Implementing Quality Measurement in the Field of Drug Treatment and Harm Reduction: A Case Study in Flanders

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BACKGROUND: Implementing quality measurement is still a challenge in the field of drug treatment and harm reduction. In this case study, we investigate which strategies can be used to enhance the implementation of a policy in which quality indicators are made public. **METHODS:** Building on an evidence-based methodology, this case study shows how an organisation in Flanders – the Flemish Institute for Quality of Care – develops quality indicators along with its strategies to implement the measurement of the indicators. **RESULTS:** The study shows three types of quality indicators in the field of drug treatment and harm reduction, which measure suicide prevention, the treatment of Hepatitis C, and the experience of patients/clients. To implement and publicly report these quality indicators, several challenges need to be overcome. **CONCLUSIONS:** By using a broad range of strategies that do not only focus on the development and selection of indicators, but also embrace the importance of including multiple stakeholders, the Flemish Institute for Quality of Care is capable of launching a quality measurement project that includes quality indicators which are measured and publicly reported over time.

Keywords | Implementation – Public Transparency – Quality Indicator – Quality Measurement – Drug Treatment – Harm Reduction

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1 BACKGROUND

Policy makers and scholars call for the development and use of quality measures to identify and incentivise the use of best practices in the field of drug treatment and harm reduction (Pincus et al., 2016). To implement a good quality measurement system, several challenges need to be overcome. The selection of the indicators is, for instance, an intensive process in which different stakeholders need to be involved. In their study on a practice-based addiction medicine research network (AMNet), Clarke et al. (2021) show how a group of executive and steering committees used a multi-step, consensus-based process to identify and select standardised assessment tools and quality measures.

Although the selection of valid and usable indicators is a very important step in the process, it does not guarantee success. According to Harris (2015), the use of quality measures in drug treatment and their application are in 'a primitive state'. Still only limited attention has been paid to the way in which these indicators are implemented and measured over time in the field of drug treatment and harm reduction. Ford II, et al. (2022) also call for 'the black box' of implementing quality measurement to be studied. To attain this goal, much can be learned from other fields in healthcare where quality measurement is becoming a standard (Williams et al., 2018).

Indeed, several European countries invest in public reporting as a quality strategy building on information provided by hospitals, GPs, or specialists. Public reporting may not only lead to improvements in the quality of care by incentivising providers and professionals to improve their practice, but also allows information to be provided to healthcare users for them to receive information tailored to their needs. To be effective, information has to be easily accessible and indicators should be valid and reliable (Cacace et al., 2019).

In this case study, we look at an initiative in Flanders – a region in Belgium – where the Flemish government is authorised for the quality of care in inpatient services and community-based services. Here, the government aims to enhance the quality of the healthcare services provided – including the field of drug treatment and harm reduction – and make the quality transparent for its citizens by publishing the quality indicators on a central website. As patients and clients have a free choice when selecting their service provider, transparency in the quality of the services provided can help in making the right choice. To map the quality of care in Flanders, the Flemish Institute for Quality of Care was founded, which is a partner organisation of the Flemish government that is responsible for the intersectoral development, validation, measurement, and public reporting of quality indicators.

2 METHODS

2.1 Case description

To investigate the development and use of quality measures in the field of drug treatment and harm reduction, a descriptive case study was used. More specifically, the case of the Flemish Institute for Quality of Care was studied; this is an organisation that aims to measure and follow up the quality of care and patient safety in various sectors of Flemish health and residential care – including the field of drug treatment and harm reduction – and facilitate transparency and quality improvement. Specifically, the main objectives of this organisation are:

- to DEVELOP a core set of quality indicators, with the sector, according to a uniform evidence-based methodology
- to FACILITATE public reporting of quality using the website www.zorgkwaliteit.be
- to COORDINATE and LINK quality initiatives, build a knowledge network, and strengthen the dynamics around quality in Flanders
- to have a POLICY IMPACT, helping to build a future-proof and integrated Flemish quality policy and support decision making through the use of the results on the indicators for other policy purposes (e.g. accreditation, inspection, financing)
- to STIMULATE research and training concerning the quality of care and its improvement.

