

Evidence briefing on integrated care pathways in mental health settings

- Leeds Partnerships Foundation NHS Trust (LPFT) is undertaking a project to restructure many of its services based around the use of integrated care pathways (ICPs).
- We have found no systematic reviews of the effectiveness of ICPs specifically in mental health care.
- Two well-conducted systematic reviews provide evidence that ICPs can improve some outcomes compared with usual care in some hospital settings.
- Very little of the evidence included in these reviews comes from mental healthcare or UK settings and some of the outcomes assessed (e.g. in-hospital complications) are unlikely to be of relevance for LPFT.
- Studies that have looked at the implementation of ICPs in mental health settings in the UK NHS have generally reported on the experience of particular services. The findings are of limited value for decision-making because of their lack of methodological rigour and reporting of process outcomes and expert opinion rather than patient outcomes.
- While there is some evidence suggesting that ICPs can reduce hospital costs, their relevance to LPFT is uncertain as most studies were not conducted in either the UK NHS or mental health settings.
- Given the uncertainties around the generalisability of the evidence and the best ways to implement ICPs, it will be important to plan carefully for implementation of any change to services and to monitor resource use, costs and clinical outcomes during and after any change.

This evidence briefing has been produced for the Leeds Partnership NHS Foundation Trust by the Centre for Reviews and Dissemination as part of TRiP-LaB. Full details of methods are available on request (paul.wilson@york.ac.uk or duncan.chambers@york.ac.uk).

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Background

Leeds Partnerships Foundation NHS Trust (LPFT) is undertaking a project to restructure many of its services based around the use of integrated care pathways (ICPs). ICPs (also referred to as 'clinical pathways', 'critical pathways', 'care plans', 'care paths' and 'care maps'¹) have been defined as 'structured multidisciplinary care plans which detail essential steps in the care of patients with a specific clinical problem'.² Since their origin in the 1980s, ICPs have been used in the management of a wide range of conditions in various healthcare systems and settings.

The aim of this evidence briefing is to assess the evidence that ICPs deliver better health outcomes and/or reduce costs in mental health care settings.

Methods

This briefing is based primarily on existing sources of synthesised and quality-assessed evidence, primarily systematic reviews and economic evaluations.

We initially searched for relevant research evidence in the following sources:

- DARE (Database of Abstracts of Reviews of Effects) for quality-assessed systematic reviews
- Cochrane Database of Systematic Reviews (CDSR)
- NHS EED for quality-assessed economic evaluations
- Health Technology Assessment (HTA) database.

In view of the limited evidence base for ICPs specifically in mental health care (see below), we asked an information specialist to conduct a broader search (full details available on request). The objectives of this search were to locate any evaluations of ICPs in mental health care settings (particularly in the UK NHS) that might have been omitted from the systematic reviews.

Databases searched were The Cochrane Library, HMIIC (Health Management Information Consortium database, a good source for UK-based literature), and PsycINFO. A number of other online resources, including NHS Evidence, the TRIP database and Clinical Evidence, were also searched.

After removal of duplicates, this search located 15 potentially relevant records. In addition to critical appraisal and interpretation of the research evidence, we have attempted to assess implications for health equity and ease of implementation of changes to services.

Evidence base for effectiveness

Systematic reviews

We found no systematic reviews of the effectiveness of ICPs specifically in mental health care. However, two recent reviews (both reported in two publications) have assessed ICPs in general: a Cochrane review^{1,3} and a review by Allen et al. from the Wales Centre for Evidence Based Care.^{4,5}

The Cochrane and Allen et al. reviews differed in their objectives, inclusion criteria and methods. Allen et al. aimed to identify the circumstances in which ICPs are more or less effective, for whom and in what contexts. Rotter et al. had the more traditional objective of assessing the effects of

ICPs on professional practice, patient outcomes, length of hospital stay and costs. Allen et al.'s review was restricted to 'high-quality' randomised trials (RCTs) whereas the Cochrane review included a wider range of study designs*. Most studies included in the reviews compared treatment guided by an ICP with 'usual care'.

These differences between the reviews are reflected in differences in their results and conclusions. Allen et al. included seven studies (nine publications) in their review. They attempted to synthesise the studies using a narrative approach to answer their research questions. The main conclusions of the review were that:

- ICPs are most effective in contexts where patient care is predictable but their value is less clear in settings where recovery is more variable
- ICPs are most effective in bringing about behaviour change where there are identified deficiencies in services
- The value of ICPs in contexts where multidisciplinary working is well established is less certain.

None of the trials included in this review included an economic evaluation, so the authors could not comment on cost-effectiveness issues.

The review was generally well-conducted but the limited number of trials included and the wide range of populations and settings involved make the reliability and generalisability of the authors' conclusions uncertain.

For example, the statement that ICPs are less effective where patient recovery is less predictable would appear to apply to most mental health conditions. However, this conclusion was apparently based mainly on the results of a single trial in stroke rehabilitation which found no differences between patients treated according to an ICP and those given 'usual care'. None of the included trials were performed in mental health care settings and only two were performed in the UK.

