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## CONFERENCE ABSTRACT

# Indicators for monitoring and evaluating integrated care: what we measure in practice

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**Introduction:** Measuring and evaluating the outcomes of integrated care has long been a challenge and up to date, no consensus has been reached on what to measure and which indicators are more appropriate. This gap on the other hand has often been recognized as a cause for unsuccessful or unsustainable implementation of integrated care. The aim of this study is to review indicators used to measure integrated care in Europe and their features in order to define, where possible, domains and attributes in a causal chain of inputs, process, outputs and outcomes.

**Methods:** A stepwise approach was used to capture the breadth of the topic, starting with a systematic review of the international scientific and grey literature related to measurement of integrated care. The results were classified, clustered, compared to existing integrated care frameworks and analyzed by the authors in multiple iterations to arrive at domains and attributes for measuring integrated care. Presentations to and discussions with experts in the field helped the consolidation of the findings. Limitations apply chiefly to the fact that priority is given to the European context. Data availability for the operationalization of the indicators is crucial and many of them may only be relevant in countries with highly developed information and data collection systems. However, the description of attributes facilitates the contextualization to different levels of development of the health information systems.

**Preliminary results:** 261 indicators for measuring integrated care in practice were found. These indicators included well-known quantitative as well as indicators based on qualitative survey questions, e.g. eliciting information on patient satisfaction. Seven domains were defined: Care coordination, Continuity of care, Patient-Centred Care, User experience, Community-based services, Access to care, Management/Organization level. These domains were further refined by describing 41 attributes and classifying the indicators in the causal chain. By realigning the 261 indicators with the domains and attributes, a framework was created detailing different dimensions measured and evaluated in integrated care in practice.

**Discussion:** A multitude of indicators disease- or country-specific have been used for measuring integrated care in practice. By providing an analytic framework for the indicators already used in practice to measure integrated care, the current study provides the basis for

a general evaluation framework. The strength of the identified domains and attributes lies in their alignment with existing integrated care frameworks, making outcomes comparable across systems and simplifying performance measurement. The association of practice-based indicators with the domains and attributes gives ready-to-use examples for measurement, which can be fitted to the local context and availability of data. As the domains and attributes are based on the results of the literature review, they reflect the different perspectives of integrated care, taking into account the managers' and professionals' (supply-side), as well as the patients' and caregivers' (demand-side) experience. Furthermore, attributes such as 'Availability of services along the continuum of care (e.g. prevention, rehabilitation, community-based care)' reflect the holistic and people-centred approach purported by integrated care. The classification of indicators according to input, process, output, and outcome measures adds another important potential use of this work.

**Conclusion:** Based on a review of indicators used in practice to measure integrated care, this study identified domains and attributes for evaluating and monitoring integrated care in practice. For the first time, these indicators are not disease-, country- or model-specific but provide a generalizable approach to performance measurement in integrated care. There is obvious room for reviewing the attribution of indicators to a certain domain and attribute rather than other, as well as unavoidable overlaps. Nonetheless, this study presents a comprehensive and unique basis for the further operationalization of performance measurement in integrated care.

The findings are based upon indicators currently used to measure integrated care in practice which may not represent all the relevant aspects of integrated care. A gap analysis is the logical next step to identify new integrated care indicators that more accurately account for improving performance measurement and assessment.

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**Keywords:** indicators for integrated care; monitoring and evaluation; performance measurement; evaluation framework

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