for patient recovery, reduced lengths of stay, reduced costs and public safety.

- Going smoke-free on all our inpatient services from March 2013 with no increase in smoking-related incidents. This learning encouraged our Trust and partner organisations to go smoke free in 2014 and 2015.
- Major service transformation in our forensic medium secure services, National Autism Unit and Mental Health in Learning Disabilities services leading to significant cost savings with better outcomes for patients (e.g. better access to primary care, better skill mix in our clinical teams, more flexible response to need).
- We won the HMP Wandsworth contract for £11million over 5 years, and secured funding of £1million for Criminal Justice Mental Health across Lambeth, Southwark, Lewisham and Croydon police stations and courts.
- We have recovered from a deficit of near £8m at the end of 2012/13 to a now break even position in 2015/16 (excluding transition funding for forensic secure services).
- We have returned our National Autism Unit to a surplus, running at 100% occupancy with a daycare provision and a waiting list, whilst expanding our community and primary care diagnostic ASD/ADHD offer to meet the challenges of the Autism Act for commissioners.
- Both pathways within our neurodevelopmental disorders service line (inpatient services for people with autism, and community mental health services for people with intellectual disabilities) were rated outstanding by the CQC (2016).
- Being chosen as the 'Lead Educational Provider' for higher psychiatric training in South London for Forensic Psychiatry and Psychiatry of Intellectual (Learning) Disability.
- Secured a grant from Health Education South London (HESL) and supported by King's Health Partner's Education Academy, to address health inequalities for adults with intellectual disabilities through education and training approaches.
- Launch of a new, dedicated psychiatric genetics clinic (2014) – the first in the UK – in collaboration with the Guy's Medical Genetics department, to identify new genes for autism and ADHD.
- Publishing research in the highest impact factor journals (e.g. Science, Nature Neuroscience, Nature Medicine, Nature Reviews Neuroscience, Lancet, Archives of General Psychiatry, Molecular Psychiatry, Brain and JAMA Psychiatry).

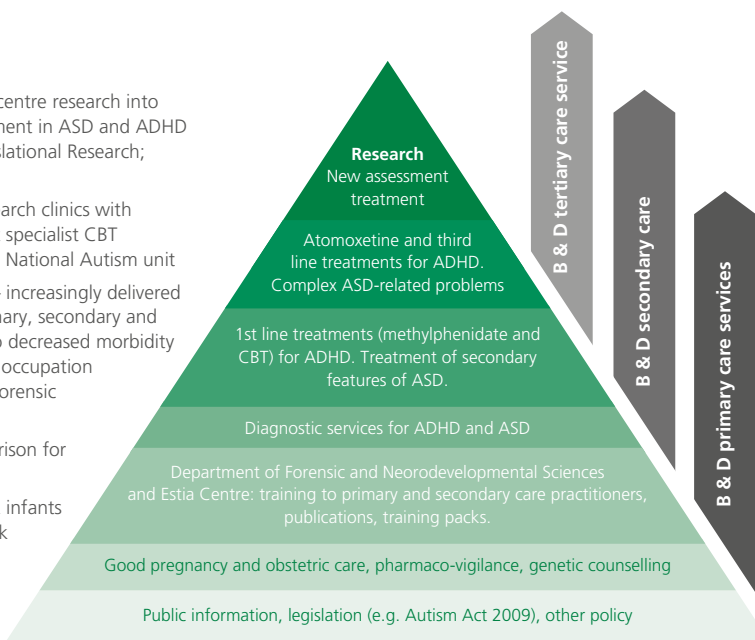
- Collaboration across King's Health Partners to address inequalities experienced by people with intellectual disabilities by our three NHS Trusts signing the Mencap Pledge (June 2016).
- In 2016, the CAG was successful in securing the Forensic Vanguard for South London, called 'South London Partnership'. This will be a transformational change programme across three NHS providers: Oxleas, South London & the Maudsley and South West London & St Georges NHS Trusts. This will provide the opportunity to improve quality and patient experience in the pathway and it will also provide a substantial saving in the long term.
- In 2016, the CAG was successful in securing the Forensic Vanguard for South London, called 'South London Partnership'. This will be a transformational change programme across three NHS providers: Oxleas, South London
- In September 2016, our clinical director was seconded to NHS England to provide senior leadership to the national Transforming Care Agenda for the Learning (Intellectual) Disability programme.

# Demonstrating our tripartite mission

**Figure 5** | Adult attention deficit disorder and Autism spectrum service

### Examples of BDP CAG input

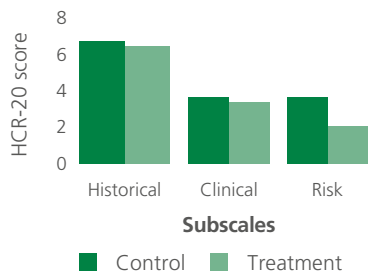
- Leading international multi-centre research into novel assessment and treatment in ASD and ADHD e.g. Sackler Centre for Translational Research; EU-AIMS
- National diagnostic and research clinics with pathway into our outpatient specialist CBT programme, day service and National Autism unit
- Our core specialist services – increasingly delivered in the community, with primary, secondary and tertiary pathways, leading to decreased morbidity and co-morbidity, improved occupation functioning and decreased forensic behaviour
- Research and screening in prison for ASD and ADHD
- Research: scanning high-risk infants for ASD and infants of at-risk mothers
- Clinical Reference Group, input into development of NICE guidelines



**Figure 6 | Forensic offender health pathway**

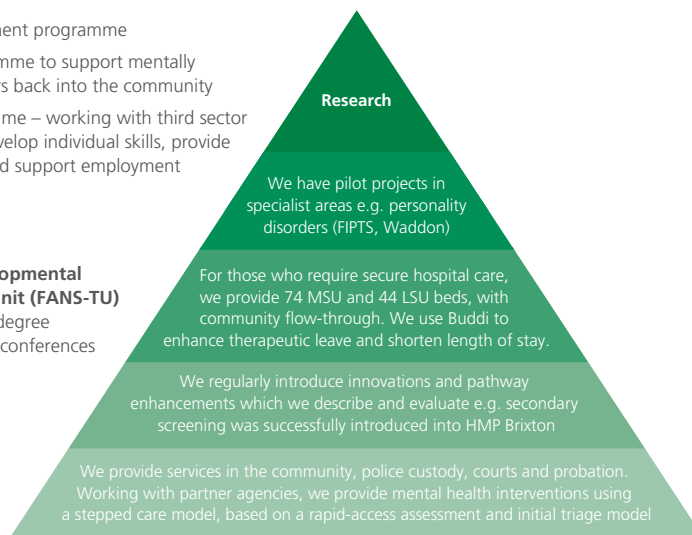
**We deliver a range of interventions:**

- Secondary screening in prisons with psychological work in preventing the onset of psychosis
- Rapid triage in police custody and court
- Teaching HCR-20 to forensic patients to reduce risk

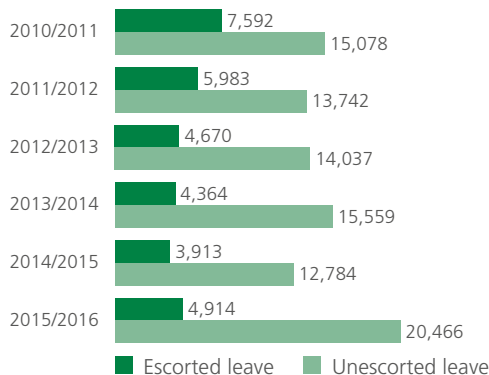


- Violence reduction programme to reduce numbers of incidents
- Sex offender treatment programme
- Educational programme to support mentally disordered offenders back into the community
- Vocational programme – working with third sector organisations to develop individual skills, provide work experience and support employment

**Forensic Neurodevelopmental Science – Teaching Unit (FANS-TU)** delivers postgraduate degree programmes, national conferences and original research



**Outcomes from Buddi (GPS electrical tagging)** showing significant increase in unescorted leave and reduction in leave violation

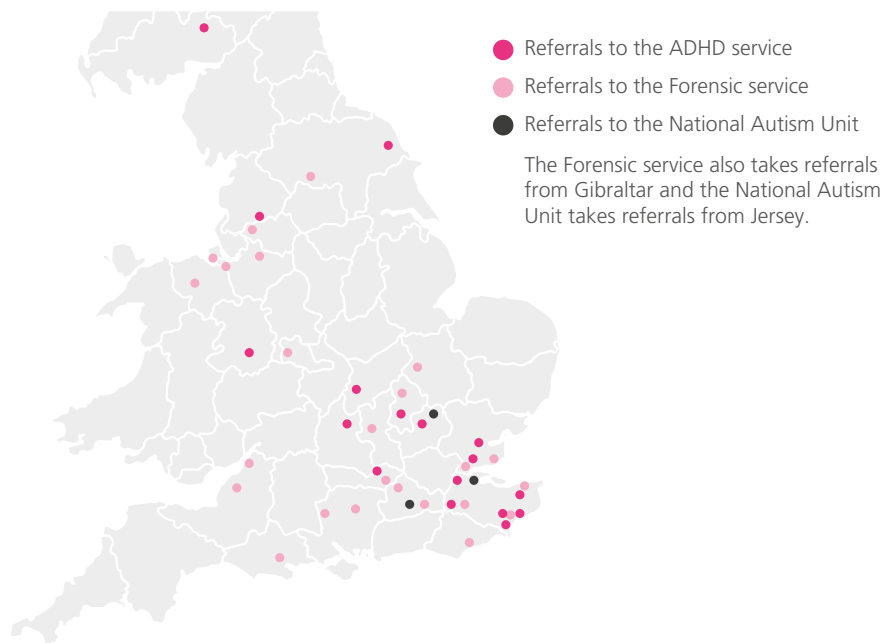


# Where our service users are referred from

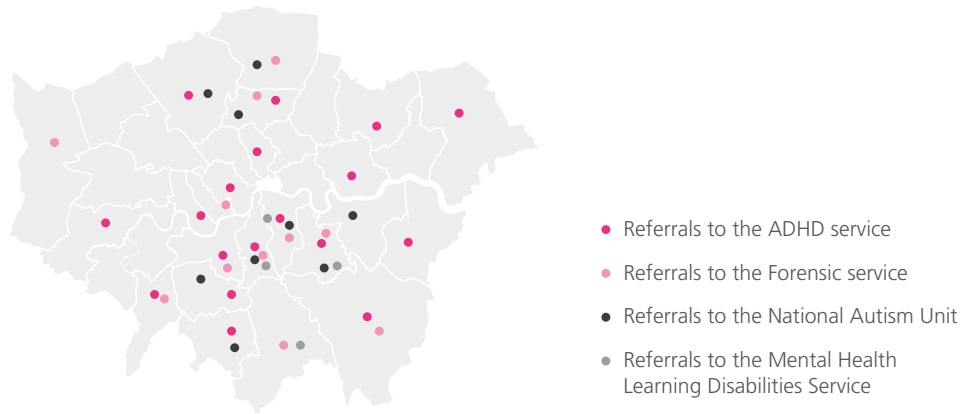
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The following figures show that we take referrals from right across the United Kingdom and some referrals from other European countries.

**Figure 7** | Referrals from across England, Wales and Scotland

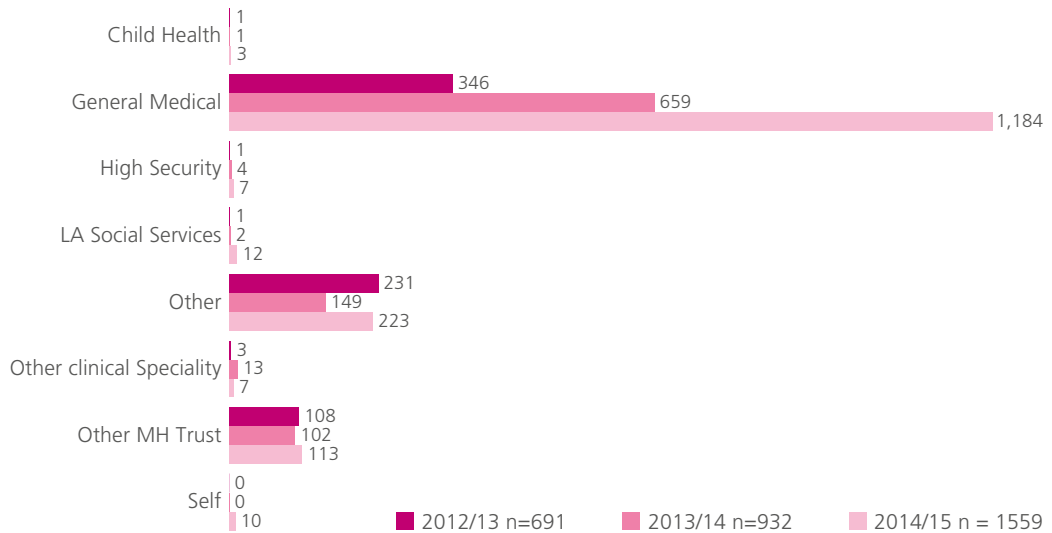


**Figure 8 | Referrals across London**



## Referral sources

**Figure 9 | Referral sources to the National Autism and ADHD services from 2012–2015**

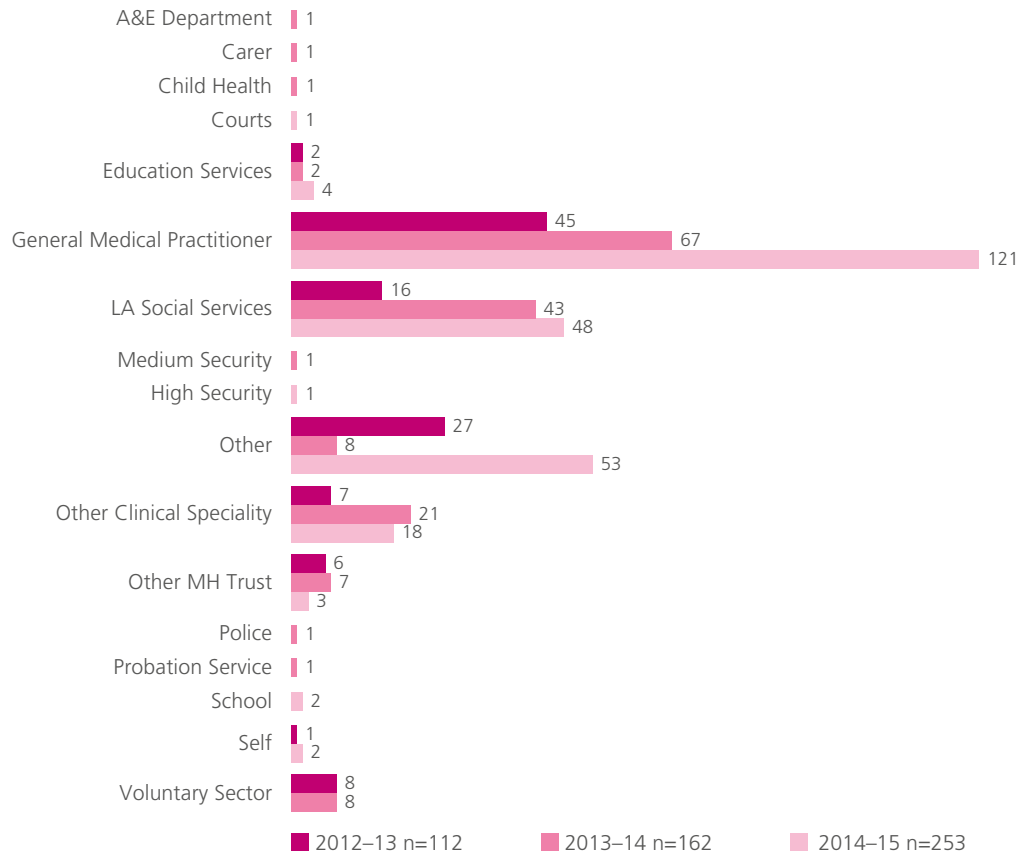




This reflects the work we have done in reaching out to primary care, to raise awareness of ASD/ADHD and the assessment services we are able to offer. This helps to meet the commissioner responsibilities set out in the Autism Act. Strategically, as we

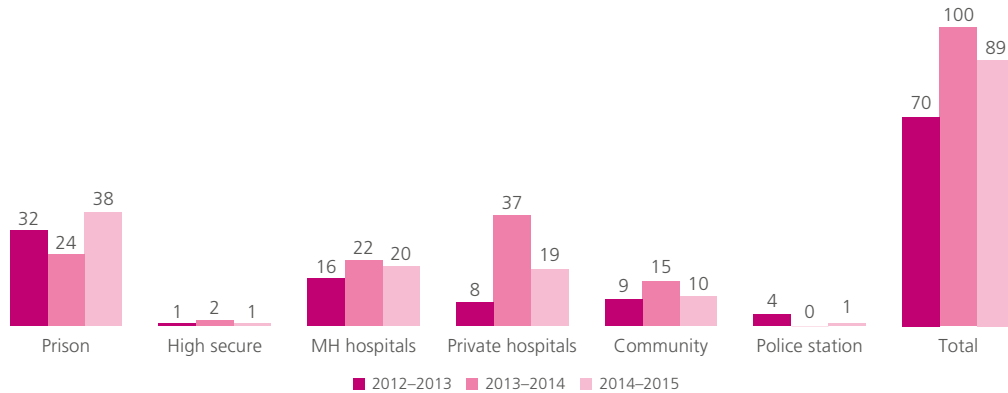
develop our integrated primary care and community offer, we anticipate this will lead to a reduction in referrals to our national diagnostic clinics at the Maudsley but those who are then referred will clearly be in need of a tertiary service.

**Figure 10 |** Referral sources to Mental Health Learning Disability services from 2012–2015

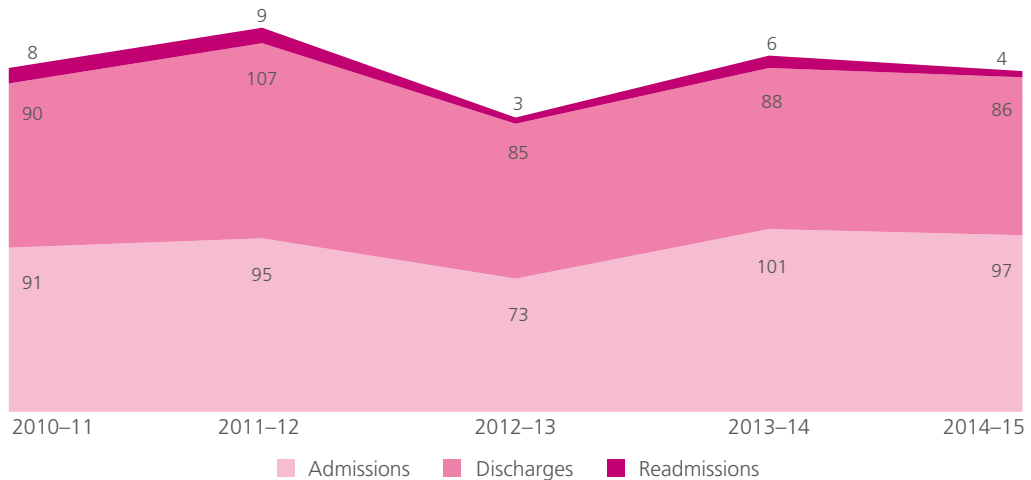


## Forensic Offender Health Pathway

**Figure 11 |** Referral sources to Forensic Services between 2012–2015

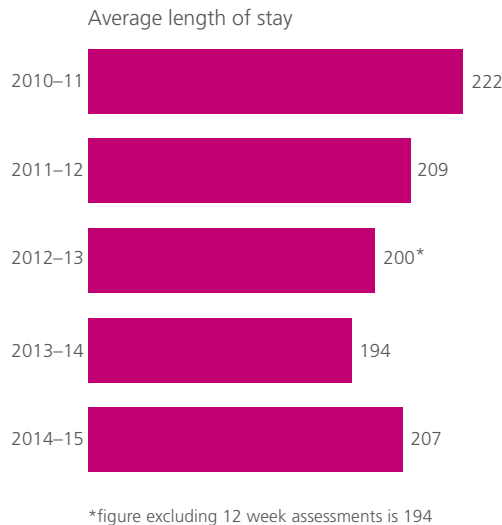


**Figure 12 |** Referrals, admissions, discharges and readmissions 2010/11 to 2014/15 for the Forensic Offender pathway

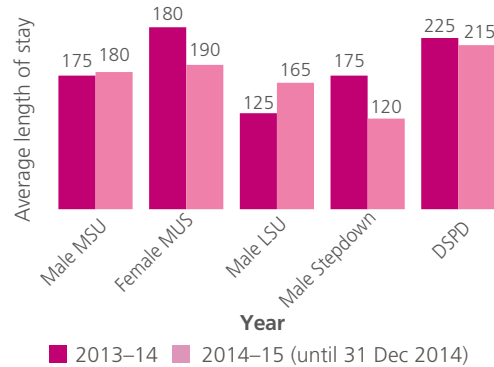


The graph below shows high levels of admission activity. Readmission rates are mainly recalls for those who are on a restriction order under the Mental Health Act and we have seen a general downward trend since 2012. This is reassuring, as there is also a trend towards a shorter average length of stay. Benchmarking against other service providers is not available at present. However, as shown in the graph, our current average length of stay is considerably less than the 18–24 months that is the traditionally quoted typical length of stay for medium secure patients by local commissioners. The data sharing as part of our South London Partnership Forensic Vanguard will allow better benchmarking in the future.

**Figure 13 |** Forensic Offender Health pathway average length of stay (trimmed) since 2011



**Figure 14 |** Average length of stay on Forensic Secure Units



The length of stay (LOS) in our forensic secure services is relatively constant. However, Commissioners have indicated it is the shortest LOS compared to similar providers. Our recently secured Vanguard in forensic services for South London will promote sharing and benchmarking of data in the future. In 2013/2014, we were operating a 12-week pilot assessment/triage programme on our acute admission ward (Norbury) which demonstrated better patient outcomes. Although statistical significance at the  $p < 0.05$  level was not reached, this is likely due to the small sample size and therefore lack of power. Within three months, the majority of participants were found to no longer require medium secure level care and were able to be placed in less restrictive environments (low secure units, general wards). The reduction of days on a medium secure unit is likely to have a positive long term effect on patient well-being and quality of life, as well as reducing stigma and individual level costs. Most patients in forensic

services are 'graduates' from general psychiatry and black males are over-represented. Thus, this initiative is likely to have a disproportionately beneficial effect on this group of people.

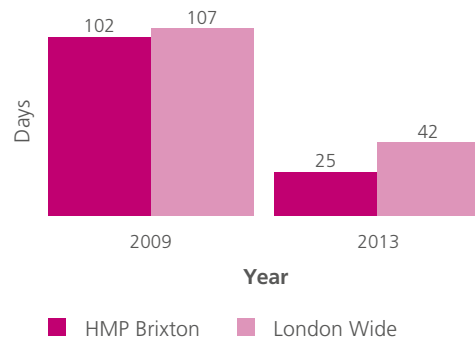
Despite promising results, this resource-intensive option early in our secure forensic pathway was not commissioned when responsibility transferred from local commissioners to NHS England. However, this is being reviewed in the light of the outcomes we have been able to share and our successful Vanguard with NHS England to test new models of care across South London.

## Prison-hospital transfer waiting times to the Forensic Medium Secure Unit

Historically, there have been difficulties with prison-hospital transfer waiting times and with transfer times in London being consistently longer than those reported in other parts of the UK. In 2009, these delays were reported at 102 days for HMP Brixton and 107 days across London.

Working with a neighbouring Trust, we sought to explore re-designed pathways to assess whether they could assist in reducing hospital transfer waiting times. A part-time pathway Community Psychiatric Nurse was introduced to specifically work with the prison population requiring transfer (including liaising with other services and the Ministry of Justice) and a rapid consultant response was introduced for all referrals. The pathways enhancements were compared across two sites and both yielded significant benefits (Forrester et al, 2013).

**Figure 15 |** Transfer waiting times in days



## Contract with HMP Wandsworth Prison

Due to the changing commissioning landscape and re-categorisation of prisons, we are no longer working in HMP Brixton but are seeking to transfer our learning into HMP Wandsworth, where we won the tender in 2015.

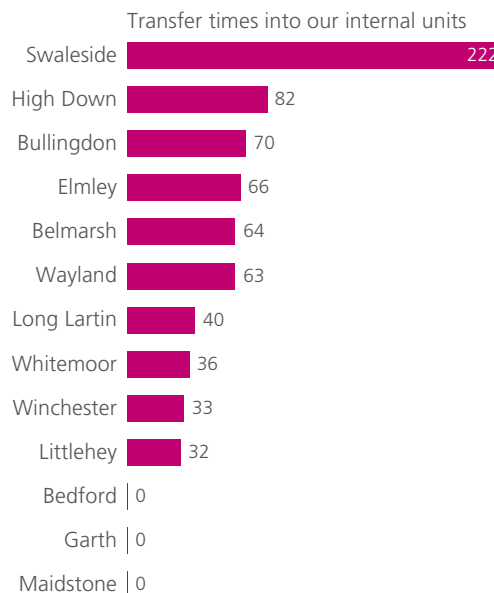
Between April 2015–March 2016, we have had 28 referrals for prisoners with mental health problems requiring transfer into a secure hospital environment. Figure 16 shows the average wait in days from referral to hospital transfer in HMP Wandsworth compared to London and the rest of the UK.

**Figure 16 |** Transfer waiting times in days (2015–2016) compared to the rest of London and the UK

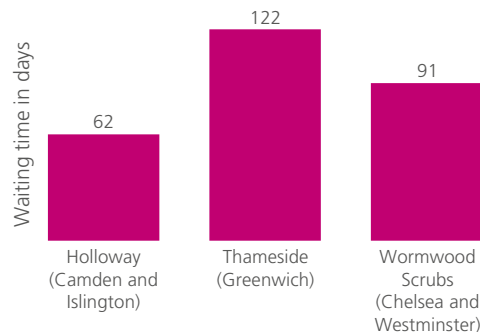


We are also the forensic gate-keepers for prisoners who originated from the London Borough of Lambeth, but who are detained in other prisons in the country. Figures 17 and 18 show the average waiting times in days for these prisons.

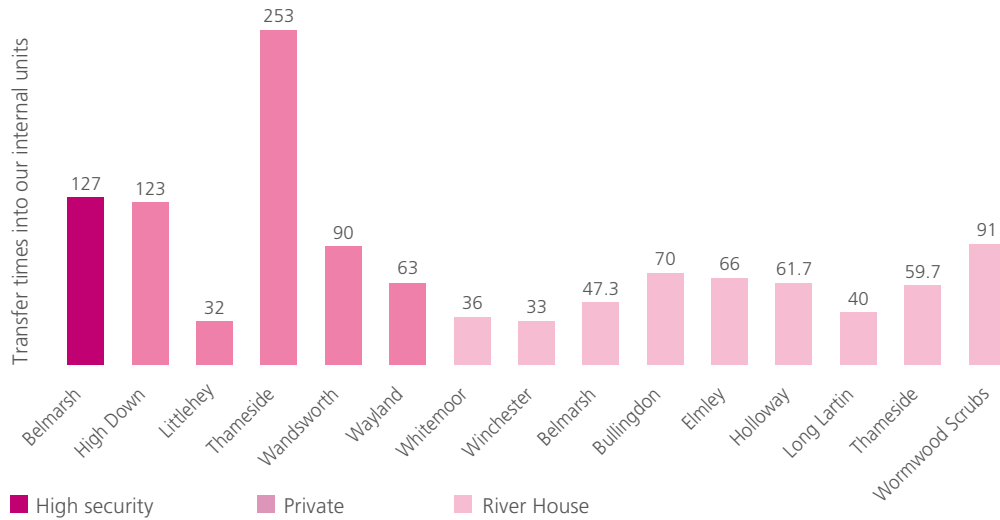
**Figure 17 |** Lambeth prisoners detained in other prisons outside of London 2015–2016



**Figure 18 |** Lambeth prisoners detained in prisons in other London boroughs 2015–2016



**Figure 19** | Average waiting time for hospital transfers for the different prisons from which referrals have come in 2015–2016



This shows transfer times into our secure beds at River House medium secure unit compared to transfers into high secure environments or the private sector, often because we have no available secure beds.

# Clinical outcomes

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This section of the book evidences clinical outcomes for patients in the Behavioural and Developmental CAG as measured with the Health of the Nation Outcome Scales (HoNOS). The HoNOS measure behavioural problems, impairment, psychiatric symptoms and social functioning, and show the detail of where the change in a person's clinical presentation has occurred. Since the publication of our first outcomes book, when we reported on the use of HoNOS-Secure and HoNOS-LD as pilot projects, paired HoNOS-Secure ratings on discharge has been adopted as a CQUIN for secure forensic services. We are currently working with our local commissioners on paired HoNOS-LD ratings for our learning disability mental health services. This data extraction is not yet routine in the Trust, but the use of HoNOS-LD was highlighted as an area of good practice by the CQC (2016). Understanding context is important and we look forward to further analysis with clinical teams. For

example, patients who are on the caseload for longer may be more likely to have a paired HoNOS rating, whilst those in an acute crisis may not have paired ratings due to their shorter contact with services. Our current data, presented below, may therefore be an under-representation of clinical improvement.

The two approaches to measuring health outcome are the following:

1. Examines change in total HoNOS scores, which is useful for showing high level changes over a number of years.
2. Documenting the proportion of patients showing improvement or deterioration on each of the 12 HoNOS scales at first contact with the clinical pathway and on discharge. Previously, we reported average first and last HoNOS ratings found in clinical records for the entire caseload.

**Figure 20** | The 12 HoNOS scales:

The HoNOS scales cover a wide range of health and social domains – psychiatric symptoms, physical health, functioning, relationships and housing:

<b>1</b>	Overactive, aggressive, disruptive or agitated behaviour
<b>2</b>	Non-accidental self-injury
<b>3</b>	Problem drinking or drug-taking
<b>4</b>	Cognitive problems
<b>5</b>	Physical illness or disability problems
<b>6</b>	Problems associated with hallucinations and delusions
<b>7</b>	Problems with depressed mood
<b>8</b>	Other mental and behavioural problems
<b>9</b>	Problems with relationships
<b>10</b>	Problems with activities of daily living
<b>11</b>	Problems with living conditions
<b>12</b>	Problems with occupation and activities

**How they are scored:**

<b>0</b>	No problem
<b>1</b>	Minor problem requiring no action
<b>2</b>	Mild problem but definitely present
<b>3</b>	Moderately severe problem
<b>4</b>	Severe to very severe problem

## Forensic services

### HoNOS-Secure scales

As well as the 12 HoNOS scales mentioned above, there are additional scales called HoNOS-Secure that apply to the patients in Forensic services.

These extra scales are specifically designed for use in health and social care settings such as secure psychiatric, prison health care and related forensic services, including those based in the community. Parts of the original HoNOS can be hard to interpret in secure settings and this scale meets that need.

<b>A</b>	Risk of harm to adults or children
<b>B</b>	Risk of self-harm (deliberate or accidental)
<b>C</b>	Need of building security to prevent physical escape
<b>D</b>	Need for a safely staffed living environment
<b>E</b>	Need for escort on leave (beyond the secure perimeter)
<b>F</b>	Risk to individual from others
<b>G</b>	Need for risk management procedures

Forensic secure services are now required to report paired HoNOS-Secure scores on discharge and these are presented in the graphs below. This different way of reporting makes data comparison with our first outcomes book difficult. However, it will allow for better comparison in the future.



