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## Setting standards for physical health monitoring in patients on antipsychotics

### AIMS AND METHOD

To develop standards for physical health monitoring in patients on antipsychotics in a forensic environment. We reviewed recommendations for physical health checks from key publications and then agreed a consensus on what to monitor and how often.

### RESULTS

We developed a standardised form to ensure the requisite minimum monitoring is performed when a patient is newly prescribed an antipsychotic drug or the dose is increased, when an abnormality is detected and for routine annual physical health monitoring.

### CLINICAL IMPLICATIONS

We have produced a pragmatic solution to the gap between the recognised risks to physical health of individuals treated with antipsychotic medication and the need for clear, unambiguous standards of physical healthcare.

There is now extensive evidence that people with severe mental illness have higher rates of morbidity and mortality for common physical illnesses than the general population.<sup>1</sup> However, in forensic settings there is a dearth of data on morbidity rates, but the limited evidence available does suggest significant rates of physical health problems for in-patients in secure settings.<sup>2,3</sup>

A number of publications have highlighted the need for physical health monitoring in individuals with mental health problems.<sup>4</sup> Despite that, there is no established national consensus detailing precisely what should be measured and how frequently.

We are based in a forensic mental health service without any general practitioner input; patients can be resident for periods beyond 10 years. Primary care services are provided by psychiatric trainees and staff grade doctors.

The National Institute for Health and Clinical Excellence (NICE) guidelines on schizophrenia refer to primary and secondary services with regard to the provision of care to individuals with schizophrenia.<sup>5</sup> Criterion 12 of the guidelines highlights a minimum standard of physical health checks 'at regular intervals' for those with schizophrenia within primary care. We carried out an audit of this criterion within our in-patient service that demonstrated deficits in the measurement and recording of physical health parameters.<sup>6</sup> The need for a more systematic approach to the execution and documentation of physical health checks has been highlighted by our audit and by other services.<sup>7</sup> This paper addresses this need.

There is increasing evidence of the link between antipsychotic medication and physical health risks, such as:

- weight gain<sup>8</sup>
- metabolic syndrome<sup>9,10</sup>
- endocrine problems (e.g. diabetes,<sup>11,12</sup> hyperprolactinaemia,<sup>13,14</sup> sexual dysfunction<sup>15</sup>)
- cardiovascular problems
- sudden death<sup>16,17</sup>

- abnormalities of QTc<sup>18</sup>
- effects on blood pressure<sup>19</sup>
- stroke.<sup>20</sup>

In the light of a high percentage (87%) of our in-patients being prescribed antipsychotic medication (Churchward *et al*, 2007 internal audit, Langdon Hospital, personal communication) and the potentially elevated risks in this group, we decided to set standards for physical health checks that would incorporate the risks associated with the institution and ongoing treatment with antipsychotics.

### Method

A multidisciplinary group was formed in June 2006, comprising a senior mental health pharmacist (S.C.) and three staff psychiatrists (D.T., V.O., S.O.).

A widespread search of the English language publications to date was carried out to establish the relevant evidence base. The relevant papers were then reviewed and the key points summarised with respect to the physical health parameters that had been identified as important. A pragmatic consensus was agreed on by the group with regard to the parameters of what should be measured and how often.

Once standards had been agreed, other colleagues on site, from a variety of disciplines, were consulted to determine the most appropriate format for the implementation of the standards. We explored the current development of the NHS Care Records Service (NCRS), particularly the electronic patient records service, both locally and nationally.<sup>21</sup> Although the NCRS has the potential to include monitoring, we found that in its current state of development it does not have the flexibility to incorporate this type of tailor made monitoring.<sup>22</sup>

An example of the summary of the key points from the review is presented in Table 1 (full review of recommendations on all parameters available from the authors on request).



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## Results

Having collated the data, it was evident that there was a lack of uniformity from the different sources on how often the parameters should be measured (Table 1).

A major obstacle to improving the quality of physical healthcare monitoring for patients with schizophrenia is the lack of consensus regarding which health parameters should be monitored and when they should be monitored.<sup>4</sup>

We recognise the importance of good primary care services for patients in forensic mental health services. However, this project did not attempt to incorporate all aspects of preventative healthcare but focused specifically on monitoring elements of physical health risk compounded by treatment with antipsychotic medication.

