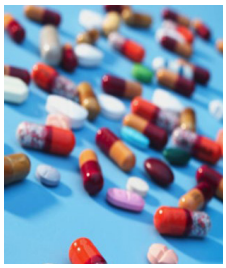
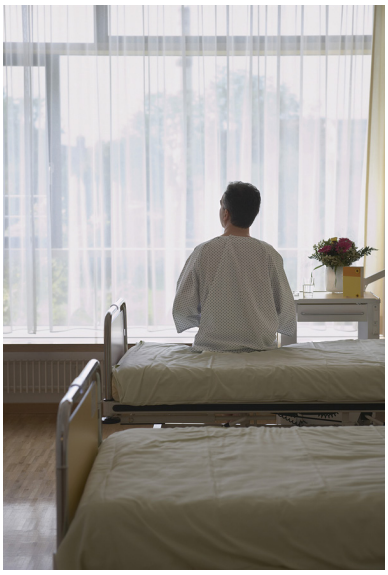
POMH-UK
PRESCRIBING OBSERVATORY FOR MENTAL HEALTH-UK

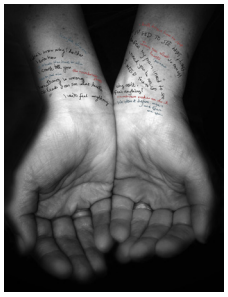
RC PSYCH
ROYAL COLLEGE OF PSYCHIATRISTS

The Prescribing Observatory for Mental Health 10-year report

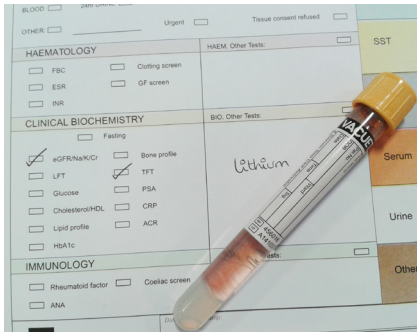
Supporting rational, effective and safe prescribing in mental health services











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Joint-heads of POMH-UK

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Foreword

Part 1

It takes time to improve patient care, but for frontline clinicians working in the National Health Service (NHS) time is usually in short supply. Among the different approaches that have been developed to assess and improve patient care, clinical audit is probably the most widely used. If clinicians have sufficient time to plan and deliver audits they can use them to identify shortcomings in the quality of patient care, to inform changes needed to correct these, and to assess the impact of these changes. But too often clinical staff do not have sufficient time and other resources to develop and pilot audit tools, reflect on the results of an audit or complete audit cycles by examining the impact of efforts to improve practice.

Over the past 10 years the Prescribing Observatory for Mental Health (POMH) has delivered a first-rate service to healthcare providers by designing high-quality audits of prescribing practice, making it easier for teams to benchmark their practice against national standards and implement changes aimed at improving the quality of care that patients receive. POMH has led the way in highlighting areas of concern such as use of antipsychotics among people with dementia and monitoring side-effects of psychotropic drugs. Through developing a range of resources that help prescribers improve their practice POMH has delivered real change for patients.

The success of POMH can be seen in changes in prescribing practices in the UK over the past decade such as reductions in the numbers of people with psychosis who receive medication at doses above the *British National Formulary* (BNF) maxima. It is also reflected in the high levels of participation in the programme with every mental health trust in England having participated in one or more of these audits. Despite these successes there are still areas where the quality of prescribing in mental health needs to improve. As leaders in their field I am confident that POMH will be central to delivering further improvements in these areas in the next 10 years.

M Crawford.

Professor Mike Crawford
Director of the Royal College of Pychiatrists' Centre for Quality Improvement (CCQI)

Part 2

Having been involved at the conception, birth and infancy of POMH-UK, I am delighted to be asked to write this foreword for an initiative that, as it passes its tenth anniversary, has now reached full maturity.

I believe that POMH-UK is unique in British healthcare. In fact, I wonder whether there is anything else quite like it anywhere. Under the inspired leadership of Thomas Barnes and Carol Paton, and the excellent management of the team at the College Centre for Quality Improvement, the Prescribing Observatory has grown and thrived as an enduring engine for improvement.

This endurance is the key to the success of POMH-UK. Better prescribing in the UK will only happen when the behaviour of the many thousands of doctors and nurses involved in decisions about medication changes. This can take years. Unlike NHS bodies, which come and go as health services are re-structured, Royal Colleges stick around. This has allowed POMH-UK to be there for the long haul essential to bring about improvement.

POMH-UK embodies the true spirit of clinical audit. It provides a safe, blame-free place where clinicians can exercise their professional responsibility to reflect on information about their performance. They can compare how they and their teams are doing in relation to their peer group across the country. The POMH-UK team provides clinicians with support and guidance to enable change and then, hopefully, with the reward of knowing that their practice has improved as a result.

Mental health providers are not obliged to sign-up to POMH-UK, and they have to pay to do so. The fact that almost all NHS mental health trust in England, together with NHS providers from the rest of the UK and a number of independent mental health providers, choose to participate is testimony to the value that they place on membership.

I am certain that this is merely the end of the beginning for POMH-UK. The introduction to this report hints at the international interest in this work. All in all, I suspect that the Health Foundation has concluded that its initial 3-year investment in POMH-UK was money well spent!

Dr Paul Lelliott
Deputy Chief Inspector, Care Quality Commission

Introduction

In 2005, a tapering grant from the Health Foundation allowed us to set up the Prescribing Observatory for Mental Health (POMH-UK) within the Royal College of Psychiatrists' Centre for Quality Improvement (CCQI). Our aim was to promote and support rational, effective and safe prescribing in mental health services, principally through national, audit-based, quality improvement programmes (QIPs).

This report summarises the quality improvement achieved by the clinicians and clinical teams in participating mental health services over the past 10 years. The number of mental health trusts as well as private and charitable healthcare organisations taking part in our QIPs has increased steadily over this period: currently, there are over 60 member organisations and POMH-UK is now funded solely through their subscriptions.

Reflecting over the past 10 years, we have speculated on the factors contributing to the success of POMH-UK. These include the decision to pursue QIPs focused on discrete aspects of prescribing practice, each supported by a dedicated steering group. We would like to take this opportunity to thank the numerous clinical experts who have engaged in these groups and given so generously of their time (they are all listed in Appendix III). Practice has been audited against realistic practice standards, derived mainly from National Institute for Health and Care Excellence (NICE) guidelines.

The data collection tools have been refined in the multidisciplinary regional workshops held annually around the country, and we would like to thank all those who have contributed constructively and thoughtfully during these events. Each participating service receives a customised report on its performance against the standards, in both absolute and relative benchmarked terms. For individual clinicians and clinical teams, this feedback has the potential to prompt thoughtful and informed reflection on practice and the generation and implementation of action plans where performance falls short of the standards. For pharmacists and medicines management committees, these reports

provide an objective measure of the quality of relevant practice which can inform their work plans, strategies and policies. For trusts, the reports reflect the local implementation of relevant NICE guideline recommendations and evidence for their quality accounts.

From a more strategic perspective, the data on current prescribing practice collected by POMH-UK have been requested by NICE guideline development groups considering update and revision of their recommendations. Such data have also supported the rationale for major funding applications for clinical trials of pharmacological intervention. Further, in relation to each QIP, POMH-UK has sought to support local trust clinical action plans with customised change interventions. For some QIPs, this has required additional analysis of the audit data and further qualitative research, conducted as BSc and PhD projects.

There has been interest internationally in using the POMH-UK methodology. We have been invited to present the POMH-UK work across Europe, Asia and Australasia, and are currently supporting psychiatric colleagues in Canada who have initiated their first prescribing QIP. In the UK our experience was of increasing engagement by clinicians and healthcare organisations along with the realisation that evident improvement in practice takes years to embed.

Professor Thomas Barnes and Carol Paton
Joint-heads of POMH-UK

QIP 1 & 3. Prescribing high-dose and combined antipsychotics

Overview

Over the first 6 years of this quality improvement programme (2006–2012) there were modest reductions in the proportion of acute adult psychiatric in-patients prescribed high-dose and/or combined antipsychotic medication. A similar trend was seen in forensic patients over a period of 5 years (2007–2012). Much of this improvement may be attributed to fewer routine prn ('as required') prescriptions of antipsychotic medication. We are currently supporting colleagues in Canada who are adapting this programme for use in their local health system.

Inadvertent high-dose prescribing is not uncommon with combined or prn antipsychotic medication. Partly to address this issue, one of the change interventions generated by POMH-UK to support local action plans was a high-dose 'ready reckoner'. This is now in its sixth edition and over 35 000 have been requested and distributed. It is routinely used by Mental Health Act Commission second-opinion doctors (SOADs). Colleagues in Sweden and Canada are preparing a local version.

Background and rationale

There is considerable evidence for the effectiveness of antipsychotic drugs in the treatment of psychosis, but no evidence to suggest that doses of antipsychotics higher than the recommended dosages are more effective than standard doses in any clinical situation or patient group (Royal College of Psychiatrists, 2014). The NICE schizophrenia guidelines (NICE, 2014a) recommend that a standard dose of a single antipsychotic should be routinely used. Those patients who are prescribed more than one antipsychotic concurrently are more likely to receive a high total antipsychotic dose and are at an increased risk of side-effects and tend to spend longer in hospital. This QIP initially addressed prescribing for patients on adult acute and psychiatric intensive care wards and, later, patients on forensic wards.

Clinical practice standards

1 The total daily prescribed dose of antipsychotic drugs is within summary of product characterictics (SPC)/*British National Formulary* (BNF) limits. A high-dose is defined here as a total daily dose (whether of a single antipsychotic or combined antipsychotics) greater than 100% of the maximum recommended daily dose (Royal College of Psychiatrists, 2014).

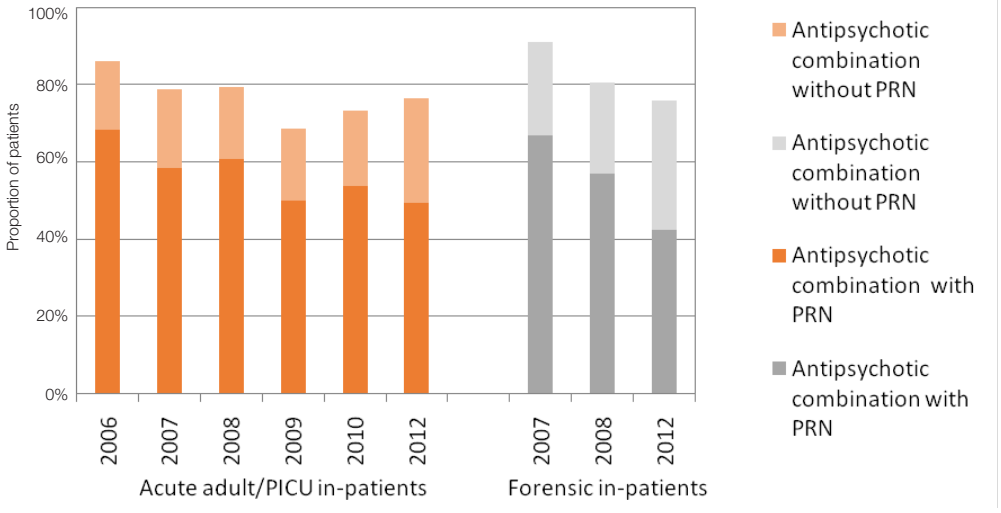
2 Individuals are prescribed only one antipsychotic at a time. This standard applies to 100% of individuals with schizophrenia. Exceptions are individuals with schizophrenia who are receiving clozapine but who have not responded sufficiently; and individuals who are changing from one antipsychotic to another (NICE, 2014a).

Total national samples audited against the clinical practice standards

	2006	2007	2008	2009	2010	2012	2017
Acute adult in-patients	3492	3271	1505	4269	3880	6184	Planned
Forensic adult in-patients	–	1891	1997	–	–	3333	Planned

Key findings

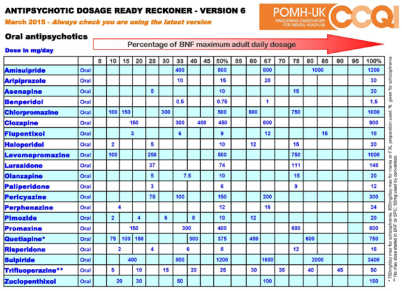
Clinical practice standard 2



Proportion of patients for whom the dose of a combination of antipsychotic drugs is higher than BNF limits

Change interventions

We have produced several change interventions for this QIP: the Ready Reckoner, a workbook and a poster for clinical staff addressing the evidence base case for risks of combined antipsychotics. The Ready Reckoner is a laminated card the size of the *British National Formulary* (BNF) that contains at-a-glance information about antipsychotic dosage, allowing easy calculation of whether the dose of an individual antipsychotic or combination of antipsychotics reaches the high-dose threshold.


ANTIPSYCHOTIC DOSAGE READY RECKONER - VERSION 6

March 2015 - Always check you are using the latest version

POMH-UK

Oral antipsychotics

Dose in mg/day

Percentage of BNF maximum adult daily dosage

		5	10	15	20	25	30	33	40	45	50%	55	60	67	70	75	80	85	90	95	100%
Amisulpride	Oral							400			800			1000			1600				1200
Aripiprazole	Oral							10			15			20							30
Asenapine	Oral					5					10					15					20
Benperidol	Oral							0.5			0.75			1							1.5
Chlorpromazine	Oral	100	150				300				500	650			750						1000
Clozapine	Oral			150				300		400	450			600							900
Flupentixol	Oral			3				6			9			12			15				18
Haloperidol	Oral	2				5					10	12				15					20
Levomepromazine	Oral	100				200					600					750					1000
Lurasidone	Oral					37					74					111					148
Olanzapine	Oral					5		7.5			10					15					20
Paliperidone	Oral					3					6					9					12
Pericyazine	Oral					75		150			150			200							300
Perphenazine	Oral		4								12			16							24
Pimozide	Oral	2		4			6		8		10	12									20
Promazine	Oral			150				300			400					600					800
Quetiapine*	Oral	75	100	150					300		375	450				600					750
Risperidone	Oral		2			4			6		8					12					16
Sulpiride	Oral			400				800			1200			1600			2000				2400
Trifluoperazine**	Oral	5		10		15		20			25	30		35		40		45			50
Zuclopenthixol	Oral		20		30			50						100							150

Comment from participating trust

Forensic Mental Health Services Managed Care Network, NHS Scotland

"The State Hospital first participated in 2007 as a way of benchmarking its antipsychotic prescribing practices. The results were encouraging and reassured Clinical Governance that "regular" antipsychotic prescribing was good and not excessive. It did, however, result in the review and reduction of the number of patients written up for "as required" antipsychotic prescriptions. Later projects have included some other forensic services in Scotland."

NHS SCOTLAND

Publications following QIP 1 & 3

Mace S, Taylor D (2015) Reducing the rates of prescribing high-dose antipsychotics and polypharmacy on psychiatric in-patient and intensive care units: results of a 6-year quality improvement programme. *Therapeutic Advances in Psychopharmacology*, **5**: 4–12.

Barnes TRE, Paton C (2011) Antipsychotic polypharmacy in schizophrenia: benefits and risks. *CNS Drugs*, **25**: 383–99.

Shingleton-Smith A, Paton C, Barnes TRE (2011) *Antipsychotics: combined and high dose. In 101 Recipes for Audit in Psychiatry* (ed C Oakley et al): pp. 185–186. RCPsych Publications.

Barnes TRE, Shingleton-Smith A, Paton C (2009) Treatment of schizophrenia by long-acting depot injections in the UK. *British Journal of Psychiatry*, **195 (suppl. 1)**: s37–42.

Paton C, Barnes TRE, Brooke D, Petch E, Shingleton-Smith A (2008) Prevalence of, and rationale for, the prescription of high-dose and combined antipsychotics in forensic settings in the UK. *Journal of Psychopharmacology*, **22 (suppl)**: A44.

Paton C, Barnes TRE, Cavanagh MR, Taylor D, Lelliott P (2008) High-dose and combination antipsychotic prescribing in acute adult wards in the UK: the challenges posed by PRN prescribing. *British Journal of Psychiatry*, **192**: 435–9.