## HoNOS-Secure outcomes for the Male MSU and LSU over the last three financial years

Figure 21 | (a)

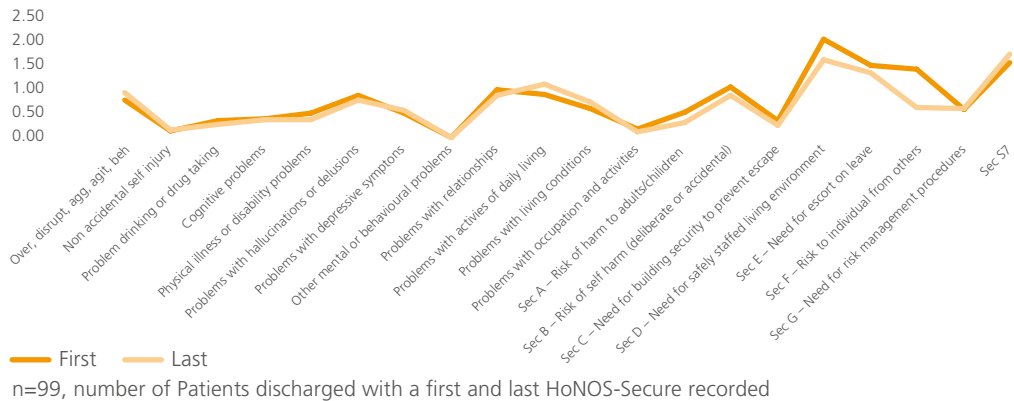


Figure 21 | (b)

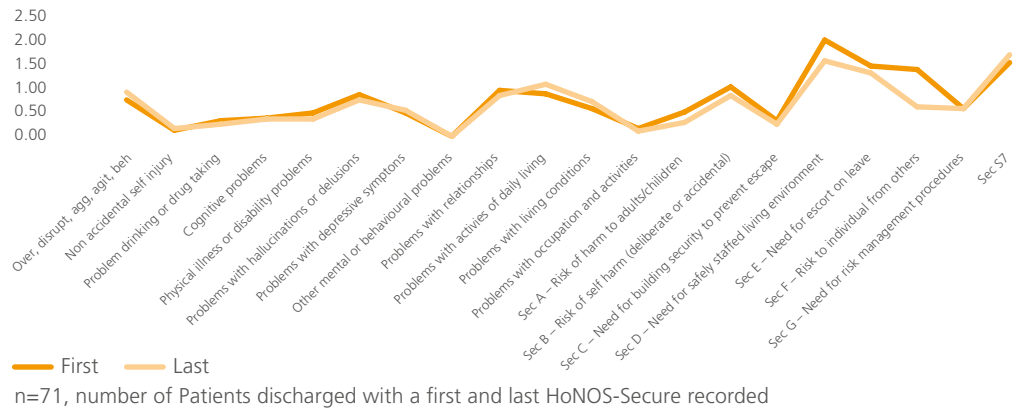
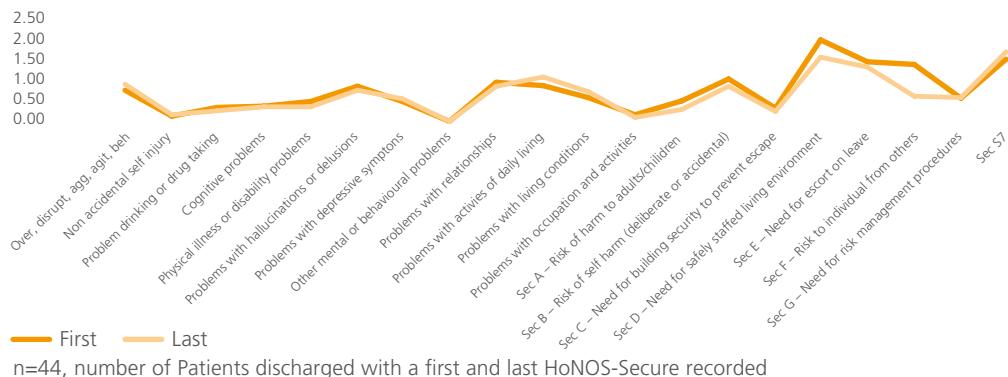


Figure 21 | (c)



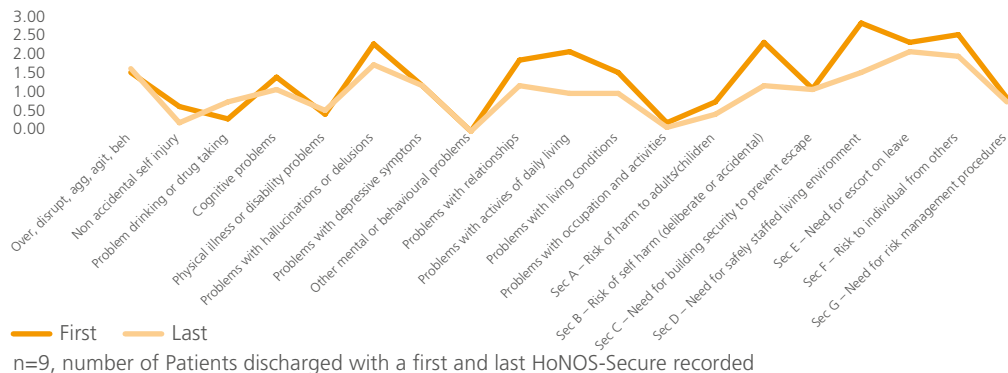
### Analysis of the above three HoNOS-Secure outcomes for the service

We are unsure why these graphs do not reflect the acuity on admission. Our male offender health pathway involves several wards (as compared to

our female pathway which is on one ward) and this may have resulted in rating inconsistencies across some of the HoNOS domains.

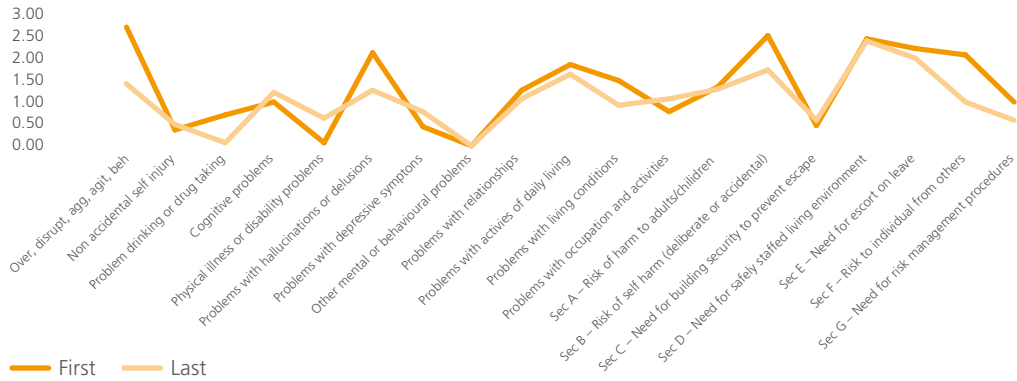
### HoNOS-Secure outcomes for the Norbury Ward over the last three financial years

Figure 22 | (a)



63 patients were discharged from Norbury in 2012/2013 but only nine patients had paired HoNOS-Secure scores.

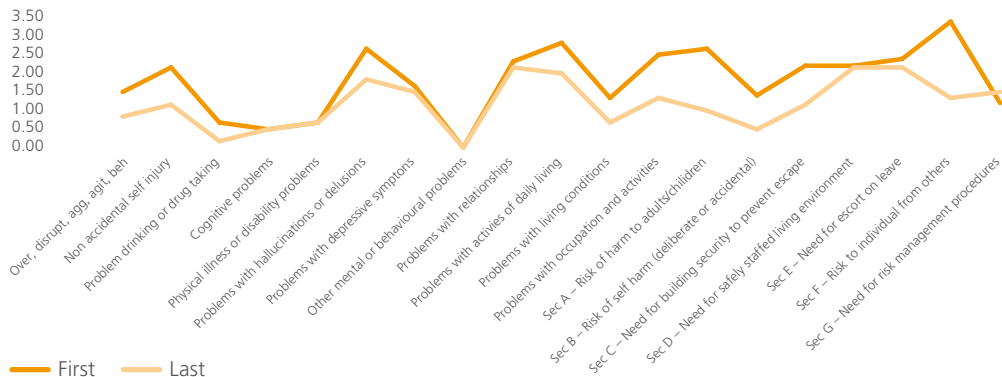
**Figure 22 | (b)**



n=14, number of Patients discharged with a first and last HoNOS-Secure recorded

64 patients were discharged from Norbury in 2013/2014 but only 14 patients had paired HoNOS-Secure ratings.

**Figure 22 | (c)**



n=6, number of Patients discharged with a first and last HoNOS-Secure recorded

42 patients were discharged from Norbury in 2014/2015, but only six patients had paired HoNOS-Secure ratings.

## Analysis of the above three HoNOS-Secure outcomes for the service

In comparison to the graphs for the Forensic pathway, the graphs above from Norbury Ward (our Tier 1 admission unit) show higher acuity and

the HoNOS-Secure ratings when patients leave Norbury to go back to prison or into one of our forensic Tier 2 wards.

## HoNOS-Secure outcomes for the Chaffinch Ward over the last three financial years

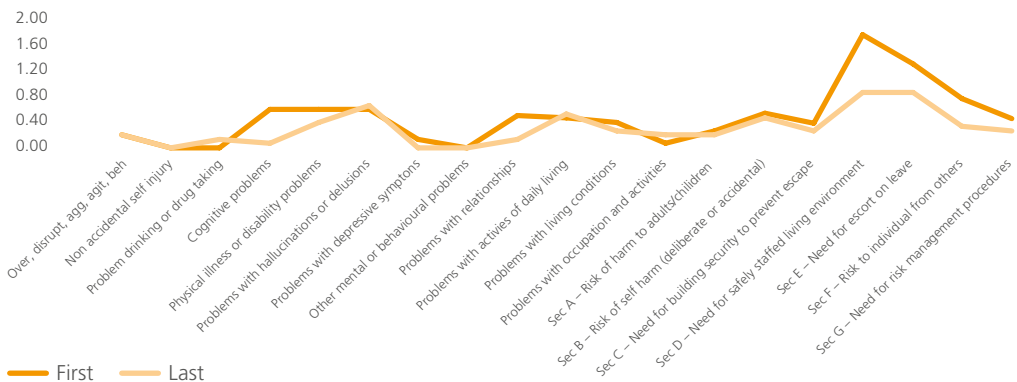
**Figure 23 | (a)**



n=15, number of Patients discharged with a first and last HoNOS-Secure recorded

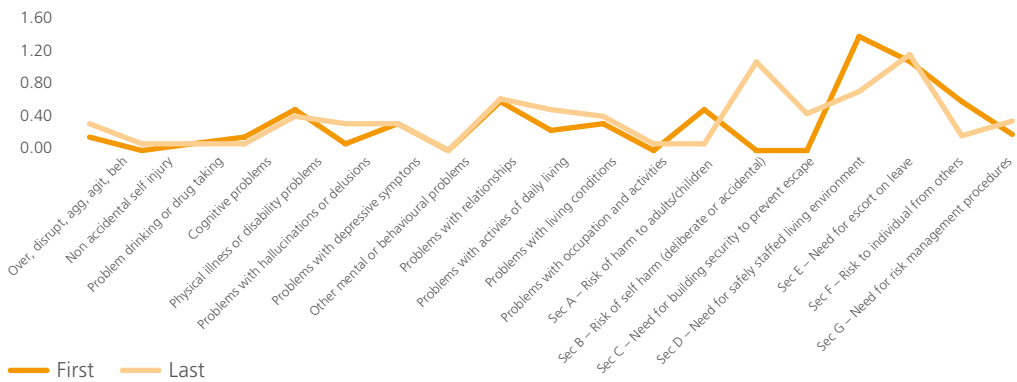
21 patients were discharged from Chaffinch in 2012/2013 but only 15 had paired HoNOS-Secure ratings.

**Figure 23 | (b)**



— First — Last  
 n=15, number of Patients discharged with a first and last HoNOS-Secure recorded  
 25 patients were discharged from Chaffinch in 2013/2014 but only 15 had paired HoNOS-Secure ratings.

**Figure 23 | (c)**



— First — Last  
 n=12, number of Patients discharged with a first and last HoNOS-Secure recorded  
 19 patients were discharged from Chaffinch in 2014/2015 but only 12 had paired HoNOS-Secure ratings.

## Analysis of the above three HoNOS-Secure outcomes for the service

Our paired HoNOS-Secure ratings for our pre-discharge unit (Chaffinch) also shows significant changes in security needs.

Given that NHS England has adopted paired HoNOS-Secure ratings on discharge as a CQUIN target nationally across all secure services, we have plans in place across our forensic services to improve the reliability and consistency of our data. We will be completing HoNOS-Secure ratings via

a multi-professional review at key points along the pathway, and paired HoNOS scores will be reviewed by each ward at monthly quality and performance monitoring forums. Work is also being undertaken to triangulate HoNOS-Secure with HCR-20 scores on admission and discharge to better evaluate the usefulness of HoNOS-Secure in clinical practice. Induction and refresher sessions have been included in our CAG Training Plan to support staff in using rating scales routinely.

## HoNOS-Secure outcomes for the Female MSU Forensic Offender Health Pathway over the last three financial years

Figure 24 | (a)

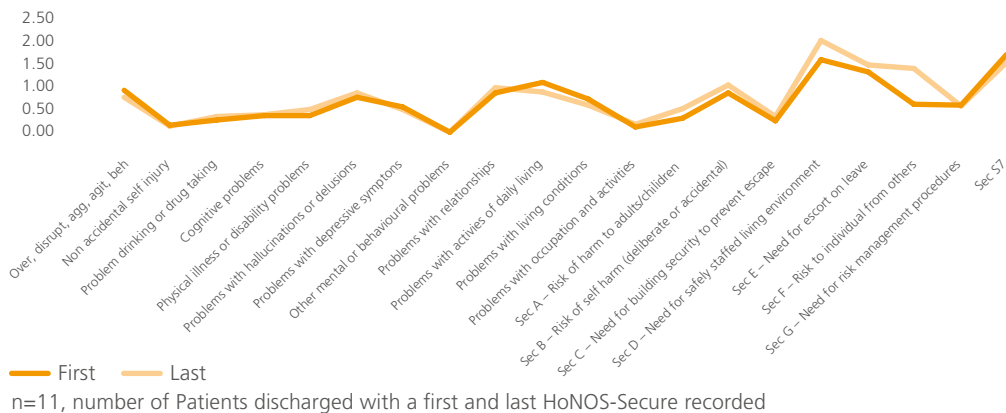


Figure 24 | (b)

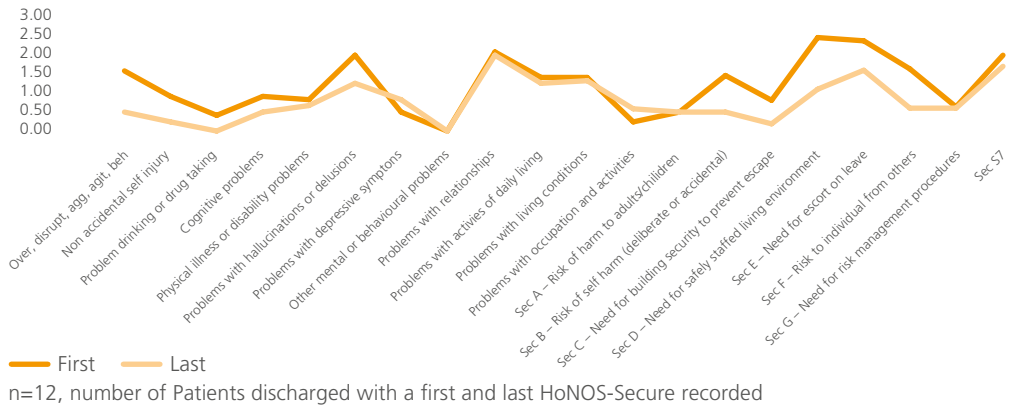
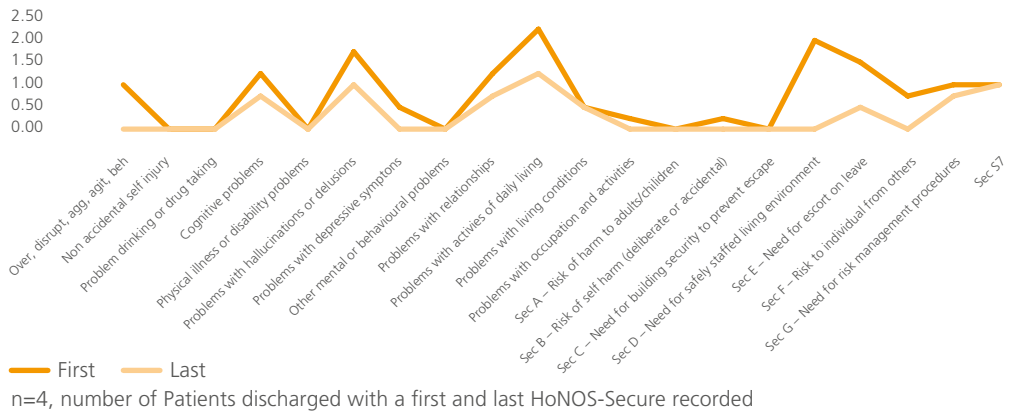


Figure 24 | (c)



## HoNOS-Secure outcomes for the outpatient and community Forensic Offender Health Pathway over the last three financial years

Figure 25 | (a)

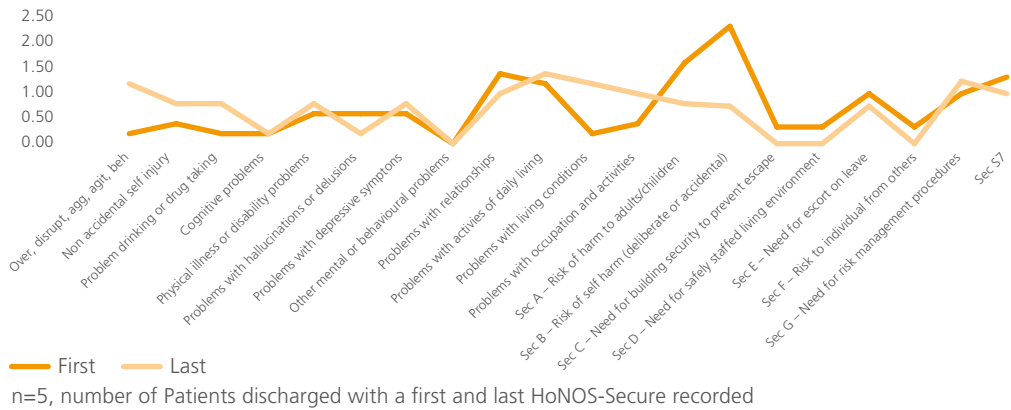


Figure 25 | (b)

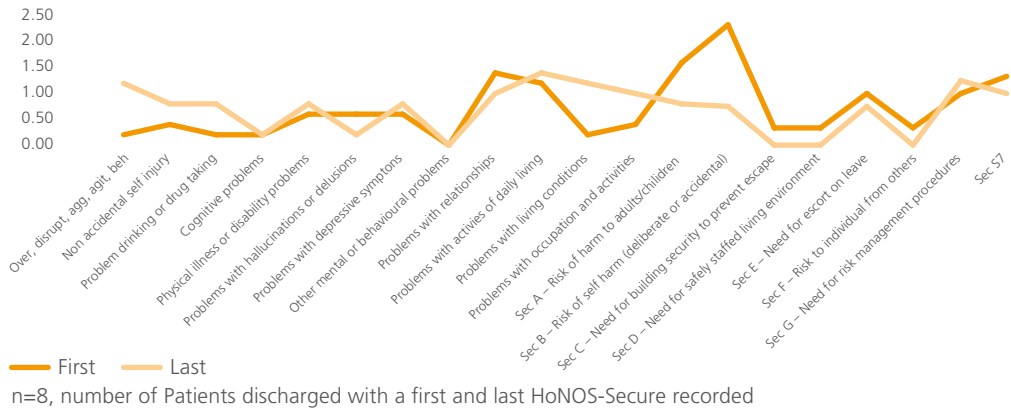
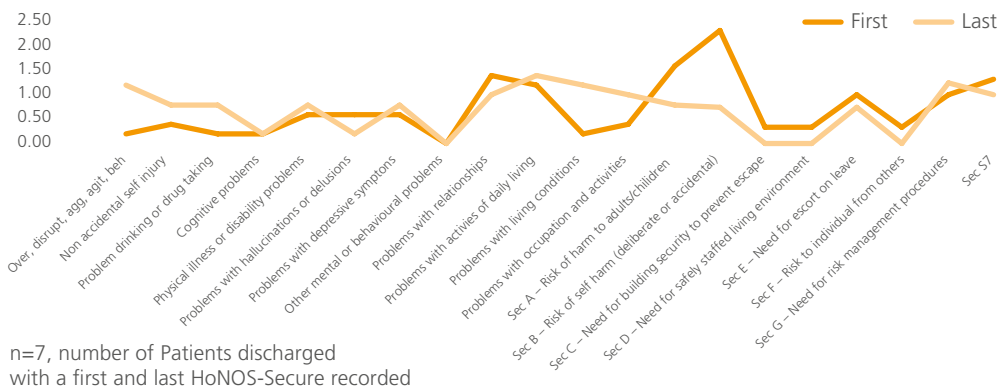




Figure 25 | (c)



Most discharges from our forensic community services are due to deteriorating mental health and the need for an admission, often into mainstream adult mental health wards rather than secure settings, as demonstrated by the paired HoNOS-Secure scores.

### Forensic – Example of other clinical outcome measures routinely used as part of our integrated research approach

#### New Violence Reduction Programme for Forensic known as HCR-20 Risk and Recovery Programme

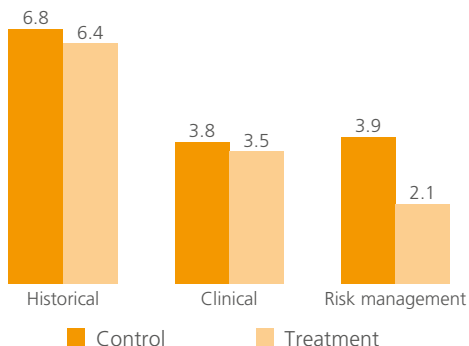
We applied the principles of the recovery model to create the HCR-20 Risk and Recovery

Programme. The programme runs on all of our forensic inpatient wards. The purpose of this programme is to be transparent about risk by making the patient aware of exactly how risk is assessed and to empower patients to take an active role in reducing their HCR-20 scores and manage their risk.

We achieve this through holding weekly group sessions on the wards. By being transparent with patients about how and why we assess risk and encouraging them to understand the risk assessment process, the patients in the treatment group showed reduced scores on the overall risk items of the HCR-20 post-treatment when compared with the control group.

We have demonstrated that involving patients in risk and recovery work and encouraging responsibility-taking can introduce risk benefits. A paper to be submitted for publication in the future.

**Figure 26 | HCR-20 Risk and Recovery chart**



**Key**

**Historical** – These are the list of historical problems itemised on the evaluation form for their presence or relevance, such as violence, employment, traumatic experiences or treatment response etc.

**Clinical** – These are the list of recent problems itemised on the evaluation form, such as insight, instability, symptoms of major mental disorder etc.

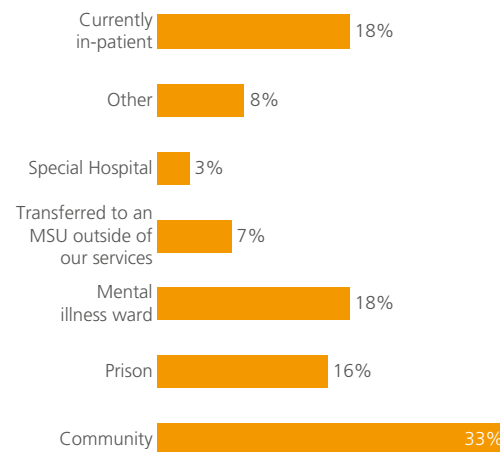
**Risk Management** – These are a list of future problems listed on the evaluation form, such as professional services and plans, personal support, stress or coping etc.

## FIPTS Outcomes

Our Forensic Intensive Psychological Therapy Service (FIPTS) is for offenders with severe and dangerous personality disorders and includes our community FIPTS team, our medium secure inpatient unit (Waddon) and residential services. This population is typically difficult to engage in treatment and has high drop-out rates, which

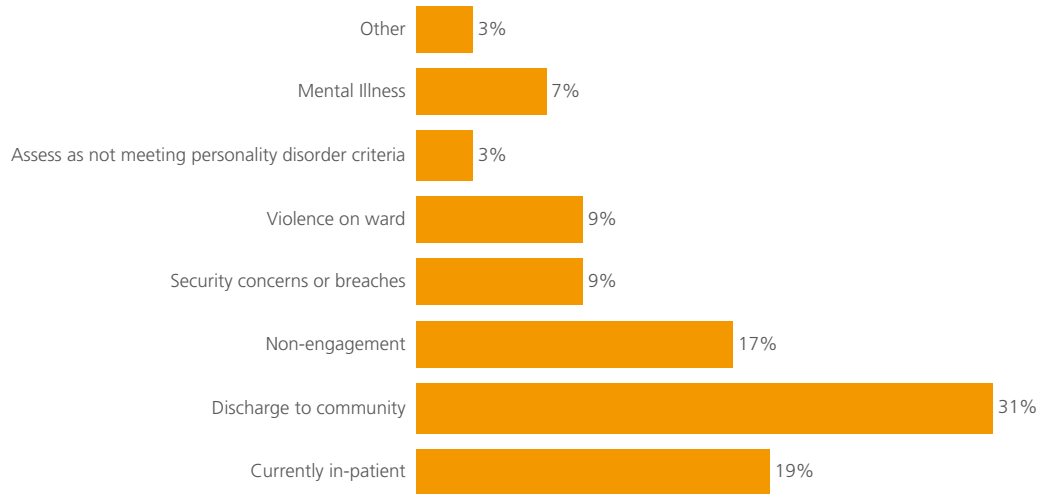
are associated with increased risk. Over a three-year period, 72% of those admitted to Waddon have completed at least one phase of the main treatment programme, the Violence Reduction Programme (VRP), and 39% have completed all three phases. Engagement in the VRP is significantly associated with a reduction in the risk of violence (Archibald et al, 2014) and treatment completion on Waddon is strongly correlated with successful discharge.

**Figure 27 | Showing discharge destination for % of forensic patients**



The graph below shows the discharge destinations as audited in 2013. Some of the returns represented successful outcomes, in that the patients completed the therapies but had to return to prison to await a parole hearing.

**Figure 28 | Reason for discharge % (2013 audit)**



## National Autism Unit

**Figure 29 | (a) Neurodevelopmental disorders pathway – National Autism Unit (NAU) discharged patients**

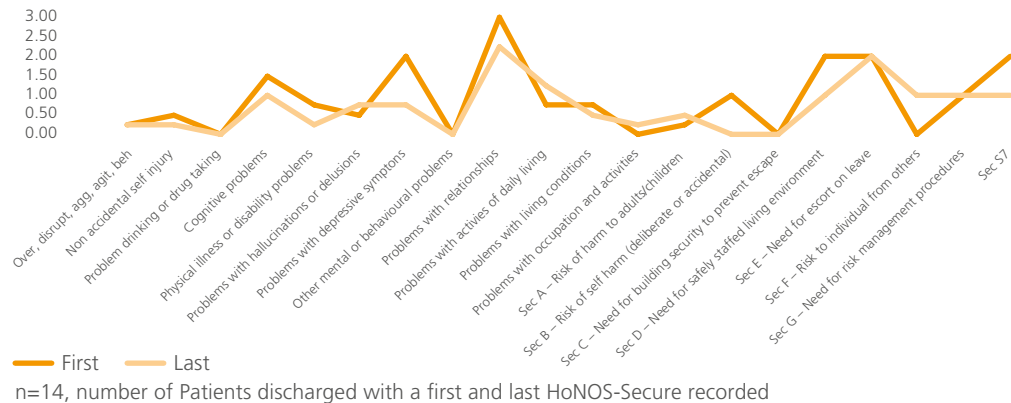


Figure 29 | (b)

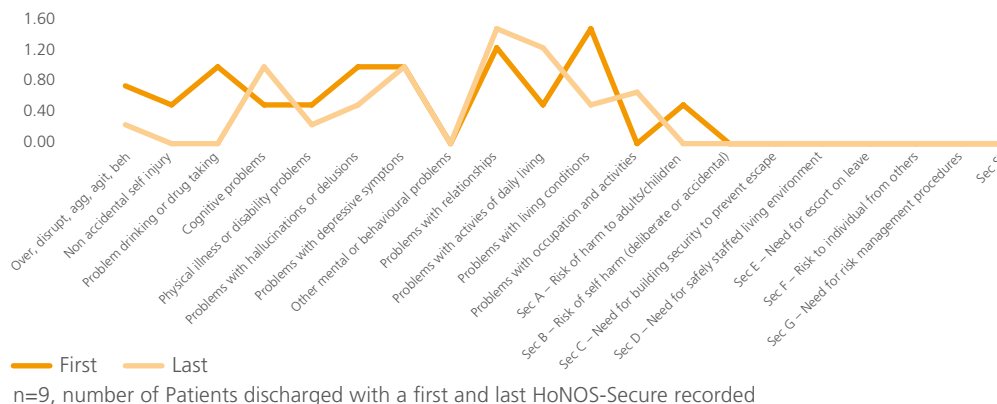
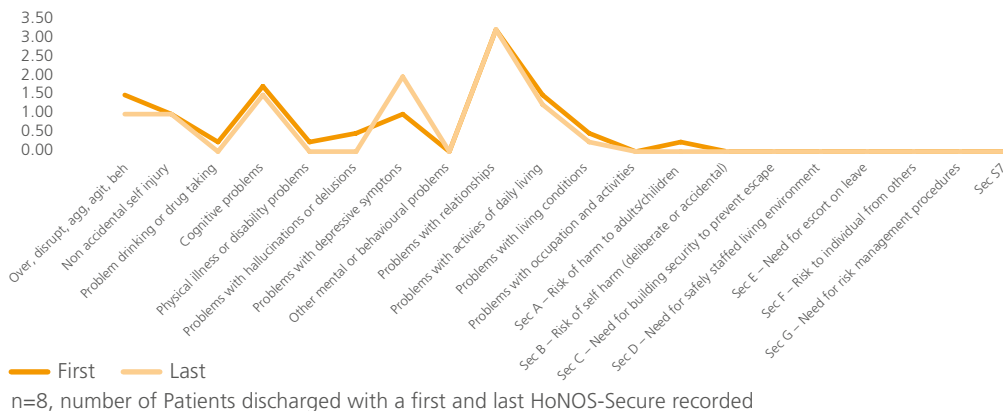


Figure 29 | (c)



Our National Autism Unit was remodelled in 2013/2014 with a reduction in inpatient beds and a more robust pre-admission assessment. The unit

now may decide not to offer admission if it is likely to result in the need for higher security or a different skill mix to that offered on the unit.