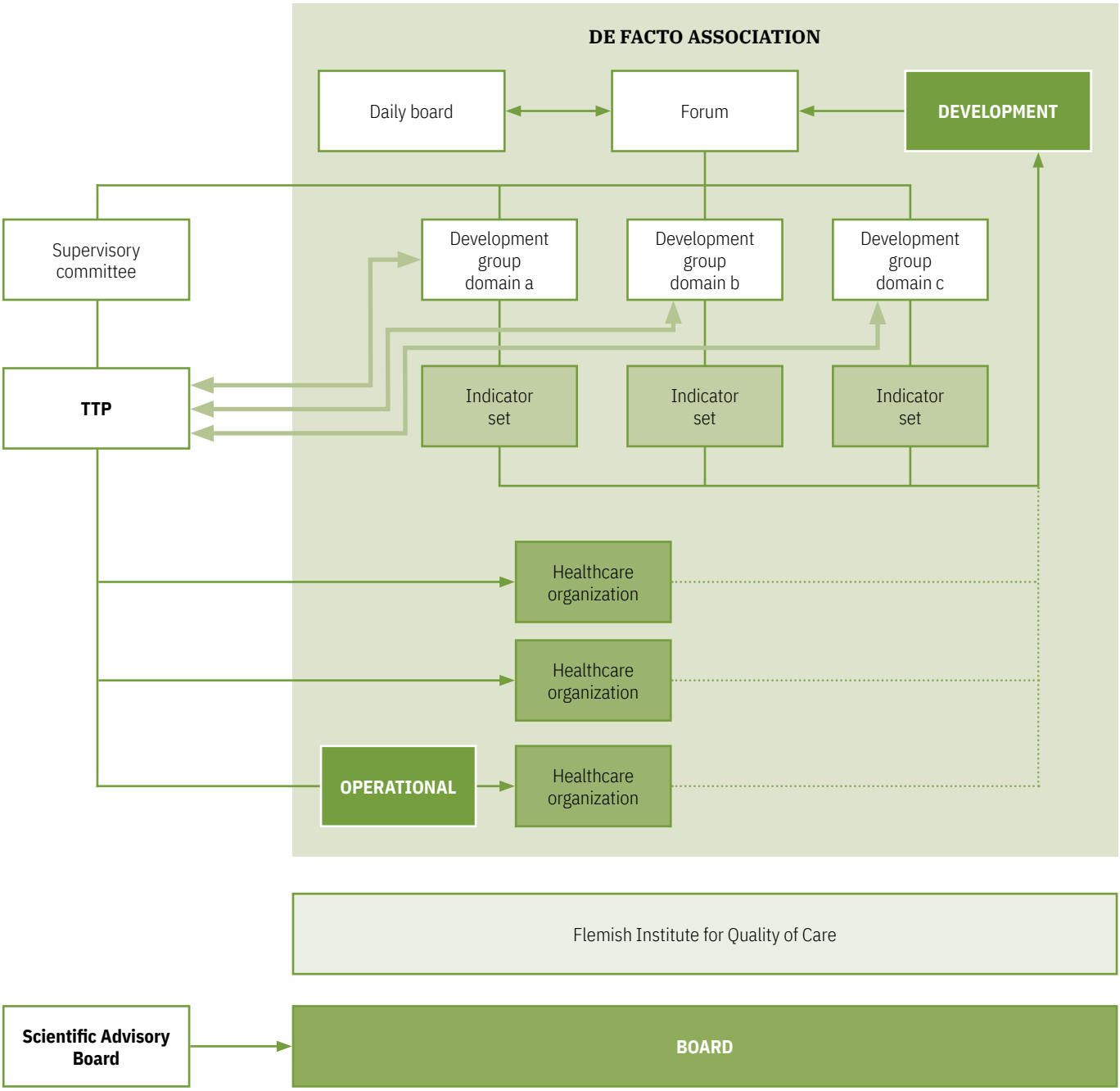
The Flemish Institute for Quality of Care increases transparency by publicly reporting indicator results on a central platform (the website www.zorgkwaliteit.be) so that the Flemish people, healthcare providers, the government, and researchers can monitor and compare the quality of care themselves.

The Flemish Institute for Quality of Care builds on bottom-up decision making. To increase participation, indicators are developed in close collaboration with the sector. The governance structure of the organisation – which is shown in *Figure 1* – supports this aim as there are several committees and advisory organs that allow joint decision making.

Four de facto associations are part of the governance structure, and cover four different sectors, namely General Hospitals, Mental Health Care, Care for the Elderly, and Primary Care. For each de facto association, it is ensured that the most important stakeholders are represented, such as the various professional associations, the Flemish Patient Platform and other patient associations, the authorities, the health insurance companies, the umbrella organisations, the universities and knowledge centres, etc. This broad spectrum of stakeholders should create support in the sector for the initiatives of the Flemish Institute for Quality of Care.