QIP 2. Screening for metabolic side-effects of antipsychotic drugs

Overview

Over the 6 years of this programme (2006–2012), there was a significant increase in screening for modifiable risk factors for diabetes and cardiovascular disease in patients under the care of assertive outreach teams (AOTs). The proportion of patients for whom measures of blood pressure, central obesity, blood glucose and blood lipids had been documented in their clinical records in the previous year rose from just over 1 in 10 in 2006 to just over 1 in 3 by 2012. The proportion of patients with no evidence of any such screening fell from almost half to 1 in 7 patients over the same period. Nevertheless, despite these improvements, only a minority of community psychiatric patients prescribed antipsychotic medication are screened for cardiovascular risk factors in accordance with best practice recommendations and therefore potentially remediable causes of poor physical health remain undetected and untreated.

The findings suggest that audit-based quality improvement programmes of this kind can help improve clinical practice in relation to monitoring of cardiometabolic risk factors. Such an approach was subsequently adopted by the National Audit of Schizophrenia and the NHS England Commissioning for Quality and Innovation (CQUIN) scheme in relation to physical healthcare screening in mental health services.

Background and rationale

People with schizophrenia have an excess mortality, 2 to 3 times higher than the general population, and their life expectancy is shortened by up to 20 years. Approximately 60% of this excess mortality is due to physical illness. This may be partly related to the psychotic illness itself as well as illness-related factors such as physical inactivity, cigarette smoking, excess alcohol consumption and poor diet. However, treatment with antipsychotic medication is also a contributory factor, not least because of the metabolic side-effects. Weight gain, hypertension, central obesity, raised fasting glucose and dyslipidaemia are relatively common in people with schizophrenia and, when clustered together, are highly predictive of cardiovascular disease and type 2 diabetes. There is a consensus across evidence-based guidelines that patients on continuing antipsychotic medication should receive regular monitoring of these cardiometabolic risk factors so that they may be adequately treated.

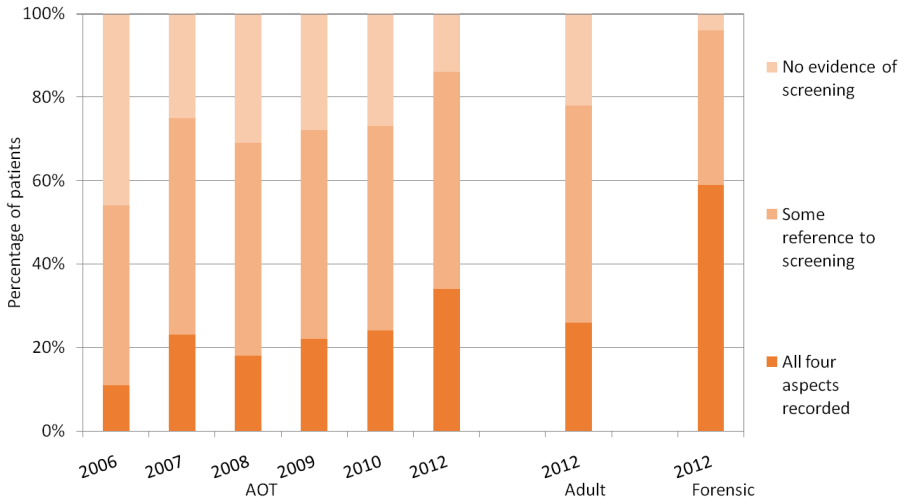
Clinical practice standard

1 All patients prescribed continuing antipsychotic medication should have their blood pressure, body mass index (or other measure of obesity), blood glucose (or HbA1C) and lipids measured at least once a year. Annual screening is the minimum acceptable practice; most guidelines recommend more frequent screening of some or all of these measures depending on the drug prescribed or a patient's demographic or clinical characteristics (e.g. NICE, 2014a).

Total national samples audited against the clinical practice standards						
	2006	2007	2008	2009	2010	2012
Assertive outreach patients	1966	1516	1035	2522	3058	1591
Forensic services	-	-	-	-	-	1224
Adult services	-	-	-	-	-	3263

Key findings

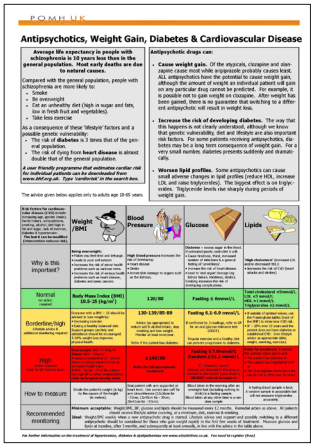
Clinical practice standard 1



Proportion of patients screened for all four aspects of the metabolic syndrome in assertive outreach (AOT), adult and forensic sub-samples.

Change interventions

Several change interventions were created for this QIP, for instance a metabolic monitoring poster, which was designed to raise awareness of cardiovascular risk factors and how to measure them in patients. We also created a body mass index (BMI) chart and a handy patient-held card to record physical health checks.



Comment from participating trust

Birmingham and Solihull Mental Health NHS Foundation Trust

“My team was involved with the POMH audits at an early stage. It was a great opportunity to work closely with pharmacy colleagues to look at very important issues for patient safety and quality in their treatment. It served to raise our awareness of physical health monitoring for patients which in turn lead to better working relationships with primary care.”

Birmingham and Solihull NHS
Mental Health NHS Foundation Trust

Publications following QIP 2

Barnes TRE, Bhatti SF, Adroer R, Paton C (2015) Screening for the metabolic side-effects of antipsychotic medication: findings of a six-year quality improvement programme in the UK. *BMJ Open*, **5**: doi: 10.1136/bmjopen-2015-007633.

Barnes TRE, Paton C (2010) Medication recommendations in the updated NICE guideline for the treatment and management of schizophrenia. *Die Psychiatrie*, **7**: 18–24.

Barnes TRE, Paton C, Hancock E, Cavanagh MR, Taylor D, Lelliott P (2008) Screening for the metabolic syndrome in community psychiatric patients prescribed antipsychotics: a quality improvement programme. *Acta Psychiatrica Scandinavica*, **118**: 26–33.

Barnes TRE, Paton C, Cavanagh M, Hancock E, Taylor DM (2007) A UK audit of screening for the metabolic side-effects of antipsychotics in community patients. *Schizophrenia Bulletin*, **33**: 1397–403.

QIP 4. Prescribing anti-dementia drugs

Overview

Over the 7 years of this quality improvement programme so far (2007–2014), prescribing practice was consistently good with respect to documentation of formal cognitive assessments and seeking the views of patients or carers prior to the initiation of anti-dementia medications, most of which were cholinesterase inhibitors. However, practice was revealed to fall short of standards relating to physical examination and medication review before starting treatment.

Medicines with anticholinergic activity worsen cognition and can negate the effects of anti-dementia medication. In 2014, at least 1 in 14 patients in the POMH-UK national sample of over 9000 patients was prescribed medication with clinically significant anticholinergic effects. The main contributors to this 'anticholinergic burden' were antidepressant and antipsychotic medicines and medicines used to treat urinary incontinence. We are currently developing a list of such medications that are best avoided in people with dementia. To support clinicians in optimising treatment we are also developing a list of alternative medications for the same clinical indications that have a lower anticholinergic burden.

Background and rationale

It is estimated that 800 000 people in the UK have dementia, the most common type being Alzheimer's disease. The group of medicines known as cholinesterase inhibitors have been shown to slow cognitive decline in people with dementia and were the first drugs to be licensed in the UK for this condition. Use of these medicines may allow people with dementia to care for themselves for longer and delay the need for institutional care. However, in the majority of patients, the clinical benefits associated with cholinesterase inhibitors are modest. The most recent iteration of NICE guidance (TA217; NICE, 2011a) in this area recommends the use of cholinesterase inhibitors for mild to moderate Alzheimer's disease with specialist initiation and regular review to assess continuing risk-benefit.

Clinical practice standards

Derived from NICE dementia clinical guideline (CG42; NICE, 2006a, 2012 update).

1 Before initiating treatment with anti-dementia medication, the following should be documented: (a) formal cognitive testing; (b) medication review; (c) assessment of cardiovascular risk (cholinesterase inhibitors only); (d) the carer's view (where there is a carer).

2 Only specialists in the care of people with dementia (psychiatrists, neurologists and physicians specialising in the care of older people) should initiate treatment with an anti-dementia drug.

3 All patients who continue on an anti-dementia drug should be reviewed within 6 months of initiation and this should include documentation of: (a) global assessment; (b) functional assessment; (c) behavioural assessment; (d) formal assessment of cognition; (e) the carer's view.

4 All patients who have been prescribed an anti-dementia drug for more than 12 months should have the following documented: (a) review of tolerability/ side-effects; (b) carer's view of treatment.

Treatment target

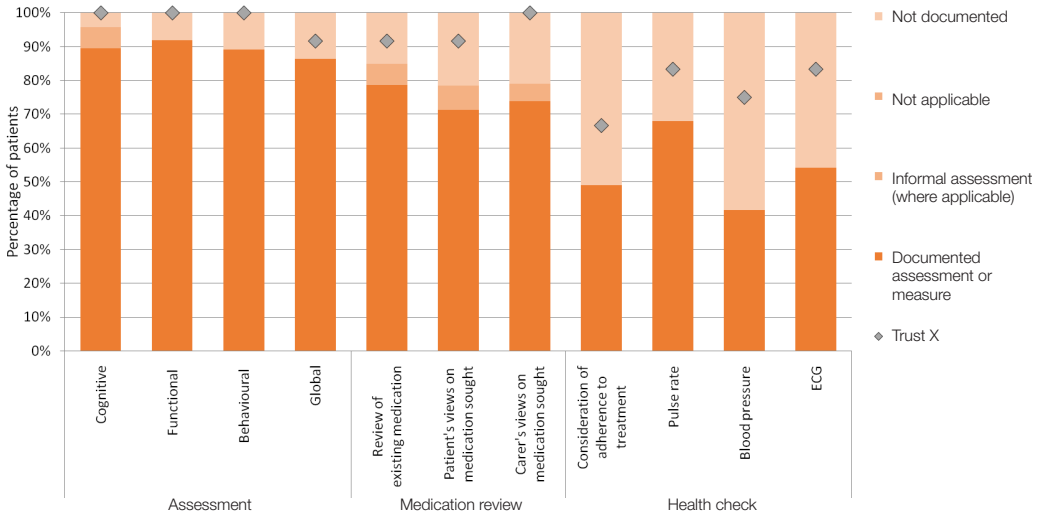
Derived from CG42 (NICE, 2012 update) and BAP consensus statement (O'Brien & Burns, 2010).

1 The three acetylcholinesterase (AChE) inhibitors donepezil, galantamine and rivastigmine should be used for mild to moderate Alzheimer's disease, while in routine practice the use of memantine should be limited to moderate to severe Alzheimer's disease.

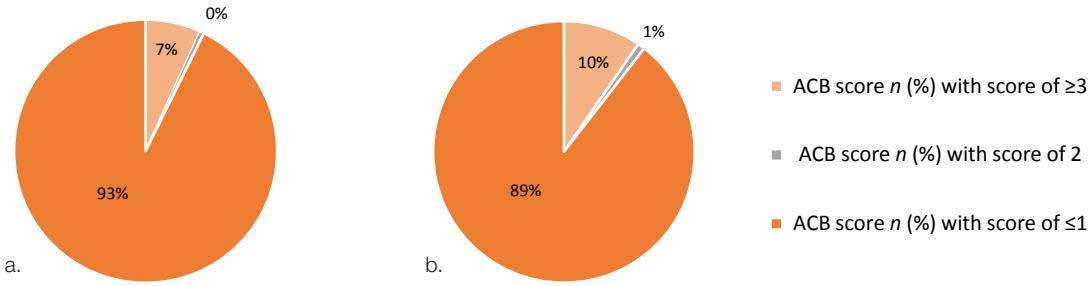
National samples audited against the clinical practice standards		
	2007	2014
Old age psychiatric services	1897	9180

Key findings

Clinical practice standard 1



Proportion of patients receiving the recommended pre-treatment assessments at re audit. The diamonds indicate the performance of a sample individual trust.



Proportion of patients who were (a.) and were not (b.) prescribed anti-dementia drugs and their Anticholinergic Cognitive Burden (ACB) score. A score of 3 or more may be considered clinically significant.

Comment from participating trust

Sussex Partnership NHS Foundation Trust

"The trust took part in this 2013 audit and submitted data for almost 400 patients from across 15 teams. The audit report was extremely useful, not only in showing that the trust performed well overall against the audit standards and against the national sample, but in highlighting inconsistencies between teams. Action planning has been focused on bringing all teams up to a consistent higher level of practice."

Sussex Partnership NHS
NHS Foundation Trust

Publications following QIP 4

Barnes TRE, Chee S, Paton C (2014) Prescribing of anti-dementia drugs in the UK. *Journal of Psychopharmacology*, **28 (suppl.)**: A69.

Perecherla S, Paton C, Shingleton-Smith A, Barnes TRE (2009) Variations in prescribing patterns for anti-dementia drugs across PCT populations. *Progress in Neurology and Psychiatry*, **13**: 30–33.

QIP 6. Assessment of the side-effects of depot antipsychotics

Overview

Over the 3 years of this programme (2008–2011) there was a marked improvement in the quality and frequency of monitoring of side-effects in routine practice for patients prescribed depot/long-acting antipsychotic medication. The proportion of patients in the national sample who had documented evidence of side-effect assessment in the past year increased from 65% at baseline in 2008 to 82% by 2011. The proportion who had blood tests related to the detection of side-effects more than doubled over this period, and the same was true for physical examination and the use of side-effect checklists or rating scales.

The relatively low level of side-effect monitoring at baseline prompted additional qualitative research to identify barriers to best practice. The findings of this work led to the generation of an educational resource for nursing staff to facilitate the side-effect review process. This side-effect information folder has proved popular with services.

Background and rationale

Antipsychotic medication provides relief for many patients from the symptoms of psychosis and is widely prescribed long-term for relapse prevention in schizophrenia. The indubitable therapeutic benefits of antipsychotic treatment are frequently gained at the cost of a diverse range of unpleasant, disabling and potentially harmful side-effects, which can affect virtually every physical system. Such side-effects can cause patients significant distress and functional impairment as well as contributing to long-term physical health risk. Given that the symptoms of schizophrenia tend to emerge in early adulthood, the side-effects associated with long-term treatment can represent an enduring burden rather than temporary discomfort. A significant proportion of the contact that patients with schizophrenia have with clinicians is based around the prescription and administration of medication. Such contact provides opportunities for assessing treatment response as well as tolerability and safety. Patients established on treatment with depot/long-acting antipsychotic preparations will have regular contact with healthcare professionals who are administering the injections.

Clinical practice standard

Derived from the NICE schizophrenia clinical guideline CG82 (NICE, 2009a) and the British Association for Psychopharmacology schizophrenia consensus guideline (Barnes et al, 2011).

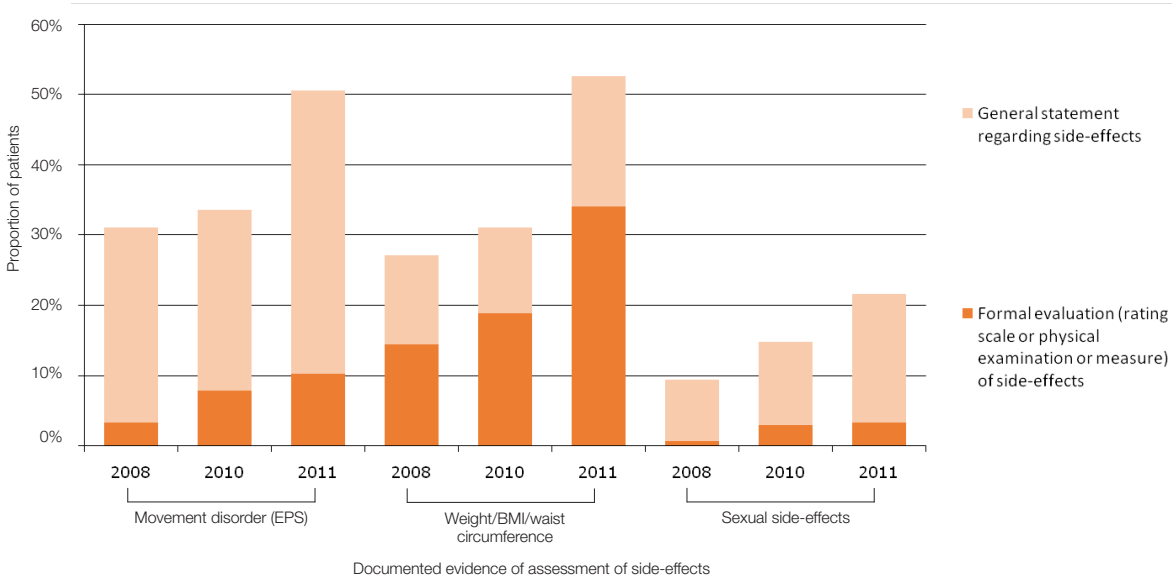
1 For people receiving depot antipsychotics, side-effects should be reviewed at least once a year.