## Obsessive Compulsive Inventory scales

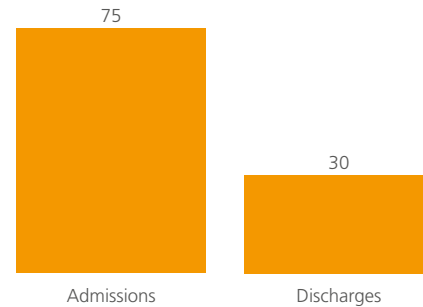
NAU – Example of other clinical outcome measures routinely used as part of our integrated research approach

The OCI (Obsessive-Compulsive Inventory – Revised) is a comprehensive self-report measure for assessing obsessive-compulsive symptoms. It contains 42 items which are rated on a five-point scale. The measure has good internal consistency and test/re-test reliability and is used routinely in our national diagnostic clinics to record a range of symptoms associated with autism. For people with autism who require admission, obsessions and compulsions are often severe enough to meet diagnostic criteria for obsessive compulsive disorder (OCD), a disabling anxiety disorder.

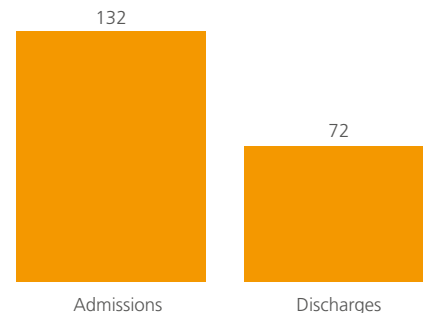
Our National Autism Unit uses a combination of specialised psychological, pharmacological and social treatments adapted for people with autism.

National Autism Unit – Treatment outcomes using the Obsessive-Compulsive Inventory (OCI)

**Figure 30** | Significant reduction in OCD symptoms using a standardised rating scale (OCI) 2013



**Figure 31** | Discharges from the National Autism Unit between January – September 2013 with severe obsessive compulsive symptoms compared to the same period in 2015.



This data suggests that recent admissions have more severe obsessive-compulsive symptoms but are still able to benefit from the treatments offered on the unit.

### Liebowitz Social Anxiety scale

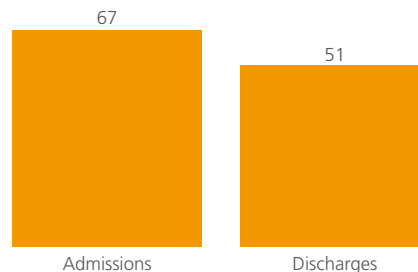
Social difficulties are a core manifestation of autism and often give rise to profound and disabling social anxiety. The Liebowitz Social Anxiety scale is a 24-item questionnaire assessing social interaction and performance situations commonly feared by people with social anxiety disorder.

The scale was originally developed as a clinician-rated measure but has since been adapted as a self-report measure. The scores shown below demonstrate our autism-adapted treatments decrease our inpatients' social anxiety and decrease avoidance behaviour. This is likely to have secondary effects on self-esteem and overall function in the community.

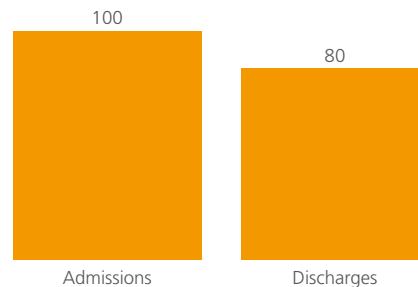
### National Autism Unit – Treatment effect on Leibowitz Social Anxiety (LSAS) self ratings

The figures below show discharges from National Autism Unit between January – September 2015 for severe social anxiety compared to the same period in 2013. This suggests that our recent admissions have shown less severe anxiety symptoms.

**Figure 32 |** Admissions and discharges from the NAU Jan–Sep 2015



**Figure 33 |** Admissions and discharge from the NAU Jan–Sep 2013

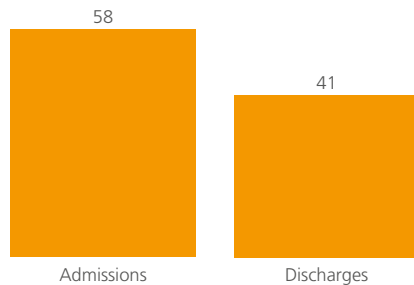


### Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM)

The CORE-OM is a clinical tool for measuring psychological distress. It is a 34-item questionnaire assessing four domains: wellbeing, symptoms, functioning and risk. It is a self-rating measure using a five point scale and is used pre- and

post-therapy to provide a measure of therapeutic outcome. Lower scores indicate less psychological distress. The clinical cut-off score is 10.

**Figure 34** | Comparison of the mean total CORE-OM scores for 25 patients admitted onto NAU



**Adult Autism Psychological Therapies (offered on a day patient basis on our NAU ward)**

For day patients with ASD, 27 paired CORE-OMs were available for analysis (out of 47 patients who completed therapy between August 2014 and July 2015). Patients currently in therapy were excluded from the analysis. 'Deterioration' in this context is likely to reflect the individual's awareness of his/her difficulties and the ongoing nature of their neurodevelopmental problems.

## Mental health of learning disabilities

### HoNOS-LD scales

As well as the 12 HoNOS scales mentioned above, there are additional scales called HoNOS-LD. These extra scales are currently used in day-to-day work to measure changes in people with intellectual disabilities who have additional mental health needs. The use of this scale is under review nationally, as it may not adequately reflect the complexity of health needs for this patient group (Radhakrishnan, Smith and O'Hara, 2012).

1	Behavioural problems directed at others
2	Behavioural problems directed towards oneself (self-harm)
3	Other mental and behavioural problems
4	Attention and concentration
5	Memory and orientation
6	Communication (problems with understanding)
7	Communication (problems with expression)
8	Problems associated with hallucinations and delusions
9	Problems associated with mood changes
10	Problems with sleeping
11	Problems with eating and drinking
12	Physical problems
13	Seizures
14	Activities of daily living at home

15	Activities of daily living outside of home
16	Level of self-care
17	Problems with relationships
18	Occupation and activities

The severity scale in HoNOS-LD differs from HoNOS. Scoring 0 = no problem; 1 = mild; 2 = moderate, 3 = severe, 4 = very severe. Domains are rated with the patient's support and care package in place.

Figure 35 | (a)

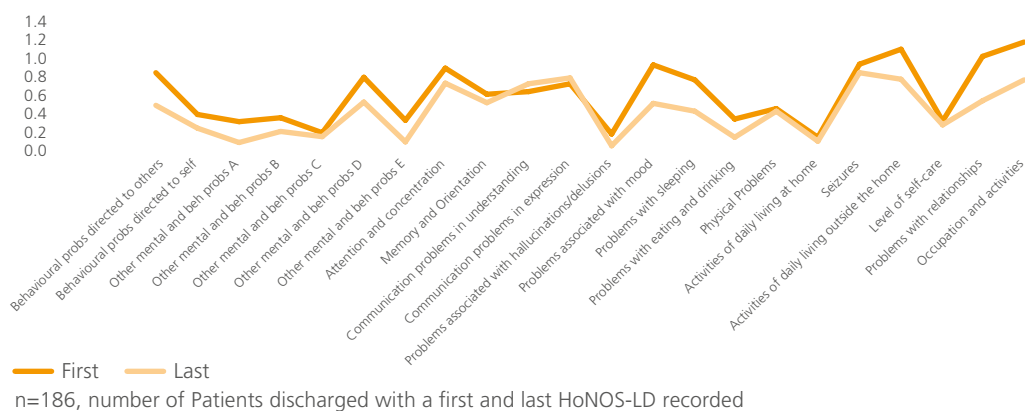


Figure 35 | (b)

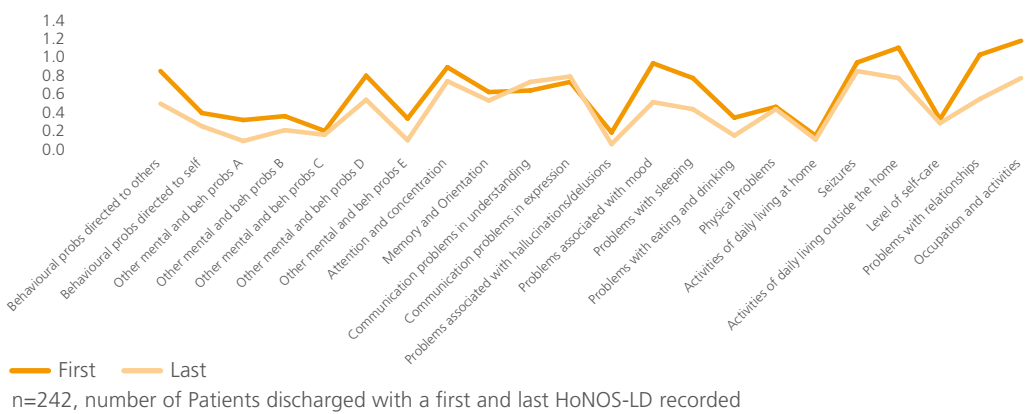
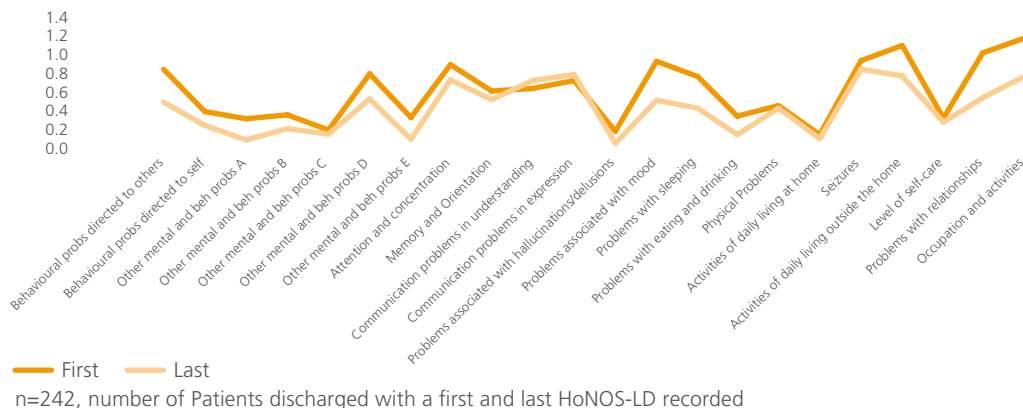




Figure 35 | (c)



The graphs show the teams are continuing to be effective year-on-year in similar clinical domains of need, although behavioural presentations appear to be more acute in 2014/15. In the autumn of 2015, the MHL service was remodelled to introduce capacity and flexibility in responding to NHS England's Transforming Care Agenda. This is likely to have a significant impact on the referrals we receive and we will be examining the effectiveness and outcomes of our service remodelling.

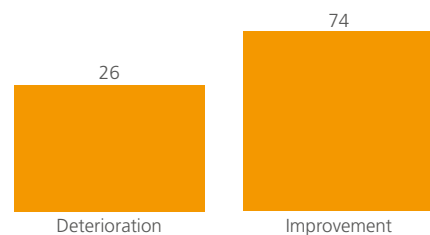
### CORE-LD

CORE-LD is a self-rating outcome measure being developed in England and Scotland. The measure includes simplified items from the CORE-OM selected by therapists and people with intellectual disabilities, as well as new items designed to cover the major issues experienced by people with

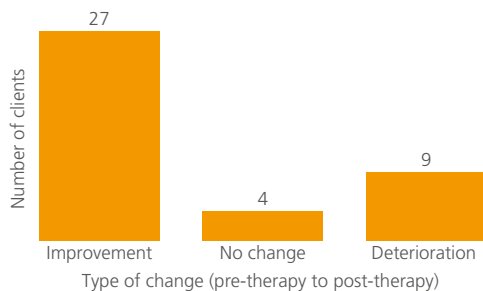
intellectual disabilities. CORE-LD is a different measure and is not comparable to CORE-OM.

In 2015, this was used by psychologists within MHL and compared to another outcome measure, PTOS-ID (Psychological Therapy Outcome Scale – Intellectual Disability) which we also piloted. CORE-LD was found to be more consistent and user-friendly and we are considering using some of the items across our MHL services.

Figure 36 | Comparison of the mean total CORE-LD scores for 27 patients admitted onto NAU



**Figure 37 |** Categories of change



A number of patients showed a 'deterioration' which is likely to reflect the individual's awareness of his/her difficulties and the ongoing nature of their neurodevelopmental problems.

'Global distress (GD) score' is rated in CORE-LD on a scale of 0–2; a higher score means the individual is more psychologically distressed. This decrease following psychological therapy was statistically significant using paired sample t-tests ( $t(40)=3.099$ ,  $p < .005$ ), and small in size (using Cohen's  $d$ ).

	Pre-Therapy Mean Global Distress Score	Post-therapy Mean Global Distress Score	Effect Size
Data (n=41)	0.78 (SD 0.37)	0.61 (SD 0.35)	0.47 (S)



*When I look back to the rock bottom state I was in when we first met, and my life now, I'm filled with gratitude*

# Quality of care metrics

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The Behavioural and Developmental Psychiatry CAG specialises in the assessment and management of risk. In the main, these are risks of violence and physical aggression towards others and adult safeguarding concerns for our vulnerable patient groups. Both have the potential to impact significantly on the safety, health and wellbeing of our patients and staff, as well as the wider community.

Our most serious incidents are subject to external investigation and scrutiny; the most recent has led us to redesign the physical layout of our forensic acute admission ward and strengthening our nurse leadership. We have developed beneficial communication with our local police, councillors and Public Protection and Scrutiny of Bromley Local Authority.

## Violence and aggression

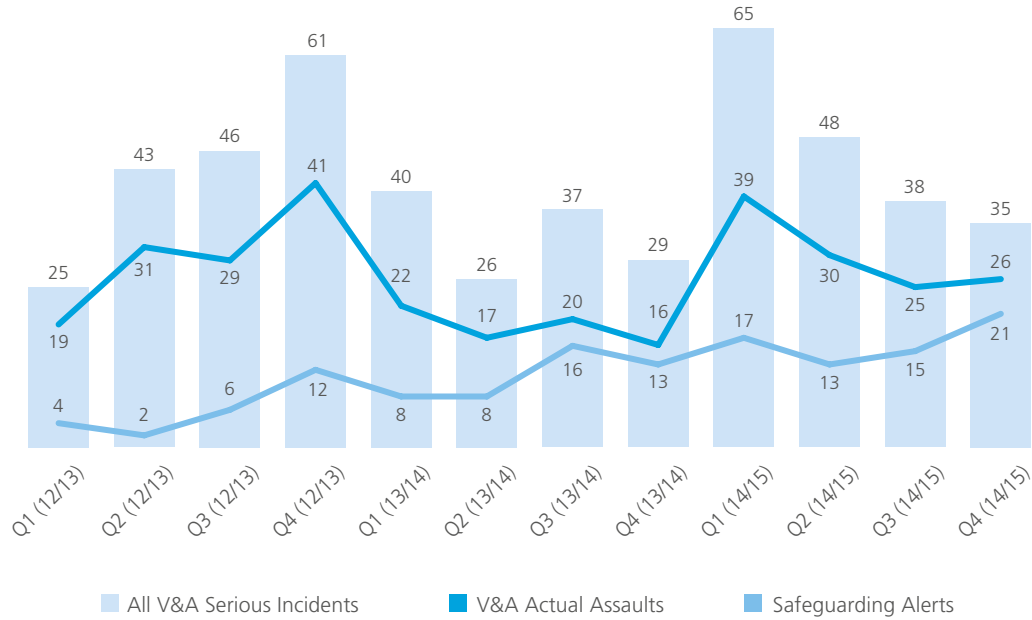
Managing incidents of violence and aggression (V&A) is an important challenge for our services. We have been working to reduce the levels by monitoring and understanding serious incidents to determine the best use of resources. In 2013, we introduced more therapeutic activities over the weekend on our forensic wards and piloted the care delivery system approach (see Figure 38&39),

which contributed to a significant reduction in violent incidents on our wards. This is being relaunched with DH funding as part of the Trust's 'Four Steps to Safety' quality improvement initiative. During 2014, the spikes in V&A were mainly associated with isolated incidents from one individual within our NAU service. Within our forensic medium secure services, we have adopted a more recovery-focussed approach to patient care, with increased patient involvement demonstrated by the use of 'My Shared Pathway' and regular patient representative meetings, coinciding with a decrease in reported incidents. Further patient involvement initiatives, such as collaborative risk assessment, are planned for the future.

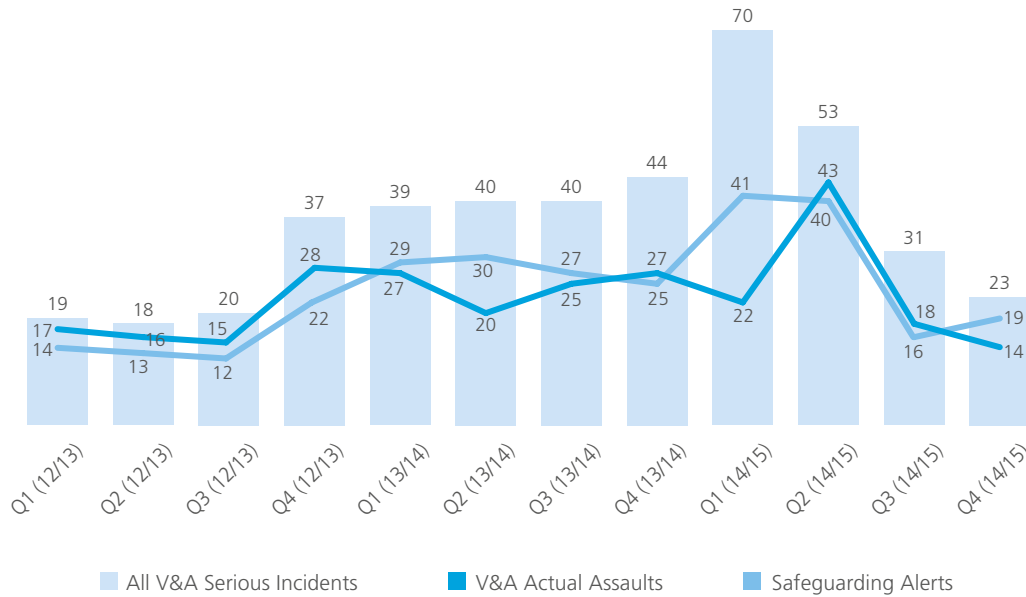
## Adult safeguarding

The CAG works with vulnerable adults. Awareness and reporting of potential adult safeguarding concerns is a priority. The CAG invested in local education and training for all staff and this resulted in the number of incidents reported increasing. Currently, safeguarding incidents are grouped together with violence and aggression in the Trust's incident reporting system. The next step is to understand these incidents within this reporting system and with our social care partners.

**Figure 38** | CAG Violence and Aggression Incidents showing number of actual assaults and safeguarding alerts from April 2012 to March 2015 for Forensic services



**Figure 39** | CAG Violence and Aggression Incidents showing number of actual assaults and safeguarding alerts from April 2012 to March 2015 for Neurodevelopmental services



## Managing violence and aggression on Norbury PICU (Forensic Psychiatric Intensive Care Unit)

Norbury prioritises early intervention, with proactive risk assessment and management plans. Implementing 'least restrictive' practices means the patient is at the heart of the decision-making process. Norbury uses personalised activity plans drawn up collaboratively with patients, with evening and weekend activities supported by an OT

technician. Psychologists lead on collaborative behavioural support plans around behaviours not driven by psychosis, and the patient and clinical team discuss and agree on medication to aid consistent and transparent decision-making. This 'medication algorithm' has resulted in a significant reduction in missed medication doses

and medication errors (OR 5.31, 95% CI 1.04 to 27.25,  $p = 0.05$ ), with a five fold improvement in medication adherence. Improved adherence should have an impact on recovery, length of stay, violence

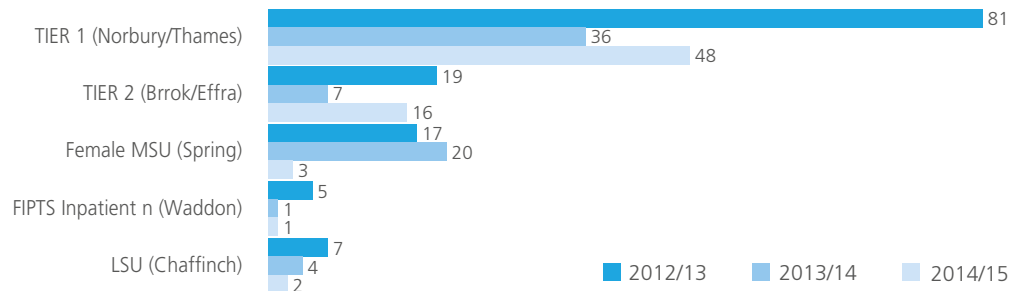
and aggression levels and patient outcomes. This has been presented at national conferences and is ready for trials on a larger scale to assess reliability and reproducibility of this approach.

## Our use of seclusion and prone restraints

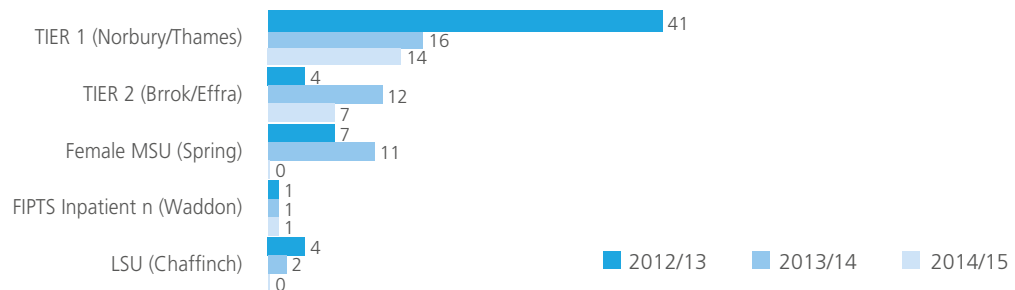
In line with 'Positive and Proactive Care: reducing the need for restrictive interventions' (DH 2014), the CAG continues to work to reduce the use of prone restraints. Figure 40 shows the number of seclusions and Figure 41 the number of prone

restraints across all our inpatient wards, between 2012–2015. In 2015, we decommissioned our seclusion room on NAU, based on its infrequent use and privacy and dignity issues regarding its location in the middle of the ward.

**Figure 40 |** Number of seclusions (2012–2015)



**Figure 41 |** Number of restraints (2012–2015)

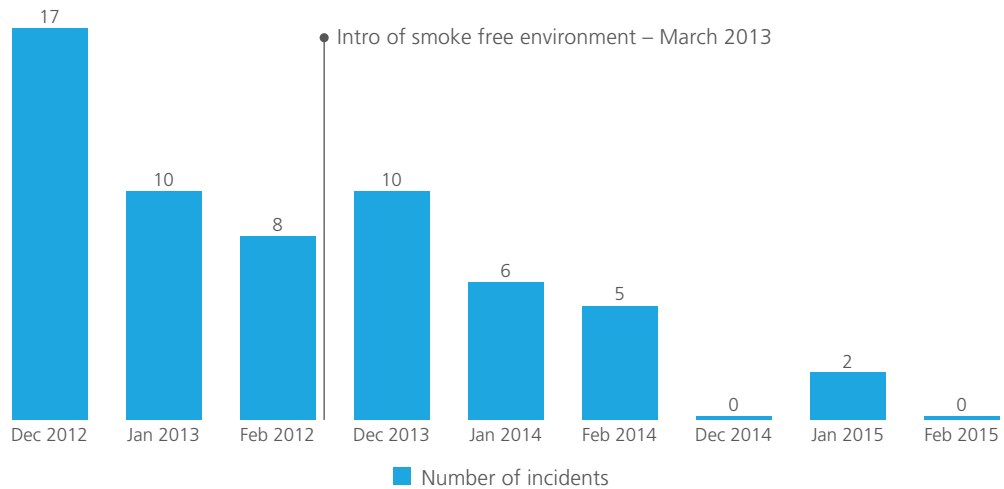


## Violent incidents relating to our smoke-free forensic wards

These incidents are audited manually and so are conducted randomly as part of a wider audit of smoke-free related issues. Figure 42 shows we continue to manage a smoke-free environment without an increase in serious untoward incidents. There is growing and sustained engagement in the weekly smoking cessation support group (typically 10–12 patients attend each week).

Carbon monoxide monitoring provides a useful motivation for attendees. Commitment to learning by staff has been positive with 93% (323) of eligible clinical staff completing the Level 1 e-learning programme, which covers the impact of smoking and stopping smoking on mental and physical health, how to refer smokers for support and how to manage tobacco withdrawal including the use of nicotine replacement therapy.

**Figure 42** | Results of our random audit on serious incidents in relation to smoking and introduction of smoke-free environment in March 2013.



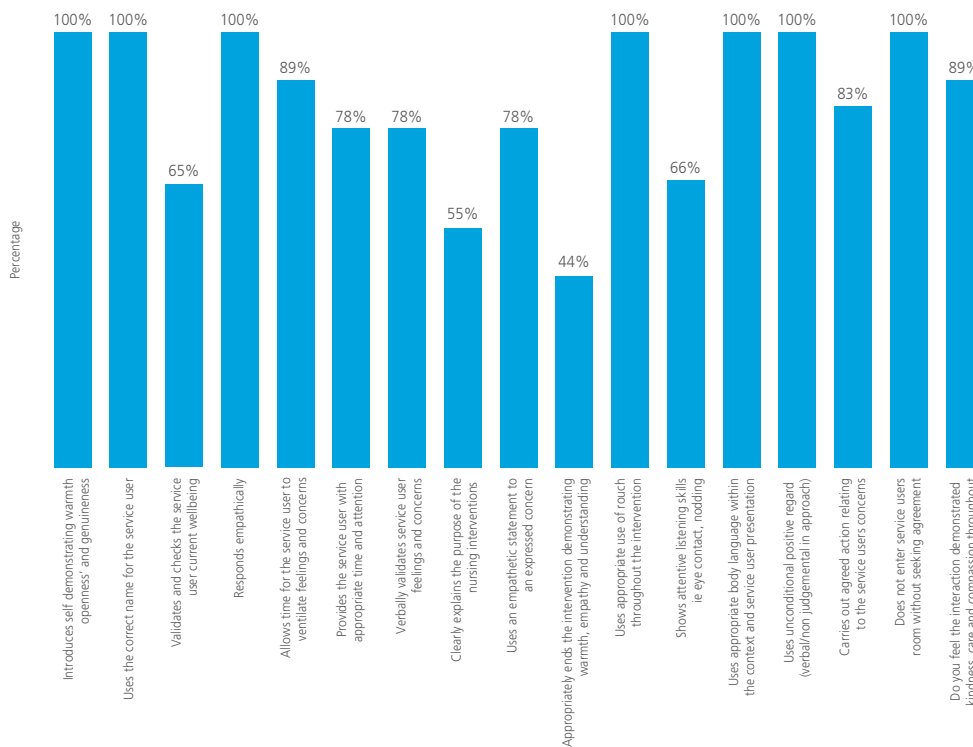


## Compassion in practice

In 2012/2013 we piloted, with South London and Maudsley NHS Foundation Trust's Quality Improvement Team, the 'Care Delivery System' (CDS) on our forensic ward with the highest number of serious incidents.

This 'whole systems approach' involved a five month pilot, from Nov 2012–March 2013, and included direct observation of staff engagement by external clinicians, the implementation of a risk assessment tool called Dynamic Appraisal of Situational Aggression (DASA), communication tool (SBAR) and explicit agreements and shared goals between patients and their multi-professional care team.

**Figure 43** | Observation on staff engagement for the Norbury ward (acute forensic admission ward)



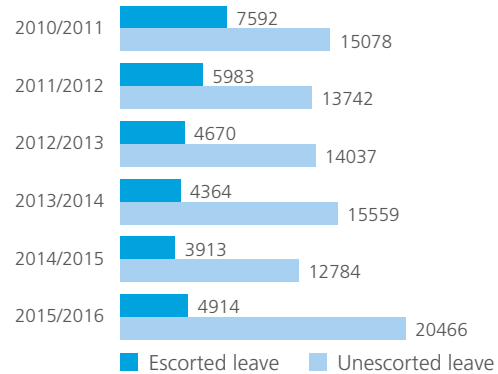
The Care Delivery System has been evaluated within the Trust in combination with 'Safer Wards', an RCT evidence-based initiative from KCL. The 'Four Steps to Safety' programme, which is based on and incorporates the CDS, has now been adopted and will be implemented across all wards as part of a Trust-wide quality improvement project in 2016.

## Managing risk and leave violation

The impact of the GPS (global positioning system) tracking of patients absconding or failing to return from unescorted leave has been dramatic. It also supports the therapeutic leave programme for patients with offending histories. The CAG uses 100 GPS ankle bracelets to enable a more effective use of leave. This was introduced as part of a comprehensive protocol for risk management. The aim of this initiative is to improve public protection and patient recovery. The system functions by alerting any violation of 'exclusion zones' or duration agreed in terms of a patient's leave.

Following introduction, an audit of 9,000 leave episodes in March 2010 highlighted a problem with 0.5% of all leave (absconding, failing to return or late return). Leave has increased by 85% and positive press has been received from the patients, as well as on BBC Radio 4 Today Programme, BBC Breakfast and BBC London radio. We estimate that our risk rate has dropped by 90% since March 2010.

**Figure 44 |** Escorted and unescorted leave trend



This study is important because leave is therapeutic in itself and patients view increased leave as moving towards recovery. Preliminary findings suggest that Buddi leave is financially cost-effective ( $p < 0.003$ ) with £10 saved per leave episode. The cost of leave violations and saving from reduced length of stay in hospital is now being examined and submitted for publication. (Reference: J Tully, A Cullen, D Hearn and T Fahy (2015) The Journal of Forensic Psychiatry & Psychology).

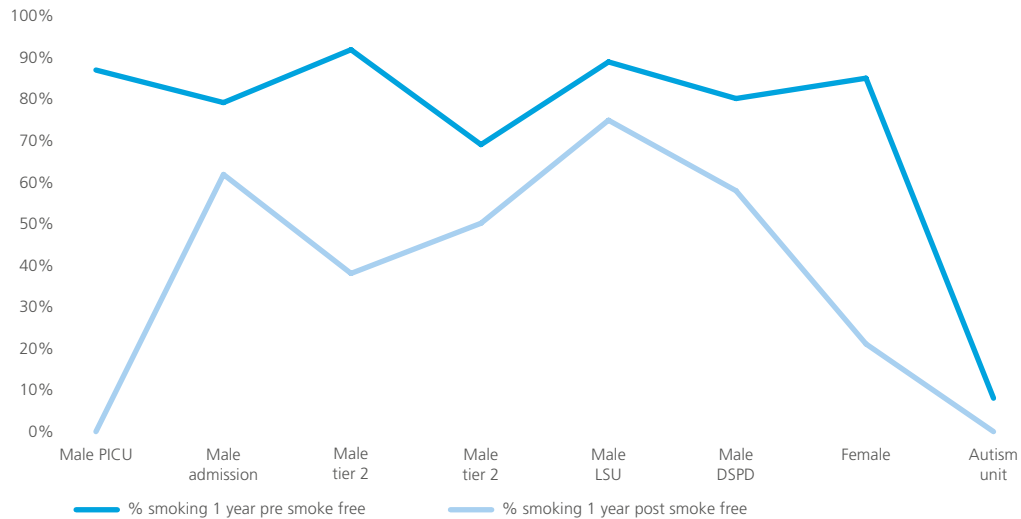
## Co-morbid physical health problems

People with severe mental illness and people with intellectual disabilities have poorer health outcomes and are likely to die 15–20 years prematurely from preventable causes. The CAG is committed to reducing these health inequalities

and worked intensively in 2012/2013 to prepare for our smoking ban, which was implemented across all our inpatient services in March 2013.