Within each de facto association there are several decision-making organs to allow bottom-up decision making (see *Figure 1*). The ***Daily Board*** of each de facto association is responsible for the day-to-day management and the annual planning of each sector. In this daily board representatives of the various stakeholders are involved. Here, the drug treatment centres are, for instance, represented by their umbrella organisations. The quality indicators are developed within

Figure 1 | The organisational structure of the Flemish Institute for Quality of Care



Development Groups. In these development groups representatives of care users, experts with experience and knowledge of the sector, and experts with knowledge on data and data processing are involved to make sure that indicators are developed that build on the latest evidence-based guidelines and recent scientific literature. Depending on their expertise, most development groups are focused on the development of one set of indicators (e.g. Hepatitis C or suicide prevention). Additionally, there is also a ***Forum***, which all stakeholders from the de facto associations, including all participating and interested organisations, can join. This decision-making organ serves as a final approval body and channel of communication to the sector.

Next to decision-making organs in the de facto association, there are several organisation-wide decision-making bodies. The validity and reliability of the indicators, as well as their applicability and feasibility in the sector, are assessed by a ***Supervisory Committee***. This committee is founded and endorsed by the Flemish Minister of Welfare and ensures that the quality indicators are developed according to a scientifically substantiated methodology and that the legal procedures regarding data protection are followed. The ***Board of Directors*** mainly consists of representatives from the de facto associations, the Flemish Patient Platform, the scientific associations, the health insurance companies, and the government. This decision-making body is responsible for overall governance,

mission, strategy, representation, financing, and monitoring the operational functioning of the Flemish Institute for Quality of Care. The ***Scientific Advisory Board*** functions as a scientific knowledge platform within the Flemish Institute for Quality of Care, bringing together experts and knowledge institutions that are active in the field of scientific research on quality of care, with the aim of providing scientifically substantiated advice to the Flemish Institute for Quality of Care board. Finally, to secure data exchange between participating facilities the Flemish Institute for Quality of Care collaborates with a ***Trusted Third Party (TTP)*** that collects and processes the data.

2.2 A methodology to develop indicators

The Flemish Institute for Quality of Care has developed a standardised methodology to develop and implement quality indicators which consists of seven consecutive steps (Plessers et al., 2019). The first four steps are necessary in the process of development. The last three steps are to check whether the indicators are also appropriate for use in the context where they are implemented and made publicly available.

Step 1. Compose the development group

When the decision is made to develop an indicator (set), the first step is to bring together a project group for the development of this indicator(s). Here it is important to create a multidisciplinary development team with experts (e.g. academics, healthcare providers, community-based service providers, and end users). Ideally, a project plan is created that defines the goals, boundaries, roles, responsibilities, required resources, and milestones. The development group has several tasks which are described in the next steps to develop quality indicators.

Step 2. Review the current state of the scientific knowledge on quality indicators

The next step is to have an overview of the relevant literature and guidelines and perform a systematic evaluation of the methodological quality of the selected quality indicators (e.g. by means of the AGREE instrument; AGREE, 2009). It is crucial that the indicators have a sufficient scientific link with clinically relevant outcomes (Mainz, 2003a; 2003b). Ideally, indicators should be based on (multidisciplinary) evidence-based guidelines. If no guidelines are available, the best available scientific evidence on the quality of care is used and quality indicators may be selected on the basis of consensus among healthcare professionals (Mainz, 2003a).

A combination of different indicators can help to provide a broad and balanced picture of the quality domain (Geary et al., 2017; Mainz, 2003a). When only specific aspects of the care process are mapped, the results can be misleading. A healthcare provider may, for instance, perform well in one subprocess, but not in all processes (Rubin et al., 2001). Therefore, the Flemish Institute for Quality of Care aims to focus as much as possible on process and outcome indicators.

Step 3. Selection of the indicators

If in Step 2 several indicators were found, the next step is to reduce the list of potential indicators on the basis of a consensus model (Mainz, 2003a). Group decisions are preferable to individual decisions because they are less susceptible to personal bias and a lack of reproducibility. To support this decision-making process, for example, the Delphi consensus or RAND appropriateness method can be used (Campbell et al., 2002; Hasson et al., 2000; Van Engen-Verheul et al., 2011). These are facilitative group techniques in which, through an iterative, multi-stage process, individual opinions are transformed into group consensus. In order for quality indicators to be retained, they must meet a number of criteria:

- The *importance of the 'quality problem'.* The impact of the problem is estimated in terms of frequency, cost, and severity (i.e. the impact on mortality, morbidity, or the associated financial costs). The higher the frequency, cost, and severity of the problem, the more relevant it is to develop quality indicators for the problem (Berg et al., 2005; Kötter et al., 2012; Mainz, 2003a).

