Process quality indicators for general clinical occupational health practice

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Introduction

National clinical audits have shown that clinical processes vary across occupational health (OH) departments in England [1,2]. A similar variation in clinical processes was found among clinicians managing stroke patients in the last decade [3]. Clinical quality indicators (QI) were successfully used to drive up the quality of care in stroke medicine [4] and assessment against QI is central to the government’s strategy to deliver high quality outcomes in the National Health Service (NHS) [5]. As well as supporting evidence-based practice, generic clinical QI for OH practice can be used by individual services to monitor the temporal trends in their performance and to monitor their performance against other services. In addition, QI can be used as performance indicators for employers commissioning OH services and may be used by suppliers of OH advice to audit their services. In 2010 the Faculty of Occupational Medicine launched SEQOHS (Safe Effective Quality Occupational Health Service) [6], a voluntary accreditation system for OH services. SEQOHS is based on a series of OH service standards divided into six domains but does not include clinical QI. Quality assessment instruments have been developed for occupational physicians in the Netherlands to evaluate the implementation of their national OH guidelines [7,8]. Validation of these bespoke indicators found that better performance by occupational physicians in the management of back pain and mental health disorders predicted a shorter time to return to work in employees [8,9]. The quality instruments developed in the Netherlands were specific to their national guidelines but to date no generic clinical QI have been developed for OH practice.
The aims of this project were (i) to develop generic evidence-based quality process indicators in order to improve the quality of clinical OH services in rehabilitating sick-listed individuals back to work and (ii) to test the acceptability and feasibility of the indicators.

Methods

We based the criteria for the characteristics of the process indicators on expert consensus and theoretical underpinnings from the literature [10,11]. An expert working group was formed of senior OH physicians with national strategic responsibilities (see acknowledgements). Through discussion, the expert working group agreed that QI should have the following characteristics:

- be process or organizational rather than outcomes
- be easily collected, measured and reliable
- be based as far as possible on scientific evidence
- be cost effective

In order to have practical impact, the indicators required evidence demonstrating a clear link between organizational or clinical processes and improved quality of OH services. In this context, improved quality was defined as retention of employees at work, early rehabilitation of employees back to work and lower levels of absence attributable to sickness.

From previous experience, key literature sources were identified:

- the Health and Safety Executive (HSE) website [12]
- the Department for Work and Pensions (DWP) website [13]
- evidence tables produced for the National Institute for Health and Clinical Excellence (NICE) sickness absence guidelines [14]
- the Cochrane Database [15].

The library of the HSE and DWP websites were title screened for review papers and reports based on reviews of the literature. A systematic search was conducted for the Cochrane Database using a search string: ‘Sickness absence AND reduce OR absence rate AND reduction OR absence rate AND reduce OR return to work’.

The search strategy focused on the OH setting, sickness absence rates, rehabilitation rates, return-to-work rates, OH processes and OH structures. In order to ensure that the QI reflected current OH practice in the UK, we only included UK studies after 1990, which included the working age population.

The retrieved studies were thematically categorized and the expert working group developed the draft QI. Where there were gaps in evidence, corroborative evidence or indicators from other specialities were used. The expert working group developed the draft QI review criteria and help notes to assist in their implementation by consensus.

Once the draft indicators had been developed a pilot study was conducted to assess the acceptability and feasibility of the indicators. Volunteer OH departments were recruited via a professional e-newsletter and via NHS Plus. Pilot centres were asked to collect data for each indicator over 1 day in 1 week, and fill out a questionnaire which ascertained their views on: questions relating to the specific indicator; whether the indicator was clear; whether it was feasible to collect data for that indicator; and whether they would recommend any changes to the wording of the indicator or help notes (which accompanied the indicator). The final indicators were produced by refining the draft indicators to reflect the feedback from the pilot sites. The target standards were based on feedback from the pilot sites and were agreed by the expert group.

Results

In total, 1605 reports were retrieved from the search. Six reviews and reports met the inclusion criteria, and were analysed for demonstrable evidence that organizational or clinical processes led to improved quality of OH services, as illustrated in Table 1.

Draft indicators were developed as follows:

**Indicator 1:** Temporary modification of work arrangements should be considered for employees who have been absent from work attributable to sickness for 4 weeks or more.