Total national samples audited against the clinical practice standards				
	2008	2010	2011	2017
Non-acute* mental health services	5804	5037	6105	Planned

*Adult community psychiatric team, elderly community psychiatric team, intellectual disability, etc.

Key findings

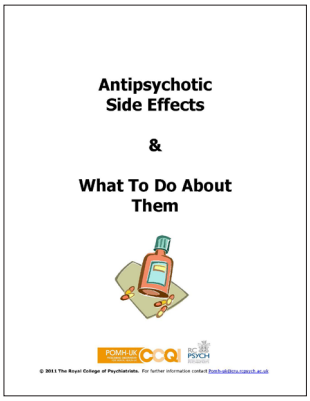
Clinical practice standard 1



Proportion of patients in the national samples (2008–2011) with documented assessments over the previous year of three selected side-effects.

Change intervention

As part of this QIP, we prepared an educational resource, *Practical tips for managing side-effects*. This folder contains a series of information sheets, designed to facilitate discussion between clinical staff and individual patients about side-effects of antipsychotics and possible solutions. The folder also includes leaflets about individual side-effects, suitable for sharing with patients.



Comment from participating trust

Northumberland, Tyne and Wear NHS Trust

"Our participation in this POMH audit helped to raise local awareness about this important, sometimes overlooked, area of practice. Participating teams saw some significant improvements, which exceeded national benchmarks. This was particularly so regarding weight gain and sexual dysfunction, common causes of medication non-concordance, for which regular monitoring and intervention are important components of care."

Northumberland, Tyne and Wear NHS Foundation Trust

Publications following QIP 6

Barnes TR, Paton C, Shingleton-Smith A, Pope A, McIntyre S, Haddad P, et al (2010) A quality improvement project to improve the assessment of side-effects in patients prescribed depot antipsychotic medication. *Journal of Psychopharmacology*, **24 (suppl.)**: A15.

Pope A, Adams C, Paton C, Weaver T, Barnes TRE (2010) Assessment of adverse effects in clinical studies of antipsychotic medication: survey of methods used. *British Journal of Psychiatry*, **197**: 67–72.

Barnes TRE, Shingleton-Smith A, Paton C (2009) Antipsychotic long-acting injections: prescribing practice in the UK. *British Journal of Psychiatry*, **195 (suppl.)**: 37–42.

QIP 7. Monitoring of patients prescribed lithium

Overview

Over the first 5 years of this programme (2008–2013) there was marked improvement in the biochemical monitoring of patients prescribed lithium. This was most evident between 2010 and 2011, which may partly reflect the introduction in 2010 of the patient-held lithium pack developed by POMH-UK and the National Patient Safety Agency (NPSA). For patients starting treatment, there was improvement in the provision of information about potential side-effects, the signs and symptoms of toxicity and risk factors for toxicity. For patients established on lithium treatment, there was an increase in the frequency of checking lithium levels as well as more frequent monitoring of renal and thyroid function and body weight. Overall, the proportion of such patients with mood disorder who had a documented lithium in the desired plasma level range (0.4–0.8 mmol/L) increased in successive audits from a little over half in 2008 to three-quarters by 2013.

Changing clinical practice takes time, particularly when, as in this case, the systems that support the practice are complex and not directly under the control of clinical teams. But the improvements achieved over the duration of the QIP thus far reflect the commitment of clinical services to work towards agreed best practice.

Background and rationale

Lithium is licensed for the treatment of bipolar affective disorder and depression and its use in these conditions is supported by NICE guidelines. Its side-effect profile is well established. This includes an increased risk of developing thyroid and kidney problems and thus all patients should have their thyroid and kidney function checked before starting lithium and then regularly throughout treatment. Lithium also has a narrow therapeutic range, that is, there is a small margin between an effective and a toxic dose. Importantly, dehydration and the concomitant use of some medicines can increase plasma lithium levels. It is therefore important that patients understand how to take lithium safely and that the level of lithium in the blood is monitored regularly.

Clinical practice standards

Derived from CG38 (NICE, 2006b).

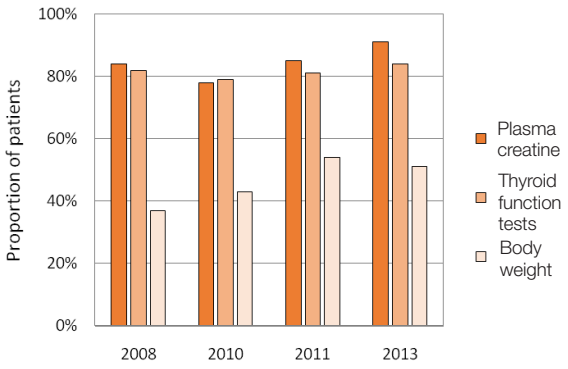
1 The following tests/measures should be completed before initiating treatment with lithium: (a) renal function tests, urea and electrolytes (U&Es), including creatinine (or e-GFR or creatinine clearance); (b) thyroid function tests (TFTs); (c) weight or BMI or waist circumference.

2 The following tests/measures should be conducted during maintenance treatment: (a) serum lithium level every 3 months; (b) U&Es including creatinine (or e-GFR or creatinine clearance), and TFTs every 6 months; (c) weight or BMI or waist circumference during the past year.

Total national samples audited against the clinical practice standards					
	2008	2010	2011	2013	2016
All adult and old age mental health services	3373	3646	5683	6400	Planned

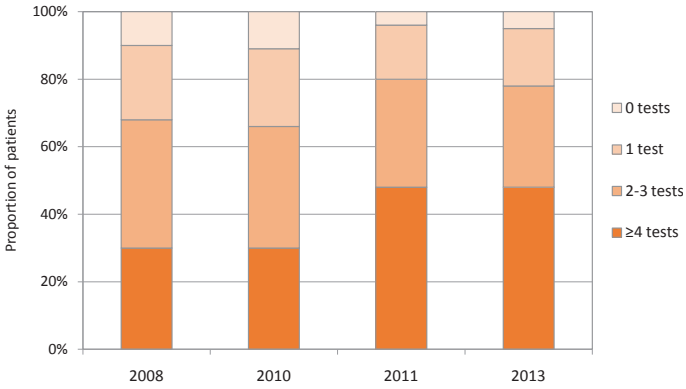
Key findings

Clinical practice standard 1



Proportion of patients with documented pre-treatment screening: 2008–2013

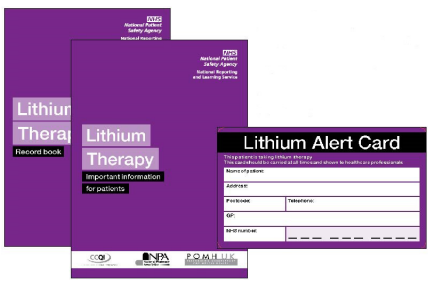
Clinical practice standard 2



Frequencies of serum lithium level monitoring in the past year for patients on maintenance treatment in the national samples: 2008–2013

Change interventions

We have created a *Patient lithium* pack consisting of a patient information booklet, lithium alert card and record book for tracking blood test results. In addition, this work prompted the NPSA *Patient Safety Alert – Safer Lithium Therapy* that details the actions to be taken by all healthcare organisations in the NHS where lithium therapy is initiated, prescribed, dispensed and monitored.



Comment from participating trust

Oxleas NHS Foundation Trust

"The baseline audit identified that we did not have robust systems to: a) identify all our patients receiving lithium, or b) remind clinicians when blood tests for lithium monitoring were due. Inspired by another trust at a national POMH event, we developed a lithium database which led to significant improvements. We submitted our work for the 2014 NICE Shared Learning Awards and achieved 'runner up'."

Publications following QIP 7

Paton C, Barnes TRE (2014) Undertaking clinical audit, with reference to a Prescribing Observatory for Mental Health audit of lithium monitoring. *Psychiatric Bulletin*, **38**: 128–31.

Paton C, Adroer R, Barnes TR (2013) Monitoring lithium therapy: the impact of a quality improvement programme in the UK. *Bipolar Disorders*, **15**: 865–75.

Collins N, Barnes TR, Shingleton-Smith A, Gerrett D, Paton C (2010) Standards of lithium monitoring in mental health trusts in the UK. *BMC Psychiatry*, **10**: 80.

Gerrett D, Lamont T, Paton C, Barnes TRE, Shah A (2010) Prescribing and monitoring lithium therapy: summary of a safety report from the National Patient Safety Agency. *BMJ*, **341**: c6258.

Paton C, Barnes TRE, Shingleton-Smith A, McAllister-Williams RH, Kirkbride J, Jones PB, et al (2010) Lithium in bipolar and other affective disorders: prescribing practice in the UK. *Journal of Psychopharmacology*, **24**: 1739–46.

QIP 8. Medicines reconciliation

Overview

This quality improvement programme ran from 2009 until 2010 and achieved some improvement in medicines reconciliation practice. The proxy measure of such practice was the proportion of newly admitted patients for whom two or more sources of information about the medicines they were taking immediately prior to hospital admission had been checked. This proportion, representing all those patients for whom medicines reconciliation was possible, increased modestly between baseline (71%) and re-audit (79%). Whether or not patients are taking their prescribed medication immediately prior to admission is a key factor in medicines reconciliation. Despite this, there was no documented statement about medication adherence in over 40% of cases, although this proportion showed a slight decrease by 2010. The primary care record was the only source of information that was consulted significantly more in 2010 than in 2009 and this source also yielded the highest proportion of discrepancies. Omission of previously prescribed medication was the most commonly reported discrepancy in the reconciliation process, and the majority involved medicines for physical illness. In the few cases where such omissions had the potential to cause significant harm, the drug had been initiated or continued by a physician or other hospital specialist.

Background and rationale

Medication error is recognised as a common cause of avoidable morbidity and mortality. Errors can happen at the point a medicine is prescribed (usually by a doctor), dispensed (usually by a pharmacist) and administered (usually by a nurse). At each stage in the process, the root cause may be a simple lapse in concentration, a problem with decision-making or a knowledge deficit. The point of transfer between care settings, and in particular hospital admission, is a known period of high risk for prescribing errors.

The process of ensuring that the medicines prescribed on admission are not unintentionally different from those that the patient was taking before admission is known as medicines reconciliation. The stages of medicines reconciliation may be defined as: (1) collecting information on pre-admission medication history, using recent and accurate sources of information (such as the patient and their GP) to create a full and current list of medicines; (2) checking this list against the current prescription chart in hospital, ensuring any discrepancies are resolved appropriately; and (3) communicating, through appropriate documentation, any changes, omissions and discrepancies.

Clinical practice standard

1 The trust has an approved policy for medicines reconciliation. The policy clearly states who is responsible, in what timeframe and where medicines reconciliation information should be documented.

Treatment target

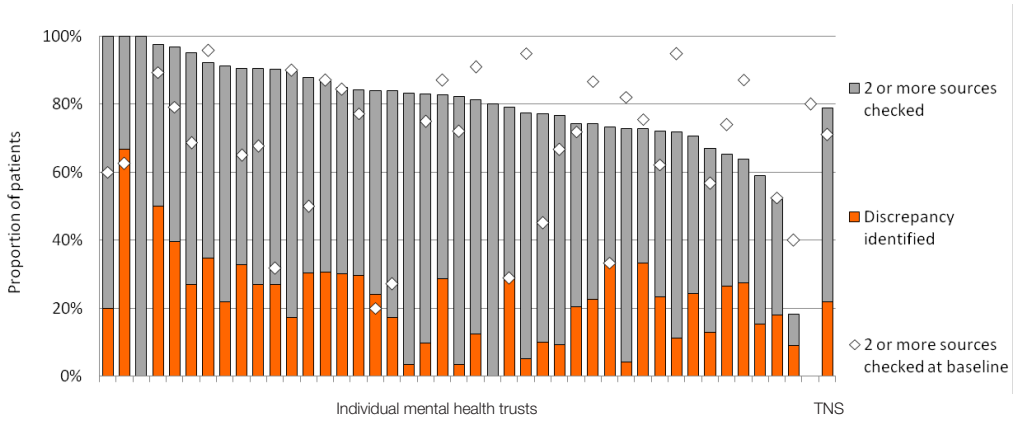
1 There is no unintentional discrepancy between the medication prescribed prior to admission and the medication prescribed at the point of admission.

The audit data allow benchmarking of the proportion of patients for whom medicines reconciliation was not possible because fewer than two sources of information about their current medication were checked.

Size of total national samples audited against the clinical practice standards		
	2009	2010
Acute adult services	1055	1338
Acute elderly services	614	683
Forensic services	121	275

Key findings

Treatment target 1



Patients in each trust in 2010 with two or more sources of information on medicines checked (i.e. medicines reconciliation was possible) and patients with discrepancies identified (*n*=1811). TNS, total national sample.

Change interventions

The *Using Medicines Safely* slides detail the errors which can occur when a patient is prescribed medication on admission and how patients and carers can help reduce the risk of errors by bringing all medicine the patient is taking to the hospital. A patient perspective on medicines reconciliation is included in these slides as well as in the report. This highlights issues regarding patient's sharing their medication with others, not disclosing all medication they are taking or that they have stopped taking/reduced their medication. The report also contains a narrative description of medicines reconciliation errors reported by trusts including those that are clinically significant.

Publications following QIP 8

Barnes TRE, McIntyre S, Bhatti S, Paton C (2011) Medicines reconciliation: adherence to medication on admission to a psychiatric ward. *Journal of Psychopharmacology*, **25**: A65.

Paton C, McIntyre S, Bhatti SF, Shingleton-Smith A, Gray R, Gerrett D, et al (2011) Medicines reconciliation on admission to in-patient psychiatric care; findings from a UK quality improvement programme. *Therapeutic Advances in Psychopharmacology*, **4**: 101–110.

QIP 9. Antipsychotic prescribing in people with a learning disability

Overview

Over the 6 years of this quality improvement programme (2009–2015), there were some improvements in the proportion of patients prescribed antipsychotic medication for more than 12 months who had documented evidence in their clinical records of the assessment of body weight and monitoring of blood pressure.

The practice standard 1 (see below) was met in almost all cases, with treatment being documented for 98% of patients who started treatment in the past 12 months and 97% for those who had been prescribed antipsychotic medication for more than 12 months. The clinical indications for antipsychotic treatment were similar at each audit with the exception of self-harm and self-injurious behaviour which were more frequent targets at the supplementary audit. In total, 64% of people with learning disability were prescribed an antipsychotic at supplementary audit, 49% of whom had a comorbid psychotic illness and 36% of whom exhibited behaviours noted by NICE to be potentially legitimate targets for such treatment.

Background and rationale

Learning disability is a complex diagnostic entity, grouped within the mental disorders in ICD-10 (WHO, 1991). For an individual to be diagnosed as having learning disability they must meet three core criteria: significant intellectual impairment, problems in overall adaptive functioning that are a consequence of this impairment, and an onset in childhood. Antipsychotics have been used to treat behavioural problems in people with learning disability in the absence of mental illness for a long time. However, there is debate about how they should be deployed alongside psychological and behavioural treatments as well as the lack of capacity of people with learning disability to participate in decisions about their treatment. Deb and colleagues have produced guidelines for the use of antipsychotics for behavioural indications in learning disability (Deb et al, 2006) which provide a framework for practice in terms of key domains such as assessment, capacity considerations, monitoring of effectiveness and adverse effects, communications and withdrawal. These were used to derive the clinical practice standards.