Figure 45 shows the prevalence of smoking amongst our inpatient population a year before and a year after our smoking ban.

**Figure 45 |** Prevalence of smoking across our CAG inpatient wards

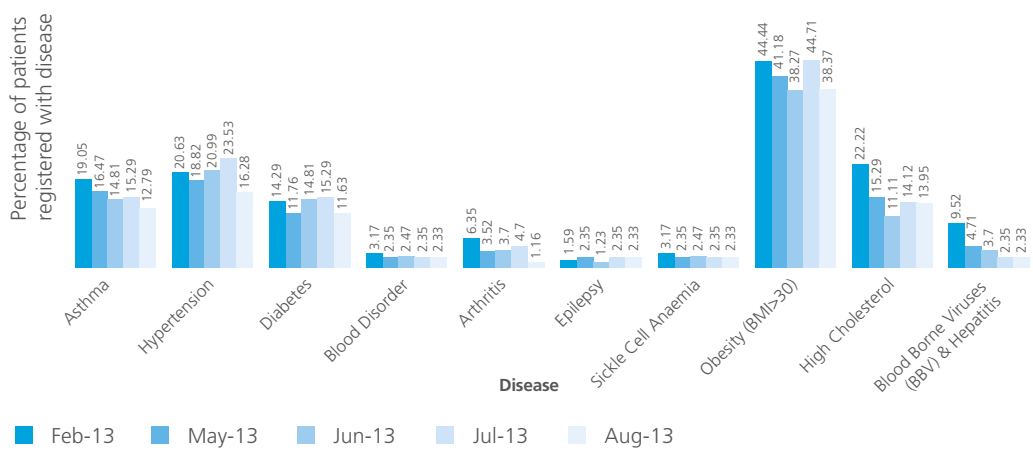


Key: PICU = Forensic intensive care, Tier I = Tier I forensic wards, Tier II = Tier II forensic wards, LSU = low secure unit, Female = female medium secure, DSPD = personality disorder unit, Autism = National Autism Unit

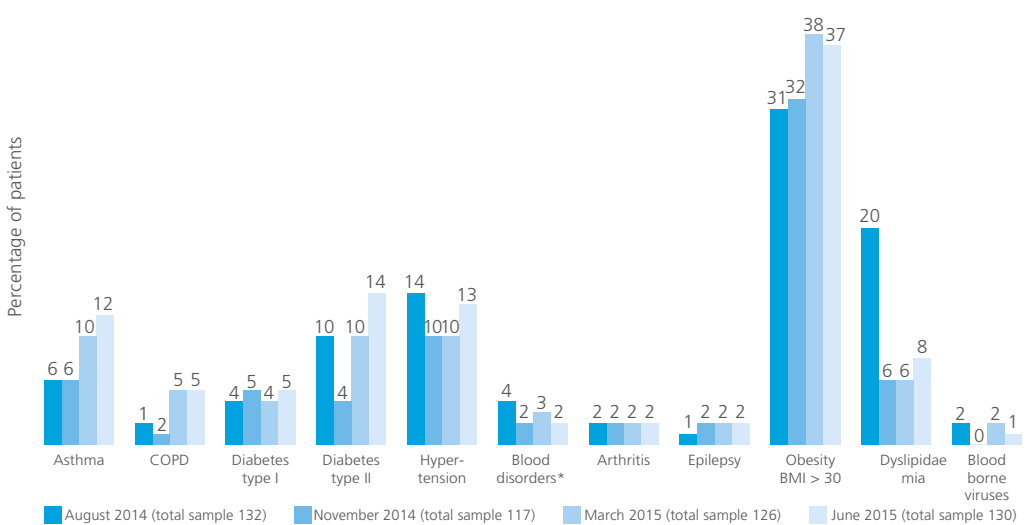
To assess cardiovascular risk we have implemented the QRISK2 tool on our inpatient wards which guides the interventions offered, and are effectively meeting our CQUIN targets (smoking status, lifestyle such as exercise and diet, body mass index, blood pressure, glucose regulation and blood lipids). We are piloting CQUIN targets in our community services in discussion with our commissioners.

On our forensic units, we have established a chronic diseases register to better understand the health needs of our patients so that we can focus attention on where we can have the most significant impact. We also offer dental and sexual health screening via our links with primary care services and increased physical activity within our units and hospital grounds. We can measure improvements in service users physical healthcare and disability through HoNOS-Secure and HoNOS-LD metrics.

**Figure 46** | Forensic secure inpatient services at River House. Chronic Disease Register 2013. Total sample: n = 104



**Figure 47** | Chronic Disease Register 2014/2015



\*Anaemia, sickle cell anaemia, thalassaemia etc

We ensure all our patients are registered with a GP and are now able to offer regular GP appointments on site, with a GP on call for advice outside of clinic times. An optician visits regularly, although patients are also supported to see an optician of their choice in the community where possible and preferred. A mobile dentistry service visits monthly and all new patients are booked for a full checkup within six weeks of their admission.

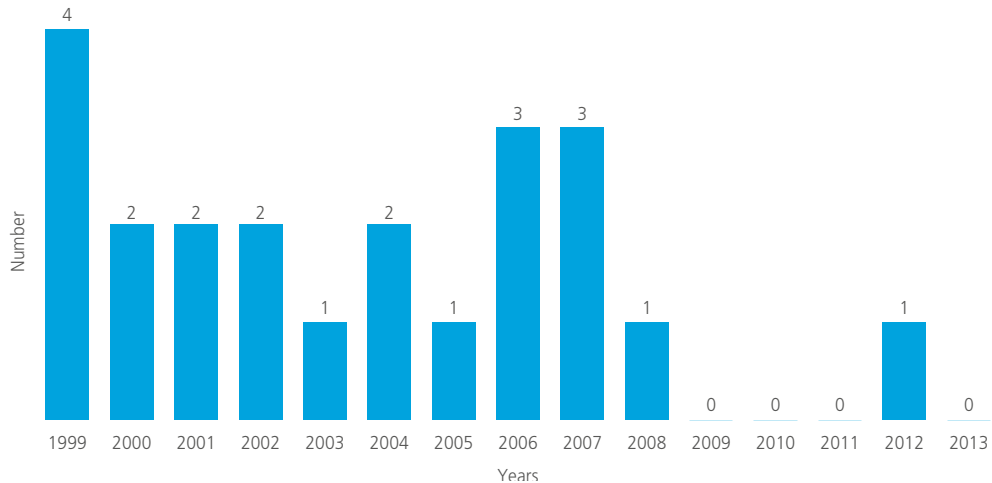
Supporting patients to make healthy lifestyle choices is built into the therapeutic programme e.g. the first episode of leave authorised to all Norbury ward patients is to the gym. We have collaborated with other CAGs and services across KHP to examine access to and evaluation of care pathways for people with intellectual disabilities (ID) and physical health conditions –

e.g. respiratory disease, reported to be the largest cause of premature deaths – and are currently working to incorporate ID screening questions in the IMPARTS screening programme being used across our partnership acute trusts.

## Deaths in custody

After South London and Maudsley NHS Foundation Trust started providing services at HM Prison Brixton in 2008, there was a sustained reduction of deaths in custody rates. We worked with the prison service to introduce a multi-agency system for monitoring risk of self harm and suicide and set up a weekly complex cases meeting with the prison's forensic psychology department. We also introduced a grant-funded secondary screening layer for mental health (Slade & Forrester, 2015).

**Figure 48** | Number of deaths in custody over the last 15 years



With changes in the commissioning landscape and re-categorisation of prisons, we are no longer providing services in HMP Brixton. We started providing mental health services to HMP Wandsworth in 2014, a prison which has experienced an excess of deaths in custody

in recent years. To assist the prison and other providers, we implemented a thematic review and through this process identified 5 main themes for action which will be addressed and monitored, recognising that our former model took some years to fully implement and take hold.

**Figure 49** | Themes identified for action following thematic review at HMP Wandsworth

Identify theme	Action
Management and coordination of complex cases	Complex cases forum initiated with Governor support
Service integration/referral pathways	Integrated governance structure and referral mechanisms
Environmental issues	Highlighted environmental issues (e.g. excessive ligature points) in a Victorian-era prison
Informatics	Training in record keeping and communication; new prescribing system; improved use of read codes
Resuscitation	All staff trained in BLS/ILS

# Patient experience

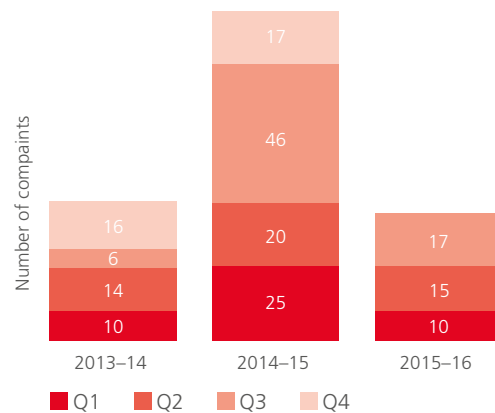
## Patient experience data information

PEDIC is the Patient Experience Data Information Centre provided by South London and the Maudsley NHS Foundation Trust. PEDIC is routinely used across our CAG services via electronic tablets in community/clinic settings and inpatient booths. We are exploring ways of making the process more meaningful to patients who spend a long time with us, as well as to those with intellectual disabilities. PEDIC has changed since its introduction and now consists of different questions for community and inpatient areas, and the Family and Friends Test. Responses are grouped into positive or negative (which also includes 'don't know'). An accessible version of these questions has been re-introduced for patients with intellectual disabilities in April 2016. The graphs below, from 2014–2015, reflect increased patient engagement with PEDIC and we are using this at our performance meetings and have begun to display 'You Said, We Did' posters in all our clinical areas in response.

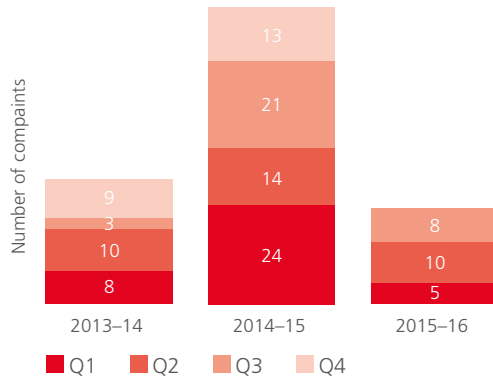
## Formal complaints

The monitoring of the number and nature of complaints is a useful indicator which, alongside other measures, can indicate the quality of the service we deliver. The following graph shows a reduction of the number of complaints between April 2013 and November 2015.

**Figure 50 |** Total number of complaints by quarter year-on-year for the whole B&D service



**Figure 51 |** Total number of complaints by quarter year-on-year for the Forensic Offender Health Pathway (FOHP)



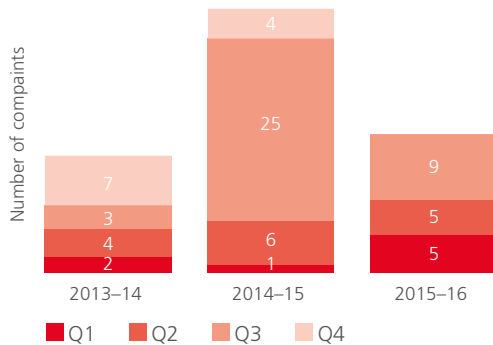
The number of complaints in Q3 in the year 2014/2015 was the result of one individual.

The majority of complaints received are around treatment and care issues, which is similar across the Trust. Analysis of these show medication and communication around diagnosis and discharge plans continue to be areas for improvement. We have considerably reduced waiting times to assessment in our neurodevelopmental disorders diagnostic clinics and the quality of food offered on our inpatient units is an area that is receiving Trust-wide attention.

We continue to work with the Trust Patient Advisory Liaison Services (PALS) along with the PALS/complaint surgeries in our inpatient wards to better understand patient issues and complaints. We continue to encourage staff to help resolve issues promptly.

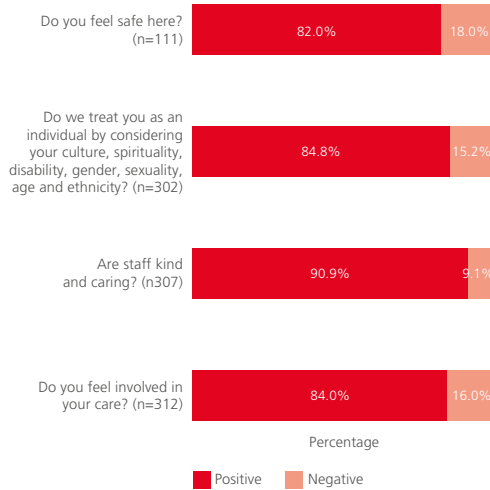
BDP CAG: ADHD & BCG service user feedback in 2014/15

**Figure 52 |** Total number of complaints by quarter year-on-year for our Neurodevelopmental Disorders pathway (NDD)



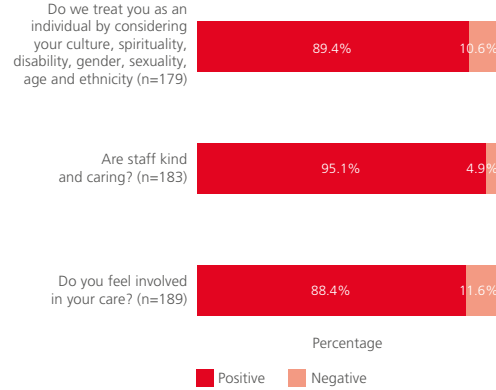


**Figure 53 | Forensic Offender Health Pathways**  
(Sample size: n=312)

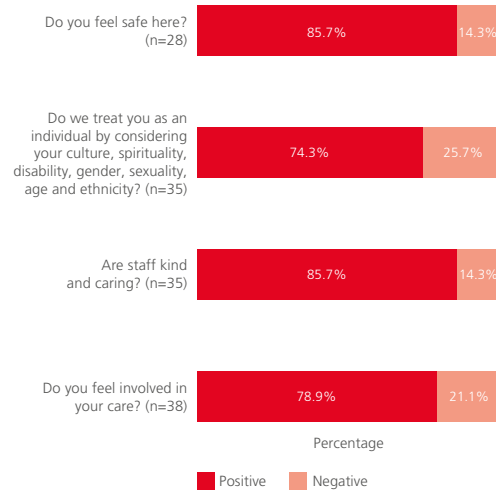


It is encouraging to note that more of our patients report feeling safe on our forensic wards compared to data from 2013, as published in our first outcomes book in 2014, and this is in part due to approaches we have taken to patient engagement and our management of violence and aggression.

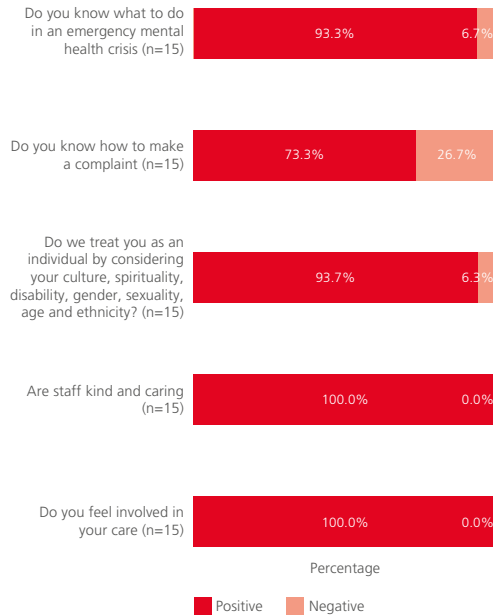
**Figure 54 | Forensic community pathways**  
(Sample size: n=189)



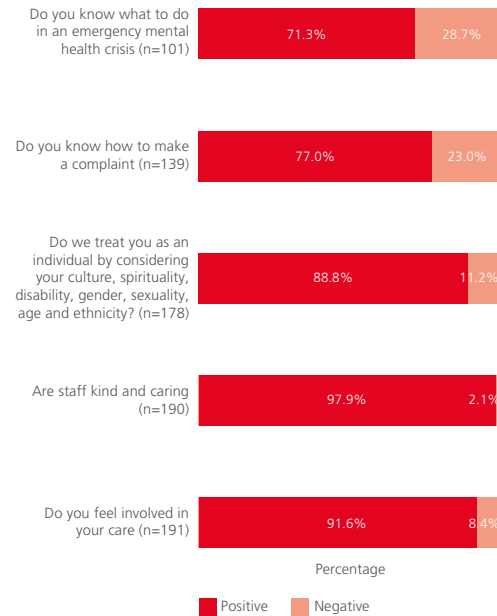
**Figure 55 | National Autism Unit**  
(Sample size n=38)



**Figure 56 | Adult Attention Deficit Hyperactivity Disorder (ADHD) and Behavioural Genetics (BGC) diagnostic clinics (Sample size: n=15)**



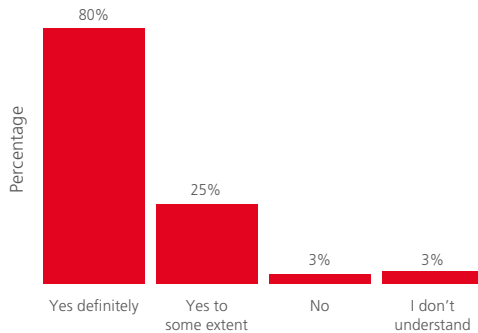
**Figure 57 | Mental Health Learning Disabilities outpatients (Sample size: n=191)**



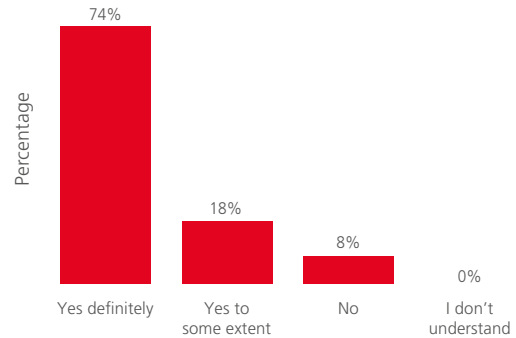
The CAG is aware of the specific challenges the PEDIC questionnaire may pose when given to adults with intellectual disabilities. We know from our own published research for example, that the meaning of 'crises' or 'care plan' may be understood differently by patients, carers and clinicians (Hemmings, Obousy and Craig, 2013) but are encouraged to see that our patients feel better involved in their care plans, know what to do in an emergency and how to make a complaint.

Our specialist diagnostic clinics do not use PEDIC, as they are often one-off assessments. In 2012, the clinics conducted their own study to understand the level of patient satisfaction, asking the question 'How helpful was your assessment?'

**Figure 58 | ADHD Clinic**



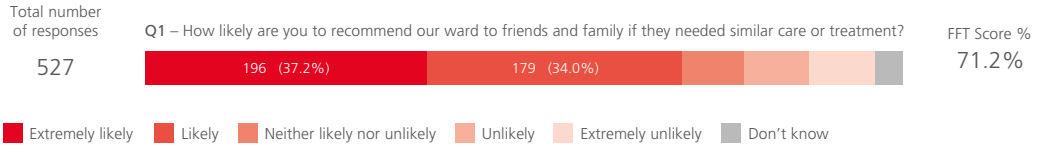
**Figure 59 | Behavioural Genetics Clinic**



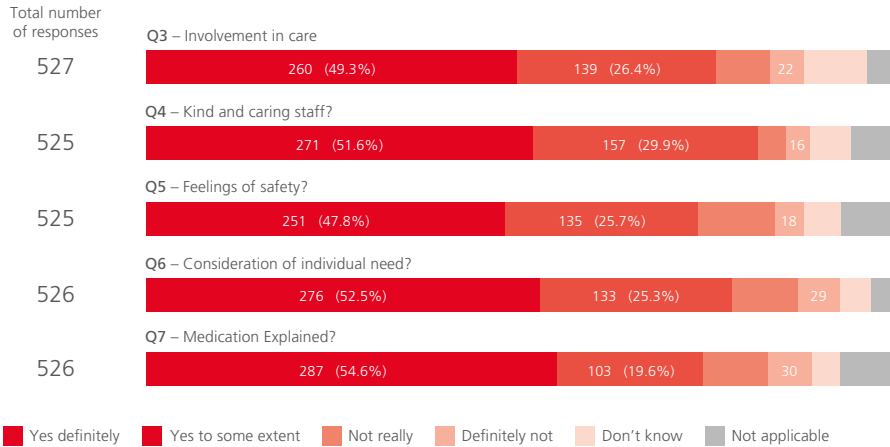
Friends and Family Test (FFT) questions have been incorporated in PEDIC and have begun to provide us with feedback. It is still in its early stages of analysis for use within the CAG and with frontline services.

**Figure 60 | FFT response for CAG (January–September 2015)**

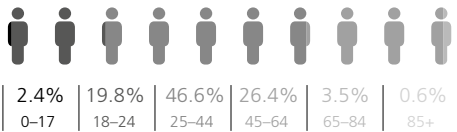
**Friends and family test**



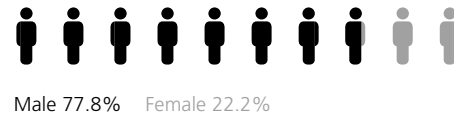
**Core questions**



**Age group**

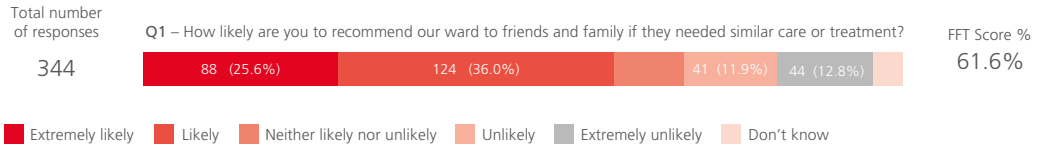


**Gender**

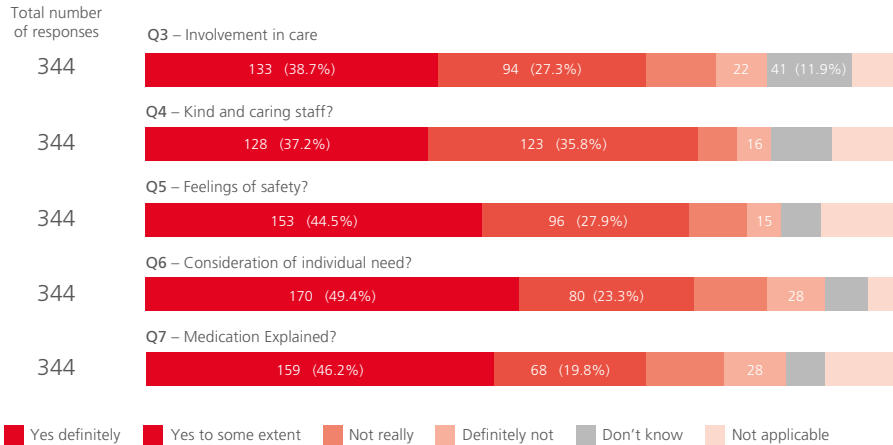


**Figure 61 | FFT response for CAG inpatient units (January–September 2015)**

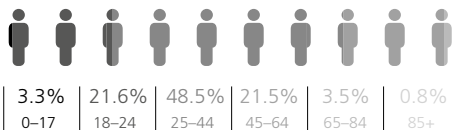
**Friends and family test**



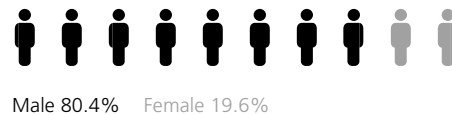
**Core questions**



**Age group**

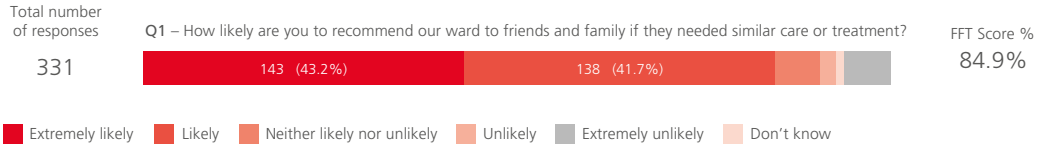


**Gender**

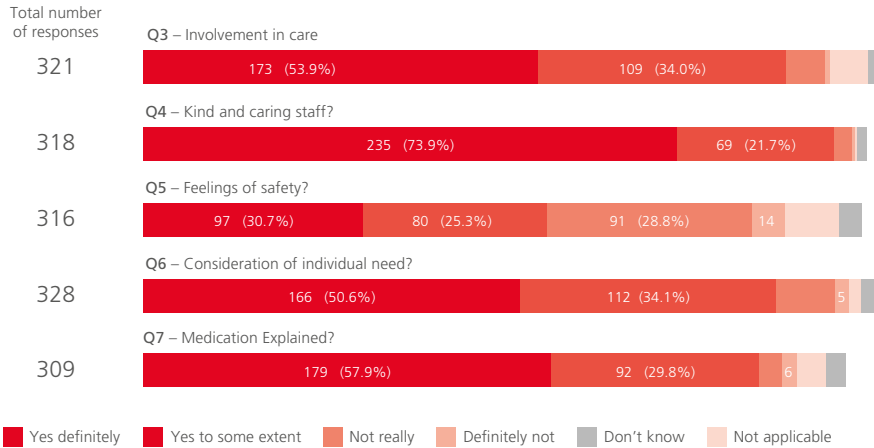


**Figure 62 |** FFT response for CAG community services (January–September 2015)

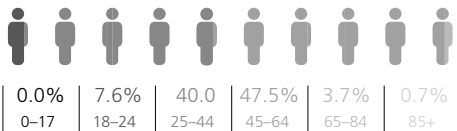
**Friends and family test**



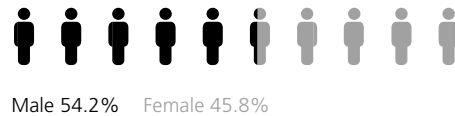
**Core questions**



**Age group**



**Gender**



## Examples of patient engagement and partnership working

### Partnership working at the heart of the Transforming Care agenda for people with intellectual disabilities.

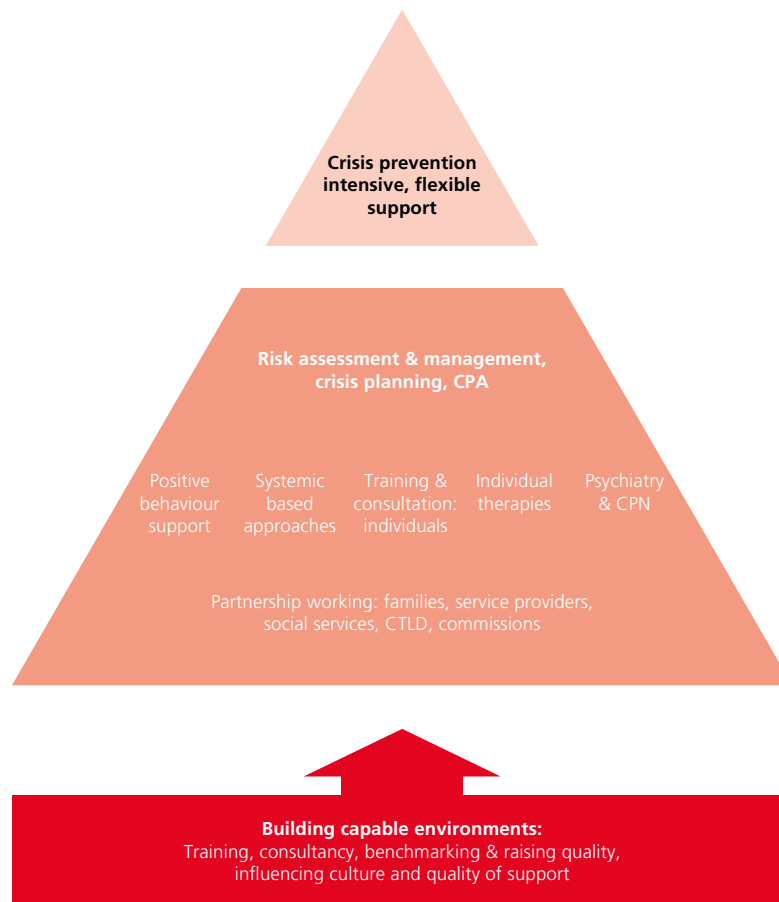
The Winterbourne View Report and subsequent 'Transforming Care' agenda has highlighted a clear expectation that local services offer strong 'capable environments' that demonstrate good outcomes for people with intellectual disabilities, who can display behaviour that can significantly challenge services. Additionally, it recommended that robust local crisis provision should be in place to prevent unnecessary hospital admissions and out-of-area placements wherever possible.

To meet this challenge, Southwark Local Authority funded a pilot initiative with MHLA to develop and run a small Enhanced Intervention service to meet the needs of a small number of adults whose behaviour presents complex and serious challenges and where there is a significant risk of placement

breakdown. The service model brings together clinicians across South London and Maudsley and Guy's and St Thomas', to provide positive behaviour support, systemic consultation and case management under the Care Programme Approach (CPA) framework. It emphasises strong partnership working between health, social care and third sector providers and family-centred approaches alongside clinical leadership to help co-create capable environments to manage crises locally and effectively.

This pilot has demonstrated preventative savings in 2015/2016 of over £250k by avoiding out-of-area placements for three individuals. The success of this work has resulted in funding for a further two years and interest from NHSE looking at new models to support people closer to home.