The Cochrane review by Rotter et al. included interrupted time series and controlled before and after studies as well as randomised trials. As a result, considerably more studies were included compared with Allen et al.'s review: 27 studies in total of which 19 were randomised trials, two were non-randomised controlled trials, four were controlled before and after studies and two were interrupted time series analyses. This in turn meant that meta-analysis was possible for some outcomes although differences between trials meant that a narrative synthesis was presented in most cases. Compared with usual care, use of an ICP significantly reduced in-hospital complications and improved documentation of care. There were no differences in in-hospital mortality or readmission to hospital. Most studies reported significant reductions in hospital length of stay associated with use of an ICP compared with usual care. Studies in which ICPs were used as part of a multi-faceted intervention did not find any evidence of differences in outcomes between the intervention and control ('usual care') groups. The review included evidence on the impact of ICPs on hospital costs and these results are discussed below.

The Cochrane review also examined whether evidence informed strategies had been used for developing and implementing pathways in the included studies. The review authors examined ten criteria for quality of implementation, three of which (identification of potential barriers to change, incorporation of reminder systems and use of local opinion leaders) were so poorly reported that they could not be used in the review. Twenty of the 27 studies included in the review reported on at least four of the seven remaining criteria and were classified as scoring 'high' for evidence informed development and implementation. The most commonly reported implementation

* It is often not feasible or practical to evaluate changes in service delivery or organisation of care within the confines of a randomised controlled trial. Alternative study designs include controlled before and after (which compare outcomes before and after an intervention for an experimental and a control group or groups but allocation is not random) and interrupted time series (which use routine data to measure the effect of an intervention as a trend over time). Although these designs can be of value, they provide less reliable estimates of the effect of an intervention than do randomised trials.

processes were use of evidence based content, adaptation of evidence for local circumstances and clinician involvement in pathway development. Use of an implementation team, identification of evidence–practice gaps, use of audit and feedback and incorporation of educational sessions were less commonly reported. The review authors concluded that because of poor reporting it was not possible to draw conclusions about the impact of implementation on ICP effectiveness.

Like the Allen et al. review, the Cochrane review was well conducted. The authors' conclusions appear likely to be reliable but the relevance of the findings to UK mental health settings is uncertain in many cases. Only two of the included studies were from the UK and only one was conducted in a (US) mental health setting (bipolar disorder outpatient clinic). Many of the outcomes assessed reflected the widespread use of ICPs for patients undergoing surgical procedures, for example in-hospital complications and mortality. It should also be noted that despite the review's relatively broad inclusion criteria, any studies evaluating the implementation of an ICP at a single site would be excluded. Such studies provide low-level evidence but could be relevant to LPFT if conducted in similar settings in the UK. This issue is discussed further below (see 'Other evidence').

Three other systematic reviews were also found. A review published in a nursing journal⁶ did not meet the DARE methodological quality criteria (for example, the inclusion criteria were unclear) and has been used for background purposes only. A German-language review in the HTA database⁷ was not translated but appeared to include similar studies to the Cochrane and Allen et al. reviews. A review of clinical pathway audit tools was also found.⁸

Other evidence

The database search revealed a number of studies which appeared to be evaluations of ICPs in mental health settings in the UK. Copies of nine publications were obtained for assessment.

All of these studies were conducted in the UK, in a range of settings (see Table 1). The papers generally describe the development and implementation of ICPs at a local level. Some studies include a degree of evaluation but in most cases this is quite limited. Evaluation generally took the form of audits (limited to process outcomes) with or without questionnaire- or interview-based surveys. The surveys were generally limited to clinicians' or patients' opinions of the success or otherwise of ICP implementation.

While several of these studies were conducted in relevant settings, their value as evidence to assist decision making in LPFT is very limited. Firstly, there is no control group or site in any of these studies, which makes it difficult to separate the effects of ICP introduction from those of other changes which might have been happening at the same time. Secondly, single-site studies like these could be influenced by local factors which may be quite different from those affecting LPFT. Thirdly, the evaluations only consider a limited range of outcomes and provide little information on clinical outcomes, resource use or costs.

The list of studies identified by our searches is unlikely to include all relevant published studies (a full systematic review would be required to achieve this). It is likely that there are also many similar audits or small-scale evaluations that have never been published and are not easily accessible. In other words, this type of literature is highly susceptible to 'publication bias'. In general, studies showing negative or uncertain results for a new intervention are more likely to remain unpublished than those showing positive results.