Clinical practice standards

1 The indication for treatment with antipsychotic medication should be documented in the clinical records (derived from Deb et al, 2006).

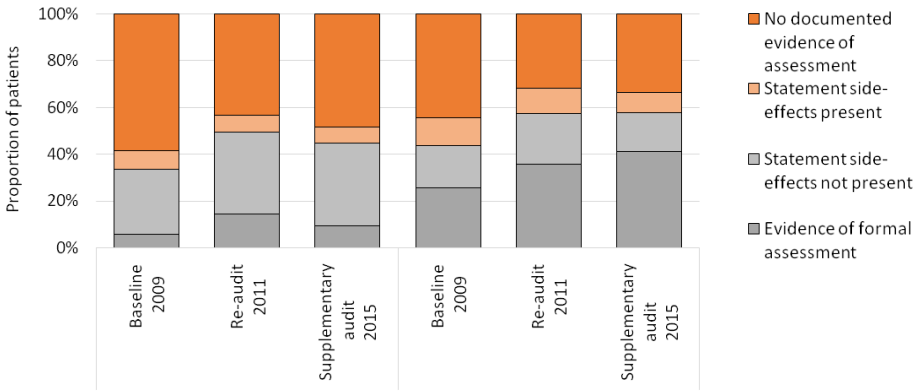
2 The continuing need for antipsychotic medication should be reviewed at least once a year (derived from Deb et al, 2006).

3 Side-effects of antipsychotic medication should be reviewed at least once a year. This review should include assessment for the presence of extrapyramidal side-effects (EPS), and screening for the four aspects of the metabolic syndrome: obesity, hypertension, diabetes and dyslipidaemia (derived from CG82; NICE, 2009a).

Total national samples audited against the clinical practice standards			
Learning disability severity	2009	2011	2015
Mild/borderline	1101	1152	2973
Moderate	672	711	1531
Severe/profound	546	524	1150

Key findings

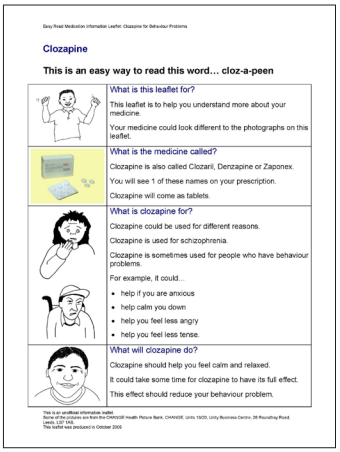
Clinical practice standard 3



Proportions of patients prescribed antipsychotics with documented evidence in their clinical records of assessment of EPS and weight measurement in the past year at baseline, re-audit and supplementary audit in the total national sample (2009–2015).

Change intervention

The POMH-UK team signposted member organisations to an evidence-based guide (Deb et al, 2006) to using medication to manage behavioural problems among adults with a learning disability, *LD Medication Guideline*. The guidance contains a quick reference guide, an easy-read guide and 35 easy-read medicine information leaflets that are available in a PDF format and also as audio recordings. These national guidelines were developed by Deb and colleagues at the University of Birmingham, the Faculty of Psychiatry of Intellectual Disability, the Royal College of Psychiatrists' Research and Training Unit (CRTU) and Mencap, and received support from the Big Lottery Fund. They can be found on Birmingham University website (www.birmingham.ac.uk/research/activity/ld-medication-guide/index.aspx).



Clozapine

This is an easy way to read this word… cloz-a-peen

What is this leaflet for?

This leaflet is to help you understand more about your medicine.

Your medicine could look different to the photographs on this leaflet.

What is the medicine called?

Clozapine is also called Clozaril, Denzapine or Zaponex.

You will see 1 of these names on your prescription.

Clozapine will come as tablets.

What is clozapine for?

Clozapine could be used for different reasons.

Clozapine is used for schizophrenia.

Clozapine is sometimes used for people who have behaviour problems.

For example, it could…

- help if you are anxious
- help calm you down
- help you feel less angry
- help you feel less tense.

What will clozapine do?

Clozapine should help you feel calm and relaxed.

It could take some time for clozapine to have its full effect.

This effect should reduce your behaviour problem.

Comment from participating trust

Derbyshire Healthcare NHS Foundation Trust

"The 2015 audit has offered a timely opportunity to undertake a quality improvement programme that has enabled us to highlight areas of good practice and areas for improvement and to measure our performance against the recommendations within the NICE guidelines (NG11) and the Winterbourne View report. Participating in the audit has been a beneficial activity that has motivated us to increase service users' involvement and to make changes in clinical documentation."

Derbyshire Healthcare NHS
NHS Foundation Trust

Publications following QIP 9

Paton C, Flynn A, Shingleton-Smith A, MacIntyre S, Bhaumik S, Rasmussen J, et al (2011) Nature and quality of antipsychotic prescribing practice in UK psychiatry of learning disability services: findings of a national audit. *Journal of Intellectual Disability Research*, **55**: 665–74.

Thalitaya MD, Udu V, Nicholls M, Clark T, Prasher VP (2011) POMHS 9b-antipsychotic prescribing in people with a learning disability. *Psychiatria Danubina*, **23 (suppl. 1)**: S50–6.

QIP 10. Prescribing antipsychotics for children and adolescents

Overview

Over the first 4 years (2010–2014) of this quality improvement programme, the reasons for prescribing antipsychotic medication were clearly documented in the clinical records in almost all children and adolescents under the care of mental health services. The most common indications for such treatment were agitation/anxiety, chronic behavioural disturbance with persistent aggression, and psychotic symptoms. For patients with early-onset mental illness (schizophrenia or mood disorder) antipsychotic medication was generally targeted at symptoms of these illnesses while for those with neurodevelopmental disorders (intellectual disability, autistic spectrum disorder, hyperkinetic disorder including attention-deficit hyperactivity disorder or tic disorder) the target was more often problematic behaviours.

At each audit, almost all patients had a medication review documented in the clinical records in the past 6 months. In terms of physical healthcare and side-effect monitoring, there were modest but consistent improvements over the duration of this QIP.

Background and rationale

In contrast to the extensive evidence base underpinning the use of antipsychotics in the treatment of psychotic illness in adults, relatively few RCTs have been conducted in children and adolescents. Only a few antipsychotic medications are licensed for use in those younger than 18 years of age. Nevertheless, antipsychotics are prescribed by the vast majority of child and adolescent psychiatrists in the UK and a significant proportion of community paediatricians: much of this prescribing is off-label. The NICE guideline (CG155) addressed the use of antipsychotic medication in children and adolescents with psychotic illness and emphasises the need for appropriate side-effect monitoring, particularly extrapyramidal (motor) side-effects and metabolic parameters.

Clinical practice standards

1 The clinical team should have an explicit rationale for prescribing antipsychotic medication for children and adolescents.

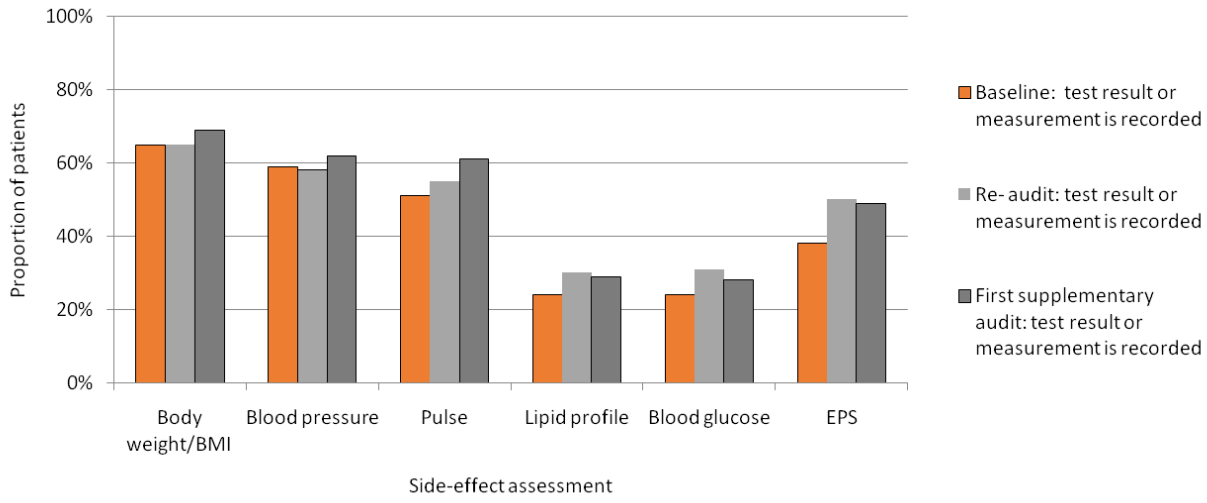
2 The following tests/measures should be documented before starting antipsychotic treatment: weight/BMI, blood pressure, pulse, blood glucose/HbA1c and blood lipids (derived from CG155; NICE, 2013).

3 A review of therapeutic response and side-effects of antipsychotic medication should be documented at least once every 6 months. This review should include tests/measures of weight/BMI, blood pressure, glucose/HbA1c, lipids and assessment for the presence of extrapyramidal side-effects (derived from CG155; NICE, 2013).

Total national samples audited against the clinical practice standards			
	2010	2012	2014
Paediatric services	162	85	53
Children and adolescent mental health services	1414	1543	1997

Key findings

Clinical practice standard 3

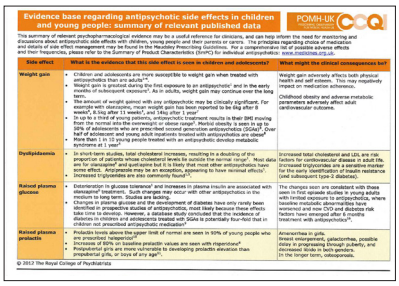


Monitoring of side-effects in children and young people taking antipsychotic medication: baseline (2010), re-audit (2012) and first supplementary audit (2014) national samples.

Change interventions

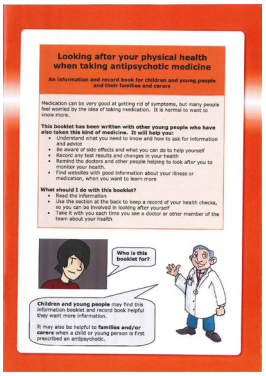
Evidence summary card

The POMH-UK Team (2012) developed a laminated A5 card summarising the evidence relating to the side-effects of antipsychotic medication in children and adolescents was produced. This card fits inside the BNF as a resource for prescribers.



Patient/carer booklet

Looking after your physical health when taking antipsychotic medication is an information and record book designed for children and young people and their families and carers. It was developed in partnership with Rethink Mental Illness and is available from the Rethink website (www.rethink.org).



Comment from participating trust

Worcestershire Health and Care NHS Trust

"Worcestershire Health and Care NHS Trust joined Topic 10: Prescribing antipsychotics for children and adolescents at re-audit in 2012, and then again for the supplementary audit in 2014. Our audit findings from 2012 enabled the service to develop a clear practice pathway in the monitoring of antipsychotic use including the development of a form which has been vital in reminding clinical staff as to the importance of regular health checks including screening blood tests."

Worcestershire Health and Care NHS
NHS Trust

QIP 11. Prescribing antipsychotic medication for people with dementia

Overview

Over 18 months, between 2011 and 2012, the prevalence of antipsychotic use in people with dementia under the care of mental health services who did not have a comorbid psychotic illness reduced from 16% to 13%. Common clinical reasons for prescribing such medication were agitation, psychotic symptoms, aggression, and distress. Younger age, care home/in-patient setting, vascular or Parkinson's disease dementia, and greater severity of dementia were all factors significantly associated with being prescribed antipsychotic medication. Further initiatives to change practice should take account of these demographic/clinical variables, whilst also acknowledging that the optimal use of antipsychotic medication in such clinical subgroups remains unknown.

The data revealed areas of consistently good practice, including consideration of alternatives to antipsychotic medication and clear documentation of target symptoms. Areas for improvement included the frequency and quality of review of the side-effects of long-term antipsychotic medication. The majority of prescriptions for antipsychotic drugs were initiated in secondary care while on-going prescribing responsibility tended to rest with primary care.

Background and rationale

Approximately 80% of people with dementia will, during the course of the illness, exhibit behavioural and psychological symptoms of dementia (BPSD) such as agitation, aggression, psychosis, wandering and sleep disturbance. Underlying causes of BPSD include psychotic experiences, discomfort and pain, and basic needs not being met. A Department of Health report in 2009 concluded that up to a quarter of people with dementia in the UK are prescribed an antipsychotic at any one point in time (Banerjee, 2009). However, the NICE clinical guideline for the management of dementia, published in 2006 (CG42; NICE, 2006a, updated 2012), recommended that antipsychotic drugs should not be prescribed routinely for patients with BPSD of mild to moderate severity, partly because of cerebrovascular adverse effects and partly because of an uncertain effect size. However, where such symptoms are causing distress and are severe, an antipsychotic drug may be considered, but such a prescription should be time-limited and regularly reviewed.

Clinical practice standards

These audit standards have been derived from relevant recommendations in the NICE CG42 (NICE, 2006a, updated 2012).

1 The clinical indications (target symptoms) for antipsychotic treatment should be clearly documented in the clinical records.

2 Before prescribing antipsychotic medication for BPSD, likely factors that may generate, aggravate or improve such behaviours should be considered.

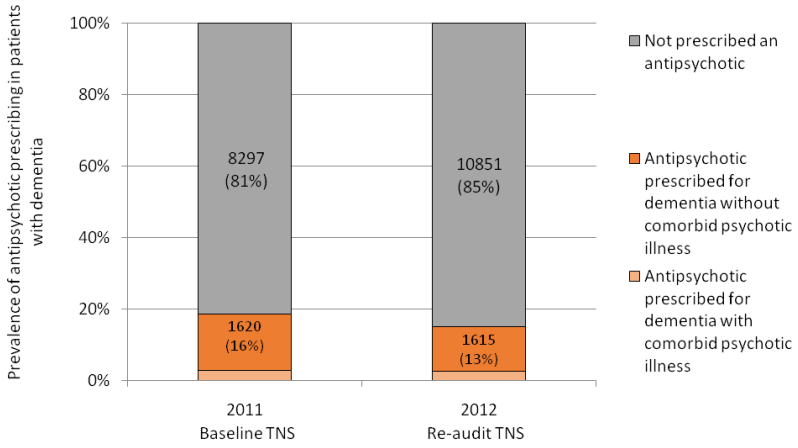
3 The potential risks and benefits of antipsychotic medication should be considered and documented by the clinical team, prior to initiation.

4 The potential risks and benefits of antipsychotic medication should be discussed with the patient and/or carer(s), prior to initiation.

5 Medication should be regularly reviewed, and the outcome of the review should be documented in the clinical records. The medication review should take account of: a. therapeutic response and b. possible adverse effects.

Total national samples audited against the clinical practice standards			
	2011	2012	2016
All patients with a diagnosis of dementia	10199	12790	Planned

Key findings



Prevalence of antipsychotic prescribing in patients with dementia at baseline and re-audit

Change intervention


IMPROVING THE QUALITY OF PRESCRIBING OF ANTIPSYCHOTICS IN PEOPLE WITH DEMENTIA

SOME USEFUL RESOURCES

Improving the quality of prescribing of antipsychotics in people with dementia: Some useful resources – this document contains links to useful resources on prescribing of antipsychotics in people with dementia. This includes background information regarding benefits and harms, decision support tools (for initiation and reviewing antipsychotic treatment), information for patients and/or carers and reports of strategies that aim to reduce the prevalence/improve the quality of such prescribing.

Comment from Professor Alistair Burns, National Clinical Director for Dementia, NHS England

"The prescribing of antipsychotic drugs in people with dementia has received a great deal of attention over the last few years. Changing clinical practice and attitudes to a more person centred care approach has been instrumental in the dramatic reduction in the prescribing of these medicines. The reports of the Prescribing Observatory for Mental Health have been a key driver in raising awareness of the issue and highlighting variation in practice. POMH-UK should be congratulated on its excellent work in this area."