### Parameters measured

We reached a consensus on which parameters should be measured and how often, based on the evidence we collated (Table 2). Where the evidence from the literature suggested monitoring less frequently than our own clinical experience, we agreed a frequency that we felt was clinically appropriate for our patient group. In particular, the recommendations on how often to weigh patients were rather infrequent compared with our current clinical practice. Given the ease of monitoring this parameter and the importance of this risk factor for our patients, we reached a consensus to continue to monitor weight on a monthly basis.

Recommendations on some parameters such as electrocardiogram (ECG) varied considerably in the

literature, ranging from monitoring ECG at baseline,<sup>18</sup> after each dose escalation and 6-monthly monitoring,<sup>29</sup> to monitoring 6-monthly for higher risk drugs.<sup>25</sup> We reached a consensus taking into consideration the recommendations available and our own clinical judgement. We already had a procedure in place for the monitoring of patients prescribed high-dose antipsychotics, based on the Royal College of Psychiatrists guidelines.<sup>30</sup> Patients prescribed above the *British National Formulary* maximum dosages of antipsychotics<sup>24</sup> are routinely monitored with an ECG every 3 months. A consensus was reached to do a baseline ECG for all patients on admission and to do ECG monitoring every 3 months for patients prescribed high-dose antipsychotics or those on higher risk antipsychotics (pimozide, sertindole). We acknowledged that there were other circumstances where repeat ECG may be necessary, such as in patients with cardiovascular disease or following rapid tranquillisation, but felt that this was beyond the scope of our standards and that such cases would need appropriate individual care planning.

Regarding hyperprolactinaemia, the literature does not indicate a consensus on routine or even baseline monitoring of prolactin levels. Regular monitoring for signs of prolactin elevation or sexual dysfunction is, however, recommended.<sup>4,31</sup> The clinical consequences of hyperprolactinaemia include menstrual disturbance, galactorrhoea and sexual dysfunction. These clinical features are incorporated within the Liverpool University Neuroleptic Side Effect Rating Scale (LUNSERS).<sup>32</sup>

Some side-effects of antipsychotics may be rare but are still significant to the patient such as the risk of cataract with phenothiazines and quetiapine.<sup>4</sup> We

**Table 1. Comparison of recommendations for physical health monitoring in patients treated with antipsychotic medication (example)**

	Summary of APBI Medicines Compendium <sup>23</sup> or BNF <sup>24</sup>	David et al <sup>25</sup>	NICE schizophrenia guidelines <sup>5</sup>	Lebovitz <sup>26</sup>	Antai-Otong <sup>27</sup>	Marder et al <sup>4</sup>	American Diabetes Association et al <sup>28</sup>
Weight		Baseline, then as needed	Routine monitoring where potential to cause weight gain	Baseline, then periodically	Baseline, then every 6 months	Baseline, then monthly for first 6 months, then every quarter once dose stabilised	Baseline, at 4 weeks, at 8 weeks, then 3-monthly
Fasting plasma glucose/HbA <sub>1c</sub>	Appropriate clinical monitoring if risk factors are present	Baseline, then 12-monthly (for clozapine and olanzapine: baseline, at 1 month, then 4- to 6-monthly)	Monitor where potential exists	Baseline, at 6 weeks, then every 3 months	Baseline, then yearly (monitor for signs of weight gain, polyuria, polydipsia)	Baseline; if significant risk factors for diabetes <sup>a</sup> are present, measure at baseline, at 4 months and then annually. For patients gaining weight, measure every 4 months	Baseline, at 3 months and then yearly
Lipids		Baseline, 3-monthly, then yearly		Baseline, at 6 weeks, at 6 months, then yearly	Baseline, then every 2 years	Baseline, then every 2 years; if LDL > 130 mg/dl then every 6 months	Baseline, at 3 months, then every 5 years

BNF, British National Formulary; HbA<sub>1c</sub>, glycosylated haemoglobin; LDL, low-density lipoprotein.

a. Family history, body mass index  $\geq 25$ , waist circumference  $\geq 35$  inches for women and  $\geq 40$  inches for men.

