

# Evidence Review

## Integrated Care Services

### Effectiveness/Patient Care measures

#### Key messages

- The majority of research regarding Integrated Care Services has been focussed either on specific interventions for certain patient groups/conditions or on evaluating the model of care as a whole, rather than individual monitoring of patient care over time.
- Tools used to assess patient care and/or effectiveness of treatment have taken a variety of forms, these include:
  - Qualitative data from patients, carers and/or health care professionals collected via satisfaction surveys, experience surveys or interviews
  - Patient data such as observations and field notes
  - Statistical data including, for example, number of ED admissions, rates of patient engagement/attendance
  - Patient physical health data relating to their condition/overall general health scores
  - Specific data collection tools including mental state assessments, assessments on patients' functioning, falls, coping, depression scores etc
  - Quality of Life assessment tools, such as EQ-5D or WHOQoL-100 and statistical analysis to extrapolate Quality of Life in Years.
- Recent reviews have acknowledged that a wide number of measures are implemented within integrated care to monitor patients' and treatment effectiveness. To date, there has been no standardisation concerning the tools used and a mixed-methods approach is common and encouraged.



## The Evidence

- 1. O'Farrell A, McCombe G, Broughan J, Carroll Á, Casey M, Fawsitt R, Cullen W. Measuring integrated care at the interface between primary care and secondary care: a scoping review. Journal of Integrated Care. 2021**

This review looked at existing research and studies with a focus on measuring effectiveness and markers of integration between primary and secondary care settings. As part of the review the authors recorded the means by which previous studies regarding the effects and effectiveness of different integrated care models were assessed. The majority of studies included in the review reported obtaining data from qualitative interviews, quantitative and qualitative surveys or questionnaires, and data from organisations such as statistics, admission data to track changes. The only tool reported was the use of P3C both P3C-EQ for patient experience and P3C- OCT for practitioner measures. The P3C experience measure (P3CEQ) is “an 11 item measure designed to assess patient experiences of person centred coordinated care” <https://www.p3c.org/resources> .



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- 2. Kelly L, Harlock J, Peters M, Fitzpatrick R, Crocker H. Measures for the integration of health and social care services for long-term health conditions: a systematic review of reviews. BMC health services research. 2020**

This systematic review looked specifically at the different measures reported in order to assess patients with long-term conditions receiving integrated care. The findings demonstrated a wide variety of outcomes and measures used within services, noting “challenges to measuring the effects of the integration of care include[d] the identification, and appropriate measurement of, a wide range of mechanisms and outcomes which may be impacted across conceptually diverse interventions” the review outlines the large variety of tools used for both physical and mental health, as well as patient, staff and carer experience and satisfaction measures alongside statistical measures such



as ED admissions etc. Clinical outcome measures generally were condition specific or relating to their condition (BMI, % time for wound healing, biomarkers, physical function tests, functional decline, Barthel Index, Rankin Scale, Glasgow Outcome Scale etc. For mental health, measures included: Mini Mental State Exam, Neuropsychiatric Inventory, Neurobehavioral Inventory, other staff assessments, Patient Health Questionnaire, Geriatric Depression Scale etc. Measures for patient wellbeing also included QoL measures and Coping with everyday living measures. The review concludes that more work is needed to formulate comparable and measurable outcome measures that could be used across different IC services, but at present a combination of measures is used in cases with no particular consensus/analysis as to whether any are more/less effective measures of patient progress and care in the IC setting.



2020 Measures for  
the integration of h

### **3. Coates D, Coppleson D, Schmied V. Integrated physical and mental healthcare: an overview of models and their evaluation findings. International journal of evidence-based healthcare. 2020**

This review looked at the available research concerning different models and findings of integrated physical and mental healthcare services and/or initiatives. The paper reports the models and reported outcomes of each study, however does not always report the measurement methods used. Of those reported, the outcome measures mentioned were: patient or staff surveys, interviews, rates of engagement with treatment (attendance etc), physical health markers and retention/dropout rates for appointments, patient diaries, field notes, observation notes, specific condition report (i.e. HIV self stigma report), Children's Global Assessment Scale (C-GAS). The majority of studies reported outcomes using mixed methods of: statistical



data (e.g. attendances, ED visits), patient physical health data (blood pressure, cholesterol) and quality of life reported by surveys and interview methods, field data and observations. No standard tool for surveying patient outcomes, QoL and feedback appears to be employed across the reported research.