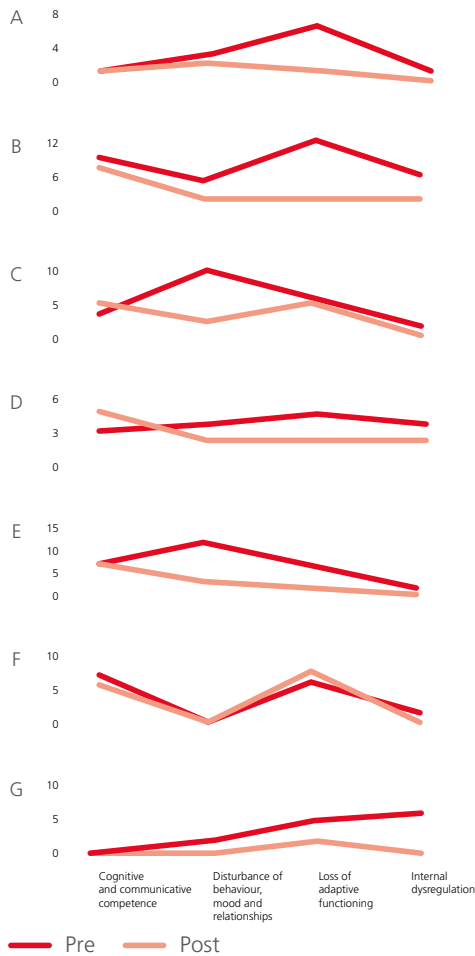
**Figure 63** | Model for an Enhanced Intervention Service to minimise community placement breakdown for people with intellectual disabilities and complex behaviours that challenge





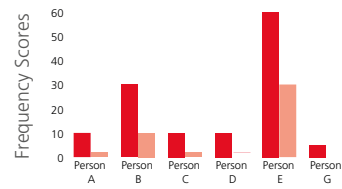
**Figure 64 |** Southwark Enhanced Intervention Pilot

**HoNOS-LD Outcome Measures**

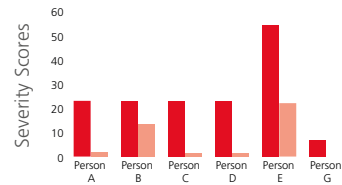


**Behaviour Problems Inventory (BPI) Outcome measures**

Mean pre and post frequency scores on Behaviour Problems Inventory (BPI) for engagement in self-injurious stereotyped and aggressive/destructive behaviour



Mean pre and post severity scores on BPI for self-injurious, stereotypes and aggressive/destructive behaviour



**Guernsey Community Participation and Leisure Assessment (GCPLA) Outcome Measures**

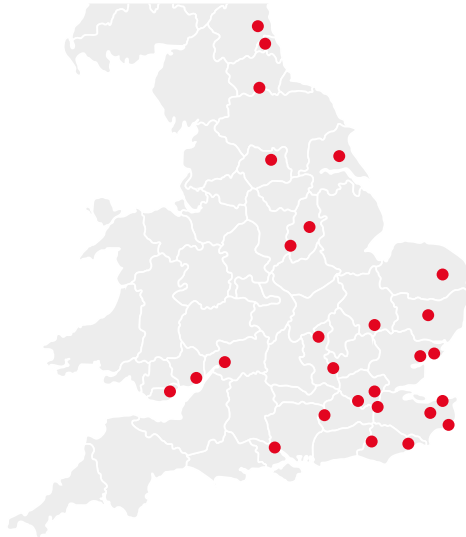
Pre and post scores on the Guernsey Community Participation and Leisure Assessment for range of activities each person is engaged in



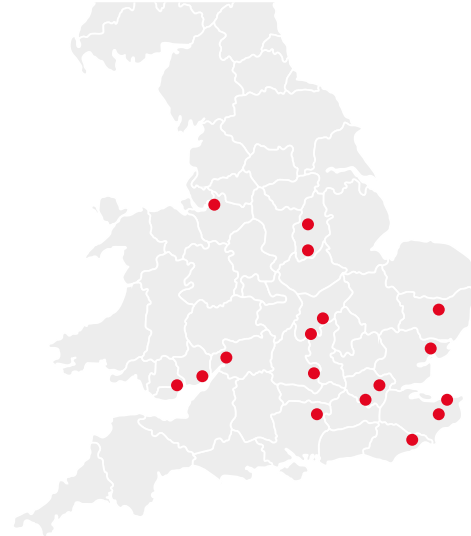
## MHLD Placement monitoring

This small, nurse-led service, began in the London Borough of Southwark in 2007 to bring individuals with intellectual disabilities admitted to hospitals out-of-area, due to their complex mental health needs or offending history and a lack of more local provision 'closer to home'. In its first three years, it saved £3m placement costs for local commissioners. Between 2008–2013, the service worked with 60 individuals in such high-cost placements and 20 had an onward move appropriate to their needs. This model has since been commissioned by Lambeth (2015) and Lewisham (2016). The figures below show the numbers of out-of-area placements and their distance from their local boroughs of origin.

**Figure 65 | 2008–2013**



**Figure 66 | 2014 to date**



The success of the service is largely due to the collaborative nature of working relationships developed over a number of years between commissioners, providers and carers. It allowed for a better understanding of need and facilitated a strong multi-agency commitment to providing creative, individualised care plans to better meet the needs identified.

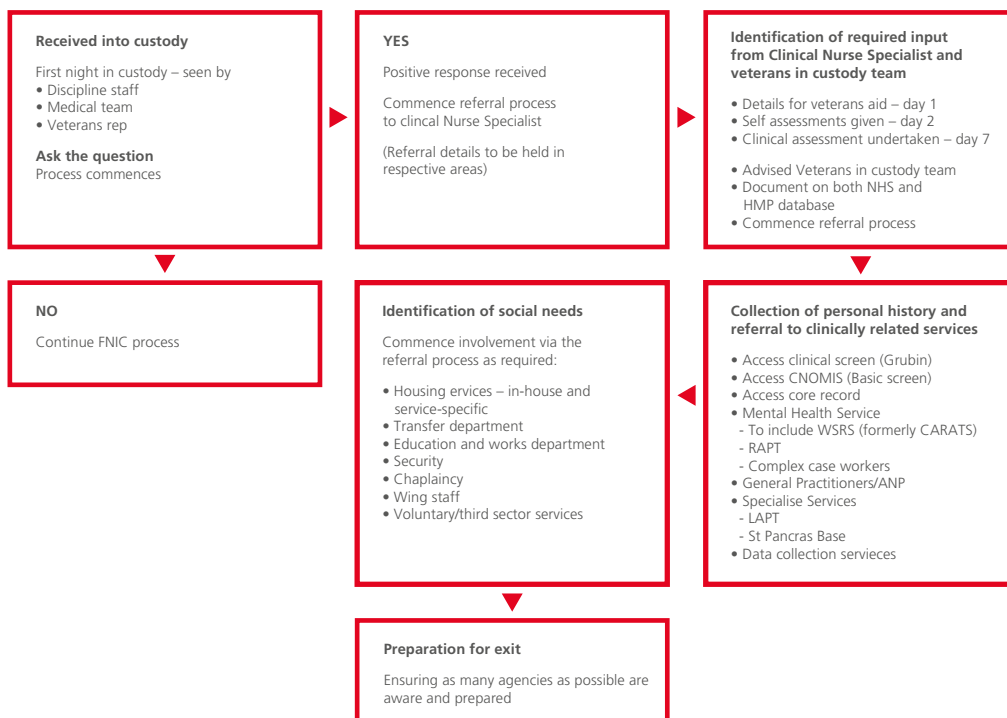
## HMP Wandsworth London Veteran Inreach Service (Pilot)

The Government report by Stephen Phillips MP (2014) stressed the need to identify ex-serving personnel who are in the criminal justice system and who would benefit from an assessment of needs and a delineated pathway to appropriate support, be that social, welfare or health-related. In response to this, we have been funded by NHS England to set up a new pilot

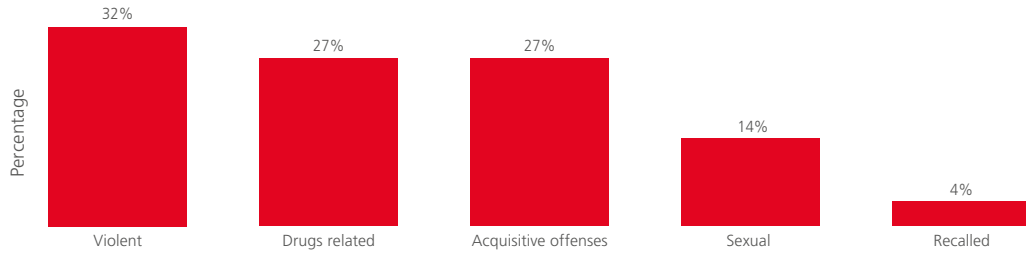
veteran inreach service in HMP Wandsworth. The service model is based on the Veterans in Custody Support model with inter-agency working across NHS, statutory and third sector organisations. The ultimate aim is to reduce re-offending and promote successful re-integration back into civilian and family life.

This new service began in May 2015. Below is preliminary data from 22 ex-UK armed forces personnel who were referred in the first three months of this pilot project.

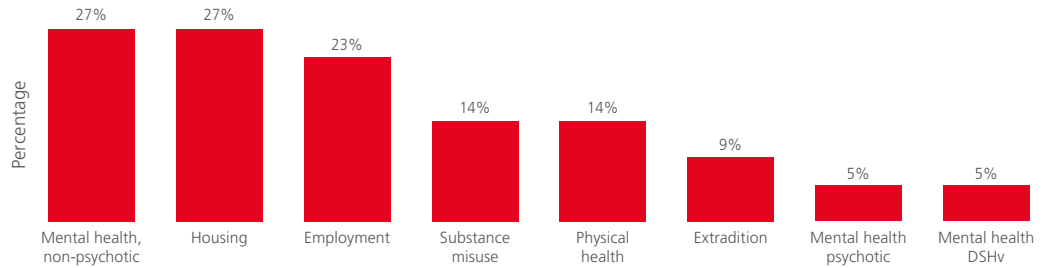
**Figure 67 |** Pathway established for London Veteran Inreach Service.



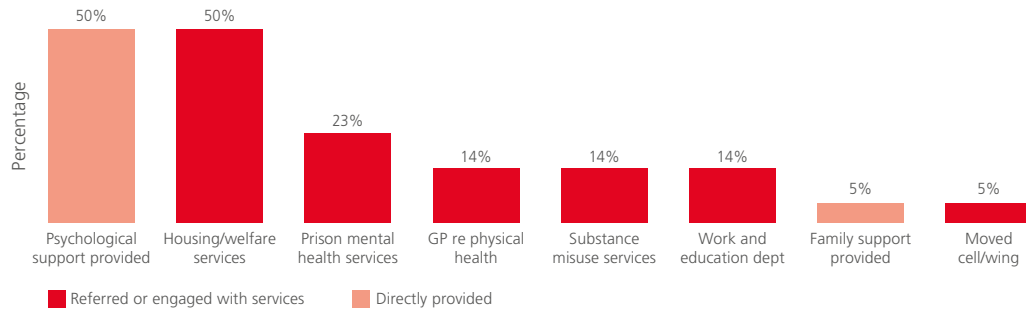
**Figure 68** | Percentage nature of offenses (n=22)



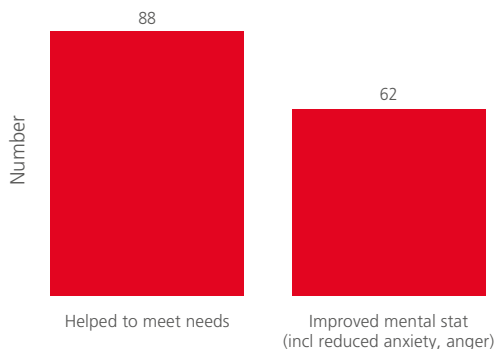
**Figure 69** | Percentage of prisoners with assessed needs (n=22)



**Figure 70** | Percentage of interventions offered



**Figure 71** | Qualitative self-report on outcomes



These are promising results and we are collecting a range of outcome measures which will be reported in our next outcomes book.

## Employment and Social Inclusion Project (ESIP)

There is growing interest in supporting offenders with mental health problems into employment. This three-year pilot project is funded by South London and Maudsley Charitable Funds. The original aim was to implement an Individual Placement and Support (IPS) programme to support this service user group into paid employment in the open employment market. In practice, this proved very difficult to implement given the complexity of need and histories of service users participating in the project.

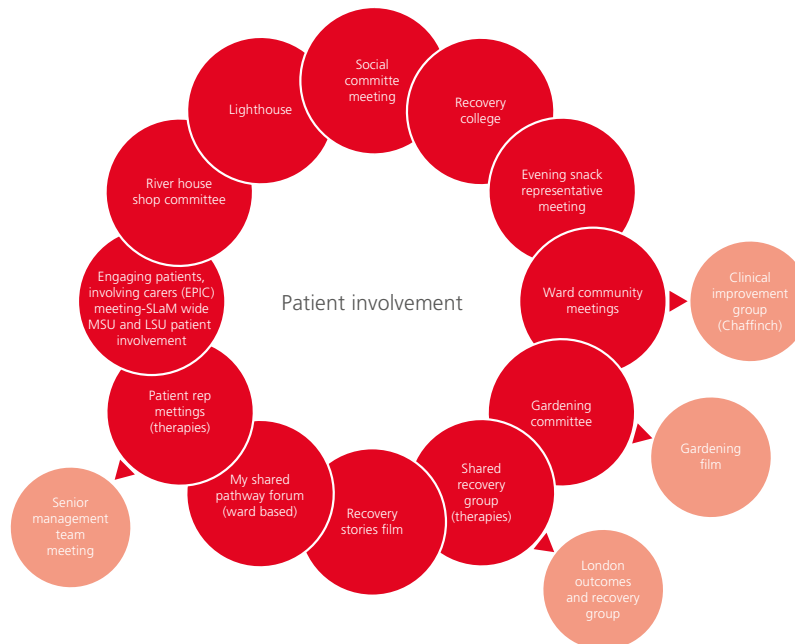
The pilot involved an occupational therapist, an employment consultant and a peer mentor (patient voice).

An evaluation report has been prepared after the second year and will soon be available for wider dissemination, as it provides valuable insights into a relatively uncharted area of supporting forensic service users into employment. The pilot found that benefits outweigh the difficulties and challenges encountered and that social inclusion activities are an important feature rather than purely focussing on employment. The creation of a paid work programme (run as a non-profit making business) within the project circumvented issues concerning disclosure and offered service users the opportunity to learn a new skill, gain confidence and work the hours that suited their needs without interfering with their benefits. This programme proved popular, even for some unwilling to work. We created a painting and decorating programme which has generated an income, and are now exploring the possibility of sustaining this in the future to include staff salaries.

*I never thought to be in the frame of mind that I'm in right now, looking forward to the rest of my life, with hope, with real expectation of being able to contribute, to give a little bit back to the world, and to make my way again as a paid employee.*

Male patient

**Figure 72** | How patients get involved



## Spaces study

To explore individual patient experiences of living in our medium secure forensic wards, 20 patients consented to participate in this novel, visual study carried out over the summer in 2014. It required each patient to take photographs of the space he/she occupied and to later explore and share their views on how their environment impacted on their well-being. We learnt that patients at times found the spaces of the hospital tense and frustrating,

especially when structures are overly restrictive, such as imposed bedtimes. Mealtimes could also be stressful and many were keen to cook for themselves and others and to create a more communal atmosphere. Staff who took part in an interview also shared the challenges they faced in meeting patient needs. Some described the ward environment both enabling and limiting. Patients and staff explored ways of using spaces differently.

## Listening to patients and acting on feedback

Learning from our analysis of user engagement on our wards (Chaplin, Douglas, O'Hara et al, 2015) and in keeping with My Shared Pathway principles, we have implemented a new community meeting on our forensic wards with patients driving the agenda. The key objective is to build an open forum from service users to senior management to discuss key issues and work in partnership.

*Made me think I want my bloodline to look up to me and for me to be a role model. Maybe I can be a role model.*

The meeting is fully patient-led and an agenda is set at the beginning of the meeting. Support is often given in completing the minutes and forwarding these via email to the CAG Senior Management Team (SMT). The CAG service director attends and a patient representative is regularly invited to the forensic SMT.

*There are different ways of looking at the world and being a man.*

Examples of issues raised and action taken include: the Tobacco Dependence Advisor attending community meetings in order to meet with patients to discuss a new tamper proof e-cigarette used in prisons – our forensic patients are trialling these and if successful they could be stocked in the River House Shop; visiting hours have been extended during the week; Aramark,

who provide food services across our hospitals, attended the meeting and following discussion launched a new menu in January 2016. This is a four week rolling menu to avoid repetition of meals and patient representatives have also been invited to observe the cooking process in the kitchens. Generic curfews are being abolished. All patients will be given individual times to return to the unit as agreed by their multi-professional team to ensure least restrictive practice and an individualised approach to their care.

*I could relate to the topic and the group.*

*I will remember it for the rest of my life*

## Man Up®

Using active learning techniques, Man Up® aims to challenge some of the attitudes and negative outcomes experienced by men as a result of wanting or needing to fulfil stereotypes and expectations. Staff from our medium secure wards are running a challenging programme with Safe Ground for adult and young men which seeks to explore issues of male identity in a safe and supportive environment. The programme was presented at a Public Health England event in 2016.

## Restorative Justice

In 2015, we hosted an event to introduce Restorative Justice at River House. Patients and staff heard from the Prison Fellowship talking about their victim awareness and restorative justice programme – Sycamore Tree. Our on-site Met police officer works behind the scenes with many staff and patients to deal efficiently and supportively with incidents in the service, implementing the Trust's new and innovative Positive Prosecutive Policy. This includes using restorative justice outcomes whenever this is agreed by victims as appropriate.

In 2016, we will be involved in the first trial of Sycamore Tree in a forensic mental health population. Multi-professional team staff have been trained alongside Prison Fellowship volunteers and our first two trials began in Jan/Feb 2016 and May/June 2016. They are offered to all our male inpatients in our forensic wards.

## Developing successful bids by involving service-users

Working with a user-led organisation, User Voice, we designed our recent offender health bids to provide mental health services in prison following consultation with service users. Service users wanted three main things: integration, improved access and commitment. We modelled our service accordingly and are delivering open referral systems (including self referral), a single integrated access point for

primary and secondary care, integrated governance, reflective practice and training for prison officers.

## Recovery and patient stories

### Forensic Recovery approach in our gardening group

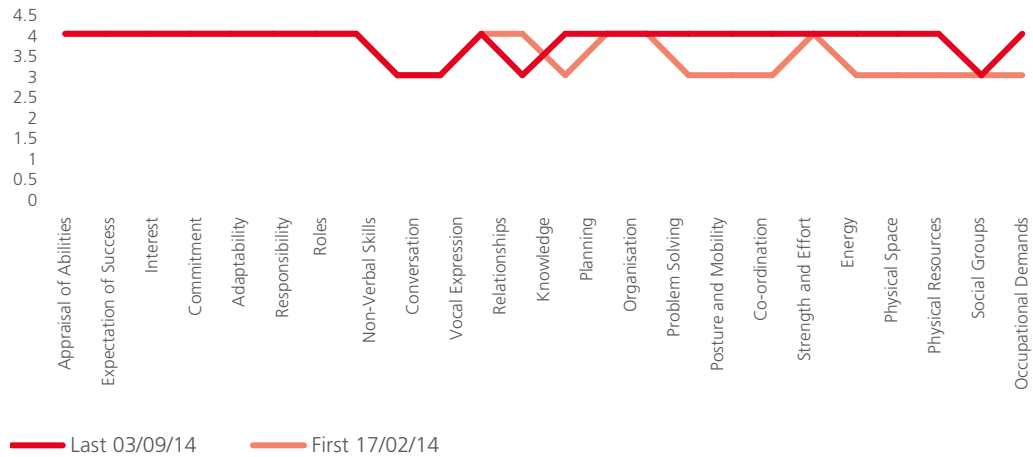
The Model of Human Occupation Screening Tool (MOHOST) is a standardised OT outcome measure, designed to look at volition, habituation, skills and environment and allowing the therapist to gain an overview of the individual's occupational functioning. The graphs below show the progress of an individual patient before and after engaging with the gardening group at River House (MSU). The patient went on to participate in a community gardening project, and from there to paid work within the Employment Painting and Decorating project. Now under the care of one of our community forensic teams, he runs his own rickshaw taxi business in London.

*I know others on the ward that would benefit*

In 2015, he came back to River House as a guest speaker with the Lighthouse Project, (a co-produced collaboration between staff and patients to promote social inclusion and community recovery opportunities) to share his experiences with current inpatients.



**Figure 73 |** MOHOST outcomes pre- and post-gardening group



## Recovery stories video

The CAG has co-produced a recovery stories video, where forensic inpatients talk about their experiences and how they have moved on in their recovery. It was made to inspire hope and recovery for patients and their families and carers. 'The Shared Recovery: A Journey in Secure Care' film was one of the finalists under the category of Recovery and Arts in the 2016 National Service User Awards in April 2016. Members of the River House Occupational Therapy Department attended the awards ceremony.

*I feel that I'd helped somebody or people in general by sharing the information I shared in the film.*



Photo: Members of River House OT team at the NSU Awards ceremony.

*I thought it was really empowering and socially inclusive. For me, it's the belongingness to be on a journey where there is light at the end of the tunnel*

## Art in Secure Services: Koestler art awards

Arthur Koestler (1905–1983) campaigned for the abolition of capital punishment, including through a series of articles in The Observer newspaper and 'Reflections on Hanging' (1956). When it became clear that the campaign was successful (hanging was abolished in 1965), he set up an annual scheme to award 'creative work in the fields of literature, the arts or sciences by those physically confined'. The Koestler Trust is the UK's best-known prison arts charity. They have been awarding, exhibiting and selling artworks by offenders, detainees and secure patients for over 50 years. Koestler awards receive over 7,000 entries a year – inspiring offenders to take part in the arts, work for achievement and transform their lives. Koestler's national exhibition attracts 14,000 visitors – showing the public the talent and potential of offenders and people in secure settings (Koestler Trust).

*I felt pretty good in taking part in the film The film will be viewed by different people like doctors and patients, and it's good to inspire people to get better and get discharged.*

From over 8,500 entries in the Koestler Art Awards 2015, River House (Medium Secure Unit) and Chaffinch (our Low Secure Service) have won five awards. We are privileged that one art work entitled "Distinguishing Differences between Change and Replacement" was exhibited at the London Southbank Centre in 2015.

**Figure 74 |** Art work that was selected for display at their yearly exhibition at the London Southbank Centre 2015



## 'Tree of Life': adapting a recovery approach in intellectual disabilities



- Helps to develop a recovery plan
- Gives hope

Paul, a MHL service user, co-presented with a clinical psychologist at the Trust's 'Tree of Life' conference in 2015. He shared some examples of how psychological input had helped him to develop his confidence. It has led to having a voluntary job which he loves and the bravery to stand up in front of a room of 100 people to talk about this work. He has become a peer 'Tree of Life' facilitator and has since helped facilitate taster workshops at wellbeing events and spoken to a multi-disciplinary audience as part of the Estia academic programme to clinicians.

*Doing my tree has helped me see all the things I can do. I thought about my dreams and now I'm doing them.*

**Paul**

A recovery approach based on narrative theory, the tree is used as a metaphor for someone's life; different parts of the tree represent different aspects of an individual's life and focusses on culture, heritage, spirituality, strengths and hopes.

Creating your own tree helps you:

- Think about your strengths and resources, resilience and relationships

## Discovery Group: an adapted mental health recovery group for people with intellectual disabilities

Funded by the Trust's Board of Governors' 'Smile for Health' scheme, MHL developed and piloted a small mental health recovery group for six adults with intellectual disabilities utilising a community and narrative psychology framework. The recovery approach was adapted

to the needs of the group, by focussing on additional issues that were important to them such as identity, rights, empowerment and self-advocacy. The group ran for six weeks in 2015. Group outcomes evidenced a decrease in psychological distress, increase in quality of

life and increased hopefulness for the future. Some attendees have gone on to join the Trust's service user involvement register. Future plans include facilitating a workshop with those who

attended, co-authoring a publication sharing the group's experience and outcomes and running the group again with previous attendees invited as co-facilitators.

**Figure 75 | Outcomes from Discovery Group attendees**

Service User	Sessions Attended	WHO-QOL 8		PTOS-ID II: Distress		PTOS-ID II: Wellbeing		PRQ		MANS-LD	Feedback		
		PRE	POST	PRE	POST	PRE	POST	PRE	POST		What did you think?	Met expectations?	More hopeful?
1											G	Y	M
2											G	Y	M
3											G	Y	S
4											G	Y	S
5											G	Y	M
6											O	N/A	N/A
Group means	4.33/6	3.94	4.53	1.13	1.05	2.14	1.74	4.2	4.3	4.27	N/A	N/A	N/A
Interpretation Green = Pos change Red = Neg change Black = No change	N/A	Higher Score = Better QOL	Lower Score = Less Distress	Higher Score = More Wellbeing	Higher Score = More involved in process of recovery	Higher Score = More happy with life					G = Good O = OK B = Bad	Y= Yes P = Partly N = No	M = More S = Same L = Less

# Education and training

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The CAG delivers a range of professional training in forensic psychiatry, risk management, offender health and mental health of learning disabilities, ASD and adult Attention Deficit Hyperactivity Disorder. There is a long history of positive collaboration between the university, clinical services, patient advocacy groups and third sector providers. The CAG aims to deliver excellent evidence-based education and training programmes to support a competent and modernised workforce in delivering high-quality mental health care promoting recovery and social inclusion. We:

- ensure the effectiveness of the training is measured and the results of novel training programmes are published in peer-reviewed publications;
- ensure all education and training activities support the translation of evidence and research findings into practice;
- embed a culture of lifelong learning and professional/career development;
- develop in collaboration with others, innovative approaches to education and training opportunities.

The CAG was awarded 'Lead Provider' status for the delivery of higher psychiatric training across south London for forensic psychiatry and psychiatry of intellectual disability. The CAG supports the training of undergraduate medical students via allocated 'firms' as part of a general psychiatry placement, special study components in forensic and neurodevelopmental psychiatry, electives from within the UK, placements of students from overseas universities and the annual psychiatry summer school.

New developments include:

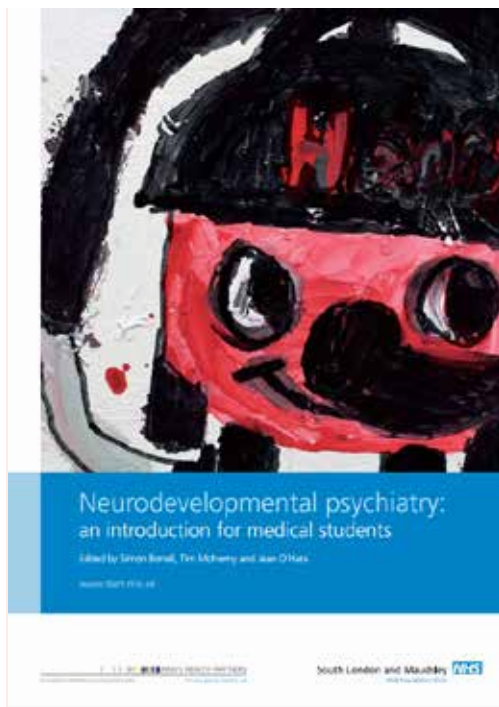
- a funded study to investigate KCL student clinical placements in psychiatry to understand how we could improve the student experience;
- e-learning supervision packages being piloted for ASD and Adult ADHD;
- a new MSc in Neurodevelopmental Disorders from 2015.

In 2014, we were awarded funding from Health Education South London (HESL) to establish and host a collaborative educational network to improve awareness across community, primary

and secondary healthcare to better meet the needs of people with intellectual disabilities in our local communities.

## Undergraduate student experience

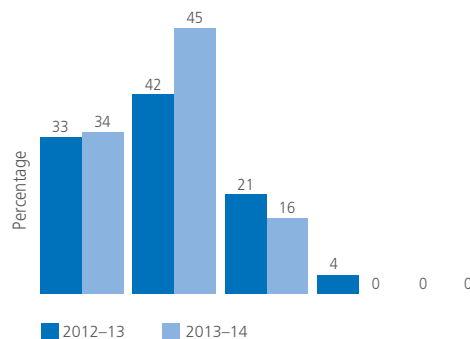
The CAG supports undergraduate medical education through lectures, examining, medical student firms, special study components and the Maudsley summer school.



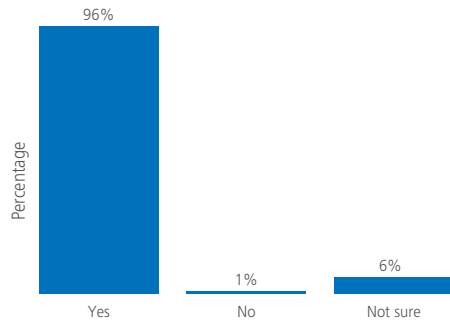
In 2011, we produced an introductory booklet for medical students, covering core aspects of working with adults with neurodevelopmental disorders. This booklet is freely available as a pdf download and is on the CAG SharePoint, Estia Centre website, Maudsley training website, the KHP Learning Hub and via Health Education South London.

The figures below show a sample of the questions and responses on the overall quality of the teaching from the 2012/13 and 2013/2014 student satisfaction survey for students taught in the Behavioural and Developmental CAG. Better coordination of student placements across CAGs is likely to improve overall student experience.

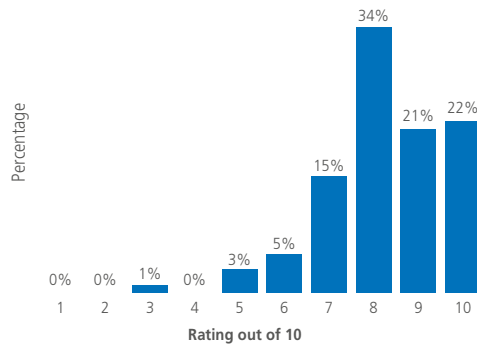
**Figure 76 |** Medical students on placement in the CAG agreement with statement 'Overall the rotation provided me with ample opportunities for clinical learning'



**Figure 77** | 2011–2015: Medical student feedback to the question: Would you recommend this training?

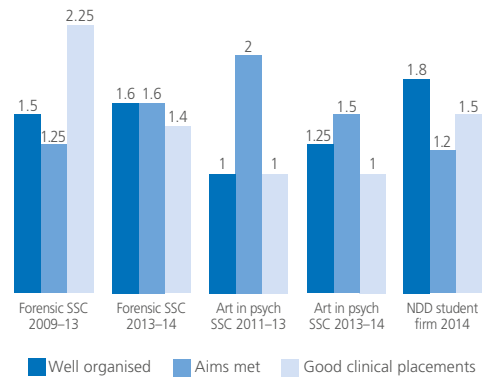


**Figure 78** | 2011–2015: Medical student feedback to the question: How good was your training experience?



Special Study Components (SSC) are chosen by medical students in their 3rd to 5th year of training. We offered a new SSC in Neurodevelopmental Disorders which has yet to be evaluated

**Figure 79** | Medical students ratings of our special study components (SSCs) and firms



Key: 1 = strongly agree, 4 = strongly disagree

In 2013, 69% of students said they would consider a career in psychiatry following their forensic SSC experience; this rose to 80% in 2014. Similarly, 50% of medical students said they would consider a career in psychiatry following their Art in Psychiatry SSC in 2013; this rose to 100% in 2014. Feedback from students on our NDD firms showed 100% would recommend the firms and 60% would consider a career in psychiatry as a result.

One of our former SSC in Forensic Psychiatry students was awarded the Royal College of Psychiatrists 'Best Psychiatric Foundation Trainee Award' in 2014/2015. Another student produced art work as part of the SSC and this was published on the cover of the British Journal of Psychiatry (July 2014).



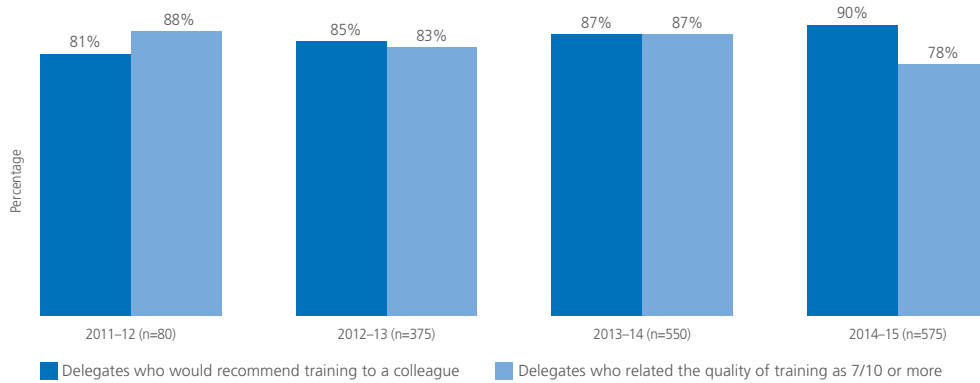
We are looking to support and quality assure our CT doctors who deliver some of the medical student experience on the wards, as well as working on improving the experience of students on clinical placements in high secure settings. In 2016, we offered a new medical student firm in MHL and helped review the undergraduate curriculum to include topics related to intellectual disabilities.