- *Measurability and feasibility of the monitoring.* The indicator can be defined and be implemented (Berg et al., 2005; Geary et al., 2017; Kötter et al., 2012; Mainz, 2003a). That means that it is possible to obtain accurate and consistent information by using reliable existing data repositories or starting up new data collections (Campbell et al., 2002).

- The *usability of the quality indicator.* This means that it must allow the improvement of healthcare. Variation in the quality indicator must reflect variation in the actual quality of care and must allow improvement measures that are also reflected in improved results (Berg et al., 2005; Kötter et al., 2012; Mainz, 2003a).

- *Validity and reliability.* The results should be consistent, and two or more raters should be able to agree about the result (inter-rater reliability) (Campbell et al., 2002; Geary et al., 2017; Mainz, 2003a; 2003b; Willis et al., 2007).

- *Sensitivity and specificity.* Poor performance must be detectable and there should be sufficient discriminatory power to distinguish good from bad quality (Campbell et al., 2002; Mainz, 2003a; 2003b; Willis et al., 2007).

- *Relevant and understandable.* The information is perceived as meaningful to patients, healthcare providers, and/or society. This target audience is able to interpret the results and, if necessary, to use the information to make choices between healthcare providers (Mainz, 2003a; 2003b; Willis et al., 2007).

- *Timeliness.* Ideally, the data should be as recent as possible. In the case of specific situations/diseases/problems that occur less frequently, it is sometimes necessary to collect data over several years in order for the data to attain sufficient numbers.

When selecting indicators, attention should be given to the avoidance of undesirable side effects. Choose indicators that stimulate the desired outcome and are difficult to manipulate (Berg et al., 2005; Bowen & Kreindler, 2008). Preferably, select indicators that do not require an additional registration burden (Berg et al., 2005) and focus on the indicators with the strongest scientific basis (Bowen & Kreindler, 2008). The indicators that are selected do not necessarily have to meet all the conditions, but are best screened for the above criteria.

Step 4. Preparation of the indicators

In this step, the definitions, the measurement protocol, and the data processing procedure are described in what is called by the organisation 'an indicator sheet'. The indicator sheet is submitted to the stakeholders for approval and serves as a guideline for organisations which want to engage in collecting data for an indicator. On the website of the Flemish Institute for Quality of Care an overview of the available indicator sheets can be found (in Dutch).

The *definition of the indicator* describes in words what the indicator represents. Depending on the choice, this can be a ratio with the description of a numerator and a denominator, a numeric or categorical variable. A clinically relevant indicator is unlikely to be equally relevant for every patient group (Geary et al., 2017). Therefore, the definition also includes inclusion and exclusion criteria for the population of healthcare users or care providers on which data is processed. Ideally, the development group will also define a target value or target interval. This has a double purpose: to encourage the care organisations to reach this target (if this is not yet the case) and to inform the public about the expected value of an indicator. This target value can be based on figures that are already available – for example, the 75th percentile – or can be derived from clinical guidelines or consensus. The target value can be increased over time if positive evolution is seen in the results of the indicators and certainly when there is still potential for improvement. Finally, it may be useful to define additional (sub) indicators, based on the same dataset, that allow more detailed information to be provided (e.g. results on the level of a department or medical discipline), so that targeted feedback can be given to the healthcare providers involved.

The *measurement protocol* is very important as it describes how the data should be collected (Mainz, 2003a). Indeed, the measurement protocol should clearly describe which data should be collected and from where and how it should be processed. As indicated above, data can come from existing registrations (e.g. electronic patient files) or be collected specifically for the indicator.

A. Automatic collection or importing of existing data is preferable to new, manually processed data (Yoo et al., 2014). Existing clinical registries are highly suitable. These data sources often contain a lot of data and there is a limited cost involved in using the data and a low risk of selection bias as opposed to gathering new data (Geary et al., 2017). However, there is a need to evaluate whether the data within these registration systems has sufficiently high quality and validity. It must also be recorded uniformly across care organisations to exclude information bias. Finally, the completeness of the dataset should be checked as the data needs to cover the intended population.

B. In the absence of appropriate available datasets, registration tools can also be used to collect data. Clear instructions on how these tools should be filled in are necessary. It may therefore be relevant to train the individuals who will provide the data input (hereafter referred to as the assessor) to improve inter-rater reliability. Preferably, the assessor is an independent person who has no self-interest in the outcome of the indicator. One method of data collection is to use external audits. The advantage of this method is that data collected by an external auditor is more reliable than self-recorded data.