MANCHESTER 1824
The University of Manchester

Publication following QIP 11

Barnes TRE, Banerjee S, Collins N, Treloar A, McIntyre SM, Paton C (2012) Antipsychotics in dementia: prevalence and quality of antipsychotic drug prescribing in UK mental health services. *British Journal of Psychiatry*, **201**: 221–6.

QIP 12. Prescribing for people with a personality disorder

Overview

In our national audits, the vast majority of people with a personality disorder were prescribed psychotropic medication. Between 2012 and 2014, this quality improvement programme achieved modest increases in the proportion of such patients who had a medication review in the past year as well as the proportion who had a documented crisis plan and reference to medication in the plan.

A wide range of medications were used, principally antidepressants, antipsychotics, mood stabilisers and sedatives. There was evidence of some targeting of symptoms, with antidepressants used to treat depressive features, antipsychotics and mood stabilisers prescribed for emotional instability and sedatives for insomnia and anxiety. This suggests that clinicians extrapolate from the evidence underpinning the use of psychotropic medication in mental illness, whether or not the target symptoms are intrinsic features of personality disorder or reflect comorbid mental illness.

Background and rationale

People with personality disorder have long-standing, pervasive patterns of thinking, feeling and relating to others that lead to social dysfunction and poor mental health. Psychotropic medication is commonly prescribed in routine clinical practice. This partly reflects the high levels of emotional distress among some people with personality disorder, together with the perceived clinical responsibility to provide rapidly effective treatments when such people present in crisis. NICE has published treatment guidelines for two relatively common subtypes of personality disorder: borderline personality disorder (CG78; NICE, 2009b) and antisocial personality disorder (CG77; NICE, 2009c). Both guidelines recommend that psychotropic medication should not be used in the management of symptoms and behaviours but that co-morbid mental illness, which commonly occurs, should be managed in line with the relevant NICE guideline for that condition.

Clinical practice standards

Derived from CG78 (NICE, 2009b).

1. A clinician's reasons for prescribing antipsychotic medication (i.e. target symptoms or behaviour) are documented in the clinical records.
2. There is a written crisis plan in the clinical records.
3. There is evidence that the patient's views have been sought in the development of the crisis plan.

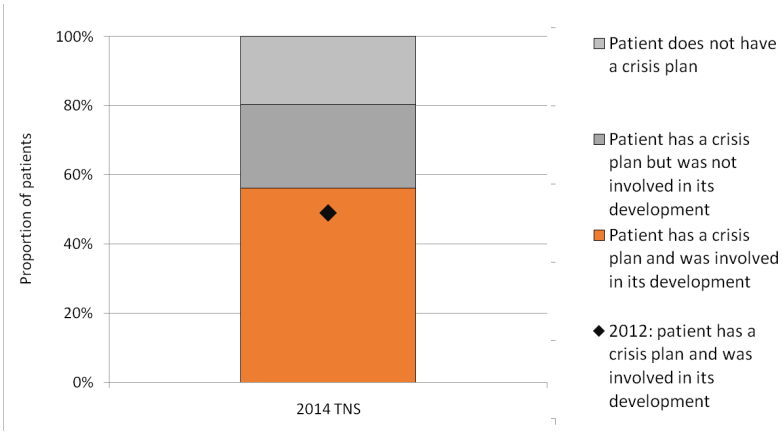
Treatment targets

1. Antipsychotic drugs should not be prescribed for more than 4 consecutive weeks in the absence of a comorbid psychotic illness (derived from CG78).
2. Z-hypnotics should not be prescribed for more than 4 consecutive weeks (derived from CG78).
3. Benzodiazepines should not be prescribed for more than 4 consecutive weeks.
4. Medication prescribed for more than 5 consecutive weeks should be reviewed, and such a review should take into account: (a) therapeutic response; (b) possible adverse effects; and (c) be documented in the clinical records.

Total national samples audited against the clinical practice standards		
	2012	2014
All adult mental health services	2600	4014

Key findings

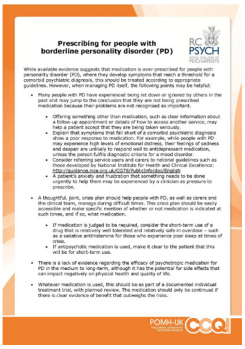
Clinical practice standards 2 and 3 at re-audit



Proportion of patients in the total national samples (TNS) in 2012 and 2014 who had a crisis plan in their clinical records.

Change intervention

POMH-UK produced a two-page, practical guide for clinicians which distils the experience of clinical experts on prescribing for people with personality disorder. The guide, titled *Prescribing for people with borderline personality disorder,* is available on the POMH Members' website (POMH Member organisation login is required to access this material).


Prescribing for people with borderline personality disorder (PD)

Comment from participating trust

Central and North West London NHS Foundation Trust

> *"We know that medication prescribed to people with personality disorder is often not in keeping with NICE guidelines. But the results of the POMH audit helped us see where the biggest problems lay. Too many patients are receiving long-term antipsychotic medication and differences in levels of prescribing across different teams led to helpful discussions about how to reduce this problem."*

Central and North West London NHS
NHS Foundation Trust

Publication following QIP 12

Paton C, Crawford MJ, Bhatti SF, Patel MX, Barnes TRE (2015) The nature and prevalence of psychotropic drug prescribing for people with emotionally unstable personality disorder under the care of UK mental health services. *Journal of Clinical Psychiatry*, **76**: e512–8.

QIP 13. Prescribing for ADHD in children, adolescents and adults

Overview

Between 2013 and 2015, there were marked improvements in the recording of heart rate, blood pressure, weight and height on centile and growth charts. However, this remains an area for improvement, particularly for longer-term monitoring. Use of such charts provides evidence for clinicians and parents as to whether the trajectory of growth and development is being adversely affected by stimulant medication.

In 2015, antipsychotics were prescribed for 1 in 6 people with ADHD who were prescribed ADHD medication and 1 in 4 of those not prescribed ADHD medication, suggesting that antipsychotics may be used to treat behavioural manifestations of ADHD as an alternative to stimulant medication. Antidepressants were also relatively commonly prescribed for adults with ADHD but there is little difference in the prevalence of such prescribing in those who were prescribed ADHD medication and those who were not. Electrocardiograms (ECGs) were almost always conducted in the context of a broader cardiovascular risk assessment. However, in nearly a quarter of the total sample, neither a cardiovascular risk assessment nor an ECG was conducted before ADHD medication was initiated.

Background and rationale

Attention-deficit hyperactivity disorder is one of the most common problems in child mental health. Key features are maladaptive levels of inattentiveness, restless overactivity and impulsiveness. In the UK, the prevalence of an ICD-10 diagnosis of ADHD is a little over 2% of school children. NICE guidance on ADHD treatment in children and adolescents recommends both behavioural therapies (such as parent training) and some forms of medication (particularly methylphenidate, atomoxetine and dexamfetamine, all of which have licences for treatment during childhood). Despite this guidance, the identification of ADHD and treatment provision remains inconsistent and patchy across the UK for children and adolescents as well as for adults with the condition. In the UK, less than 10% of adults with ADHD requiring medication may receive such treatment. Failure to treat adults with ADHD is costly to society, being associated with a greater likelihood of limited academic achievement, poor social and family adjustment, unemployment, substance use, and criminal conviction. Treatment guidelines for ADHD have been published by NICE (2008; CG72) and the British Association for Psychopharmacology has published a consensus statement (Bolea- Alamañac et al, 2014).

Clinical practice standards

Derived from CG72 (NICE, 2008)

Initiating drug treatment for ADHD

1 Before starting drug treatment, children, adolescents and adults with ADHD should have a full pre-treatment assessment, including: (a) heart rate and blood pressure (recorded as a centile in children); (b) height and weight (recorded on a growth chart in children); (c) cardiovascular risk; (d) substance misuse risk.

2 Weight, heart rate and blood pressure measured within 3 months of starting treatment.

Maintenance treatment

3 In all patients, ADHD treatment should be reviewed at least annually, using standardised rating scales.

4 Height and weight should be measured every 6 months in children and young people, and recorded on a growth chart.

5 Weight should be recorded every 6 months in adults.

6 Heart rate and blood pressure should be measured every 3 months (recorded as centile in children).

Total national samples audited against the clinical practice standards		
	2013	2015
Paediatric services	429	647
CAMH services	3737	4019
Adult mental health services	1313	1443

CAMH, child and adolescent mental health.

Change intervention

Customised slide sets

This resource was sent to each participating trust to facilitate dissemination of their benchmarked performance data and their level of compliance with the evidence-based recommendations in the NICE ADHD guidelines (NICE, 2008).

Key findings

Performance against clinical practice standards 1–6

Compliance with the clinical practice standards in each of the national clinical sub-samples in CAMHS services at baseline and re-audit.

CAMHS			Baseline audit 2013 compliance	Re-audit 2015 compliance
Audit standard			National clinical sub-sample	National clinical sub-sample
Before starting treatment			n=653	n=745
1	a	**Heart rate** *(recorded on a centile chart)*	**84%** *(7%)*	**88%** *(20%)*
		Blood pressure *(recorded on a centile chart)*	**89%** *(13%)*	**91%** *(33%)*
	b	**Height** *(recorded on a growth chart)*	**92%** *(40%)*	**93%** *(56%)*
		Weight *(recorded on a growth chart)*	**93%** *(39%)*	**93%** *(60%)*
	c	**Cardiovascular risk**	**70%**	**79%**
	d	**Substance misuse**	**34%**	**38%**
Within 3 months of starting treatment			n=525	n=508
2		**Heart rate** *(recorded on a centile chart)*	**83%** *(9%)*	**83%** *(16%)*
		Blood pressure *(recorded on a centile chart)*	**88%** *(15%)*	**87%** *(28%)*
		Height *(recorded on a growth chart)*	**87%** *(37%)*	**84%** *(49%)*
		Weight *(recorded on a growth chart)*	**89%** *(38%)*	**88%** *(55%)*
Over the past year			n=2717	n=2825
3		**Standardised scales**	**9%**	**16%**
4		**Height** *(recorded on a growth chart)*	**57%** *(32%)*	**58%** *(33%)*
		Weight *(recorded on a growth chart)*	**55%** *(33%)*	**57%** *(34%)*
6		**Heart rate** *(recorded on a centile chart)*	**22%** *(2%)*	**24%** *(3%)*
		Blood pressure *(recorded on a centile chart)*	**24%** *(5%)*	**25%** *(8%)*

Comment from participating trust

South West Yorkshire Partnership NHS Foundation Trust

"The whole Team found it useful to see how we performed in the national context. The objectivity of the process and the results motivated us to develop an action plan to do even better in the future."

South West Yorkshire Partnership NHS
NHS Foundation Trust

Publication following QIP 13

Paton C, Adroer R, Barnes TRE (2014) Prescribing practice for ADHD in children, adolescents and adults in the UK. *Journal of Psychopharmacology*, **28 (suppl. 8)**: A123.

QIP 14. Prescribing for substance misuse: alcohol detoxification

Overview

Forty-three trusts participated in the baseline audit, submitting data for 1197 patients, most of whom (70%) were under the care of a general adult psychiatrist rather than a specialist in addiction. The detoxification from alcohol was often medically complex: medical aspects of care were discussed with a physician in 20% of cases. Screening for Wernicke's encephalopathy was relatively poor, with a full, documented assessment in only just over a third of cases, 15% of whom exhibited at least one sign or symptom of this condition. Thus, clinically significant signs and symptoms are likely to have been missed and to have remained untreated in a proportion of patients. Parenteral thiamine was more likely to be prescribed by a specialist (78%) than a general adult psychiatrist (50%), while the respective figures for the prescription of relapse prevention medication were 49% and 15%.

The quality of care for medically assisted withdrawal from alcohol would likely be enhanced if there were more specialists in addictions and/or appropriate training in this area.

Background and rationale

Patients with alcohol dependence are often admitted to acute adult psychiatric wards with alcohol-related problems as a primary or, more usually, a secondary reason. Thus, mental health staff should be competent in the management of medically assisted alcohol withdrawal and alcohol-related complications. If untreated or sub-optimally managed, alcohol withdrawal can be a life-threatening condition, with a risk of grand mal seizures and delirium tremens. In the absence of adequate prophylaxis with thiamine, there is a risk of the rare but serious complication of Wernicke's encephalopathy, which can lead to permanent brain damage in the form of Korsakoff's syndrome. NICE guidelines CG100 (NICE, 2010) and CG115 (NICE, 2013) set out a series of recommendations for best practice in the diagnosis, assessment and management of harmful drinking and alcohol dependence and related complications.

Clinical practice standards

1 The decision to undertake acute alcohol detoxification of an in-patient should be informed by: (a) a documented assessment of drinking history and current daily alcohol intake; (b) a physical examination, carried out on admission.

2 Blood tests relevant to the identification of alcohol-related physical health problems should be carried out during the admission (e.g. liver function tests including gamma-glutamyl transferase (GGT), albumin, full blood count, glucose and renal function tests).

3 Pharmacotherapy to treat the symptoms of acute alcohol withdrawal should be limited to a benzodiazepine, carbamazepine or clomethiazole (derived from CG100 and CG115).

4 Phenytoin should not be prescribed to prevent or treat alcohol withdrawal seizures (derived from CG100 and the British Association for Psychopharmacology guidelines (Lingford-Hughes et al, 2012)).

5 Thiamine should be prescribed parenterally for in-patients in acute alcohol withdrawal.

Treatment targets

1 Breath alcohol should be measured as part of the initial assessment for alcohol detoxification (derived from CG115).

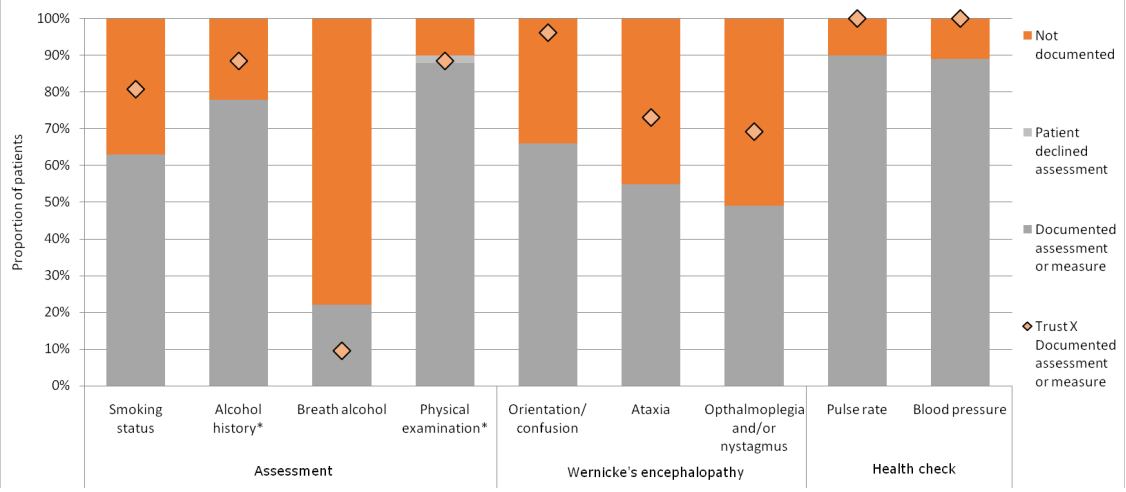
2 Following alcohol detoxification, initiation of relapse prevention medication should be considered (derived from CG115).

3 After alcohol detoxification, referral to specialist alcohol services for continuing management and support should be considered (derived from CG115 and QS11; NICE, 2011b).

Total national samples audited against the clinical practice standards		
	2014	2016
Acute adult and psychiatric intensive care wards	1197	Planned

Key findings

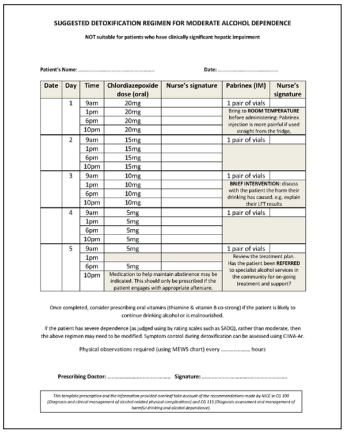
Clinical practice standard 1



Performance in the national sample and one example participating service (Trust X) against practice standard 1 assessment and other assessments during admission for alcohol detoxification.