There is strong evidence that adjustments to work facilitate earlier return to work in sick-listed workers [16]. Evidence from the NICE sickness absence guidance [20], two systematic reviews, five narrative reviews, and evidence-based guidelines [16] indicate that early intervention is effective at reducing the length of sickness absence. In general, employees who are absent for 4–12 weeks have a 10–40% risk of still being absent after 1 year [16]. Whilst there is conflicting evidence of the exact timing of the intervention, the consensus is that it should be between 4–12 weeks [16].

**Indicator 2:** After referral of an individual to OH, the individual should be seen promptly (within 6 days) and the manager should receive timely written advice from the OH department (within 2 days).

There is evidence from five narrative reviews and four systematic reviews that communication between stakeholders is a cost-effective and important element in vocational rehabilitation. This evidence also suggests that the duration of sickness absence is significantly reduced by communication between the health care provider and the workplace [16]. Early coordinated communication and commitment needs to be between all stakeholders—OH services, employers, employees, the treating doctor—and each stakeholder has a responsibility in successful
vocational rehabilitation and sickness absence reduction [16]. The timeframe for this indicator was based on a consensus by the expert working group on what was likely to be feasible in practice.

**Indicator 3:** All patients seen in OH departments should be afforded a high quality of personal care in accordance with outpatients in other medical specialities.

Indicator three is based on the widespread principle that in modern health services the service user and stakeholder should be happy with the quality of care that they receive. Indicator three was measured using a patient satisfaction survey, which was based closely on the National Outpatient Survey, but adapted for use in an OH consultation [22].

**Indicator 4:** Written reports from OH departments to managers should be of sufficient quality to assist the manager with the occupational management of the employee.

The evidence base for this indicator is as per indicator 2 and corroborative evidence from the Sheffield Assessment Instrument for Letters [23]. A manager satisfaction survey was developed for indicator four to gauge the satisfaction with the OH department of the manager who referred the

<table>
<thead>
<tr>
<th>Authors and title</th>
<th>Characteristics</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waddell G, Burton K and Kendall N, 2008 [16]</td>
<td>'Vocational rehabilitation: what works, for whom and when?'</td>
<td>Large systematic review, using transparent critical appraisal methodology, looking at the effectiveness and cost-effectiveness of interventions for vocational rehabilitation.</td>
</tr>
<tr>
<td>Verbeek J, 2006 [17]</td>
<td>'How can doctors help their patients to return to work?'</td>
<td>A review of return-to-work interventions for heart disease, rheumatoid arthritis, back pain and common mental health problems. Most of the evidence pertained to behavioural interventions for mental health problems which was too condition specific to be used for the development of general QI.</td>
</tr>
<tr>
<td>Schaafsma F, Schonstein E, Whelan K, Ulvestad E, Kenny D and Verbeek J, 2010 [18]</td>
<td>'Physical conditioning programs for improving work outcomes in workers with back pain'</td>
<td>A Cochrane systematic review on the effectiveness of physical conditioning programmes for reducing sick leave in workers with back pain. The review concluded that evidence on the effectiveness of physical conditioning programmes when compared with usual care is uncertain, although there may be some effect for workers with chronic back pain.</td>
</tr>
<tr>
<td>Varekamp I, Verbeek J and Dijk F, 2006 [19]</td>
<td>'How can we help employees with chronic diseases stay at work? A review of interventions aimed at job retention and based on an empowerment perspective'</td>
<td>Systematic review on vocational rehabilitation interventions to help employees stay at work. Whilst some of the studies showed evidence of effectiveness of some interventions, the authors argued that the evidence was often weak.</td>
</tr>
<tr>
<td>NICE Public health guidance 19: Managing long-term sickness absence and incapacity for work [20]</td>
<td></td>
<td>Large systematic review, using transparent critical appraisal methodology.</td>
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<tr>
<td>Waddell G, Burton K and Bartys S, 2004 [21]</td>
<td>'Concepts of rehabilitation for the management of common health problems: evidence base'</td>
<td>Large narrative review of the concepts and principles for the rehabilitation of common health problems, illustrating the importance and effectiveness of the bio-psycho-social approach to return-to-work interventions and the importance of good communication between all individuals involved in the management of a sick-listed employee.</td>
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staff member. This survey had a total of five questions: two questions had a maximum of four points each (using a four-point Likert scale) and three questions had a maximum of two points each. The scoring was as follows: ‘poor’ was less than five points; good was between six and ten points and excellent was rated as having a total of more than 11 points.