Data processing determines how the indicators are calculated. It describes the steps taken to calculate the numerator, the denominator, and final indicator. If necessary, there must be a description of how corrections should be applied to adjust for the differences in the population (Geary et al., 2017). Especially outcome indicators require corrections so as to be able to perform valid and reliable benchmarking. For example, a higher mortality rate may reflect a heavier patient case-mix in a given setting rather than a lower quality of care. Among others, gender, age, socioeconomic factors, lifestyle, health status, comorbidities, and the severity of the disease can have an influence on the outcome (Mainz, 2003b). A correction model can reduce the impact of differences in population characteristics on the indicator result so that differences in the quality indicator reflect real differences in the quality of care.

There are three important conditions to be met before a variable can be included in the correction model: (1) the impact of the variable must be sufficiently large, (2) the variable must be determined with sufficient precision for the majority of the population, and (3) the number of variables cannot become too large in the function of the available registrations, as this will have a negative influence on the accuracy of the model. If it is not possible to correct for disturbances with a significant influence on the indicator, this may be a reason to delete the indicator (Geary et al., 2017; Mainz, 2003b). The unavailability of the data needed for case-mix corrections has the consequence that these indicators are probably not suitable for benchmarking.

Step 5. Pilot study and evaluation of feasibility

Once the indicators are chosen and defined, a pilot study is organised in a representative sample of healthcare organisations. This is a crucial step before proceeding to the implementation of the indicators (Kötter et al., 2012). In a pilot study, the indicator is operationalised, the feasibility is tested, and difficulties or ambiguities are identified. Also, the measurement protocol is reviewed. Problems with validity, reliability, or measurability sometimes only become apparent in the pilot phase. For example, Wollersheim et al. (2007) showed that 10 to 20% of the quality indicators developed are not measurable. It is then the task of the development group to look at how these problems and ambiguities can be resolved. Through pilot testing, cer-

tain refinements can be made to the indicator (set). Therefore, the quality of the data should be thoroughly evaluated (Mainz, 2003a). Important checks are 1) the proportion of missing data, 2) whether different assessors come to the same results (inter-rater reliability), and 3) the internal consistency of the data must be checked.

Step 6. Critical evaluation of the results

Once the data from the pilot is gathered, it can be used for the calculation of the indicator scores. The development group then critically evaluates the indicator and the indicator results. In this phase it is important to verify that the results actually reflect good or bad quality (Mainz, 2003a) and correspond to the reality and expected values of the indicators. Additionally, the results can also be compared with other already available data on the same quality domain (i.e. convergent validity). The outcome of the evaluation process may be 1) to implement the indicator as it is, 2) not to retain the indicator in its current form, 3) to modify or clarify the indicator definitions, or 4) to modify the measurement protocol or provide training for the evaluators. When substantial changes are needed, it is best to organise a second pilot study to check whether the adjustments lead to the necessary improvements.

Step 7. Determine the reporting format

As a final step, the development group should define the format of the reports. Specifically, two types of reports are foreseen, namely one for the care organisations and one for the general public. The visualisation will be adapted to the target audience:

A. *Reporting for the care organisations:* the Flemish Institute for Quality of Care aims to provide feedback to the care providers so that they can improve their results. The visualisation in the reports enables benchmarking and shows targets and quality standards by means of boxplots and distribution charts. Additional (sub) indicators can be included for further clarification and analysis.

B. *Reporting for the general public:* Transparency is the norm, which means that the results of the indicators are made publicly available on the level of the organisation. The presentation of the indicators to the public should be explained in an accompanying explanatory text, so that both the objective of the indicator and the meaning of the result can be understood. The healthcare provider can also provide the necessary clarification of the results and propose an action plan for improvement. In addition to the readability of the texts, the choice of understandable graphs and figures is also crucial here.

3 RESULTS

Building on the aforementioned methodology, several indicators in the field of drug treatment and harm reduction were developed. Below, we elaborate on the challenges when collecting data and which strategies are used to handle these challenges.

3.1 Examples of indicators in drug treatment and harm reduction

The aforementioned strategies allowed the Flemish Institute for Quality of Care to develop different quality indicators in the field of drug treatment and harm reduction. For ***suicide prevention*** in mental healthcare, for instance, the organisation started with a structure indicator to evaluate the policy in terms of suicide prevention in mental healthcare organisations (including drug treatment centres and community-based services). See *Table 1* for more information about the indicator 'suicide prevention 1.0', where an external auditor checked whether the items listed in the table were part of the organisational policy.