Study	Setting	Comments
Aitken 2000 ⁹	Primary care (South West London)	Reports development of an ICP for people with severe and enduring mental illness. No evaluation reported.
Frazer 2006 ¹⁰	Primary care (South East Sheffield)	Reports development and use of an ICP for management of depression. Evaluation by questionnaire with 'positive findings'.
Duncan 2003 ¹¹	Secure hospital (State Hospital, Carstairs)	Reports development of an occupational therapy ICP. No evaluation.
Rigby 2007 ¹²	Crisis resolution/home treatment team (Central Manchester)	Reports development and implementation of an occupational therapy ICP. Evaluation by audit (process outcomes) and questionnaires.
Hassan 2002 ¹³	Regional Rehabilitation unit (Harrow, Middlesex)	Reports development and implementation of an ICP for management of depression following brain injury. Evaluation by audit (process outcomes).
Gaughan 2007 ¹⁴	Learning disabilities service (Greater Manchester)	Reports development of an ICP for people with learning disabilities with complex needs and/or challenging behaviour. No evaluation reported.
Brett 2002 ¹⁵	Continuing assessment unit (Warrington)	Reports development and implementation of an ICP for older people with severe mental illness. Benefits reported in paper but no quantitative data.
Green 2008 ¹⁶	Forensic psychiatry unit (Hull)	Discusses care pathways in general and briefly describes the Humber Centre model. No evaluation reported but cites evaluations in other sources (books/proceedings, not likely to be on most databases).
Jones 2000 ¹⁷	Hospital in-patient ward (London)	Explores problems in the development and implementation of an ICP for patients with schizophrenia. Documents problems caused by staff turnover and poor morale. Very limited patient data reported.

Table 1. Characteristics of ICP studies from UK mental health settings

Evidence base for cost-effectiveness

Evidence from Cochrane review

The Cochrane review of clinical pathways investigated the effects of ICPs on hospital costs/charges. It did not attempt to investigate cost-effectiveness. The included studies reported different outcomes (for example, hospital costs and hospital charges), defined them in different ways and used different units of measurement (different currencies and, in Japan, 'insurance points'). These differences between studies made it difficult to produce a meaningful pooled estimate of the effect of implementing ICPs on costs. However, most studies found significant reductions in costs/charges associated with ICPs compared with usual care: six out of eight studies overall and two out of three that investigated hospital costs (as distinct from charges or 'insurance points'). The review authors concluded that the order of magnitude of the reported effects suggested 'considerable benefits' from using ICPs.¹

While these studies represent a reasonable body of evidence suggesting that ICPs can reduce hospital costs, their relevance to LPFT is uncertain as most were conducted in quite different healthcare systems (USA and Japan) and non-mental health settings. The only mental health study included was a randomised trial conducted in US outpatient clinics for bipolar disorder. This study, which implemented a pathway as part of a multi-faceted intervention, reported that the intervention was cost-neutral over 3 years while improving some clinical outcomes.^{18, 19}

Economic evaluations found on NHS EED

Two economic evaluations of ICPs were found in the NHS EED database but neither related to a mental healthcare setting. Blegen et al. evaluated managed care for women after Caesarean delivery using a 'CareMaps' pathway in a US hospital.²⁰ Olsson et al. compared an integrated pathway with usual care for patients admitted to a hospital in Sweden with hip fracture.²¹ Both studies produced favourable results for the pathway intervention but differences in indications and settings suggest that their relevance to LPFT is uncertain.

Implications for Leeds Partnerships NHS Foundation Trust

General

The systematic reviews provide good evidence that ICPs can improve some outcomes and reduce costs compared with usual care in hospital settings.

However, very little of the evidence included in these reviews comes from mental healthcare settings and some of the outcomes assessed (e.g. in-hospital complications) are unlikely to be of relevance for LPFT. This reflects the origins of ICPs in the management of patients undergoing routine surgical procedures. Most studies that have investigated costs have reported savings from use of ICPs compared with usual care but again the generalisability of this evidence to LPFT is uncertain. It is unclear whether the cost savings reported in these studies took into account the costs of developing and implementing the pathways.

Studies that have looked at the implementation of ICPs in mental health settings in the UK NHS have generally reported on the experience of particular services. While some positive (and a few negative) experiences have been reported, the findings are of limited value for decision-making because of their lack of methodological rigour and reporting of process outcomes and expert opinion rather than patient outcomes. Publication bias is also possible in that not all relevant studies are published and those with negative or uncertain results are less likely to be published.

Given these uncertainties, LPFT need to consider to what extent the research evidence, taken together with other considerations, supports the implementation of ICPs in their setting. It will be important to plan carefully for implementation of any change to services and monitor costs and clinical outcomes during and after any change.

Implementation

Implementation of ICPs across a wide range of services will clearly be a major undertaking for LPFT and will require considerable time and resources to carry through successfully. Implementation is more likely to be successful if seen as a means of improving quality and patient outcomes rather than as an attempt to reduce costs.

The Cochrane review of clinical pathways noted that a range of evidence informed strategies have been used to implement ICPs but the relationship between implementation strategy and ICP effectiveness was unclear. There is a substantial literature on implementation of evidence based guidelines that falls outside the scope of this briefing but could be investigated if required.

Health equity

None of the evidence sources we looked at explicitly addresses issues around health equity. However, successful implementation of an ICP should in principle reduce health inequalities by ensuring that patients receive appropriate evidence-based care and that variations from the pathway are documented and available for audit.²

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