Change interventions

A one-page summary of practical clinical considerations was produced to support trainees who initiate medically assisted withdrawal. In addition, a template prescription to prompt more consistent prescribing was made available for trusts to adopt and adapt for local use.


SUGGESTED DETOXIFICATION REGIMEN FOR MODERATE ALCOHOL DEPENDENCE

NOT suitable for patients who have clinically significant hepatic impairment

Patient's Name: ..... Date: .....

Date	Day	Time	Chlordiazepoxide dose (oral)	Nurse's signature	Pabrinex (IM)	Nurse's signature
	1	9am	20mg		1 pair of vials	
		1pm	20mg		Bring to ROOM TEMPERATURE before administering; Pabrinex injection is more painful if used straight from the fridge.	
		6pm	20mg			
		10pm	20mg			
	2	9am	15mg		1 pair of vials	
		1pm	15mg			
		6pm	15mg			
		10pm	15mg			
	3	9am	10mg		1 pair of vials	
		1pm	10mg		BRIEF INTERVENTION: discuss with the patient the harm their drinking has caused, e.g. explain their LFT results	
		6pm	10mg			
		10pm	10mg			
	4	9am	5mg		1 pair of vials	
		1pm	5mg			
		6pm	5mg			
		10pm	5mg			
	5	9am	5mg		1 pair of vials	
		1pm			Review the treatment plan:	
		6pm	5mg		Has the patient been REFERRED to specialist alcohol services in the community for on-going treatment and support?	
		10pm	Medication to help maintain abstinence may be indicated. This should only be prescribed if the patient engages with appropriate aftercare.			

Once completed, consider prescribing oral vitamins (thiamine & vitamin B co-strong) if the patient is likely to continue drinking alcohol or is malnourished.

If the patient has severe dependence (as judged using by rating scales such as SADQ), rather than moderate, then the above regimen may need to be modified. Symptoms control during detoxification can be assessed using CIWA-Ar.

Physical observations required (using MEWS chart) every ..... hours

Prescribing Doctor: ..... Signature: .....

This template prescription and the information provided overleaf take account of the recommendations made by NICE in CG 100 (Diagnosis and clinical management of alcohol-related physical complications) and CG 115 (Diagnosis, assessment and management of harmful drinking and alcohol dependence).

Publication following QIP 14

Paton C, Chee S, Drummond C, Lingford-Huges A, Loubser I, Barnes TRE (2015) Medically assisted withdrawal for alcohol detox: an audit of practice in acute adult psychiatric wards in the UK by the Prescribing Observatory for Mental Health (POMH-UK). *Journal of Psychopharmacology*, **29 (suppl. to issue 8)**: A109.

QIP 15. Prescribing valproate for bipolar disorder

Overview

The baseline audit data for this QIP are currently being analysed. Data have been submitted for more than 6700 patients with bipolar disorder, with approximately a third prescribed valproate. Early indications are that there are gaps between the audit standards and clinical practice with respect to the safe use of valproate in women of childbearing age, and in screening for potential side-effects of valproate in patients with bipolar disorder receiving long-term treatment for the prevention of relapse.

Background and rationale

NICE and the British Association for Psychopharmacology have published evidence-based guidelines for the management of bipolar disorder (NICE, 2006b; Goodwin et al, 2009). Both recommend valproate as an option for the treatment of acute episodes of mania, the prevention of relapse and in some circumstances, for the treatment of acute episodes of depression. Valproate is associated with a range of side-effects including weight gain, tremor and blood dyscrasias. It is also a known dose-related human teratogen; when taken during pregnancy, the risk of giving birth to a baby with major congenital malformation(s) is increased severalfold over population norms as is the risk of the child developing autism. In addition, the average IQ of children exposed to valproate *in utero* is lower than population norms. The appropriate prescribing and monitoring of valproate treatment are key to delivering best care for all people with bipolar disorder, particularly women of childbearing age.

Clinical practice standards

Derived from CG38 (NICE, 2006b).

1 Do not routinely prescribe valproate for women of childbearing age.

2 If valproate is prescribed for a woman of childbearing age, there should be documented evidence that the woman: (a) is aware of the need to use adequate contraception; (b) has been informed of the risks that valproate would pose to an unborn baby.

3 Prior to initiating treatment with valproate, the following should be documented in the clinical records: weight and/or BMI, the results of liver function tests (LFTs), and a full blood count.

4 Patients prescribed valproate should receive written information about the use of this medicine specifically for treating bipolar disorder.

5 Patients prescribed valproate should have an early, on-treatment review that includes screening for the common side-effects of the medication (e.g. weight gain, nausea, tremor).

6 Body weight and/or BMI, blood pressure, plasma, glucose and plasma lipids should be measured at least annually during continuing valproate treatment.

Treatment target

1 Serum valproate levels should not be routinely measured unless there is evidence of ineffectiveness, poor adherence or poor tolerability/toxicity.

Upcoming QIP: Rapid tranquillisation in the context of the pharmacological management of acutely disturbed behaviour

Background and rationale

Developing a quality improvement programme for rapid tranquillisation in the context of the pharmacological management of disturbed behaviour presents several challenges. Not least is agreeing a definition of 'rapid tranquillisation'. In 2014, NICE advice was that 'Rapid tranquillisation is when medicines are given to a person who is very agitated or displaying aggressive behaviour to help quickly calm them. This is to reduce any risk to themselves or others, and allow them to receive the medical care that they need' (NICE, 2014b). The subsequent guideline on the short-term management of violence and aggression (NICE, 2015) limited the definition to the use of medication 'by the parenteral route (usually intramuscular or, exceptionally, intravenous) if oral medication is not possible or appropriate and urgent sedation with medication is needed.'

The next step was to set realistic, evidence-based practice standards around rapid tranquillisation, which we derived from NICE clinical guideline CG25 (NICE, 2005) and the NG10 guidance (NICE, 2015). These referred to broader elements of management than the administration of parenteral medication, and included the use of de-escalation techniques and other non-pharmacological strategies as well as oral medication, as appropriate, and the monitoring of side-effects and vital signs after parenteral medication use. For clinicians participating in the programme, information on their performance against such standards would allow them to reflect on their practice in relation to the management of acutely disturbed behaviour. But some of the clinical data relevant to the standards might not be documented in detail in the clinical records of patients. So rather than collecting such clinical data retrospectively, we are proposing a prospective audit, whereby incident cases of pharmacotherapy for disturbed behaviour are identified promptly, the data are collected from clinical records and the staff involved are questioned soon after.

The practice standards and data collection tool have been reviewed and refined by an expert steering group and by multidisciplinary representatives from mental health services across the country at a series of regional workshops.

Clinical practice standards

Derived from NG10 (NICE, 2015).

1 Following an episode of rapid tranquillisation:

- there should be a prompt debrief, involving, as a minimum, a nurse and a doctor, to identify and address physical harm to service users and staff, including witnesses
- within a week, the patient's written care plan should address the management of episodes of disturbed behaviour
- within a week, a patient's written care plan should acknowledge his/her preferences and wishes should they become behaviourally disturbed again.

2 Intramuscular haloperidol should not be used as part of rapid tranquillisation in the absence of a recent ECG.

3a Following rapid tranquillisation, a patient should be monitored at least every hour on the following measures, until there are no further concerns:

- mental and behavioural state (behaviourally disturbed/agitated, asleep or awake, impairment of consciousness)
- physical observations (pulse, blood pressure, respiratory rate, temperature).

3b Such monitoring should occur every 15 minutes if any of the following apply:

- BNF maximum dose has been exceeded
- the patient appears to be asleep or sedated, has taken illicit drugs or alcohol, has a pre-existing physical health problem and/or has experienced any harm as a result of any restrictive intervention.

Treatment target

1 Offer oral medication before administering IM/IV medication for behavioural disturbance, as far as possible (derived from CG25 and NG10).

International developments

Vancouver – Fraser Health Authority

The POMH-UK Team has used collective expertise in running clinical audit-based QIPs aimed at improving prescribing practice in mental health settings to support and advise Fraser Health Authority (FHA) in Vancouver with the implementation of a similar programme of work in FHA mental health services. A POMH-UK QIP 'Prescribing high-dose and combined antipsychotics' has been identified as a priority area, hence this programme will be used by FHA as a template for developing subsequent QIPs within their organisations.

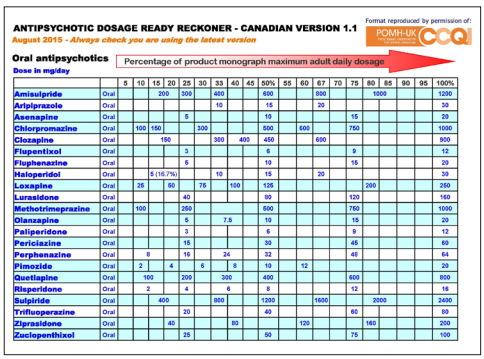
Clinical practice standards for QIP 1&3

2 The total daily prescribed dose of antipsychotic drugs is within Canadian product monograph (PM) limits. A high dose is defined here as a total daily dose (whether of a single antipsychotic or combined antipsychotics) greater than 100% of the maximum recommended daily dose (Royal College of Psychiatrists, 2014).

3 Individuals are prescribed only one antipsychotic at a time. This standard applies to 100% of individuals with schizophrenia. Exceptions: 'Individuals with schizophrenia who are receiving clozapine but who have not responded sufficiently; and individuals who are changing from one antipsychotic to another' (NICE, 2014a).

Change intervention

The Ready Reckoner – Canadian Version 1.1


ANTIPSYCHOTIC DOSAGE READY RECKONER - CANADIAN VERSION 1.1

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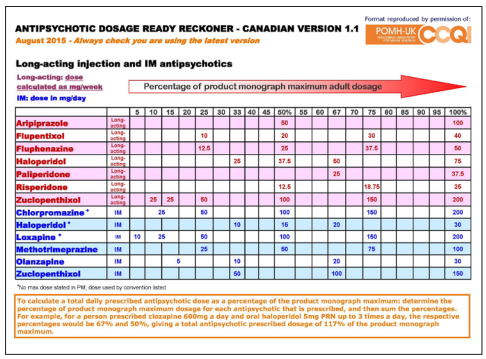
Oral antipsychotics

Dose in mg/day

Percentage of product monograph maximum adult daily dosage

		5	10	15	20	25	30	33	40	45	50%	55	60	67	70	75	80	85	90	95	100%
Amisulpride	Oral				200		300		400		600			800			1000				1200
Aripiprazole	Oral							10			15			20							30
Asenapine	Oral					5					10					15					20
Chlorpromazine	Oral		100	150			300				500		600			750					1000
Clozapine	Oral				150			300		400	450			600							900
Flupentixol	Oral					3					6					9					12
Fluphenazine	Oral					5					10					15					20
Haloperidol	Oral			5 (10.7%)				10			15			20							30
Loxapine	Oral	25			50		75		100		125						200				250
Lurasidone	Oral					40					80					120					160
Methotrimeprazine	Oral	100				250					500					750					1000
Olanzapine	Oral					5		7.5			10					15					20
Paliperidone	Oral					3					6					9					12
Periciazine	Oral					15					30					45					60
Perphenazine	Oral		8			16		24			32					48					64
Pimozide	Oral	2			4		6		8		10		12								20
Quetiapine	Oral		100			200		300			400					600					800
Risperidone	Oral		2			4			6		8					12					16
Sulpiride	Oral			400			600				1200			1600			2000				2400
Trifluoperazine	Oral					20					40					60					80
Ziprasidone	Oral				40				80				120				160				200
Zuclopenthixol	Oral					25					50					75					100


ANTIPSYCHOTIC DOSAGE READY RECKONER - CANADIAN VERSION 1.1

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Long-acting injection and IM antipsychotics

Long-acting: dose calculated as mg/week

IM: dose in mg/day

Percentage of product monograph maximum adult dosage

		5	10	15	20	25	30	33	40	45	50%	55	60	67	70	75	80	85	90	95	100%
Aripiprazole	Long-acting										50										100
Flupentixol	Long-acting							10			20					30					40
Fluphenazine	Long-acting					12.5					25					37.5					50
Haloperidol	Long-acting							25			37.5		50								75
Paliperidone	Long-acting												25								37.5
Risperidone	Long-acting										12.5					18.75					25
Zuclopenthixol	Long-acting		25	25		50					100					150					200
Chlorpromazine *	IM			25		50					100					150					200
Haloperidol *	IM								10		15		20								30
Loxapine *	IM	10		25		50					100					150					200
Methotrimeprazine	IM					25					50					75					100
Olanzapine	IM				5			10						20							30
Zuclopenthixol	IM							50						100							150

*No max dose stated in PM; dose used by convention listed

To calculate a total daily prescribed antipsychotic dose as a percentage of the product monograph maximum: determine the percentage of product monograph maximum dosage for each antipsychotic that is prescribed, and then sum the percentages. For example, for a person prescribed clozapine 600mg a day and oral haloperidol 5mg PRN up to 3 times a day, the respective percentages would be 67% and 50%, giving a total antipsychotic prescribed dosage of 117% of the product monograph maximum.

Comment from Fraser Health Prescribing Audit Group

"The Fraser Health Authority is the largest health region in the province of British Columbia, Canada, delivering comprehensive health care services to 1.7 million citizens. The Fraser Health Mental Health and Substance Use Program provides broad community and hospital based services within a region stretching 150 km from the city of Vancouver to suburban and rural communities in the Fraser Valley. Our facilities include 12 acute care hospitals with 223 beds and a large number of tertiary/rehabilitation facilities with 267 beds. A major focus of our programme is quality improvement in the area of psychotropic prescribing and monitoring. One of the areas that we wish to gain an understanding about is the use of antipsychotic medication, particularly high-dose antipsychotics and antipsychotic polypharmacy. Given the significant differences in the communities served by our health authority as well as the patient populations served within different hospitals and treatment settings, we felt it was important to partner with an organization with broad experience in medication audits across varied and diverse settings.

We are pleased to have been the first health organization outside of the UK to participate as a member organization in POMH. We have been very pleased with the support we have received from POMH in understanding the audit process, developing our audit tools, preparing a database for information collection, preparing for on-site audits, and transmitting data to the UK for analysis. We have recently completed our medication audit across the breadth of our Health Authority in both acute care and tertiary care facilities. We look forward to receiving and reviewing the results of the audit, and understanding areas in which improvements can be made in the prescribing of antipsychotics.

Congratulations to POMH on the occasion of your 10th anniversary. We look forward to future collaboration."

fraserhealth
Better health. Best in health care.

Appendix I

Role of the Prescribing Observatory for Mental Health

Thomas R. E. Barnes and Carol Paton

Summary
Positive change in prescribing practice in psychiatric services can be achieved with participation in the UK Prescribing Observatory for Mental Health (POMH-UK) quality improvement programmes. Key elements are feedback of benchmarked performance for local clinical reflection and customised change interventions informed by the national audit findings and parallel qualitative work. However, progress is gradual and gains generally modest.

Declaration of interest
In the past 3 years, T.R.E.B. has received honoraria for speaking from Lilly and Roche, and C.P. has been a consultant for Roche and Janssen.

Thomas R. E. Barnes (pictured) is a professor of clinical psychiatry in the Centre for Mental Health, Imperial College London, and an honorary consultant at West London Mental Health NHS Trust. Carol Paton is chief pharmacist at Oxleas NHS Foundation Trust and an honorary research fellow in the Centre for Mental Health, Imperial College London. They are the joint-heads of the Prescribing Observatory for Mental Health.

Uniquely among the medical and surgical colleges in the UK, the Royal College of Psychiatrists accommodates a Centre for Quality Improvement. The UK Prescribing Observatory for Mental Health (POMH-UK), based within the Centre for Quality Improvement, was set up in 2005. It was initially funded by a tapering grant from the Health Foundation, but since 2008 has been funded solely through subscriptions from member healthcare organisations. Its aim is to improve the quality of prescribing practice in mental health services. Through focused, audit-based, quality improvement programmes (QIPs), POMH-UK seeks to promote and support the optimal, safest use of existing medications in psychiatric practice.