When scores improved on this structure indicator, a process indicator was developed in collaboration with the Flemish Centre of Expertise in Suicide Prevention and other experts in the field. Here, the aim was to evaluate whether suicide prevention is done in a timely manner for each patient who is treated (see *Figure 2*). There are five process indicators that will be tested in this pilot study.

Next, an indicator specifically for harm reduction centres was developed. Building on the cascade of care (WHO, 2016), the Flemish Institute for Quality of Care aims to measure the percentage of people screened and treated for *Hepatitis C. Figure 3* gives an overview of the process indicators that were developed.

To measure the *experienced quality of the service delivery in mental healthcare,* a questionnaire was developed by the Flemish Patient Platform. This questionnaire is used to ask the opinion of the final target group – in this case, people who use drugs. The survey is the same for all mental healthcare organisations, but the layout and terminology are adjusted for the specific sectors in mental healthcare. The survey for the drug treatment and harm reduction centres contains 37 questions that measure ten domains:

1. information about addiction problems and treatment,
2. participation,
3. the therapeutic relationship,
4. personalised care,
5. organisation of care and collaboration among caregivers,
6. safety,
7. the expertise of the care providers,
8. patient rights,
9. results and evaluation of care, and
10. overall evaluation.

The results for each question are available on the website and people can compare the results between organisations. In *Figure 4,* for example, you see the topbox scores (a score between 9 and 10) of three treatment addiction centres for the question: *Did patients receive information about their addiction problems?*

Table 1 | Checklist for suicide prevention 1.0

Items that were evaluated by an external auditor
Availability of a guideline regarding the formal assessment of suicide risk of all patients at first registration in the mental health facility.
Availability of a guideline regarding patients with a suicide risk.
Availability of a flow chart of patients at risk of suicide.
Availability of a guideline on how to treat patients at risk of suicide who refuse treatment.
Availability of a written collaboration agreement with at least one other care facility to ensure continuity of care.
Availability of a summary and/or report demonstrating that the facility annually identifies situations that potentially facilitate suicide.
Availability of a guideline that requires suicide attempts and suicides to be systematically recorded in the (electronic) patient record.
Availability of a reporting system in which suicide attempts and suicides are recorded.
Availability of a guideline for the systematic analysis of suicide attempts and suicides.
Availability of an overview of the internal and external training courses followed in connection with suicide prevention.

Figure 2 | Process of suicide prevention during a treatment process in mental healthcare