## Evaluation of further training events

We have now implemented a more consistent evaluation and feedback process across all our education and training delivery. The following figures show the evaluation for our in-house multi-professional academic programmes attended by clinicians and academics across south London and our forensic MSc students.



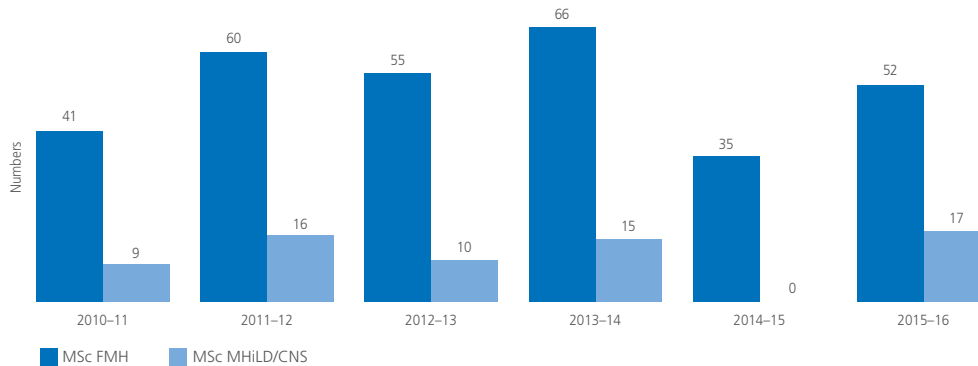
**Figure 80** | Feedback on CAG training from 2011–2015



(n = the number of students that year that took part in the survey)

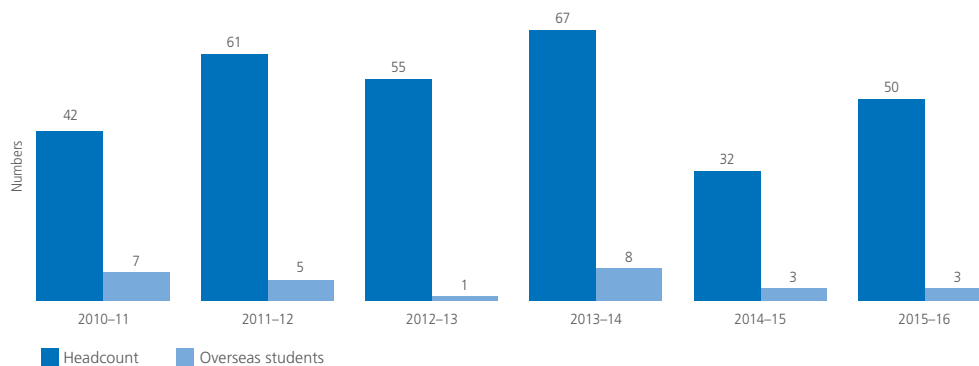
## How many students has the CAG attracted?

**Figure 81** | Forensic and NDD MSc students since 2010

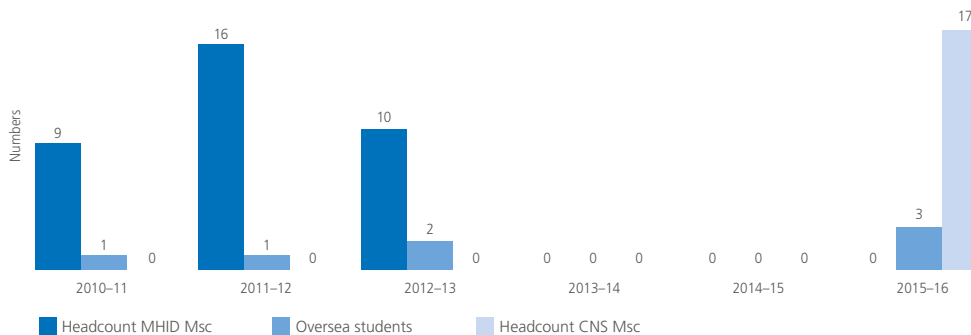


The graph reflects the cessation of our MHILD MSc and the introduction of a new MSc in Clinical Neurodevelopmental Sciences in 2015/2016.

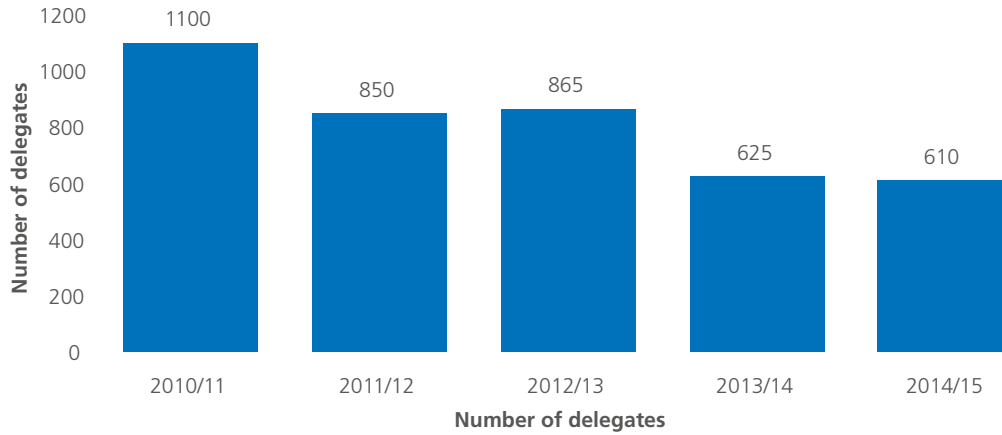
**Figure 82** | Number of Forensic MSc students



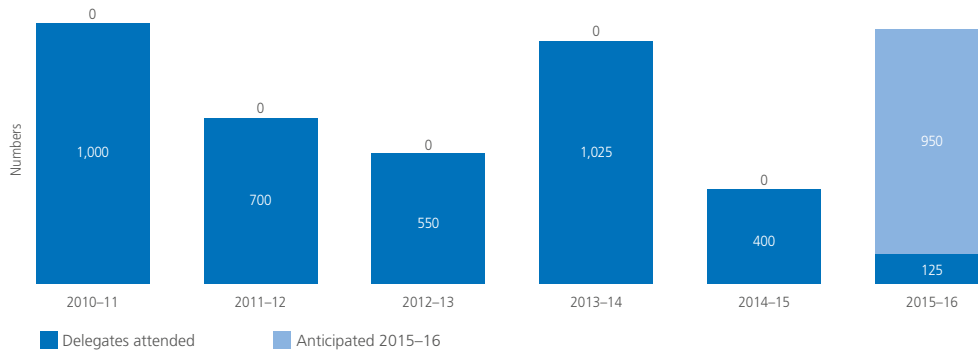
**Figure 83** | Mental health in learning disability MSc and transition to clinical neurodevelopmental sciences MSc



**Figure 84** | Number attending our Forensic and Neurodevelopment Science (FANS) courses



**Figure 85** | Number attending our Estia (MHL) courses and workshops



In 2014/15, our delegate numbers dropped due to personnel changes and long-term absences. We are relaunching Estia in 2016 with a refreshed

website, revised training prospectus to include an integrated mind-body offer and collaborative clinician support for its delivery.

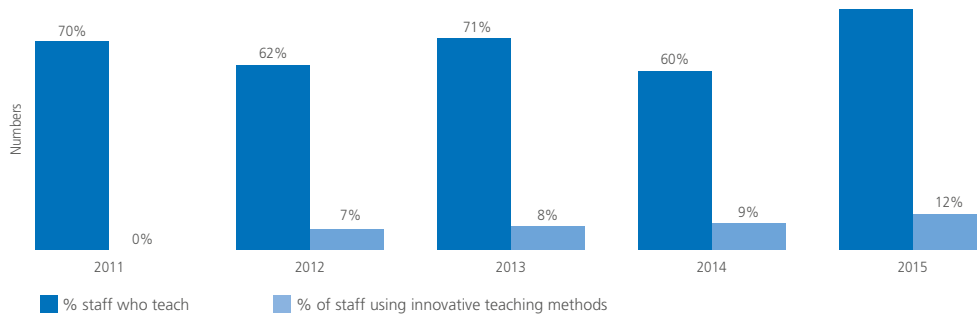
## Developing scholarship within the CAG

The CAG is committed to supporting and developing our staff as educators and trainers. We have surveyed our workforce to better understand the skills and expertise we have within the CAG and how best to develop and support our staff.

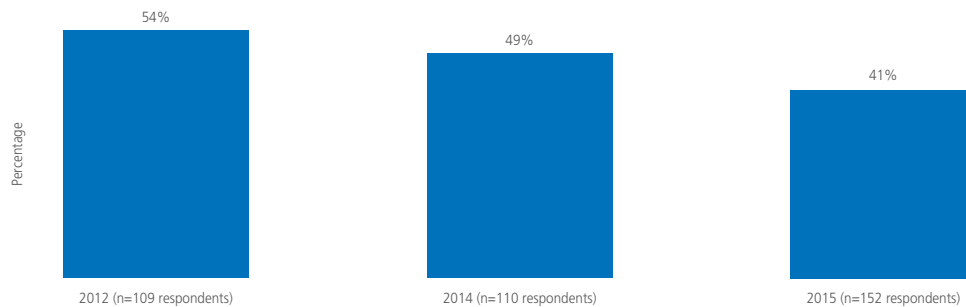
These results show the majority of clinical staff of all seniorities across all disciplines (23% doctors,

24% nurses, 24% clinical psychiatrists, 10% social workers, 9% administrators, 6% occupational health therapists and 4% management) who responded to the survey and are taking on teaching as part of their role and increasing numbers are training in this. A small but increasing number of clinical teachers are using innovative teaching methods such as simulation and e-learning.

**Figure 86** | Education & Training Workforce survey



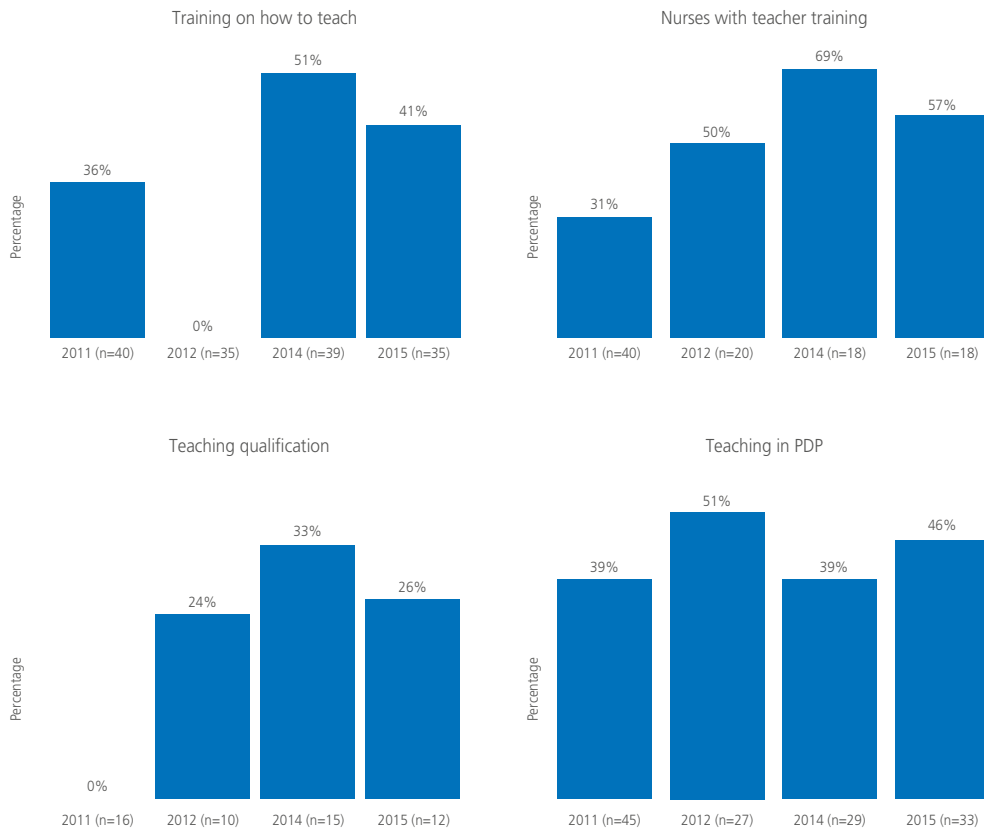
**Figure 87** | Percentage of staff who reported barriers to teaching



Barriers to teaching reported by respondents included issues such as: 'I don't want to teach'; 'It is not in my job plan'; 'Clinical duties mean there is not enough time'; 'Admin duties mean there is not

enough time'; 'I do not have the skills'; 'I do not have the confidence'; 'I do not have the support from my team'; 'I do not have the organisational support'; 'I do not know how to get involved'.

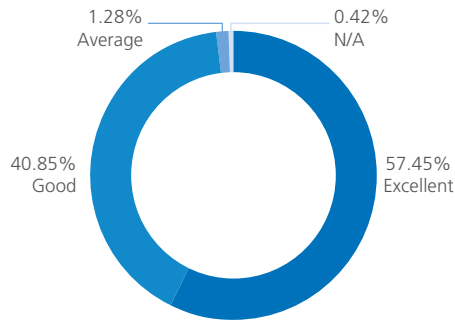
**Figure 88** | Staff survey results in percentage for the following four questions



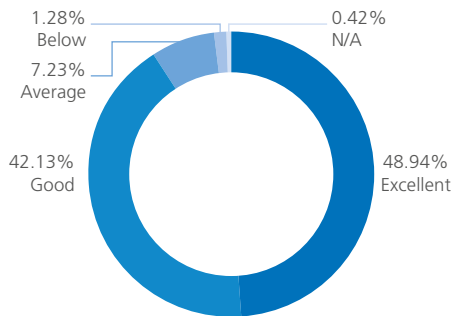
## Estia Centre Workshops

In 2013, the Estia Centre delivered 24 MHL-related workshops to community support workers from the London Boroughs of Lambeth and Southwark and nine workshops specifically for staff from the London Borough of Lewisham. Of those who attended, 235 individuals provided feedback.

**Figure 89** | Content and level of training



**Figure 90** | Training evaluated as being 'appropriate to my needs'



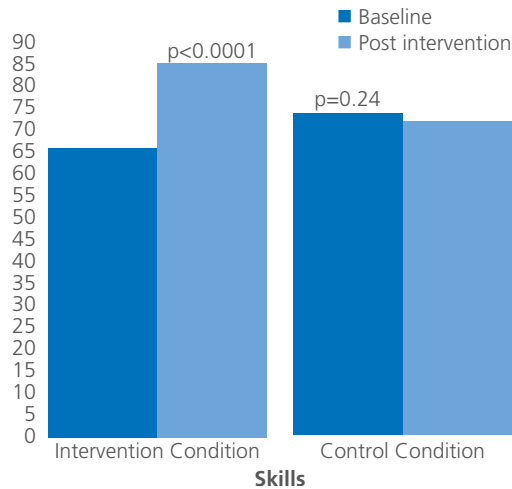
## Examples of innovative training and evaluation

### Personality Disorder Awareness Training

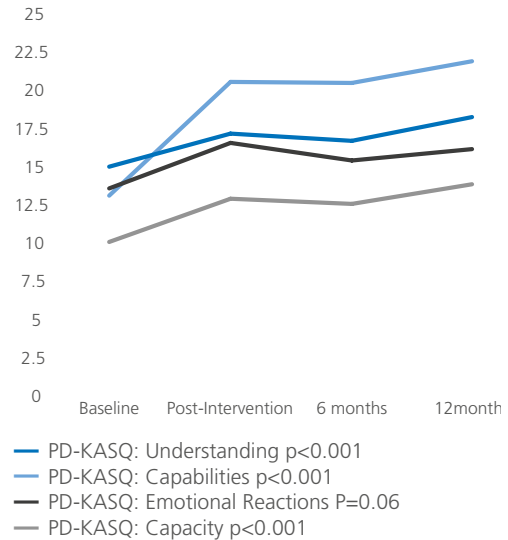
We evaluated the effectiveness of a small novel partnership intervention – Psychologically Informed Practice (PIP) – in improving staff performance and reducing antisocial behaviour in high-risk offenders residing in an Approved Premise in South London. We demonstrated significant improvements in a number of staff measures following intensive personality disorder (PD) training and these were maintained six and 12 months post-training (see Figures 89 and 90).

This included significantly increased understanding of, and perceived competency in working with, personality disorder, as reflected in the PD-KASQ. This evaluation was reported in our first outcomes book in 2014. The training continues to be delivered to probation staff.

**Figure 91** | PD-KASQ = Questionnaire of Staff changes in Personality Disorder – Knowledge, Attitudes and Skills Questionnaire



**Figure 92** | Showing the changes in staff attitudes



## Development of Attention Deficit Hyperactivity Disorder (ADHD) e-learning resource, co-produced with service users

### Conference & eLearning resource

- The initiative was a direct response to a service user satisfaction audit carried out by the services. This found that not enough resources were available post-diagnosis. It is a good example of co-production with a paid SU advisory board leading the work.
- A £15,000 grant was obtained from the Maudsley Charity.
- This allowed us to set up a service-user advisory group to support the work of the ADHD service.

- We have been developing e-resources for adults with ADHD, led by the service-user advisory group.
- This webpage (with mobile access) which is part of the the Maudsley Learning site; is a closed community, with resources for adults and ADHD. It will has links to other websites, as well as original content including videos. It was launched at the January 2016 conference.

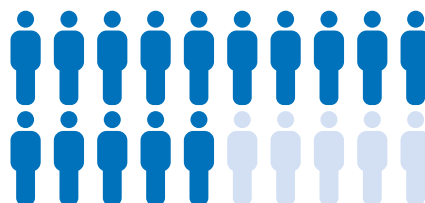


Figure 93 | January 2016 conference

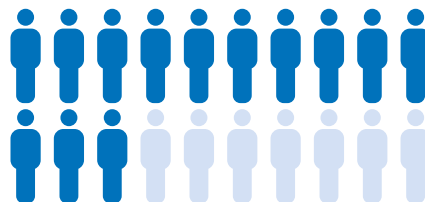


## Reducing health inequalities in intellectual disabilities

The Estia Centre secured funds from HESL and KHP Education Academy for a two-year project aimed at reducing health inequalities and premature, avoidable deaths in people with intellectual disabilities. The project delivered KHP's first awareness raising and clinical skills building learning event in March 2015, co-delivered with service users through the Baked Bean Theatre Company. The event was evaluated on the day and after three months.



77% of delegates felt more confident to deliver effective care and treatment to people with intellectual disabilities



At 3 month follow up 65% of delegates had gone on to make real changes in their clinical areas including asking about using hospital passports and making reasonable adjustments





In 2015, the project delivered training to 100 local GPs. This has led to an increase in demand for Directed Enhanced Services (DES) training for Annual Health Checks. Evidence shows that Annual Health Checks reduce health inequalities and detect illnesses far earlier than if not undertaken in people with learning disabilities.



We are working with colleagues across KHP to increase curricula content about intellectual disabilities in the workplace.

As a result of this project's mapping exercise on training provision across our AHSC, we have worked successfully with the medical school to

include Intellectual Disabilities as part of KCL's new undergraduate Curriculum 2020, with the first intake in September 2016.

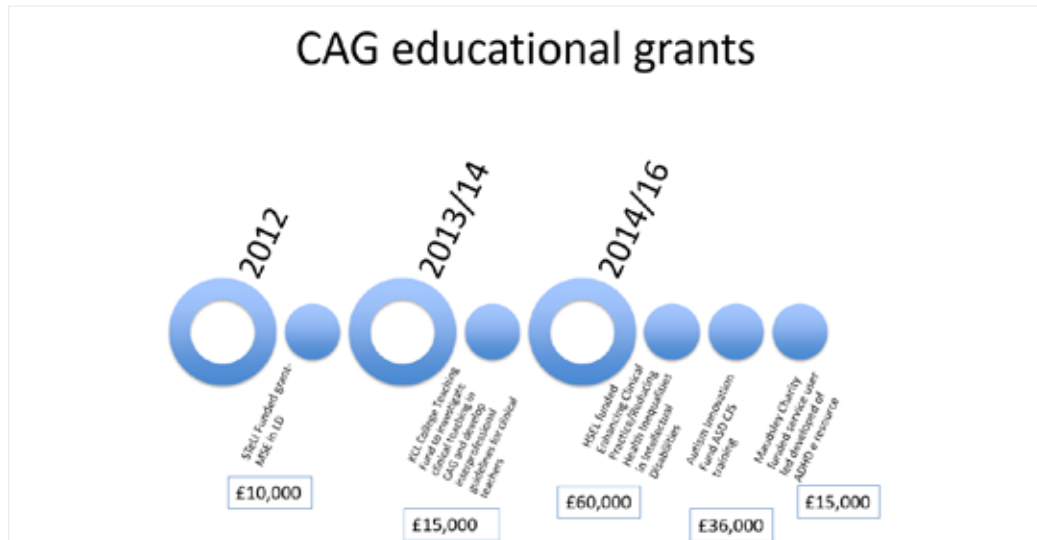


We have started to develop a suite of e-learning about intellectual disabilities for the KHP Learning Hub, a longer introductory e-learning module for staff induction and are piloting a simulation training day with the Maudsley Simulation Centre, co-produced and co-delivered with adults with intellectual disabilities. Our brief pocket guide for clinicians is available at our learning/teaching events and online via the KHP Learning Hub.

**Figure 94** | Brief pocket guide to Intellectual Disabilities



**Figure 95** | CAG's e-learning projects and educational grants awarded 2012–2016



## Key E&T publications & conferences

### 2011/12

Neurodevelopmental psychiatry: an introduction for medical students Edited by Simon Bonell, Tim McInerney and Jean O'Hara. Published by the South London and Maudsley NHS Foundation Trust in 2011

Mental Health in Intellectual Disabilities by Nick Bouras (Author), Steve Hardy (Author), Geraldine Holt (Author) Published in 2011 by Pavilion Publishing

A multi-media training pack to develop good practice in working with people with learning disabilities whose behaviour is described as challenging. Steve Hardy and Theresa Joyce, Published by Pavilion Publishing, 2011

### 2012/13

The benefits and barriers to being a clinical teacher in an Academic Health Science Centre Clinical Academic Group S. Whitwell. King's

Learning Institute Excellence in Education annual conference 2012

The Mental Capacity Act and People with Learning Disabilities. Theresa Joyce and Steve Hardy, Published by Pavilion Publishing, 2012

#### **2013/14**

McCarthy, J.; Chaplin, E.; Whitwell, S.; Underwood, L.; Asherson, P. and Murphy, D. (2014) A Pilot Study of Web Based Clinical Supervision for Clinicians Working with Adults with Autism Spectrum Disorders and Attention Deficit Hyperactive Disorders. British Journal of Medicine & Medical Research. 4(23): 4030–4043

Autism Spectrum Conditions: A guide. Eddie Chaplin, Steve Hardy & Lisa Underwood. Published in 2013 by Pavilion Publishing

#### **2014/15**

Investigation into healthcare student clinical placements in psychiatry: the role of interprofessional education Dr L.Hanna, Ms S. Mukhopadhyay, Dr S. Whitwell, Ms L.Bryan, Ms B.Phillips. AMEE international conference 2014

Investigation into KCL student clinical placements in psychiatry. Dr Susannah Whitwell, Dr Laurine Hanna, Ms Samyukta Mukhopadhyay, Ms Bridie

Phillips & Ms Lauren Bryan. 8th Excellence in Teaching Conference 2014

Investigating healthcare student clinical placements in psychiatry: what is actually happening and how can we improve student experience? S Whitwell, S Mukhopadhyay, L Hanna, L Bryan. ASME annual congress 2014

Guided Self-Help for People with Intellectual Disabilities and Anxiety and Depression – by Eddie Chaplin (Author), Jane McCarthy (Author), Steve Hardy (Author). Published in 2014 by Pavilion Publishing

#### **2015/2016**

KHP Intellectual Disabilities conference: Getting healthcare right for people with intellectual disabilities – March 2015, co-delivered with actors with intellectual disabilities from the Baked Beans Theatre Company.

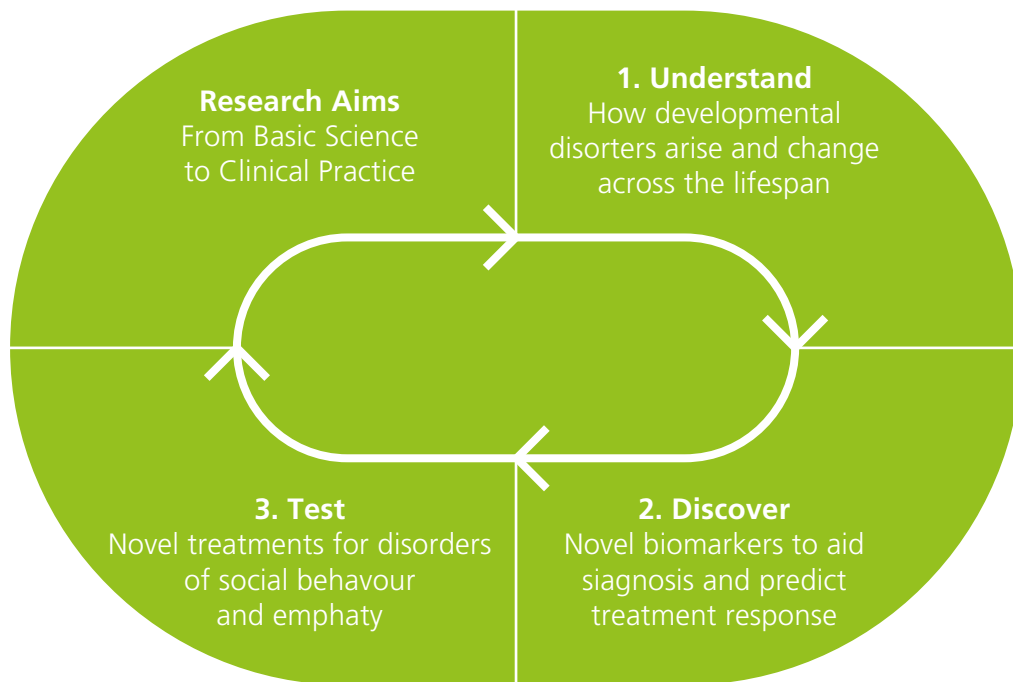
#### **2016/2017**

KHP Intellectual Disabilities conference: Getting healthcare right for people with intellectual disabilities – June 2016. Co-chaired by a service user, and co-delivered with actors with intellectual disabilities from the Baked Beans Theatre Company.

# Academic research and innovations

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## Our CAG Research Aims





## Examples of research aiding our understanding and treatment for clinical disorders

### Autism Spectrum Disorder (ASD)

Translational research has been facilitated by our CAG's integrated and collaborative approach. Discovering novel treatments for Autism Spectrum Disorder (ASD) is a challenge. Its causal mechanisms are poorly understood and the spectrum has wide clinical diversity with no practical biomarker available to supplement diagnosis or predict treatment outcome.

**Figure 96** | EU-AIMS consortium



To address this, our Behavioural Genetics Clinic is now leading and recruiting to EU-AIMS. European Autism Interventions – A Multicentre Study for Developing New Medications (EU-AIMS) is the largest single grant for autism in the world and the

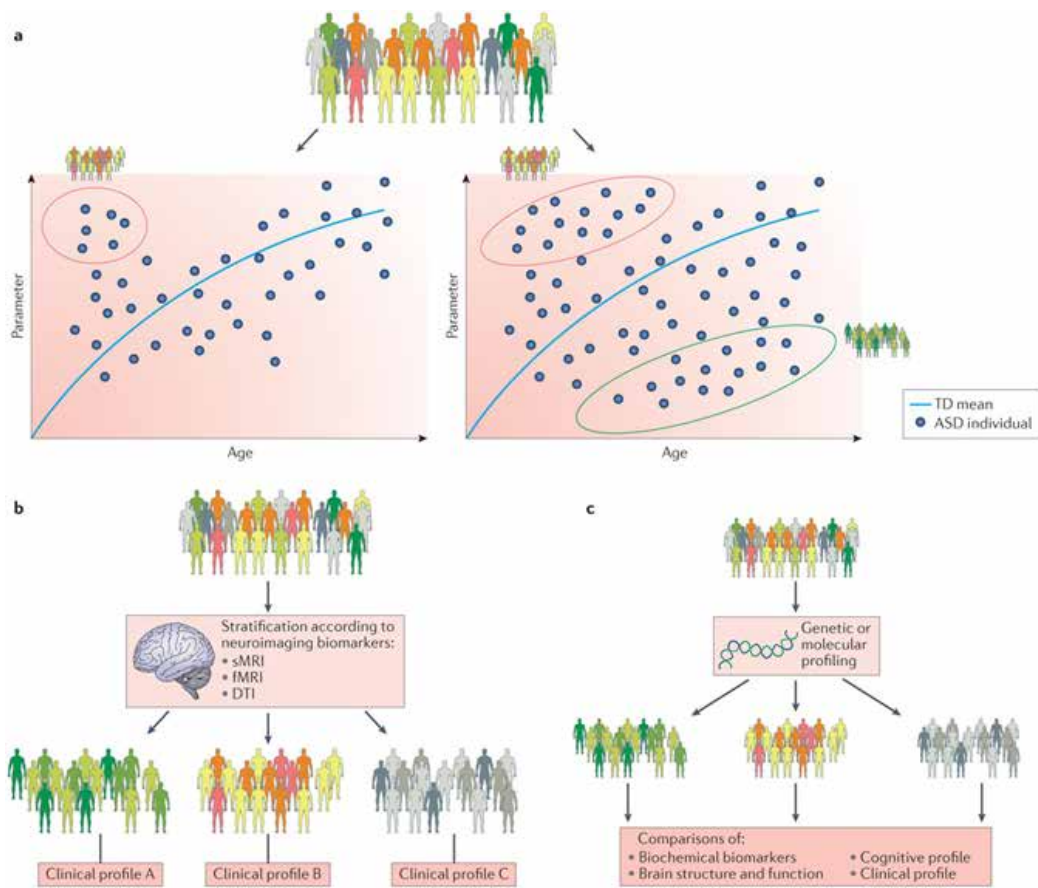
largest for the study of any mental health disorder in Europe. Led by Professor Declan Murphy, EU-AIMS was this year the EU Innovative Medicines Initiative best performing study. Importantly, EU-AIMS is the first group to work directly with the European Medicines Agency to define new treatment targets and outcome measures in autism. This initiative has recently been highlighted in Nature Reviews Drug Discovery (Loth et al., 2016). It aims to identify (stratify) sub-groups within this broad spectrum to help develop a more personalized medicine approach.

Professor Declan Murphy IoP/KHP, EU-AIMS consortium Academic Lead

Partners:

1. University of Basel
2. Institute Pasteur, Paris
3. Max Plank Institute, Göttingen
4. Neurosearch, Denmark
5. Psynova Neurotech, Cambridge
6. deCode Genetics, Iceland
7. Central Institute of Mental Health, Mennheim
8. Karolinska Institute, Sweden
9. Autism Research Centre, Cambridge
10. Donders Institute of Brain Cognition and Behaviour, Netherlands
11. University Medical Centre, Utrecht
12. European Molecular Biology Laboratory, Cambridge
13. GABO:Milliarium MBH and Co, Munich

**Figure 97** | Identifying sub-groups with Autism Spectrum Disorder



## Improving diagnosis

Building on our series of studies which won the Innovation of the Year Award as part of the NHS Healthcare, Excellence and Leadership (HEAL) Awards 2010, we are now examining whether a Support Vector Mechanism (SVM) computer programme which can classify a brain scan and differentiate between someone with ASD from someone with typical development can be applied in the clinic setting. Our service has also pioneered a new genetic diagnostic test for autism which has been patented by KCL for commercial development.