2020 Integrated  
physical and mental

#### **4. Sunderji N, Ion A, Ghavam-Rassoul A, Abate A. Evaluating the implementation of integrated mental health care: a systematic review to guide the development of quality measures. *Psychiatric Services*. 2017**

This systematic review sought to review and analyse existing measures used to evaluate the implementation of integrated care programmes in mental health. The review found a wide variety of measures used, and the authors recommended multiple-measures demonstrated best practice in assessing the efficacy of a programme over several domain outcomes. “Generally the highest quality measures were those that evaluated individual outcomes of effectiveness by using validated measurement scales” such as levels of functioning, quality of life and psychiatric /physical symptoms measures. Other measures used were identified as having common limitations such as



“imprecise specification, lack of evidence of reliability or validity, lack of risk adjustment (for outcome measures), and a high burden of measurement”.



Evaluating the implementation of i

**5. Suter E, Oelke ND, da Silva Lima MA, Stiphout M, Janke R, Witt RR, Van Vliet-Brown C, Schill K, Rostami M, Hepp S, Birney A. Indicators and measurement tools for health systems integration: a knowledge synthesis. International journal of integrated care. 2017**

This paper looked at measurement tools for a variety of aspects of integrated care and health systems. The synthesis identified “many quality tools to measure care coordination, patient engagement and team effectiveness/performance”. With regards to the specifics of patient care, the review identified 34 instruments, 25 of which were completed by either patients or family/carers and the others by healthcare staff and covered a range of topics including quality of care, patient experience and shared decision making, with the majority being some form of self-reporting/questionnaires.



Indicators and measurement tools f

**6. Maragakis A., O'Donohue W. Creating a Quality Improvement System for an Integrated Care (IC) Program: The Why, What, and How to Measure. In: O'Donohue W., Maragakis A. (eds) Quality Improvement in Behavioral Health. Springer. 2016.**

This book chapter focuses on the integration of Quality Improvement in Integrated Care Programmes in the USA. It discusses several elements concerned with assessing and monitoring effectiveness and patient improvement. Generally the chapter advocates the use of patient and provider feedback such as satisfaction surveys, alongside the use of clinical data to measure improvement/care. With regards to mental health, it



acknowledges that information is more complex to capture and measure, discussing the value of both measuring reduction in symptoms such as using the PHQ-9 for depression, the GAD-7 for anxiety, tracking behavioural health outcomes by using the Subjective Unit of Disturbance Scale (SUDS) but also acknowledging that rather than relying wholly on diagnostic measures in an IC programme attention should be given to patient functioning. Examples given include measuring “how many days of work a patient missed, how often they used medical services, how satisfied with they were with their life and how well they could perform their daily duties”. The authors advocate a mixed approach to measurement is ideally preferable including self-report measures to assess symptoms, patient experience and patient functioning.



Maragakis-ODonoh  
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## **7. Bautista MA, Nurjono M, Lim YW, Dessers E, Vrijhoef HJ. Instruments measuring integrated care: a systematic review of measurement properties. The Milbank Quarterly. 2016**

This review looked at measurement tools used in all aspects of integrated care programmes. The majority of included studies “reported on instruments measuring constructs related to care integration (33%) and patient centred care (49%); fewer studies measured care continuity/comprehensive care (15%) and care coordination/case management (3%)...questionnaire surveys, registrydata, and mixed data sources were identified as the most common methodologies in measuring integrated care” A wide variety of measures were included but the majority consisted of survey or questionnaires given to patients to fill in, and there was no standardised use of tools or measures to



examine/monitor care over time- with the majority of studies focussed on physical health outcome measures.



review instruments  
measuring integratec

**8. Karow A, Brettschneider C, Helmut König H, Correll CU, Schöttle D, Lüdecke D, Rohenkohl A, Ruppelt F, Kraft V, Gallinat J, Lambert M. Better care for less money: cost-effectiveness of integrated care in multi-episode patients with severe psychosis. Acta Psychiatrica Scandinavica. 2020**

This paper reports on the findings of a specific integrated care, community therapeutic intervention (IC-TACT) assessed for patients with schizophrenia or bipolar-I disorders. Patient outcome measures were assessed at 1, 6, and 12 months for the intervention and measures used were: sociodemographic characteristics, duration of psychosis/illness, Brief Psychiatric Scale Rating (BPRS) Positive and Negative Syndrome Scale (PANSS), Clinical Global Impressions-Severity Score (CGI-S), Global Assessment of functioning scale (GAF), Euro-QoL descriptive quality of life system (EQ-5D) and Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LE-Q-18).