The QIPs initiated thus far have tackled a range of relatively specific topics. The prescription of high-dose and combined antipsychotics has been addressed in both acute adult in-patient[1] and forensic settings. Assessment of the side-effects of antipsychotics has been the subject of two QIPs: one targeted at metabolic side-effects in patients cared for by assertive outreach teams,[2,3] and the other at comprehensive side-effect assessment in patients treated with depot/long-acting injection antipsychotics. Several QIPs have focused on the use of antipsychotic medication for indications or in populations where the supporting evidence base is limited: people with an intellectual disability (referred to as people with learning disability by UK health services),[4] children and adolescents, and in people with dementia. Other QIPs have covered the use of anti-dementia drugs,[5] recommended monitoring of lithium treatment,[6,7] medicines reconciliation at the point of hospital admission[8] and prescribing for personality disorder. Quality improvement programmes planned for the next couple of years will focus on prescribing for attention-deficit hyperactivity disorder in children and adults, alcohol detoxification in psychiatric services and the use of sodium valproate.

For each QIP, an expert group of experienced clinicians, clinical academics and service users/carers is convened to agree the audit standards: these are usually derived from established, evidence-based clinical guidelines, and their drafting is guided by the principle that they should be accepted by clinicians as undeniable criteria of good care and realistic to achieve in routine clinical practice. The group then develops a bespoke audit tool that is refined at a series of regional workshops attended by staff from member trusts. A baseline audit is then conducted, with the audit data collected by clinicians and clinical audit staff in each participating mental health service and submitted online. The data are analysed at POMH-UK and customised reports are generated for each trust, showing its performance against the audit standards, benchmarked anonymously against the other participating trusts. The performance of individual clinical teams within each trust may be compared with each other, the trust as a whole and the total national sample. Perhaps the most potent element of a QIP is the reflection by clinical teams on their performance. Slide sets that are customised for each participating trust are provided to facilitate local presentation of the data. The data collected allow for the measurement of service adherence to the clinical standards, but also include demographic, diagnostic and other relevant clinical information that provides a context for interpretation of practice, and can inform local strategies and action plans to achieve improvement. Although these audit data are suitable for the purposes of local quality improvement, they are not necessarily appropriate for objective ranking of healthcare organisations.[9] This is partly because interpretation of an individual trust's performance requires knowledge of the sample selection and the context in which the relevant services are delivered. Further, if used for the purposes of ranking, removal of trust anonymity would be necessary, inevitably undermining the credibility and potency of the benchmarked feedback.

In the time between baseline and re-audit, usually 18 months, change interventions are developed, informed by the baseline audit findings as well as additional questionnaires and qualitative work exploring barriers to, and facilitators of, best practice. The aim of these interventions is to support trusts and clinical teams in closing crucial gaps identified between the prescribing standards and clinical practice. Following re-audit, using the same data-collection tool, a second, customised, benchmarked report on performance is provided, highlighting any changes from baseline at national, trust and clinical-team level. In response to requests from trusts for continued involvement in individual QIPs, supplementary audits have been conducted over subsequent years. Examples of effective interventions by trusts to improve their practice have been shared by reports, and presentations at meetings open to member trusts. Those trusts participating in repeated audits are encouraged to consider to what extent any change in their practice over time is the consequence of implementing local strategies to increase the level of adherence

to the standards, or reflects other factors, such as the selection of different patient samples at different stages.

What has POMH-UK achieved?

Year-on-year, POMH-UK membership has grown: the vast majority of UK mental health trusts, as well as several private or charitable healthcare organisations, have joined, and the number participating in each QIP has increased in the past few years to reflect the majority of trusts with relevant services. Indeed, POMH-UK has demonstrated a workable and effective methodology for QIPs in the National Health Service (NHS), and positive changes in clinical practice have been seen in some, although not all, QIPs, along with greater involvement of clinicians and clinical teams in audit and quality improvement processes. The data collected have provided trusts with evidence of the quality of clinical care in the organisation, and supported their submissions showing adherence to national guideline recommendations as part of clinical governance. Detailed information on the quality and variation in national prescribing practice has been made available on topics such as the use of depot/long-acting injection antipsychotics[10] and for services, such as intellectual disability[4] and child and adolescent psychiatry, which lack prescribing guidelines and a robust evidence base for pharmacotherapy. The extensive information gathered on national prescribing practice in mental health services has also been used to support the rationale for successful research grant applications. These have included studies of pharmacological strategies that, despite a lack of adequate, formal testing in relation to potential risks and benefits, are commonly used in clinical practice, as shown in the large POMH-UK data-sets, which routinely comprise information on many thousands of prescriptions and may be taken as representative of national practice.

What has POMH-UK learned?

Trusts may participate in QIPS for various reasons, including using their local audit data for both internal and external benchmarking as a measure of service quality, clinical governance reporting and inclusion in Quality Accounts. Where clinical teams have the opportunity to review their benchmarked performance data, the desire of team members to provide the best care for their patients can be a powerful driver for change, particularly if the audit standards are seen as clearly evidence based, accepted as achievable good practice, and reflect their own clinical priorities. Qualitative work can be helpful in understanding possible barriers to best practice at the level of the system, team and individual patient. It can also identify potential enabling factors, and inform the development of customised change interventions. These range from relatively simple educational tools such as a 'ready reckoner' for calculating total antipsychotic dose (now commonly employed by clinicians in their own prescribing practice and when giving second opinions on pharmacotherapy) and a metabolic syndrome investigations poster, to more complex interventions such as a side-effect information folder, and a patient-held lithium booklet[11] (developed in collaboration with the National Patient Safety Agency and the National Pharmacy Association).

Any improvements in prescribing practice take time and are generally modest, but incremental and sustained improvement can be achieved over time in individual services. Examples may be drawn from POMH-UK QIPS in relation to side-effect monitoring; substantial improvements were seen in the programmes addressing screening for the metabolic syndrome and side-effect assessment in patients on depot antipsychotics. However, some established healthcare systems, and clinical custom and practice, can be formidable impediments to behavioural change. These may be common to all the QIPS, such as a lack of consistent trust commitment to the process, with slow and incomplete dissemination of audit results throughout participating organisations and little reflection by clinical teams on the content, and the variable uptake of change interventions by services, which are more likely to be adopted if they are seen as relevant to, and compatible with, local practice. Other barriers are specific to particular QIPS, depending on the prescribing issue addressed; for the QIP on high-dose and combined antipsychotics, the embedded custom and practice of *pro re nata* (p.r.n. or 'as required') prescribing proved to be resistant to educational change interventions,[1] whereas for the QIP targeting biochemical monitoring of lithium treatment, a major obstacle was the complexity of clinical care arrangements, including multiple interfaces between clinical and laboratory services, which were often not directly or wholly under the control of clinical teams.[6]

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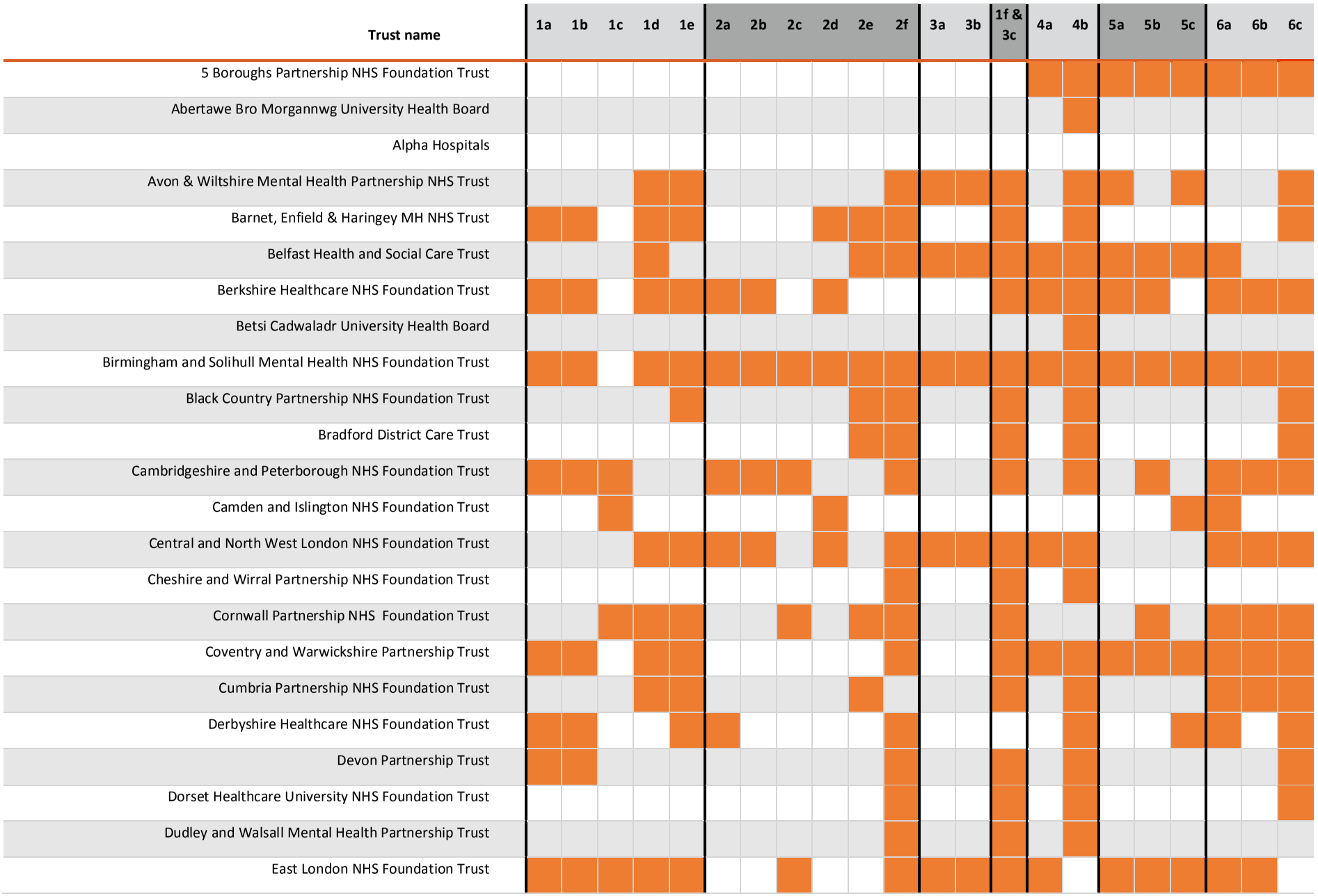
Appendix II: Member organisations participating in POMH-UK

The following table lists all the member organisations who have participated in POMH-UK since it's inception. The orange boxes mark the QIPs which member organisations have participated in and whether they participated in the baseline (a), re-audit (b) or supplementary audits (c, d, e and f) for each QIP. The member organisations are listed in alphabetical order.


Trust name
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4b
5a
5b
5c
6a
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6c
5 Boroughs Partnership NHS Foundation Trust
Abertawe Bro Morgannwg University Health Board
Alpha Hospitals
Avon & Wiltshire Mental Health Partnership NHS Trust
Barnet, Enfield & Haringey MH NHS Trust
Belfast Health and Social Care Trust
Berkshire Healthcare NHS Foundation Trust
Betsi Cadwaladr University Health Board
Birmingham and Solihull Mental Health NHS Foundation Trust
Black Country Partnership NHS Foundation Trust
Bradford District Care Trust
Cambridgeshire and Peterborough NHS Foundation Trust
Camden and Islington NHS Foundation Trust
Central and North West London NHS Foundation Trust
Cheshire and Wirral Partnership NHS Foundation Trust
Cornwall Partnership NHS Foundation Trust
Coventry and Warwickshire Partnership Trust
Cumbria Partnership NHS Foundation Trust
Derbyshire Healthcare NHS Foundation Trust
Devon Partnership Trust
Dorset Healthcare University NHS Foundation Trust
Dudley and Walsall Mental Health Partnership Trust
East London NHS Foundation Trust