Nine sites were recruited to the pilot study. Of these sites, six fully completed the questionnaires, and assessed the QI on a total of 73 patients. All the pilot sites were OH departments within NHS trusts. Two sites used electronic medical records and four used only paper records. The characteristics of the pilot sites are illustrated in Table 2.

Indicator one was generally found to be clear, and the data was seen as either feasible or very feasible to collect. Suggestions included expanding the indicator to include permanent modifications to work. Clarification was sought on whether the four-week time period included follow-up appointments or only initial appointments. Clarification in terms of time adjustment was also suggested.

Four of the pilot sites considered that indicator two was clear. Five pilot sites believed the data was either feasible or very feasible to collect. The two sites that thought the indicator was not clear required a clarification on whether the time targets set in the criteria referred to working days. The site that considered the data difficult to collect stated that their service did not record the date of the first appointment offered to clients. Three of the six pilot sites thought that the 6 day target standard for seeing an individual after the receipt of referral was too stringent and suggested an increase to 10 working days.

All of the pilot sites thought indicators three and four were clear. The pilot sites also thought it was either feasible or very feasible to collect the data. The sites mainly recommended increasing the target standards to higher than the suggested 50%. There were also recommendations to change the wording of some of the questions in both the patient and manager surveys.

The results of the pilot phase were analysed and the QI and review criteria were refined. The final indicators are as follows:

**Indicator 1:** Temporary or permanent modification of work arrangements should be considered for employees who have been absent from work attributable to sickness for 4 weeks or more.

**Review criterion:** If an employee has been absent from work attributable to sickness for 4 weeks or more, is there evidence that work modifications have been considered as part of the employee’s return to work plan? (Temporary modification of work

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**Table 2. Pilot site characteristics**

<table>
<thead>
<tr>
<th>Geographical location</th>
<th>Total number of staff employed in the OH department (Full and part-time)</th>
<th>Total number of consultants (Full and part-time)</th>
<th>Total number of nurses (Full and part-time)</th>
<th>Types of patients</th>
<th>Other comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Site 1 London</td>
<td>70</td>
<td>3</td>
<td>3</td>
<td>NHS staff and non-NHS staff</td>
<td>This site has a wide range of staff, including counsellors, technicians, and contract managers.</td>
</tr>
<tr>
<td>Pilot Site 2 East Midlands</td>
<td>24</td>
<td>1</td>
<td>6</td>
<td>NHS staff and non-NHS staff</td>
<td>This site has approx. 250–275 cases a month, of which up to a third are small and medium sized companies</td>
</tr>
<tr>
<td>Pilot Site 3 London</td>
<td>71</td>
<td>5</td>
<td>29</td>
<td>NHS staff. Large public and private sector employers</td>
<td></td>
</tr>
<tr>
<td>Pilot Site 4 East Midlands</td>
<td>30</td>
<td>6</td>
<td>11</td>
<td>NHS staff and non-NHS staff</td>
<td>This site caters for a wide range of occupational industries</td>
</tr>
<tr>
<td>Pilot Site 5 Southern England</td>
<td>18</td>
<td>2</td>
<td>10</td>
<td>NHS staff. Local authority staff. University staff. Employees in small to medium size industries</td>
<td></td>
</tr>
<tr>
<td>Pilot Site 6 West Midlands</td>
<td>42</td>
<td>1</td>
<td>16</td>
<td>NHS staff. Local authority staff. University students. Employees in small to medium size industries</td>
<td></td>
</tr>
</tbody>
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used paper or electronic health records. The four QI time commitment was required, whether or not they to measure the QI were simple to collect. Minimal extra by their manager. Pilot sites found that the data required from work for 4 weeks or more or who has been referred to where the consultation involves an employee absent these indicators largely generalizable across the OH sec-

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Target standard: >80% of patients seen.

Indicator 2: After referral of an individual to OH, the individual should be seen promptly and the manager should receive timely written advice from the OH department.

Review criteria:
(a) The number of working days from receipt of the referral form by the OH department to the first appointment date offered.
(b) The number of working days from the appointment attended by patient to despatch of management report by the OH department, where no third-party report is required.

Target standard: a = 10 working days and b = 2 working days.

Target compliance ≥95% of referrals should achieve the target standard for (a) and (b).