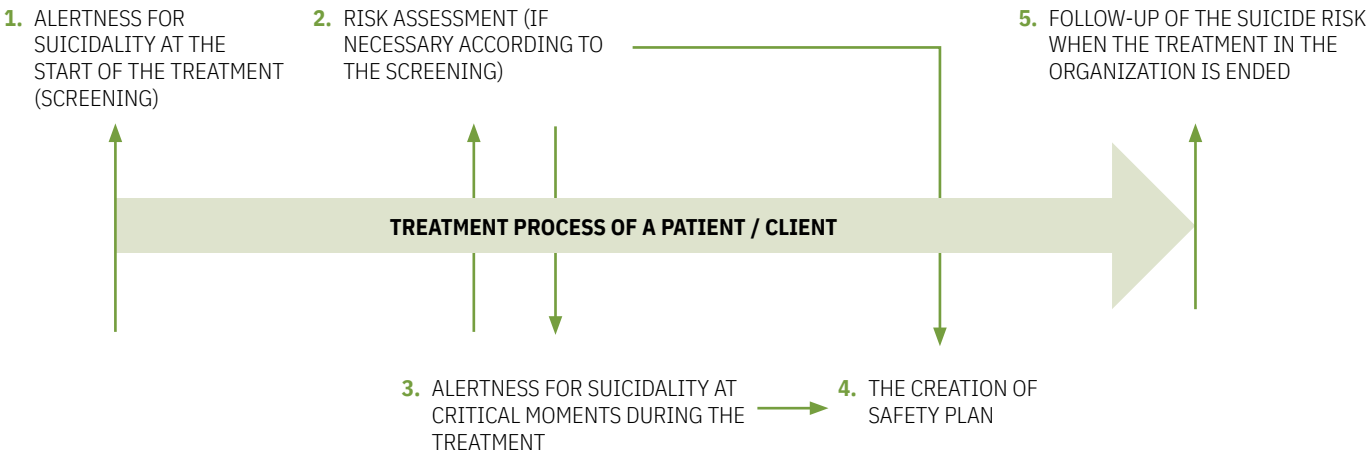
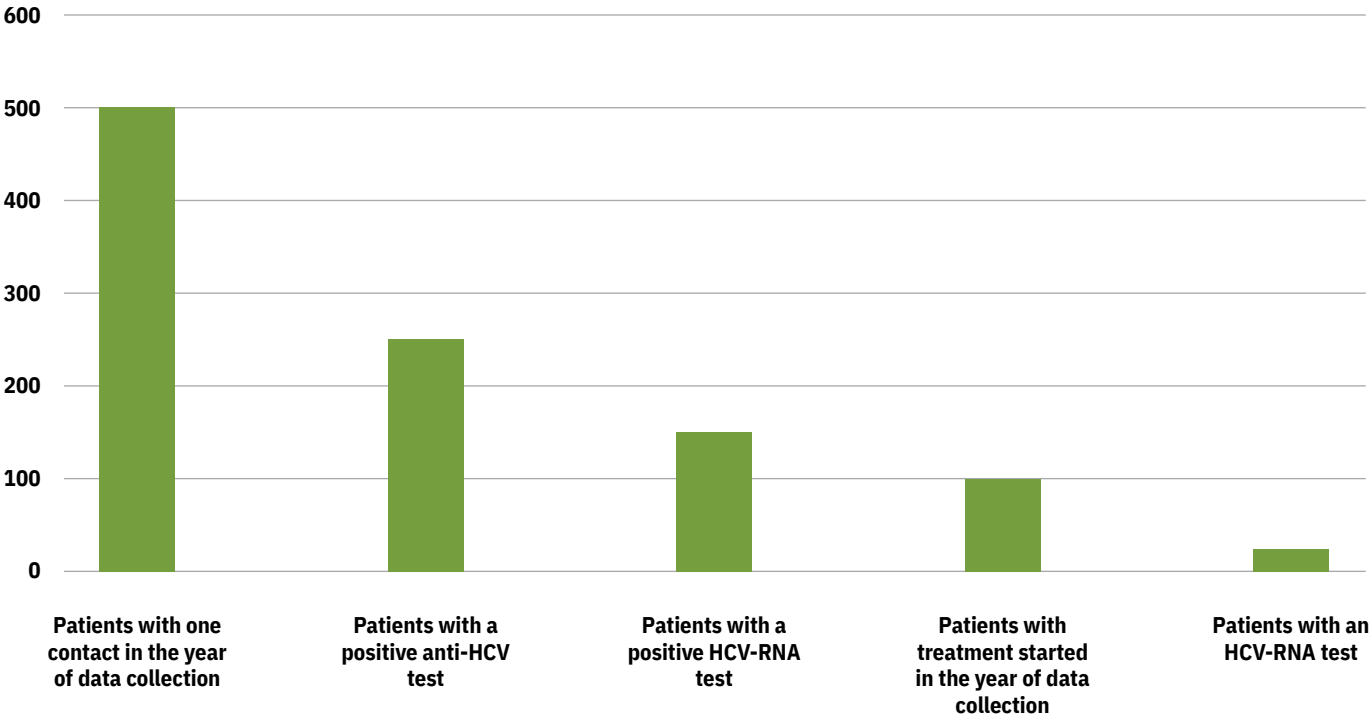


Figure 3 | Overview of the process indicators developed for Hepatitis C treatment



Indicator 1: % Patients with anti-HCV test (Screening)
a: % patients ever tested
b: % patients with positive anti-HCV test
c: % patients with negative anti-HCV test