Trust name	1a	1b	1c	1d	1e	2a	2b	2c	2d	2e	2f	3a	3b	1f & 3c	4a	4b	5a	5b	5c	6a	6b	6c
Partnerships in Care											■	■	■									
Pennine Care NHS Foundation Trust				■	■					■	■			■		■						■
Rotherham, Doncaster and South Humber Mental Health NHS Foundation Trust	■	■			■						■			■		■				■	■	■
Sheffield Health & Social Care NHS Foundation Trust	■	■		■	■			■	■	■	■			■	■	■		■	■	■	■	■
Solent NHS Trust																						
Somerset Partnership NHS Foundation Trust									■	■	■			■		■		■	■	■	■	■
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South London and Maudsley NHS Foundation Trust	■	■	■	■		■	■				■	■	■	■	■	■	■	■	■	■	■	■
South Staffordshire and Shropshire Healthcare NHS Foundation Trust	■	■		■	■	■	■		■	■	■			■		■						■
South West London and St George's Mental Health Trust	■	■				■	■		■	■	■	■	■	■	■	■	■	■		■	■	
South West Yorkshire Partnership NHS Foundation Trust				■	■				■	■	■			■		■		■	■		■	■
Southern Health NHS Foundation Trust	■	■																				
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St. Patrick's University Hospital			■													■		■				
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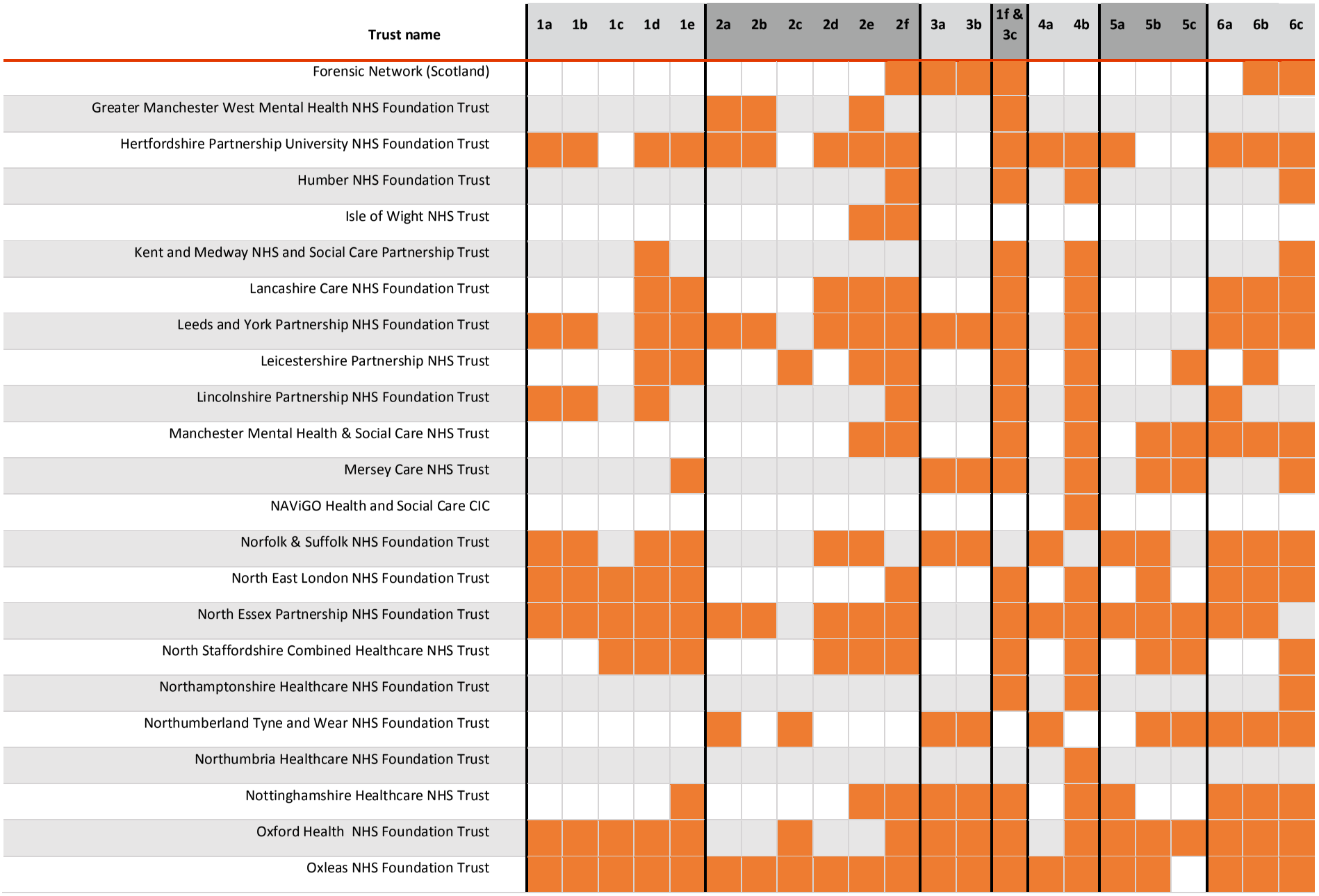
Sussex Partnership NHS Foundation Trust											■			■		■						■
Tees, Esk and Wear Valleys NHS Foundation Trust				■											■	■				■	■	
West London Mental Health NHS Trust	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■				■	■	■
Worcestershire Health & Care Trust	■	■									■			■		■						■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5c
6a
6b
6c
Forensic Network (Scotland)
Greater Manchester West Mental Health NHS Foundation Trust
Hertfordshire Partnership University NHS Foundation Trust
Humber NHS Foundation Trust
Isle of Wight NHS Trust
Kent and Medway NHS and Social Care Partnership Trust
Lancashire Care NHS Foundation Trust
Leeds and York Partnership NHS Foundation Trust
Leicestershire Partnership NHS Trust
Lincolnshire Partnership NHS Foundation Trust
Manchester Mental Health & Social Care NHS Trust
Mersey Care NHS Trust
NAViGO Health and Social Care CIC
Norfolk & Suffolk NHS Foundation Trust
North East London NHS Foundation Trust
North Essex Partnership NHS Foundation Trust
North Staffordshire Combined Healthcare NHS Trust
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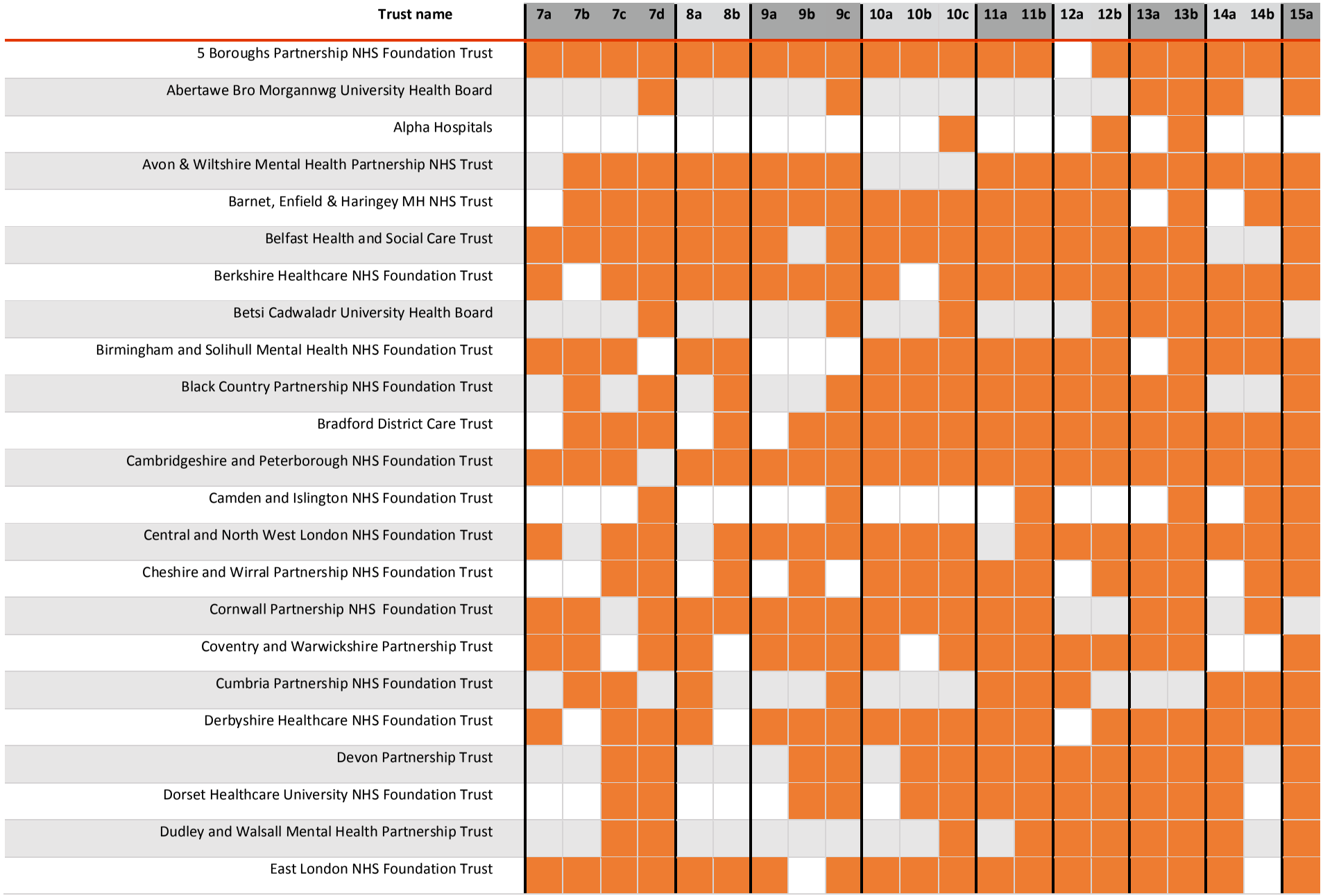
Northumberland Tyne and Wear NHS Foundation Trust
Northumbria Healthcare NHS Foundation Trust
Nottinghamshire Healthcare NHS Trust
Oxford Health NHS Foundation Trust
Oxleas NHS Foundation Trust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5 Boroughs Partnership NHS Foundation Trust
Abertawe Bro Morgannwg University Health Board
Alpha Hospitals
Avon & Wiltshire Mental Health Partnership NHS Trust
Barnet, Enfield & Haringey MH NHS Trust
Belfast Health and Social Care Trust
Berkshire Healthcare NHS Foundation Trust
Betsi Cadwaladr University Health Board
Birmingham and Solihull Mental Health NHS Foundation Trust
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Devon Partnership Trust
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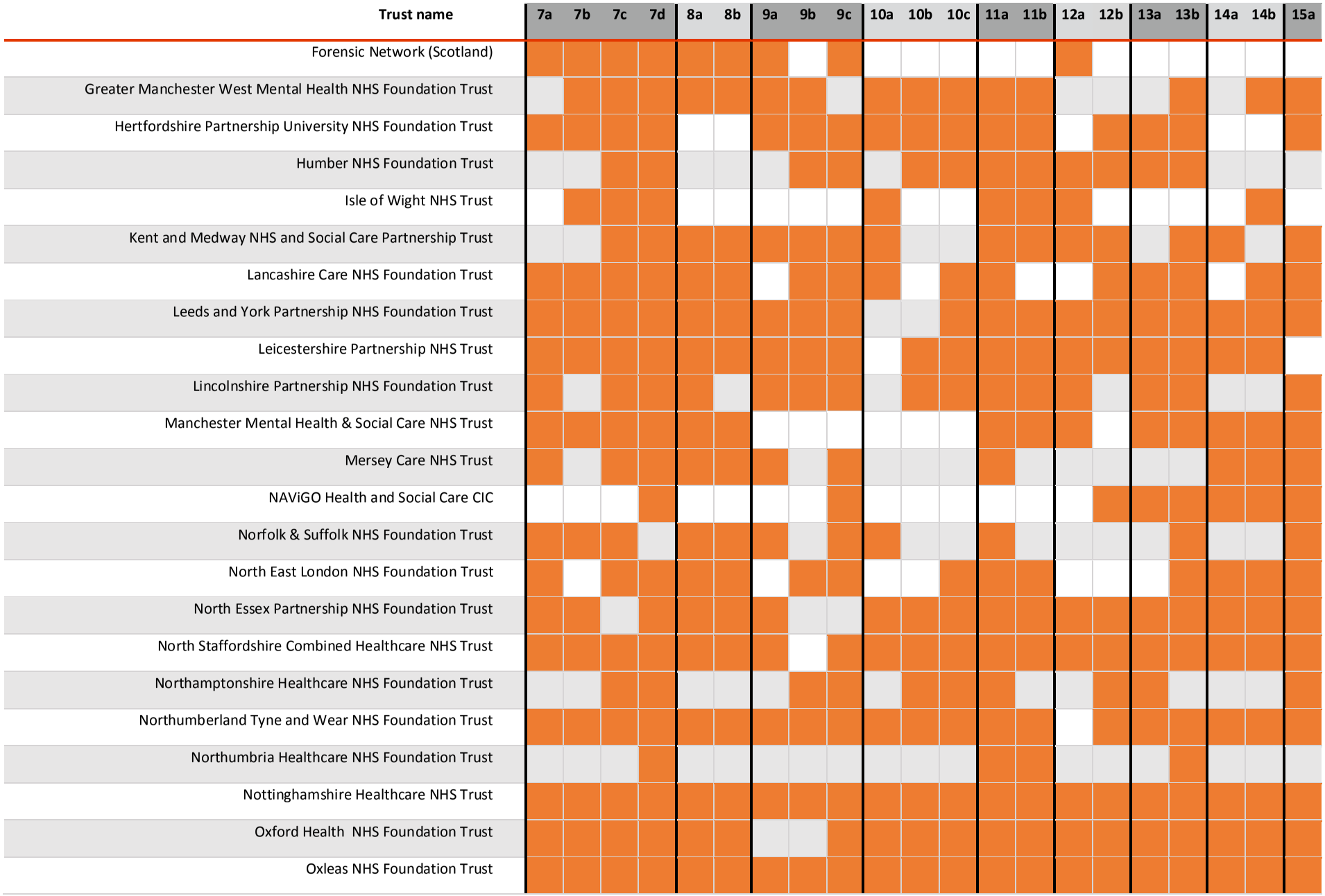
Dudley and Walsall Mental Health Partnership Trust
East London NHS Foundation Trust


Trust name
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Forensic Network (Scotland)
Greater Manchester West Mental Health NHS Foundation Trust
Hertfordshire Partnership University NHS Foundation Trust
Humber NHS Foundation Trust
Isle of Wight NHS Trust
Kent and Medway NHS and Social Care Partnership Trust
Lancashire Care NHS Foundation Trust
Leeds and York Partnership NHS Foundation Trust
Leicestershire Partnership NHS Trust
Lincolnshire Partnership NHS Foundation Trust
Manchester Mental Health & Social Care NHS Trust
Mersey Care NHS Trust
NAViGO Health and Social Care CIC
Norfolk & Suffolk NHS Foundation Trust
North East London NHS Foundation Trust
North Essex Partnership NHS Foundation Trust
North Staffordshire Combined Healthcare NHS Trust
Northamptonshire Healthcare NHS Foundation Trust
Northumberland Tyne and Wear NHS Foundation Trust
Northumbria Healthcare NHS Foundation Trust
Nottinghamshire Healthcare NHS Trust
Oxford Health NHS Foundation Trust
Oxleas NHS Foundation Trust

Trust name	7a	7b	7c	7d	8a	8b	9a	9b	9c	10a	10b	10c	11a	11b	12a	12b	13a	13b	14a	14b	15a
Partnerships in Care				■					■						■	■		■		■	■
Pennine Care NHS Foundation Trust		■	■	■	■	■			■	■	■	■	■	■	■	■	■	■	■		■
Rotherham, Doncaster and South Humber Mental Health NHS Foundation Trust	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Sheffield Health & Social Care NHS Foundation Trust	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Solent NHS Trust									■			■				■		■	■		■
Somerset Partnership NHS Foundation Trust	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
South Essex Partnership University NHS Foundation Trust	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
South London and Maudsley NHS Foundation Trust	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
South Staffordshire and Shropshire Healthcare NHS Foundation Trust		■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■
South West London and St George's Mental Health Trust	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
South West Yorkshire Partnership NHS Foundation Trust	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■
Southern Health NHS Foundation Trust									■									■	■	■	■
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West London Mental Health NHS Trust	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	
Worcestershire Health & Care Trust			■	■				■	■		■	■	■	■	■	■	■	■	■		■

Appendix III: Advisory group members

The POMH-UK Team would like to thank all the clinicians, experts by experience and other advisors who have contributed to the development of these QIPs. Special thanks to Dr Paul Lelliott who was instrumental in the early development of POMH-UK. Without his vision and commitment this project would never have been realised. We would also like to thank members of the CCQI staff, past and present, for their help and support.

QIP 1. Prescribing high-dose and combined antipsychotics	QIP 2 (Screening for metabolic side-effects of antipsychotic drugs)	QIP 3 (Prescribing high-dose and combined antipsychotics on forensic wards)	QIP 4 (Prescribing anti-dementia drugs)
Janey Antoniou Dr Paul Lelliott Maureen McGeorge David Pruce Professor David Taylor	Janey Antoniou Kathryn Hill Laraine James Dr Paul Lelliott Maureen McGeorge Dr Denis O'Sullivan Dr Jogin Thakore	Dr Deborah Brooke Keith Halsall Mo Hutchison Sheena Mitchell Dr Paul Lelliott Dr Edward Petch Stuart Wix	Professor Alistair Burns Brian Hills Dr James Warner
QIP 6 (Assessing side-effects of depot antipsychotics)	**QIP 7 (Monitoring of patients prescribed lithium)**	**QIP 8 (Medicines reconciliation)**	**QIP 9 (Antipsychotic prescribing in people with a learning disability)**
Janey Antoniou Dr John Baker Dr Pete Haddad Mo Hutchison Dr Alison Pope Michael Vine	Professor Carolyn Chew-Graham Dr Noel Collins David Gerrett Dr Thomas Kabir Dr Hamish McAllister-Williams Karen Osola	David Gerrett Professor Richard Gray Dr Thomas Kabir Dr Michael Phelan	Dr Sabyasachi Bhaumik Dr Andrew Flynn Steve Hardy Dr Jill Rasmussen
QIP 10 (Prescribing antipsychotics for children and adolescents)	**QIP 11 (Prescribing antipsychotic medication for people with dementia)**	**QIP 12 (Prescribing for people with personality disorder)**	**QIP 13 (Prescribing for ADHD in children, adolescents and adults)**
Dr Elizabeth Fellow-Smith Carol Fry Professor Chris Hollis Dr Daphne Keen Philippa Lewis Dr Margaret Murphy Dr Stephen Warren	Professor Sube Banerjee Professor Alistair Burns Dr Noel Collins Brian Hills Dr Adrian Treolar	Professor Mike Crawford Tracey James Dr Thomas Kabir Dr Geoff Lawrence-Smith Dr Maxine Patel	Professor Philip Asherson Andrea Bilbow Susan Dunn-Morua Dr Peter Lachman Professor Eric Taylor
QIP 14 (Prescribing for substance misuse: alcohol detoxification)	**QIP 15 (Prescribing valproate for bipolar disorder)**	**QIP 16 (Rapid tranquillisation)**	
Professor Colin Drummond Professor Anne Lingford-Hughes Dr Ignatius Loubser	Dr John Cookson Professor Nicol Ferrier	Professor Clive Adams Dr Stephen Dye Dr Ify Okocha	

Appendix IV: POMH-UK team, past and present

Roman Adroer
Professor Thomas Barnes
Sumera Bhatti
Mary-Rose Cavanagh
Sonya Chee
Elizabeth Hancock
Amy Lawson
Susan Lemmey
Rachel Marsh
Samantha McIntyre
Carol Paton
Haroldas Petkus
Amber Shingleton-Smith
Oda Skagseth
Izaba Younis
Krysia Zalewska

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