Indicator 3: All patients seen in OH departments should be afforded a high quality of personal care in accordance with outpatients in other medical specialties.

Review criterion:
Patient satisfaction (% patients classified as satisfied or very satisfied on a patient satisfaction survey, based on the National Outpatient Survey).

Target standard: >80% patients satisfied or very satisfied with their care.

Indicator 4: Written reports from OH departments to managers should be of sufficient quality to assist with the occupational management of the employee.

Review criterion:
Manager satisfaction survey (% managers classified as satisfied on manager satisfaction survey).

Target standard: >80% score satisfied with the report from OH.

Discussion
We have developed four generic QI, which can be used in general OH practice. The focus on evidence-based OH processes that are easy to collect and measure make these indicators largely generalizable across the OH sector where the consultation involves an employee absent from work for 4 weeks or more or who has been referred by their manager. Pilot sites found that the data required to measure the QI were simple to collect. Minimal extra time commitment was required, whether or not they used paper or electronic health records. The four QI were acceptable to OH practitioners in the six pilot sites and were feasible to implement in busy OH services.

A strength of our methodology is the combination of the use of a literature review and expert opinion in developing the indicators. Furthermore we were able to pilot the indicators to ensure that they were acceptable to users and feasible to implement. Despite basing the indicators on the best available evidence, there are some limitations, which should be acknowledged. We recognize that all the pilot sites were NHS OH services. However, the pilot sites provided OH services to a broad range of external industries and there is no reason why the QI should not be equally applicable to non-NHS OH services. Self-selection of services for the pilot sites may have resulted in a selection of better functioning departments; however, this is a positive attribute when developing QI. Departments delivering high quality OH care should set the standards to which other services should aspire.

Although the indicators we have developed have face and content validity it is important that they are formally validated in practice against the outcomes they were designed to improve: retention of employees at work, early rehabilitation of employees back to work and lower levels of absence attributable to sickness. Moreover, the reliability and sensitivity to change of the QI need to be determined. The latter is important as measures of quality need to detect changes between OH services and within services over time.

It could be argued that some of the indicators are best practice rather than quality measures. To a certain extent, there is a tautology between the two. Best practice is defined by quality, and vice versa. In so far as being measures of quality, indicators one and two were developed using evidence from systematic and narrative reviews rather than best practice case studies. This research base makes the evidence contextually relevant to the indicators; and this, together with the inclusion and exclusion criteria of the project methodology, makes the indicators generalizable to the setting of an OH consultation. In as much that ‘patients’ and the ‘customer’ (namely managers) demand vocational rehabilitation or a reduction of sickness absence from OH departments, indicators three and four measure quality by placing patients and managers at the centre of OH practice—a principle of quality now establishing itself throughout other parts of the NHS [24]. Therefore, indicators three and four go further than being best practice by asserting that without patient and manager satisfaction, OH departments cannot proclaim to provide quality services. Others have also suggested adjustments on return to work, patient satisfaction and timeliness of appointments and reports as potential measures of quality in OH [7,8,25,26]. When used as a QI, adequate timing of consultations has been shown to be related to shorter time to return to work in those with mental health problems [8].
All of our QI were process indicators, although patient and manager satisfaction could be considered important outcomes of an OH consultation. For improving quality of care, process indicators have an advantage over outcome indicators in that they are not influenced by the severity or complexity of the cases seen. Moreover, if poor OH outcomes are found, it is often unclear as to what remedial action should be taken. In contrast, provided a process indicator is clearly linked to an outcome, we can be confident that improvement in performance of the indicator will lead to an improvement in the outcome [27,28].

The four generic QI were developed to assist OH services to benchmark and improve their performance. These indicators have been incorporated into a new clinical registry for OH, known as MOHAWK [29], thus enabling OH services readily to compare their data with other OH services. Furthermore, it is anticipated that the indicators will assist SEQOHS assessors in their work in accrediting and re-accrediting OH services. QI should not be used in isolation but should be used as part of an overall quality improvement strategy. If used in this way, these indicators have the potential to raise the quality and reduce the clinical variability of OH services.

### Key points

- Four process quality indicators have been developed for general clinical occupational health practice.
- The data required to measure the indicators are simple to collect in busy occupational health departments.
- The measurement and wording of the indicators were acceptable to occupational health practitioners in six pilot sites.

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### Acknowledgements

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### Conflicts of interest

None declared.

### References