**Table 2. Monitoring schedule required for all patients on antipsychotic medication<sup>a</sup>**

When	Parameters
On admission	Height Weight Waist circumference Glucose Lipids Electrocardiogram <sup>b</sup> Blood pressure Liver function test Urea and electrolytes Thyroid function test Full blood count LUNTERS
Monthly	Weight Smoking
Annually	Waist circumference Glucose Lipids Electrocardiogram <sup>2</sup> Blood pressure Liver function test Urea and electrolytes Thyroid function test Full blood count Eye examination (>40 years old) LUNTERS
Every 2 years	Eye examination (>40 years old)

LUNTERS, Liverpool University Neuroleptic Side Effect Rating Scale.

a. If any abnormalities are detected or the patient has particular medical risk factors, monitoring will be required as appropriate for the individual patient.

b. Electrocardiogram monitoring should be repeated 3-monthly for patients on high-dose antipsychotics or higher risk drugs such as thioridazine, sertindole and pimozide.

procedure. Each patient would have a physical health form filed in a separate physical health folder, which could be checked at every clinical review meeting. Nursing staff and medical staff shared responsibility for collecting and recording data.

## Discussion

The importance of monitoring physical health in all patients with mental health problems is apparent from current evidence. In population terms, the impact of treatment with antipsychotic medication is potentially compounding an already elevated risk of cardiovascular and metabolic disease in this patient group.

The lack of clear guidelines on how to implement NICE guidance is well known.<sup>33</sup> We took a pragmatic approach using a consensus agreement between colleagues to create standards that we then implemented through the creation of structured monitoring forms, which can be translated into a computer-based system when available.

We hope that others may find this a useful model that could be applicable with modification in other settings.

Future areas of work could include development of algorithms for the management of abnormal findings (e.g. elevated blood sugar, hyperlipidaemia), exploration of patients' perspective on monitoring of physical health, and re-auditing of completed physical health monitoring using the new standards and recording sheets.

We would like to see clear standards for physical healthcare and a structured monitoring system included in the NCRS.

## Declaration of interest

None.

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therefore agreed to incorporate regular eye checks in our local standard for physical health checks in patients on antipsychotics.

We decided to include smoking in our final monitoring form as it is such an important lifestyle factor known to have impact on the risks that we are addressing in this paper.

We were keen to transform Table 2 into a format that would be more practical at the ward level and serve to prompt clinicians as to when monitoring was due. Consequently, we developed the physical health monitoring form (see online supplement to this paper).

Two other forms were devised (available from the authors on request) for annual monitoring of haematological and biochemical parameters as well as further monitoring of any abnormal result findings, but for the purpose of this paper we limited ourselves to the first year of antipsychotic administration.

## Implementation

Our results were presented to the forensic multi-disciplinary clinical governance meeting. Agreement was reached to incorporate the standards in a policy and



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## Survey of Scottish psychiatrists' views on neuropsychology training

### AIMS AND METHOD

A national survey of members of the Scottish division of the Royal College of Psychiatrists to establish the training in neuropsychology they have received, their views on neuropsychology service provision and on potential formal postgraduate neuropsychology training opportunities.

### RESULTS

A 54% ( $n = 288$ ) consultant psychiatrist response rate was achieved. The responses suggest that where specialist neuropsychology services exist, they are not perceived to be sufficient to deal with clinical demand. Consultant psychiatrists indicated that there are limited training opportunities in neuropsychology for psychiatrists, and this seems to be reflected in their limited

confidence in interpreting basic recommended neuropsychological assessment tools. There seems to be a definite desire among consultant psychiatrists for postgraduate training opportunities.

### CLINICAL IMPLICATIONS

Scottish psychiatrists desire an increase in formal neuropsychology training opportunities.

The application of neuropsychology is relevant to the majority of psychiatric subspecialties. This is affirmed in various national clinical guidelines: old age psychiatry in relation to the neurodegenerative disorders<sup>1–3</sup> as well as psychiatry of learning disability and child and adolescent psychiatry in relation to the neurodevelopmental conditions that are clinically eloquent early in life.<sup>4–8</sup> Specialists in general adult psychiatry and forensic

psychiatry may encounter individuals affected with the aforementioned conditions.<sup>9</sup> They also treat people with severe and enduring mental illness with neuropsychological sequelae, particularly the chronic psychotic disorders. It is important to distinguish the latter from other neurodegenerative condition, especially in senescence.<sup>10</sup> The neuropsychological assessment of those with suspected alcohol-related brain damage is