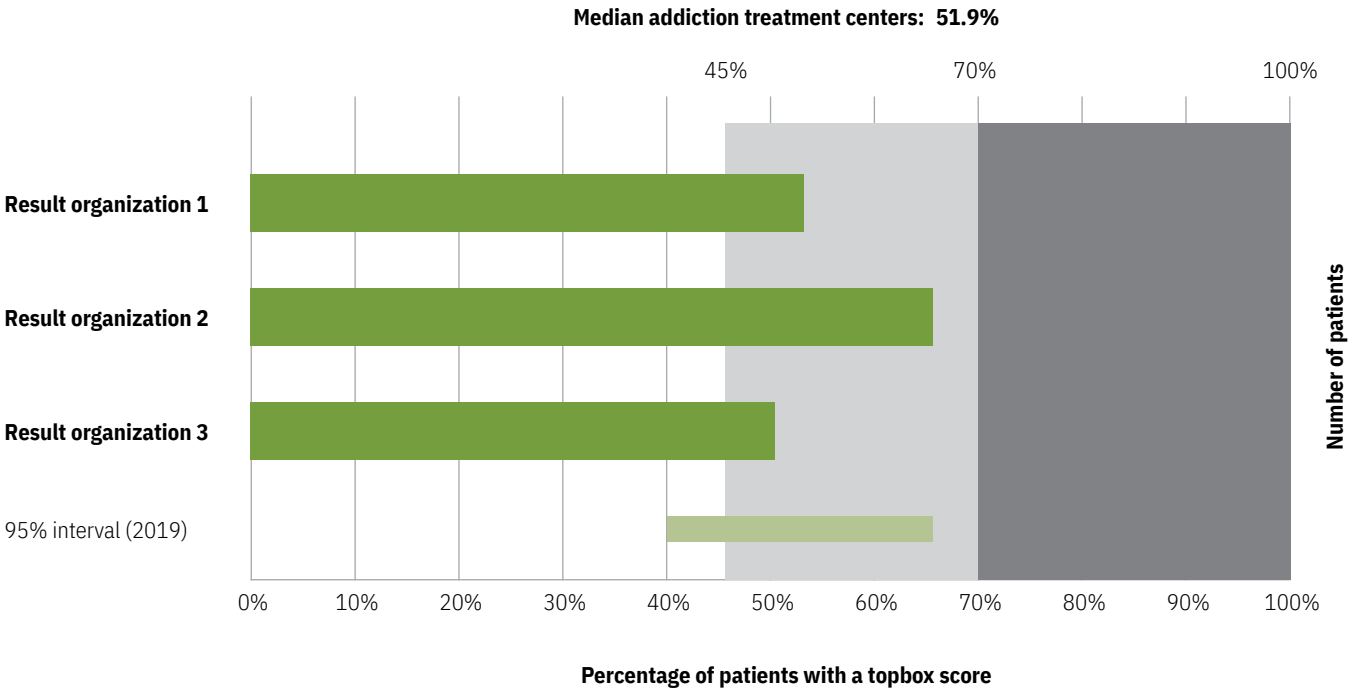
Indicator 2: Diagnosis made

Indicator 3: Treatment started

Indicator 4a: Curved SVR12 (Sustained Virological Response)

Indicator 4b: Known SVR12 (Sustained Virological Response)

Figure 4 | Example of the comparison of the results of one question in the Flemish Patient Survey



3.2 Challenges to measure and collect data

While the indicators are developed using an evidence-based methodology, some service providers are still reluctant to participate in the initiatives of the Flemish Institute for Quality of Care. One reason for not participating is the fact that the Flemish Institute for Quality of Care reports the results publicly. Organisations are afraid they will be penalised by the government and citizens when not scoring well. To handle this challenge, the Flemish Institute for Quality of Care aims to be responsive by listening to the feedback from the sector, not only on the level of the decision-making organs (such as the Daily Board, the Development Groups, and the Forum) but also of individual organisations. This sometimes slows down the process of launching new indicators; however, it does make the measurements more robust. Additionally, to give the organisations some ownership of their results, the website of the Institute allows the organisations to write their own explanation with the results presented on the website. Thus, organisations can explain to possible patients/clients and other stakeholders what the numbers mean and how they will improve them in the future.

Another reason for not participating is the limited amount of resources (e.g. time, personnel) organisations have. To limit the effort to collect the data, the Institute works with secondary data or with smaller sample sizes. Next, the measurement periods are also approved by the Daily Board of each de facto association to make sure that the yearly programme is feasible for the participating organisations.

Some organisations also have their doubts about the trustworthiness of the indicators. Therefore it is important that the Institute follows the different steps in the evidence-based methodology that is developed, as they confirm the validity and reliability of the indicator sets. Moreover, during the process of data collection an additional check is built in, as a confirmation report is provided to all participating organisations before the benchmark reports are created. This report contains descriptive statistics to allow the Institute and the organisations to check the data. If mistakes were made, new data should be provided.

To prevent organisations from dropping out when the results do not meet their expectations, a 'declaration of engagement' was developed, which states that they need to subscribe for a minimum set of indicators for at least three years. For drug treatment centres, for instance, we strive for maximum participation in the treatment of Hepatitis C. When an organisation has agreed to participate and signed the declaration, the data will be benchmarked and published.

4 CONCLUSIONS

By using a combination of different strategies, the Flemish Institute for Quality of Care succeeds in measuring and publicly reporting quality indicators. Building on an evidence-based methodology, several indicators in the field of drug treatment and harm reduction have been developed. As delivering data is a huge investment of resources for the organisations (e.g. personnel, time, technology), this study shows which strategies the Institute has developed to handle these challenges.

Authors' contributions: KDP: Conceptualization, Writing – original draft, Writing – review & editing; DDW: Methodology; SD: Methodology, Writing - review & editing.

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