Better care for less  
money cost effective

**9. Abdool PS, Supasitthumrong T, Patel K, Mulsant BH, Rajji TK. Using an Integrated Care Pathway for Late-Life Schizophrenia Improves Monitoring of Adverse Effects of Antipsychotics and Reduces Antipsychotic Polypharmacy. The American Journal of Geriatric Psychiatry. 2019**

A comparison between two groups of patients with schizophrenia- one group on an integrated care pathway and one on TAU measured outcomes using several clinical scales:

**TABLE 2. Monitoring Completed at Least Once During the Year in the ICP and TAU Groups**

Completed Assessments	Integrated Care Pathway (N = 100)	Treatment as Usual (N = 100)	$\chi^2$	p Value
Abnormal Involuntary Movement Scale	93	4	158.5	< 0.00
Simpson-Angus Scale	94	5	158.4	< 0.00
Barnes Akathisia Rating Scale	95	5	162.0	< 0.00
Metabolic monitoring	91	25	89.4	< 0.00
Montreal Cognitive Assessment	72	28	38.72	< 0.00
Fall risk	82	35	45.49	< 0.00
Completed all six assessments	57	1	76.15	< 0.00





The study found that those who were on the IC intervention were monitored more frequently, and more often recorded with the monitoring tools. Subsequently the review found the intervention group had better health outcomes and reduced polypharmacy.



Using an ICP for  
late life schizophren

**10.Everink IH, van Haastregt JC, Evers SM, Kempen GI, Schols JM. An economic evaluation of an integrated care pathway in geriatric rehabilitation for older patients with complex health problems. PloS one. 2018**

This article focusses on evaluating the value-for-money of an integrated care pathway intervention for two cohorts of patients over time. While the focus of the study is on the effectiveness and economic benefits of integrated care, the patient outcomes were measured using two methods: “dependence in activities of daily living (measured with the KATZ-15) and quality adjusted life years (EQ-5D-3L)”.

The study found no notable difference in the quality adjusted life in years (QALYS) score, but that the intervention improved patients scores in KATZ-15.



An economic  
evaluation of an IC I

**11. Bower P, David R, Sutton M, Lovell K, Blakemore A, Hann M, Howells K, Meacock R, Munford L, Panagioti M, Parkinson B. Improving care for older people with long-term conditions and social care needs in Salford: the CLASSIC mixed-methods study, including RCT. Health Services and Delivery Research. 2018**

This paper more broadly reports on the implementation of the Salford Integrated Care Programme (SICP) as a whole, but also covers an RCT intervention and discussion on measuring effectiveness/patient care which included quality of life measures and qualitative survey/interview data and physical health data such as Patient activation Measure (PAM) and WHOQOL-100. The paper also reports on assessing carers/caregivers quality of life using EQ-5D-5L and ICECAP-O.



Improving care  
needs for older peo

**12. Spoorenberg SL, Wynia K, Uittenbroek RJ, Kremer HP, Reijneveld SA. Effects of a population-based, person-centred and integrated care service on health, wellbeing and self-management of community-living older adults: A randomised controlled trial on Embrace. PloS one. 2018**

This paper reports on a RCT of a integrated care intervention called EMBRACE, for older adults. The actual trial findings mostly found no clinically significant improvements/changes in the intervention group, although a small improvement in rates of self-management, but the study used several patient care measures to examine effectiveness/improvements: EuroQoL-5D-3L for quality of life, INTERMED for the elderly self-assessment, Groningen Wellbeing-Indicator, Groningen Frailty Indicator, KATz-15, Self Management Ability Scale and Partners in Health for Older Adults (PIH-OA).



Effects of a  
population based p

**13. McClintock HF, Bogner HR. Incorporating patients' social determinants of health into hypertension and depression care: a pilot randomized controlled trial. Community mental health journal. 2017.**

This pilot study describes an intervention involving taking an integrated approach to patients with physical health and mental health needs. Although the study itself is describing a specific intervention, the outcome measures for patient care are designed to cover both aspects of care including recording changes in physical health measures (such as blood pressure and weight) and the 9 item Patient Health Questionnaire to measure and track changes in depressive symptoms.



2017\_Article\_.pdf

**14. Maragakis A, Nolan J, Lindeman S. Adding a functional utility score to the evaluation of behavioral health screens in integrated care settings: What's all the FUS about?. Journal of Contextual Behavioral Science. 2017**

This paper argues the care for the use of a Functional Utility Score (FUS) system, used to assess and score screening tools used in integrated care settings to examine their usefulness to patients and patient care. The paper discusses the difficulties in some traditional behavioural and medical health screening tools, which have not necessarily been designed with an integrated care approach in mind, and demonstrate how a FUS would work in relation to the PHQ-2 screen.



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### Sources searched

HMIC, PsycINFO, Medline

A structured public domain search for unpublished research.

A query email sent to Information Specialists across the NHS requesting information from their Integrated Care Services

Last 5 years.

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