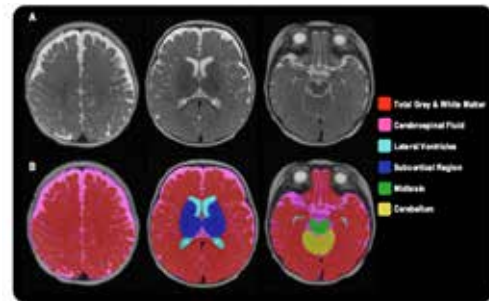
## Identifying infants at risk of neurodevelopmental disorders

Over the past two years we have worked to prove infant brain development and function can be measured. We can now demonstrate those infants at high risk for ASD have very significant difference in brain function from low-risk infants. We have several NHS-adopted studies across KHP in this area, focusing upon the effects of very preterm birth on risk and infants born to depressed mothers.

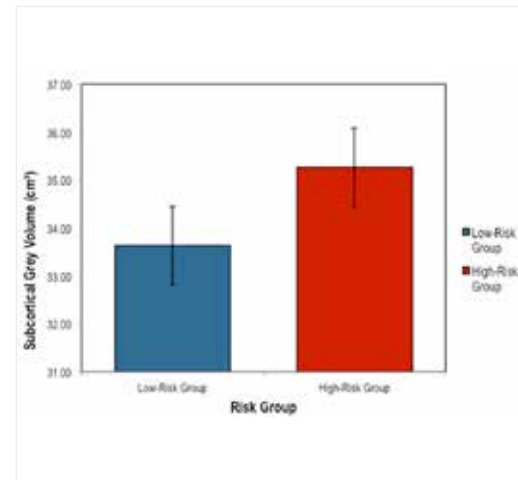
We can now use MRI to safely measure brain differences in infants as young as four months who are at risk of developing a neurodevelopmental condition such as ASD. As illustrated in Figures 98 and 99, we have found that babies at higher risk of ASD or related conditions have larger 'subcortical' brain volumes at 4–6 months, compared to babies at lower

risk of developing the condition. We are now investigating whether this is a useful early warning of later diagnosis.

**Figure 98** | Example of subcortical brain volumes in a four-month-old infant



**Figure 99** | Brain differences in subcortical grey volume in four-month-old infants at high risk of developing ASD



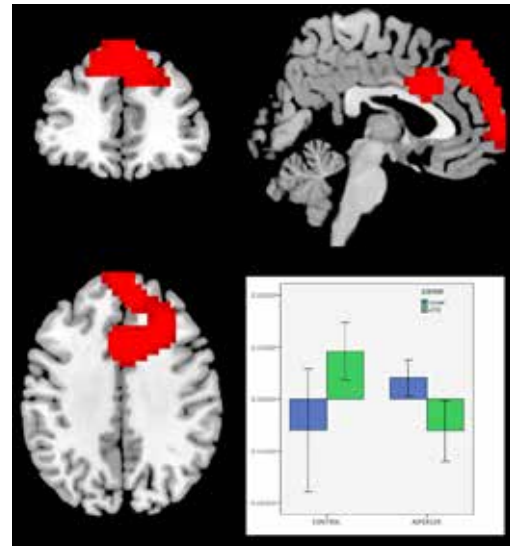


This work was selected as a conference highlight by the President of Human Brain Mapping [Geneva 2016]. Our autism work was presented at No 10 Downing Street in 2013 and is seen as world-leading to such an extent, Autistica (a leading autism research charity in the UK) is trying to find a way to fund studentships in our clinics. We are also part of a winning bid for funding an international research effort in genetics and neurodevelopment that was awarded US\$12million by NIH in 2014.

## Finding new treatments for neurodevelopment conditions

Using imaging methods – functional MRI – we previously showed, for the first time in the world, that depleting brain serotonin restores the pattern of brain activity in ASD towards a 'typical' control profile (Daly et al, Arch Gen Psychiatry 2012). This landmark discovery implies that rather than increasing serotonin availability with the ubiquitous use of selective serotonin reuptake inhibitors (SSRIs), enhancing serotonin may be a novel treatment approach in ASD. We are now examining whether we can use this imaging technology to predict who will be most responsive to a serotonin inhibiting or enhancing drug. Figure 100 shows brain serotonin in ASD.

**Figure 100 | Brain serotonin in ASD**

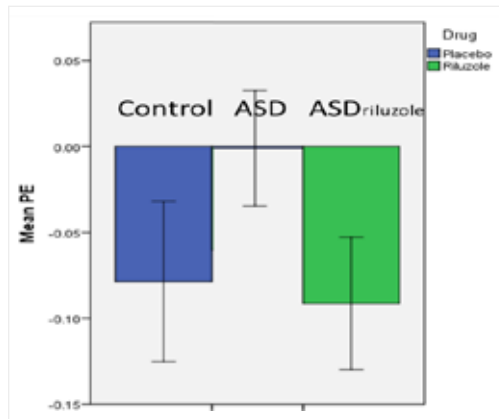


In ASD, reducing brain serotonin makes their brain response to facial emotion (green) more like controls (blue). In controls, reducing brain serotonin makes their brain response to facial emotion (green) more like people with ASD (blue).

Using imaging methods – magnetic resonance spectroscopy (MRS) and positron emission tomography (PET) – we have demonstrated the balance between two neurochemicals (excitatory glutamate and inhibitory GABA) that are critical for brain development and function and may be abnormal in ASD (Mendez et al,

Neuropharmacology 2012; Horder et al, IMFAR 2012). Funded by Autism Speaks and the MTRC, our current work also shows that control of excitatory/inhibitory balance is altered in ASD. This has led to a recent funding award from industry to investigate potential new treatments for ASD which may shift this balance. Using a drug called riluzole, increasing the concentration of the inhibitory chemical GABA in ASD, makes their brain activity (green) more like controls (blue) (See Figure 101)

**Figure 101** | Brain Glutamate and GABA balance in ASD in response to Riluzole



## Addressing disorders of social behaviour

In 2013, we demonstrated a high prevalence of unrecognised ASD/adult ADHD across the adult healthcare and prison system. This provides evidence for the need to increase awareness and training, commission diagnostic and intervention services to prevent very significant social disability, comorbid mental illness and the human and financial costs to the community. We are now investigating whether the treatment of ADHD in prisons can help reduce levels of violence.

In 2013, we reported the first study to reveal the brain basis of conduct disorder in children. This is important as children with conduct disorder (CD) are much more likely to have continued problems in adult life. These include alcoholism, drug abuse, mental illness, criminality, domestic violence, unemployment and early death. This costs society billions of pounds each year. Now we want to discover whether there are specific brain differences that: a) predict resistance to change and/or b) are 'reversible'. To achieve this, we have recently received almost £900,000 to analyse the brain in CD children before and after a well-validated parent training intervention, which has been demonstrated to effectively reduce antisocial behaviour in CD children.

**Other areas of research and value-based healthcare initiatives in the CAG include:**

- Examining predictors of absconding behaviour from medium secure forensic units with a view to developing a risk screen tool for absconding
  - Examining predictors of community recall of patients detained under S37/41 of the Mental Health Act
  - Testing and demonstrating how a 12-week triage forensic model delivers good assessment, treatment and the financial benefit to local commissioners
  - Developing a pilot enhanced community service to meet the needs of adults with intellectual disability, with the aim of preventing placement breakdown in the local
- community, hospital admission and out-of-area placement
  - Examining the concept of 'recovery' for adults with intellectual disabilities and significant mental health difficulties
  - Evaluation of a 'flexible integrated reading support tool' for adults with Autism Spectrum Disorders and their carers
  - Introduction of research, outcomes and service evaluation (ROSE) forums across our service areas to increase research awareness in our wards and community teams, to encourage earlier translation of evidence into clinical practice.

## Translational research

Research is key to improving our services and delivering treatment innovations.

**Figure 102** | Shows the number of awards as of 2013 and in excess of £43 million.



# Research in focus

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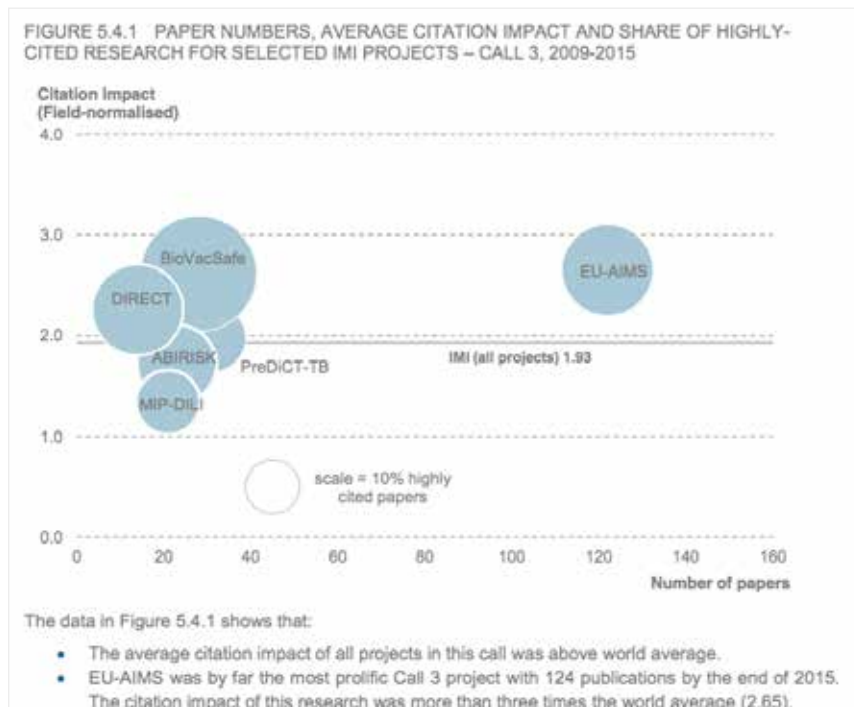
## Introduction

In the past five years (2011–2015), personnel from across the partnership have collaborated with both national and international researchers, publishing nearly 300 peer reviewed articles. In terms of comparison with other groups, a normalised measure of the research performance of an institution is their field weighted citation impact. A score of 1.00 is considered a world average, below this indicated this group of publications has been cited less than expected for that field; above it has been cited more than expected. The score for the Behavioural and Developmental Psychiatry CAG is 2.21,

indicating the current CAG's papers are cited considerably more than would be expected. This is reflected not only in the citations (4,019) and online views (8,411) of their papers over this time period, but also how their research has added knowledge to our understanding of behavioural and developmental disorders and influenced treatment pathways and policy development.<sup>1</sup> For example, the EU-AIMS programme is led by our group and has been recognised as the 'best performing' and 'most productive' EU Innovative Medicines Initiative research programme. The citation impact of this research is almost 3 times the world average.

- 1 Metrics states use the Times Higher Education methodology for its 2015/16 university rankings, scaled to the research group by using the Elsevier database Scopus, interpreted using Scival software. As such only Journal articles, reviews and conference papers are used. The scholarly output (number of publications) is a reflection of the articles done whilst working in the partnership excluding those authored externally. Due to the necessary time period required for calculations, the citation metrics and views can reflect time spent by researchers in other institutions, giving indication of the group's research power. Scival data was collected on the 6th October 2016

**Figure 103** | Paper numbers, average citation impact and share of highly cited research for selected IMI Projects 2009–2015



Source: Thomson Reuters on behalf of IMI Programme Office under a public procurement procedure

In this section, we provide a selection of abstracts from the CAG's research endeavours, grouped into themes.

## Investigating service provision, personnel and future policy development

### Ethnic inequalities, complexity and social exclusion

Annual Report of the Chief Medical Officer 2013, Public Mental Health Priorities: Investing in the evidence, 2014

#### **Bhui K and O'Hara J**

Previous research and equalities policies give significant attention to ethnic disparities in the incidence of severe mental illness, depression, suicide risk and experiences of adverse life events like discrimination, trauma (e.g. that experienced by asylum seekers and refugees), unfavourable social and housing conditions and unemployment. Although much work is being undertaken to address pre-migration traumas and adversity as determinants of mental illness, health inequalities as a result of social conditions and the risks of illness after migration during periods of resettlement, and at contact with the NHS, are also important. Trying to understand how to improve therapeutic communications for black and minority ethnic groups is a major challenge given that the diversity of interventions, outcomes and ethnic groups are all considered as belonging to one group with similar needs

An integrated approach that places mental health services within a public health framework is essential to offer people choice, avoid dependency and mitigate the long-term effects of adopting a sick role; at the same time, rapid and early assessment, diagnosis and intervention must be targeted at those showing consistent and persistent symptoms and patterns of presentation that are known to indicate the emergence of more severe mental illness. At the point of a new-onset mental illness, rapid intervention, protecting physical and emotional health, and minimising adverse effects and impacts on physical health (for example, obesity due to medication) are essential and should be undertaken irrespective of which service the patient is first diagnosed in. However, we must guard against the notion that early assessment and diagnosis are technically and professionally simple: we need a highly skilled and senior workforce that is confident and committed to making competent clinical decisions, and a legal and rights-based framework that is cognisant of the ethical use of resources to meet health needs and maximise choice. This mitigates the risk that diagnosis becomes the basis of inflexible care pathways, which might further restrict choice and compound social exclusion through stigma and discrimination. At a time of economic downturn, one of the risks to mental health care is that it is seen only as a social intervention, targeting the environment. Important as that is, skilled assessment and psychiatric intervention – including social, psychological and pharmacological interventions – are also warranted, within a person-centred and shared decision making process that offers choice, protection and access to effective

treatment. Therefore, preventing inequality in the community, the health impacts of inequality on the vulnerable and inequalities of access, intervention and experience need a finely balanced health system with skilled and confident leaders, clinicians and commissioners.

## Mental health expertise at prison reception

Journal of Forensic Psychiatry and Psychology, 2015

**Brown, K., Cullen, A., Kooyman, I., Forrester, A.**

Although screening has become an established procedure in prison health care, some difficulties persist. In attempts to improve this, many local adaptations have been introduced, but few have been evaluated. We introduced an adaptation – mental health expertise (a Community Psychiatric Nurse, CPN) – into the reception area of a busy remand prison, and compared standard and enhanced assessment procedures over a six-month period. Referrals (n = 67) were significantly more likely to be suitable for onward case working by the clinical team after a CPN was introduced. The team showed little evidence of the 'mission creep' (where teams operating at a secondary level absorb mental health problems at a primary care level) that has been described elsewhere in the literature. Despite its limitations, this evaluation suggests that prison pathways can be improved by relatively inexpensive local

initiatives, and that advancing specific mental health expertise into prison reception areas can enhance existing processes.

## Violent offending by UK military personnel deployed to Iraq and Afghanistan: A data linkage cohort study

The Lancet, 2013

**MacManus, D., Dean, K., Jones, M., Rona, R.J., Greenberg, N., Hull, L., Fahy, T., Wessely, S., Fear, N.T.**

Background: Violent offending by veterans of the Iraq and Afghanistan conflicts is a cause for concern and there is much public debate about the proportion of ex-military personnel in the criminal justice system for violent offences. Although the psychological effects of conflict are well documented, the potential legacy of violent offending has yet to be ascertained. We describe our use of criminal records to investigate the effect of deployment, combat, and post-deployment mental health problems on violent offending among military personnel relative to pre-existing risk factors.

Methods: In this cohort study, we linked data from 13 856 randomly selected, serving and ex-serving UK military personnel with national criminal records stored on the Ministry of Justice Police National Computer database. We describe

offending during the lifetime of the participants and assess the risk factors for violent offending.

Findings: 2,139 (weighted 17.0%) of 12 359 male UK military personnel had a criminal record for any offence during their lifetime. Violent offenders (1,369 [11.0%]) were the most prevalent offender types; prevalence was highest in men aged 30 years or younger (521 [20.6%] of 2,728) and fell with age (164 [4.7%] of 3,027 at age >45 years). Deployment was not independently associated with increased risk of violent offending, but serving in a combat role conferred an additional risk, even after adjustment for confounders (violent offending in 137 [6.3%] of 2,178 men deployed in a combat role vs 140 (2.4%) of 5,797 deployed in a non-combat role; adjusted hazard ratio 1.53, 95% CI 1.15–2.03;  $p=0.003$ ). Increased exposure to traumatic events during deployment also increased risk of violent offending (violent offending in 104 [4.1%] of 2,753 men with exposure to two to four traumatic events vs 56 [1.6%] of 2,944 with zero to one traumatic event, 1.77, 1.21–2.58,  $p=0.003$ ; and violent offending in 122 [5.1%] of 2,582 men with exposure to five to 16 traumatic events, 1.65, 1.12–2.40,  $p=0.01$ ; test for trend,  $p=0.032$ ). Violent offending was strongly associated with post-deployment alcohol misuse (violent offending in 120 [9.0%] of 1,363 men with alcohol misuse vs 155 [2.3%] of 6,768 with no alcohol misuse; 2.16, 1.62–2.90;  $p<0.0001$ ), post-traumatic stress disorder (violent offending in 25 [8.6%] of 344 men with post-traumatic stress disorder vs 221 [3.0%] of 7,256 with no symptoms of post-traumatic stress disorder; 2.20, 1.36–3.55;  $p=0.001$ ), and

high levels of self-reported aggressive behaviour (violent offending in 56 [6.7%] of 856 men with an aggression score of six to 16 vs 22 [1.2%] of 1,685 with an aggression score of zero; 2.47, 1.37–4.46;  $p=0.003$ ). Of the post-traumatic stress disorder symptoms, the hyperarousal cluster was most strongly associated with violent offending (2.01, 1.50–2.70;  $p<0.0001$ ).

Interpretation: Alcohol misuse and aggressive behaviour might be appropriate targets for interventions, but any action must be evidence based. Post-traumatic stress disorder, though less prevalent, is also a risk factor for violence, especially hyperarousal symptoms, so if diagnosed it should be appropriately treated and associated risk monitored.

## How can mental health clinicians, working in intellectual disability services, meet the spiritual needs of their service users?

Advances in Mental Health and Intellectual Disabilities, 2015

**Loynes, B., O'Hara, J.**

Purpose: The purpose of this paper is to identify approaches that mental health clinicians, working in intellectual disability services, can adopt to ensure the spiritual needs of their service users are met.



Design/methodology/approach: A narrative literature review examining original research, expert opinion pieces and book chapters was undertaken. To broaden the perspective of the paper, publications from different academic areas were reviewed including intellectual disabilities, mental health, neurodevelopmental disorders, general health and spirituality literature.

Findings: The main principles of spiritual assessment tools from the general health literature can be applied to this group. However, the literature would suggest that certain approaches are of particular importance in intellectual disabilities mental health including advocating for service users to attend the religious services they wish to and working collaboratively with families and carers when addressing spiritual issues.

Research limitations/implications: The question of how to meet the spiritual needs of people with autism and severe intellectual disability is a neglected research area. Research examining the spiritual needs of service users with intellectual disabilities, on mental health inpatient units, is also needed as well as a review of whether spiritual needs are being met in current person-centred care plans.

Originality/value: No published literature review was identified that specifically addressed the question of how mental health clinicians should approach the spiritual needs of their service users.

## A summary of government initiatives relating to employment for people with learning disabilities in England

Tizard Learning Disability Review, 2015

### **Blamires, K.**

Purpose: The purpose of this paper is to provide a synthesis of current and previous government policies and strategies, in relation to people with learning disabilities and employment, to facilitate a better understanding of the current situation and future challenges.

Design/Methodology/Approach: A search was completed to identify government policies relating to the employment of people with learning disabilities. Key policies were identified and their impact was discussed in the paper.

Findings: It appears there is a necessity to identify how successful pilot projects can be replicated on a national scale, with clear targets and measures and initial financial support to set up these services. Alongside this there is a need for interventions targeting not just employers, but the general population, educating people about the importance of including and valuing people with learning disabilities in the workforce.

Originality/Value: It is important that policy is analysed and the impact of it is assessed to determine whether more action is necessary. This paper adds updates to some of the issues discussed in Melling et al's (2011) paper about "Supported employment for people with learning disabilities".

## Caregiver burden as people with Autism Spectrum Disorder and Attention Deficit Hyperactivity Disorder transition into adolescence and adulthood in the United Kingdom

Journal of the American Academy of Child and Adolescent Psychiatry, 2012

**Cadman, T., Eklund, H., Howley, D., Hayward, H., Clarke, H., Findon, J., Xenitidis, K., Murphy, D., Asherson, P., Glaser, K.**

There is increasing recognition that Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD) are associated with significant costs and burdens. However, research on their impact has focused mostly on

the caregivers of young children; few studies have examined caregiver burden as children transition into adolescence and young adulthood, and no one has compared the impact of ASD to other neurodevelopmental disorders (e.g., ADHD). We conducted an observational study of 192 families caring for a young person (aged 14 to 24 years) with a childhood diagnosis of ASD or ADHD (n = 101 and n = 91, respectively) in the United Kingdom. A modified stress-appraisal model was used to investigate the correlates of caregiver burden as a function of family background (parental education), primary stressors (symptoms), primary appraisal (need), and resources (use of services). Both disorders were associated with a high level of caregiver burden, but it was significantly greater in ASD. In both groups, caregiver burden was mainly explained by the affected young person's unmet need. Domains of unmet need most associated with caregiver burden in both groups included depression/ anxiety and inappropriate behavior. Specific to ASD were significant associations between burden and unmet needs in domains such as social relationships and major mental health problems. Adolescence and young adulthood are associated with high levels of caregiver burden in both disorders; in ASD, the level is comparable to that reported by persons caring for individuals with a brain injury. Interventions are required to reduce caregiver burden in this population.

## Using imaging technology to go beneath the surface

### Frontal networks in adults with Autism Spectrum Disorder

Brain, 2016

**Catani, M., Dell Aqua, F. et al.**

It has been postulated that Autism Spectrum Disorder is underpinned by an 'atypical connectivity' involving higher-order association brain regions. To test this hypothesis in a large cohort of adults with Autism Spectrum Disorder we compared the white matter networks of 61 adult males with Autism Spectrum Disorder and 61 neurotypical controls, using two complementary approaches to diffusion tensor magnetic resonance imaging. First, we applied tract-based spatial statistics, a 'whole brain' non-hypothesis driven method, to identify differences in white matter networks in adults with Autism Spectrum Disorder. Following this we used a tract-specific analysis, based on tractography, to carry out a more detailed analysis of individual tracts identified by tract-based spatial statistics. Finally, within the Autism Spectrum Disorder group, we studied the relationship between diffusion measures and autistic symptom severity. Tract-based spatial statistics revealed that Autism Spectrum Disorder was associated with significantly reduced fractional anisotropy in regions that included frontal lobe pathways.

Tractography analysis of these specific pathways showed increased mean and perpendicular diffusivity, and reduced number of streamlines in the anterior and long segments of the arcuate fasciculus, cingulum and uncinate – predominantly in the left hemisphere. Abnormalities were also evident in the anterior portions of the corpus callosum connecting left and right frontal lobes. The degree of microstructural alteration of the arcuate and uncinate fasciculi was associated with severity of symptoms in language and social reciprocity in childhood. Our results indicated that Autism Spectrum Disorder is a developmental condition associated with abnormal connectivity of the frontal lobes. Furthermore our findings showed that male adults with Autism Spectrum Disorder have regional differences in brain anatomy, which correlate with specific aspects of autistic symptoms. Overall these results suggest that Autism Spectrum Disorder is a condition linked to aberrant developmental trajectories of the frontal networks that persist in adult life.

### Neuroimaging in Autism Spectrum Disorder: Brain structure and function across the lifespan

The Lancet Neurology, 2015

**Ecker, C., Bookheimer, S.Y., Murphy, D.G.M.**

Over the past decade, in-vivo MRI studies have provided many invaluable insights into the neural substrates underlying Autism Spectrum Disorder (ASD), which is now known to be associated with

neurodevelopmental variations in brain anatomy, functioning, and connectivity. These systems-level features of ASD pathology seem to develop differentially across the human lifespan so that the cortical abnormalities that occur in children with ASD differ from those noted at other stages of life. Thus, investigation of the brain in ASD poses particular methodological challenges, which must be addressed to enable the comparison of results across studies. Novel analytical approaches are also being developed to facilitate the translation of findings from the research to the clinical setting. In the future, the insights provided by human neuroimaging studies could contribute to biomarker development for ASD and other neurodevelopmental disorders, and to new approaches to diagnosis and treatment.

## Fronto-striatal circuitry and inhibitory control in autism: Findings from diffusion tensor imaging tractography

Cortex, 2012

**Langen, M., Leemans, A., Johnston, P., Ecker, C., Daly, E., Murphy, C.M., dell'Acqua, F., Durston, S., Murphy, D.G.M.**

Introduction: Repetitive behaviour and inhibitory control deficits are core features of autism; and it has been suggested that they result from differences in the anatomy of striatum; and/or the 'connectivity' of subcortical regions to frontal

cortex. There are few studies, however, that have measured the micro-structural organisation of white matter tracts connecting striatum and frontal cortex.

Aims: To investigate differences in bulk volume of striatum and micro-structural organisation of fronto-striatal white matter in people with autism; and their association with repetitive behaviour and inhibitory control.

Methods: We compared the bulk volume of striatum (caudate nucleus, putamen and nucleus accumbens) and white matter organisation of fronto-striatal tracts using (respectively) structural magnetic resonance imaging (sMRI) and tract specific diffusion tensor imaging (DTI) measures in 21 adults with autism and 22 controls. We also assessed performance on a cognitive inhibition (go/nogo) task.

Results: Bulk volume of striatal structures did not differ between groups. However, adults with autism had a significantly smaller total brain white matter volume, lower fractional anisotropy of white matter tracts connecting putamen to frontal cortical areas, higher mean diffusivity of white matter tracts connecting accumbens to frontal cortex and worse performance on the go/nogo task. Also, performance on the go/nogo task was significantly related to anatomical variation when both groups were combined; but not within the autism group alone.

Conclusions: These data suggest that autism may be associated with differences in the anatomy of fronto-striatal white matter tracts.

## Glutamate/glutamine and neuronal integrity in adults with ADHD: A proton MRS study

Translational Psychiatry, 2014

**Maltezos, S., Horder, J., Coghlan, S., Skirrow, C., O’Gorman, R., Lavender, T.J., Mendez, M.A., Mehta, M., Daly, E., Xenitidis, K., Paliokosta, E., Spain, D., Pitts, M., Asherson, P., Lythgoe, D.J., Barker, G.J., Murphy, D.G.**

There is increasing evidence that abnormalities in glutamate signalling may contribute to the pathophysiology of Attention Deficit Hyperactivity Disorder (ADHD). Proton magnetic resonance spectroscopy ([<sup>1</sup>H]MRS) can be used to measure glutamate, and also its metabolite glutamine, *in vivo*. However, few studies have investigated glutamate in the brain of adults with ADHD naive to stimulant medication. Therefore, we used [<sup>1</sup>H]MRS to measure the combined signal of glutamate and glutamine (Glu+Gln; abbreviated as Glx) along with other neurometabolites such as creatine (Cr), N-acetylaspartate (NAA) and choline. Data were acquired from three brain regions, including two implicated in ADHD—the basal ganglia (caudate/striatum) and the dorsolateral prefrontal cortex (DLPFC)—and one ‘control’ region—the medial parietal cortex. We compared 40 adults with ADHD, of whom 24 were naive for ADHD medication, whereas 16 were currently on stimulants, against 20 age, sex and IQ-matched healthy controls. We found that compared with controls, adult ADHD participants had a significantly lower concentration of Glx,

Cr and NAA in the basal ganglia and Cr in the DLPFC, after correction for multiple comparisons. There were no differences between stimulant-treated and treatment-naïve ADHD participants. In people with untreated ADHD, lower basal ganglia Glx was significantly associated with more severe symptoms of inattention. There were no significant differences in the parietal ‘control’ region. We suggest that subcortical glutamate and glutamine have a modulatory role in ADHD adults; and that differences in glutamate-glutamine levels are not explained by use of stimulant medication.

## Early specialization for voice and emotion processing in the infant brain

Current Biology, 2011

**Blasi, A., Mercure, E., Lloyd-Fox, S., Thomson, A., Brammer, M., Sauter, D., Deeley, Q., Barker, G.J., Renvall, V., Deoni, S., Gasston, D., Williams, S.C.R., Johnson, M.H., Simmons, A., Murphy, D.G.M.**

Human voices play a fundamental role in social communication, and areas of the adult “social brain” show specialization for processing voices and their emotional content (superior temporal sulcus, inferior prefrontal cortex, premotor cortical regions, amygdala, and insula)]. However, it is unclear when this specialization develops. Functional magnetic resonance (fMRI) studies suggest that the infant temporal cortex does not differentiate speech from music or backward

speech, but a prior study with functional near-infrared spectroscopy revealed preferential activation for human voices in 7-month-olds, in a more posterior location of the temporal cortex than in adults. However, the brain networks involved in processing nonspeech human vocalizations in early development are still unknown. To address this issue, in the present fMRI study, 3- to 7-month-olds were presented with adult nonspeech vocalizations (emotionally neutral, emotionally positive, and emotionally negative) and nonvocal environmental sounds. Infants displayed significant differential activation in the anterior portion of the temporal cortex, similarly to adults. Moreover, sad vocalizations modulated the activity of brain regions involved in processing affective stimuli such as the orbitofrontal cortex and insula. These results suggest remarkably early functional specialization for processing human voice and negative emotions.

## The antisocial brain: Psychopathy matters: A structural MRI investigation of antisocial male violent offenders

Archives of General Psychiatry, 2012

**Gregory, S., Ffytche, D., Simmons, A., Kumari, V., Howard, M., Hodgins, S., Blackwood, N.**

Context: The population of men who display persistent antisocial and violent behavior is

heterogeneous. Callous-unemotional traits in childhood and psychopathic traits in adulthood characterize a distinct subgroup.

Objective: To identify structural gray matter (GM) differences between persistent violent offenders who meet criteria for antisocial personality disorder and the syndrome of psychopathy (ASPD+P) and those meeting criteria only for ASPD (ASPD-P).

Design: Cross-sectional case-control structural magnetic resonance imaging study. Setting: Inner-city probation services and neuroimaging research unit in London, England. Participants: Sixty-six men, including 17 violent offenders with ASPD+P, 27 violent offenders with ASPD-P, and 22 healthy nonoffenders participated in the study. Forensic clinicians assessed participants using the Structured Clinical Interview for DSM-IV and the Psychopathy Checklist-Revised. Gray matter volumes as assessed by structural magnetic resonance imaging and volumetric voxel-based morphometry analyses was the main outcome measure.

Results: Offenders with ASPD+P displayed significantly reduced GM volumes bilaterally in the anterior rostral prefrontal cortex (Brodmann area 10) and temporal poles (Brodmann area 20/38) relative to offenders with ASPD-P and nonoffenders. These reductions were not attributable to substance use disorders. Offenders with ASPD-P exhibited GM volumes similar to the nonoffenders.

Conclusions: Reduced GM volume within areas implicated in empathic processing, moral reasoning, and processing of prosocial emotions

such as guilt and embarrassment may contribute to the profound abnormalities of social behavior observed in psychopathy. Evidence of robust structural brain differences between persistently violent men with and without psychopathy adds to the evidence that psychopathy represents a distinct phenotype. This knowledge may facilitate research into the etiology of persistent violent behavior.

## Investigating treatment pathways

### Identification and validation of biomarkers for Autism Spectrum Disorders

Nature Reviews Drug Discovery, 2015

**Loth, E., Spooren, W., Ham, L. M., Isaac, M. B., Auriche-Benichou, C., Banaschewski, T., Baron-Cohen, S., Broich, K., Bölte, S., Bourgeron, T., Charman, T., Collier, D., de Andres-Trelles, F., Durston, S., Ecker, C., Elferink, A., Haberkamp, M., Hemmings, R., Johnson, M. H., Jones, E. J. H. & 18 others**

Currently, the EU-AIMS Longitudinal European Autism Project (LEAP) is the worldwide largest multicentre, multidisciplinary study to identify stratification biomarkers for ASD and biomarkers

that may serve as surrogate end points. In total, the study will include approximately 450 individuals with ASD between the ages of 6 and 30 years, and 350 control participants with typical development or mild intellectual disabilities. All participants are comprehensively characterized in terms of their clinical symptom profile, comorbidities, quality of life, level of adaptive function, neurocognitive profile, brain structure and function (assessed using structural magnetic resonance imaging (sMRI), functional MRI (fMRI) and electroencephalogram (EEG)), biochemical biomarkers, prenatal environmental risk factors and genomics.

To understand whether data generated in this study would be accepted in regulatory decisions for future clinical trials, the LEAP Group obtained scientific qualification advice from the European Medicines Agency (EMA) on the population selection criteria, clinical end points and biomarker methodologies to be used. The EMA's Committee for Medicinal Products for Human Use (CHMP) offers tailored advice to support the qualification of innovative methods that have been developed for a specific intended use in the context of research into and development of pharmaceuticals. The goal of using qualified methods is to enable a more robust assessment of risks versus benefits in clinical trials. Another advantage of the procedure of qualifying these methods is that, once qualified, these clinical study instruments may be applied by any investigator in subsequent clinical research, thus ensuring greater scientific rigour.

## New treatment targets for Autism Spectrum Disorders: EU-AIMS

The Lancet Psychiatry, 2014

### **Loth, Spooren and Murphy, for the EU-AIMS consortium**

Autism Spectrum Disorders are one of the most common and severe neurodevelopmental disorders, but no effective treatments for core symptoms are available. The main reasons for the absence of effective treatments are the high clinical and genetic heterogeneity between affected individuals, restricted knowledge of the underlying pathophysiological mechanisms, and the lack of reliable diagnostic biomarkers. Hence clinical trials, which have largely been unsuccessful so far, rely on biologically diverse groups of patients, operationally defined according to the Diagnostic and Statistical Manual of Mental Disorders and the International Statistical Classification of Diseases and Related Health Problems, 10th revision. The identification of more homogenous biological subgroups is therefore essential for the development of novel treatments based on the molecular mechanisms underpinning Autism Spectrum Disorders.

Recent advances in genomics and new methods to model pathophysiological mechanisms in vitro and in vivo might now make identification of new treatment targets and the stratification of patients according to biological biomarkers possible.

Hence, in 2012, the Innovative Medicines Agency set up a large-scale public-private partnership – EU-AIMS – to harness these advances in an integrated translational research programme aiming to identify new biomarkers and treatment targets for Autism Spectrum Disorders.

## Cardiovascular risk factors and metabolic syndrome in people with established psychotic illnesses: Baseline data from the IMPaCT randomized controlled trial

Psychological Medicine, 2015

**Gardner-Sood, P., Lally, J., Smith, S., Atakan, Z., Ismail, K., Greenwood, K.E., Keen, A., O'Brien, C., Onagbesan, O., Fung, C., Papanastasiou, E., Eberherd, J., Patel, A., Ohlsen, R., Stahl, D., David, A., Hopkins, D., Murray, R.M., Gaughran, F.**

Background: The aims of the study were to determine the prevalence of cardiometabolic risk factors and establish the proportion of people with psychosis meeting criteria for the metabolic syndrome (MetS). The study also aimed to identify the key lifestyle behaviours associated with increased risk of the MetS and to investigate whether the MetS is associated with illness severity and degree of functional impairment.



Method: Baseline data were collected as part of a large randomized controlled trial (IMPACT RCT). The study took place within community mental health teams in five Mental Health NHS Trusts in urban and rural locations across England. A total of 450 randomly selected out-patients, aged 18–65 years, with an established psychotic illness were recruited. We ascertained the prevalence rates of cardiometabolic risk factors, illness severity and functional impairment and calculated rates of the MetS, using International Diabetes Federation (IDF) and National Cholesterol Education Program Third Adult Treatment Panel criteria.

Results: High rates of cardiometabolic risk factors were found. Nearly all women and most men had waist circumference exceeding the IDF threshold for central obesity. Half the sample was obese (body mass index  $\geq 30$  kg/m<sup>2</sup>) and a fifth met the criteria for type 2 diabetes mellitus. Females were more likely to be obese than males (61% v. 42%,  $p < 0.001$ ). Of the 308 patients with complete laboratory measures, 57% ( $n = 175$ ) met the IDF criteria for the MetS.

Conclusions: In the UK, the prevalence of cardiometabolic risk factors in individuals with psychotic illnesses is much higher than that observed in national general population studies as well as in most international studies of patients with psychosis.

## Augmentation of clozapine with electroconvulsive therapy in treatment resistant schizophrenia: A systematic review and meta-analysis

Schizophrenia Research, 2016

**Lally, J., Tully, J., Robertson, D., Stubbs, B., Gaughran, F., MacCabe, J.H.**

The primary aim of this systematic review and meta-analysis was to assess the proportion of patients with Treatment Resistant Schizophrenia (TRS) that respond to ECT augmentation of clozapine (+ ECT). We searched major electronic databases from 1980 to July 2015. We conducted a random effects meta-analysis reporting the proportion of responders to C + ECT in RCTs and open-label trials. Five clinical trials met our eligibility criteria, allowing us to pool data from 71 people with TRS who underwent C+ ECT across 4 open label trials (= 32) and 1 RCT (= 39). The overall pooled proportion of response to C + ECT was 54%, (95% CI: 21.8–83.6%) with some heterogeneity evident ( $I^2 = 69\%$ ). With data from retrospective chart reviews, case series and case reports, 192 people treated with C + ECT were included. All studies together demonstrated an overall response to C + ECT of 66% (95% CI: 57.5–74.3%) (83 out of 126 patients responded to C + ECT). The mean number of ECT treatments used to augment clozapine was 11.3. 32% of cases (20 out of 62

patients) with follow up data (range of follow up: 3–468 weeks) relapsed following cessation of ECT. Adverse events were reported in 14% of identified cases (24 out of 166 patients). There is a paucity of controlled studies in the literature, with only one single blinded randomised controlled study located, and the predominance of open label trials used in the meta-analysis is a limitation. The data suggests that ECT may be an effective and safe clozapine augmentation strategy in TRS. A higher number of ECT treatments may be required than is standard for other clinical indications. Further research is needed before ECT can be included in standard TRS treatment algorithms.

## Evaluating service user community groups in forensic and neurodevelopmental units.

British Journal of Mental Health Nursing, 2015

**Chaplin, E., Douglas, J., O'Hara, J., Wellington, S and Lyon, J**

Introduction: Often service user involvement in forensic mental health settings can fail to address service users' views in a systematic way and is more likely to be designed around organisational priorities.

Method: Community meetings in six forensic medium-secure units and three neurodevelopmental (ND) units were compared. Using framework analysis, the study evaluated practice, in particular how staff and service users

interacted and the issues raised at meetings. Data was collected from interviews, questionnaires and minutes of the meetings.

Results: On average, meetings were more frequent in ND than in forensic units. Difficulties were reported in resolving issues due to factors including shift patterns, staff who could make decisions being unavailable, and policy and budget constraints. Forensic unit groups tended to focus on information and ND groups on activities and the ward environment. Complaints were more likely to be raised in forensic units than in ND units.

Discussion: This study provides an insight into community groups and offers an insight into the realities of user engagement in community meetings.

## Exploring the role of genetics

### The genetics of aggression: Where are we now?

American Journal of Medical Genetics, Part B: Neuropsychiatric Genetics, 2016

**Asherson, P., Cormand, B.**

Aggression, an overt behaviour with the intention to inflict damage, is a physiological trait with important roles throughout evolution, both in defence and predation. However, when expressed

in humans in the wrong context, aggression leads to social maladjustment and crime. This special issue is about the genetic and neurobiological basis for aggression. Most of the 12 works presented here have been prepared by members of five international consortia established under the auspice of the FP7 and H2020 programs of the European Union to investigate different aspects of aggression and related behavioural phenotypes, including delineation of subtypes, aetiological mechanisms, neurobiology, neuroimaging, biomarkers, animal models and development and assessment of new treatments. Research on human aggression has largely focused on the societal causes of violent behaviour with relatively little focus on the underlying neuroscientific basis. However, interesting findings are emerging which suggest that by identifying distinct pathways to aggression, better targeting of social, psychological and medical treatments, can lead to improved outcomes for individuals and society. This issue represents a state of the art review of current neurobiological understanding of human aggression and a starting point for concerted efforts to move the field towards the development of new strategies for prevention and treatment.

## Heritability of Autism Spectrum Disorder in a UK population-based twin sample

JAMA Psychiatry, 2015

**Colvert, E., Tick, B., McEwen, F., Stewart, C., Curran, S.R., Woodhouse, E., Gillan, N.,**

**Hallett, V., Lietz, S., Garnett, T., Ronald, A., Plomin, R., Rijdsdijk, F., Happé, F., Bolton, P.**

**Importance:** Most evidence to date highlights the importance of genetic influences on the liability to autism and related traits. However, most of these findings are derived from clinically ascertained samples, possibly missing individuals with subtler manifestations, and obtained estimates may not be representative of the population.

**Objectives:** To establish the relative contributions of genetic and environmental factors in liability to Autism Spectrum Disorder (ASD) and a broader autism phenotype in a large population-based twin sample and to ascertain the genetic/environmental relationship between dimensional trait measures and categorical diagnostic constructs of ASD.

**Design, Setting & Participants:** We used data from the population-based cohort Twins Early Development Study, which included all twin pairs born in England and Wales from January 1, 1994, through December 31, 1996. We performed joint continuous-ordinal liability threshold model fitting using the full information maximum likelihood method to estimate genetic and environmental parameters of covariance. Twin pairs underwent the following assessments: the Childhood Autism Spectrum Test (CAST) (6,423 pairs; mean age, 7.9 years), the Development and Well-being Assessment (DAWBA) (359 pairs; mean age, 10.3 years), the Autism Diagnostic Observation Schedule (ADOS) (203 pairs; mean age, 13.2 years), the Autism Diagnostic Interview-

Revised (ADI-R) (205 pairs; mean age, 13.2 years), and a best-estimate diagnosis (207 pairs).

Main Outcomes & Measures: Participants underwent screening using a population-based measure of autistic traits (CAST assessment), structured diagnostic assessments (DAWBA, ADI-R, and ADOS), and a best-estimate diagnosis.

Results: On all ASD measures, correlations among monozygotic twins (range, 0.77–0.99) were significantly higher than those for dizygotic twins (range, 0.22–0.65), giving heritability estimates of 56% to 95%. The covariance of CAST and ASD diagnostic status (DAWBA, ADOS and best-estimate diagnosis) was largely explained by additive genetic factors (76%–95%). For the ADI-R only, shared environmental influences were significant (30% [95%CI, 8%–47%]) but smaller than genetic influences (56% [95%CI, 37%–82%]).

Conclusions & Results: The liability to ASD and a more broadly defined high-level autism trait phenotype in this large population-based twin sample derives primarily from additive genetic and, to a lesser extent, nonshared environmental effects. The largely consistent results across different diagnostic tools suggest that the results are generalizable across multiple measures and assessment methods. Genetic factors underpinning individual differences in autism-like traits show considerable overlap with genetic influences on diagnosed ASD.

## The genetics of Attention Deficit Hyperactivity Disorder in adults, a review

Molecular Psychiatry, 2012

**Franke, B., Faraone, S.V., Asherson, P., Buitelaar, J., Bau, C.H.D., Ramos-Quiroga, J.A., Mick, E., Grevet, E.H., Johansson, S., Haavik, J., Lesch, K.-P., Cormand, B., Reif, A.**

The adult form of Attention Deficit Hyperactivity Disorder (aADHD) has a prevalence of up to 5% and is the most severe long-term outcome of this common neurodevelopmental disorder. Family studies in clinical samples suggest an increased familial liability for aADHD compared with childhood ADHD (cADHD), whereas twin studies based on self-rated symptoms in adult population samples show moderate heritability estimates of 30–40%. However, using multiple sources of information, the heritability of clinically diagnosed aADHD and cADHD is very similar. Results of candidate gene as well as genome-wide molecular genetic studies in aADHD samples implicate some of the same genes involved in ADHD in children, although in some cases different alleles and different genes may be responsible for adult versus childhood ADHD. Linkage studies have been successful in identifying loci for aADHD and led to the identification of LPHN3 and CDH13 as novel genes associated with ADHD across the lifespan. In addition, studies of rare genetic variants have identified probable causative mutations for aADHD. Use of endophenotypes based on

neuropsychology and neuroimaging, as well as next-generation genome analysis and improved statistical and bioinformatic analysis methods hold the promise of identifying additional genetic variants involved in disease etiology. Large, international collaborations have paved the way for well-powered studies. Progress in identifying ADHD risk genes may provide us with tools for the prediction of disease progression in the clinic and better treatment, and ultimately may help to prevent persistence of ADHD into adulthood.

## Microduplications at the pseudoautosomal SHOX locus in Autism Spectrum Disorders and related neurodevelopmental conditions

Journal of Medical Genetics, 2016

**Tropeano, M. Howley, D. et al.**

**Background:** The pseudoautosomal short stature homeobox-containing (SHOX) gene encodes a homeodomain transcription factor involved in cell-cycle and growth regulation. SHOX/SHOX enhancers deletions cause short stature and skeletal abnormalities in a female-dominant fashion; duplications appear to be rare. Neurodevelopmental disorders (NDDs), such as Autism Spectrum Disorders (ASDs), are complex disorders with high heritability and skewed sex ratio; several rare (<1% frequency) CNVs have been implicated in risk.

**Methods:** We analysed data from a discovery series of 90 adult ASD cases, who underwent clinical genetic testing by array-comparative genomic hybridisation (CGH). Twenty-seven individuals harboured CNV abnormalities, including two unrelated females with microduplications affecting SHOX. To determine the prevalence of SHOX duplications and delineate their associated phenotypic spectrum, we subsequently examined array-CGH data from a follow-up sample of 26 574 patients, including 18 857 with NDD (3,541 with ASD).

**Results:** We found a significant enrichment of SHOX microduplications in the NDD cases ( $p=0.00036$ ; OR 2.21) and, particularly, in those with ASD ( $p=9.18 \times 10^{-7}$ ; OR 3.63) compared with 12 594 population-based controls. SHOX duplications affecting the upstream or downstream enhancers were enriched only in females with NDD ( $p=0.0043$ ; OR 2.69/ $p=0.00020$ ; OR 7.20), but not in males ( $p=0.404$ ; OR 1.38/ $p=0.096$ ; OR 2.21).

**Conclusions:** Microduplications at the SHOX locus are a low penetrance risk factor for ASD/NDD, with increased risk in both sexes. However, a concomitant duplication of SHOX enhancers may be required to trigger a NDD in females. Since specific SHOX isoforms are exclusively expressed in the developing foetal brain, this may reflect the pathogenic effect of altered SHOX protein dosage on neurodevelopment.

# Selected publications

## 2014/15

We publish research in the very highest impact factor journals (>8). In the last year, the CAG has had papers in Science, Nature Neuroscience, Nature Medicine, Nature Reviews Neuroscience, Lancet, Archives of General Psychiatry, and Molecular Psychiatry. Our average journal impact factor for 2015 was 6.2.

List of published books		
Author	Title	Publisher
Bouras N and Holt G (eds)	Mental Health Services for Adults with Intellectual Disability: strategies and solutions (2010)	Psychology Press, The Maudsley series
O'Hara J, McCarthy J and Bouras N (eds)	Intellectual Disability and Ill-Health: a review of the evidence (2010)	Cambridge University Press
Chaplin E, Underwood L and Hardy S (eds)	Autism Spectrum Conditions: a guide (2013)	Pavilion Publishers
Tsakanikos E and McCarthy J (eds)	Handbook of Psychopathology in Intellectual Disability: research, practice and policy (2014)	Springer
Chaplin E et al (eds)	Guided Self-Help: for people with intellectual disabilities and anxiety and depression (2015)	Pavilion Publishers & Estia

List of High Impact Publications in order of publication date (selected 2014–2015 list from PURE is below but needs formatting please)	Journal
Blasi, A., Lloyd-Fox, S., Sethna, V., Brammer, M. J., Mercure, E., Murray, L., Williams, S. C. R., Simmons, A., Murphy, D. G. & Johnson, M. H. 1 (Oct 2015) In: Atypical processing of voice sounds in infants at risk for Autism Spectrum Disorder In: 71, p. 122–133	Cortex; a journal devoted to the study of the nervous system and behavior
A. M. S., Horder, J., Hernandez, M. A., Egerton, A., Williams, S. C. R., Wilson, C. E., Spain, D., Murphy, C., Robertson, D., Barker, G. J., Murphy, D. G. & McAlonan, G. (20 Aug 2015) M.Cortical and subcortical glutathione levels in adults with Autism Spectrum Disorder Durieux, In: Contribution to journal › Article	Autism research
White matter alterations in first episode treatment-naïve patients with deficit schizophrenia: a combined VBM and DTI study. Lei, W., Deng, W., Li, M., Huang, C., Ma, X., Wang, Q., Gao, W., Li, Y., Jiang, L., Zhou, Y., Hu, X., McAlonan, G. M. & Li, T. 10 Aug 2015 In:	Scientific Reports. 5, 12994 Contribution to journal › Article
Zinkstok, J. R., Daly, E., Ecker, C., Williams, S. C. R., Murphy, D. G. M., Bailey, A. J., Baron-Cohen, S., Bolton, P. F., Bullmore, E. T., Carrington, S., Chakrabarti, B., Daly, E. M., Deoni, S. C. L., Ecker, C., Happe, F., Henty, J., Jezzard, P., Johnston, P., Jones, D. K., Lombardo, M. V. & 11 others (12 Mar 2015) White-matter relaxation time and myelin water fraction differences in young adults with autism In: Psychological Medicine. 45, 4, p. 795–805 Contribution to journal › Article	Psychological Medicine
Blackwood, N. J. (1 Feb 2015) Punishment and psychopathy: a case-control functional MRI investigation of reinforcement learning in violent antisocial personality disordered men. In: 2, 2, p. 153–160 Contribution to journal › Article	The Lancet Psychiatry
MacManus, D., Fossey, M., Watson, S. E. & Wessely, S. (Feb 2015) Former Armed Forces personnel in the Criminal Justice System In: 2, 2, p. 121–122 Contribution to journal › Article	The Lancet Psychiatry
Ameis, S. H. & Catani, M. (Jan 2015) Altered white matter connectivity as a neural substrate for social impairment in Autism Spectrum Disorder In: 62, p. 158–181 Contribution to journal › Article	Cortex; a journal devoted to the study of the nervous system and behavior
Arjun, S., Gregory, S. L., Dell' Acqua, F., Thomas, E., Simmons, A., Murphy, D. G., Hodgins, S. M., Blackwood, N. & Craig, M. C. (Jan 2015) Emotional detachment in psychopathy: Involvement of dorsal default-mode connections In: 62, p. 11–19 Contribution to journal › Article	Cortex

List of High Impact Publications in order of publication date (selected 2014–2015 list from PURE is below but needs formatting please)	Journal
McGettigan, C., Walsh, E., Jessop, R., Agnew, Z. K., Sauter, D. A., Warren, J. E. & Scott, S. K. (Jan 2015) Individual differences in laughter perception reveal roles for mentalizing and sensorimotor systems in the evaluation of emotional authenticity In: (New York, N.Y.: 1991). 25, 1, p. 246–257 Contribution to journal › Article	Cerebral cortex
Spain, D. C., Sin, P. H. J., Paliokostas, E., Furuta, M., Chalder, T., Murphy, D. G. & Happe, F. G. E.(2015) Family therapy for Autism Spectrum Disorders In: 10CD011894Contribution to journal › Article	Cochrane database of systematic reviews (Online)
Fritsch, V., Da Mota, B., Loth, E., Varoquaux, G., Banaschewski, T., Barker, G. J., Bokde, A. L. W., Brühl, R., Butzek, B., Conrod, P., Flor, H., Garavan, H., Lemaitre, H., Mann, K., Nees, F., Paus, T., Schäd, D. J., Schümann, G., Frouin, V., Poline, J-B. & 2 others( 2015) Robust Regression for Large-Scale Neuroimaging Studies In: Contribution to journal › Article	NeuroImage
Volpe U, Mihai A, Jordanova V, Sartorius N. Curr (2015 Jul): The pathways to mental healthcare worldwide: a systematic review.;28(4):299–306.	Opin Psychiatry
Murphy, D. G. M., Goldman, M., Loth, E. & Spooren, W. (5 Nov 2014) Public-private partnership: A new engine for translational research in neurosciences In: 84, 3, p. 533–536	Neuron
Murphy, C., Christakou, A., Daly, E. M., Ecker, C., Giampietro, V., Brammer, M., Smith, A. B., Johnston, P., Robertson, D. M., MRC AIMS Consortium, Murphy, D. G. & Rubia, K.(Oct 2014) Abnormal Functional Activation and Maturation of Fronto-Striato-Temporal and Cerebellar Regions During Sustained Attention in Autism Spectrum Disorder In: 171, 10, p. 1107–1116 Contribution to journal › Article	The American Journal of Psychiatry
Toro, R., Poline, J-B., Huguet, G., Loth, E., Frouin, V., Banaschewski, T., Barker, G. J., Bokde, A., Buchel, C., Carvalho, F. M., Conrod, P., Fauth-Bühler, M., Flor, H., Gallinat, J., Garavan, H., Gowland, P., Heinz, A., Ittermann, B., Lawrence, C., Lemaitre, H. & 10 others (16 Sep 2014) Genomic architecture of human neuroanatomical diversity In: 20, p. 1011–1016 Contribution to journal › Article	Molecular Psychiatry



List of High Impact Publications in order of publication date (selected 2014–2015 list from PURE is below but needs formatting please)	Journal
<p>Loth, E., Poline, J-B., Thyreau, B., Jia, T., Tao, C., Lourdasamy, A., Stacey, D., Cattrell, A., Desrivieres, S., Ruggeri, B., Fritsch, V., Banaschewski, T., Barker, G. J., Bokde, A. L. W., Büchel, C., Carvalho, F. M., Conrod, P. J., Fauth-Buehler, M., Flor, H., Gallinat, J. &amp; 16 others (1 Sep 2014) Oxytocin Receptor Genotype Modulates Ventral Striatal Activity to Social Cues and Response to Stressful Life Events In: 76, 5, p. 367–376 Contribution to journal › Article</p>	Advances in Biological Psychiatry
<p>Response inhibition and serotonin in autism: a functional MRI study using acute tryptophan depletion Daly, E., Ecker, C., Hallahan, B., Deeley, Q., Craig, M., Murphy, C., Johnston, P., Spain, D., Gillan, N., Gudbrandsen, M., Brammer, M., Giampietro, V., Lamar, M., Page, L., Toal, F., Schmitz, N., Cleare, A., Robertson, D., Rubia, K. &amp; Murphy, D. G. M. 1 Sep 2014 In: 137, 9, p. 2600–2610 Contribution to journal › Article</p>	Brain
<p>Suckling, J., Henty, J., Ecker, C., Deoni, S. C., Lombardo, M. V., Baron-Cohen, S., Jezzard, P., Barnes, A., Chakrabarti, B., Ooi, C., Lai, M-C., Williams, S. C., Murphy, D. G. M., Bullmore, E. &amp; for the MRC AIMS Consortium (Aug 2014) Are power calculations useful?: A multicentre neuroimaging study In: 35, 8, p. 3569–3577 Contribution to journal › Article</p>	Human Brain Mapping.
<p>Tully, J., Hearn, D. &amp; Fahy, T. (Aug 2014) Can electronic monitoring (GPS. 'tracking') enhance risk management in psychiatry? In: 205, 2, p. 83–85 Contribution to journal › Editorial</p>	British journal of psychiatry
<p>Wong, E. H. M., So, H-C., Li, M., Wang, Q., Butler, A. W., Paul, B., Wu, H-M., Hui, T. C. K., Choi, S-C., So, M-T., Garcia-Barcelo, M-M., McAlonan, G. M., Chen, E. Y. H., Cheung, E. F. C., Chan, R. C. K., Purcell, S. M., Cherny, S. S., Chen, R. R. L., Li, T. &amp; Sham, P-C. (Jul 2014) Common Variants on Xq28 Conferring Risk of Schizophrenia in Han Chinese In: 40, 4, p. 777–786 Contribution to journal › Article</p>	Schizophrenia Bulletin
<p>Pyszora, N. M., Fahy, T. T. &amp; Kopelman, M. D. (1 Jun 2014) Amnesia for violent offenses: factors underlying memory loss and recovery In: 42, 2, p. 202–213 Contribution to journal › Article</p>	Journal of the American Academy of Psychiatry and the Law

List of High Impact Publications in order of publication date (selected 2014–2015 list from PURE is below but needs formatting please)	Journal
<p>Schneider, M., Debbane, M., Bassett, A. S., Chow, E. W. C., Fung, W. L. A., van den Bree, M. B. M., Owen, M., Murphy, K. C., Niarchou, M., Kates, W. R., Antshel, K. M., Fremont, W., McDonald-McGinn, D. M., Gur, R. E., Zackai, E. H., Vorstman, J., Duijff, S. N., Klaassen, P. W. J., Swillen, A., Gothelf, D. &amp; 17 others (Jun 2014) Psychiatric Disorders From Childhood to Adulthood in 22q11.2 Deletion Syndrome: Results From the International Consortium on Brain and Behavior in 22q11.2 Deletion Syndrome In: 171, 6, p. 627–639 Contribution to journal › Scientific review</p>	The American Journal of Psychiatry
<p>Deeley, Q., Oakley, D. A., Walsh, E., Bell, V., Mehta, M. A. &amp; Halligan, P. W. (Apr 2014) Modelling psychiatric and cultural possession phenomena with suggestion and fMRI In 53, p. 107–119 Contribution to journal › Article</p>	Cortex; a journal devoted to the study of the nervous system and behavior
<p>Maltezos, S., Horder, J., Coghlan, S., Skirrow, C., O’Gorman, R., Lavender, T. J., Mendez, M. A., Mehta, M., Daly, E., Xenitidis, K., Paliokosta, E., Spain, D., Pitts, M., Asherson, P., Lythgoe, D. J., Barker, G. J. &amp; Murphy, D. G. (18 Mar 2014) Glutamate/glutamine and neuronal integrity in adults with ADHD: A proton MRS studyIn: 4, e373</p>	Translational psychiatry
<p>Tzschoppe, J., Nees, F., Banaschewski, T., Barker, G. J., Buechel, C., Conrod, P. J., Garavan, H., Heinz, A., Loh, E., Mann, K., Martinot, J-L., Smolka, M. N., Gallinat, J., Stroehle, A., Struve, M., Rietschel, M., Schumann, G., Flor, H. &amp; IMAGEN Consortium (Mar 2014) Aversive Learning in Adolescents: Modulation by Amygdala-Prefrontal and Amygdala-Hippocampal Connectivity and Neuroticism In: 39, 4, p. 875–884 Contribution to journal › Article</p>	Neuropsychopharmacology
<p>Lamar, M., Craig, M., Daly, E. M., Cutter, W. J., Tang, C., Brammer, M., Rubia, K. &amp; Murphy, D. G. M. (Feb 2014) Acute tryptophan depletion promotes an anterior-to-posterior fMRI activation shift during task switching in older adults In: 35, 2, p. 712–722, N/AContribution to journal › Article</p>	Human Brain Mapping
<p>Ecker, C. &amp; Murphy, D. (Feb 2014) Neuroimaging in autism--from basic science to translational research. In: 10, 2, p. 82–91, N/AContribution to journal › Article</p>	Nature Reviews Neurology
<p>Chantiluke, K., Barrett, N., Giampietro, V., Brammer, M., Simmons, A., Murphy, D. G. &amp; Rubia, K. (2014) Inverse Effect of Fluoxetine on Medial Prefrontal Cortex Activation During Reward Reversal in ADHD and Autism In: N/A, N/A, p. N/A, N/AContribution to journal › Article</p>	Cerebral Cortex

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<p>Daly, E., Ecker, C., Hallahan, B., Deeley, Q., Craig, M., Murphy, C., Johnston, P., Spain, D., Brinson, H., Gillan, N., Gudbrandsen, M., Lamar, M., Page, H., Page, L., Toal, F., Schmitz, N., Cleare, A., Robertson, D., Rubia, K. &amp; Murphy, D. (2014) Serotonin, the neural processing of response inhibition and restricted, stereotyped and repetitive behaviours in autism: an functional Magnetic Resonance Imaging study using acute tryptophan depletion In: Contribution to journal › Article</p>	Brain

Other Articles	Journal
<p>Ribeiro, R.B, Tully J and Fotiadou M, Clinical characteristics and outcomes on discharge of women admitted to a Medium Secure Unit over a 4-year period, (2015), <a href="http://dx.doi.org/10.1016/j.ijlp.2015.01.025">http://dx.doi.org/10.1016/j.ijlp.2015.01.025</a></p>	International Journal of Law and Psychiatry
<p>J. McCarthy, E. Chaplin, L. Underwood, A. Forrester, H. Hayward, J. Sabet, S. Young, P. Asherson, R. Mills &amp; D. Murphy (2015) Characteristics of prisoners with neurodevelopmental disorders and difficulties. doi: 10.1111/jir.12237</p>	Journal of Intellectual Disability Research
<p>Bhui K and O'Hara J (2014) Ethnic inequalities, complexity and social exclusion. In: 2013, Public Mental Health Priorities: investing in the evidence. Chapter 17, pp 275–284. Published 9th Sept 2014. <a href="http://www.gov.uk/government/publications/chief-medical-officer-cmo-annual-report-public-mental-health">www.gov.uk/government/publications/chief-medical-officer-cmo-annual-report-public-mental-health</a></p>	Annual Report of the Chief Medical Officer
<p>Chaplin E., Douglas J., O'Hara J et al (2015) Evaluating service user and community groups in forensic and neurodevelopmental units. Innovations. May/June 2015.Vol 4, No 4, pp 260–267</p>	British Journal of Mental Health Nursing
<p>Slade, K &amp; Forrester, A (2015). Shifting the paradigm of prison suicide prevention through enhanced multi-agency integration and cultural change. 26(6), 737–758.</p>	The Journal of Forensic Psychiatry and Psychology
<p>Chaplin E, Partsenidis I., Samuriwo B., Underwood L and McCarthy J (2014) Does substance use predict contact with the criminal justice system for people with intellectual disabilities?. OI 5, Iss 3, pp 147–153</p>	Journal of Intellectual Disabilities and Offending Behaviour

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