

QUALITY INDICATORS FOR INFECTION PREVENTION AND CONTROL IN ACUTE CARE HOSPITALS

Report 2022 – Data up to and including 2021

S. DEQUEKER • E. DUYSBURGH

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As our name suggests, science and health are central to our mission. Sciensano's strength and uniqueness lie within the holistic and multidisciplinary approach to health. More particularly we focus on the close and indissoluble interconnection between human and animal health and their environment (the "One health" concept). By combining different research perspectives within this framework, Sciensano contributes in a unique way to everybody's health.

For this, Sciensano builds on the more than 100 years of scientific expertise.

Sciensano

Epidemiology and public health - Healthcare-associated infections and antimicrobial resistance
Indicators for infection prevention and control

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BAPCOC
Belgian Antibiotic Policy Coordination Committee

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ABBREVIATIONS

AMR	Antimicrobial resistance
BAPCOC	Belgian Antibiotic Policy Coordination Committee
CAUTI	Catheter-associated urinary tract infections
CLABSI	Central line-associated bloodstream infections
COVID-19	Coronavirus disease 2019
FPS	Federal Public Service
FTE	Fulltime equivalents
HAI	Healthcare-associated infection
HH	Hand hygiene
HOST	Hospital Outbreak Support Teams
ICU	Intensive care unit
IPC	Infection prevention and control
MDRO	Multidrug resistant organism
MRSA	Methicillin-resistant <i>Staphylococcus aureus</i>
n	Number of hospitals
SSI	Surgical site infections
UTI	Urinary tract infection
WHO	World Health Organisation

SUMMARY

1. Background

The development and description of indicators to measure the quality of infection prevention and control (IPC) provided in Belgian acute care hospitals is an initiative of the Federal Platform for IPC, part of the Belgian Antibiotic Policy Coordination Committee (BAPCOC). The Royal Decree of 22 June 2017¹ obliges Belgian acute care hospitals (university hospitals and general hospitals with or without university character) to monitor the quality of their programme for the prevention and control of healthcare-associated infections (HAI), by means of these indicators. Due to the coronavirus disease 2019 (COVID-19) pandemic, BAPCOC communicated to Sciensano and the hospitals that registration of 2021 data was voluntary.

The overall objective of this IPC indicator project is to define, prioritise and implement strategies and interventions to prevent healthcare-associated infections (HAI) in order to improve the quality of care provided in hospitals. In order to achieve this overall objective, three specific objectives have been formulated: (1) an evaluation of the hospital IPC policies, planning and activities at national level in order to provide policy makers an overall view of the IPC levels and trends; (2) an assessment of the quality of the IPC management at hospital level by evaluating the resources, commitment and efforts made by the hospital in fighting HAI; and (3) the improvement of the quality of the IPC management at hospital level through encouraging hospitals to measure and improve their IPC activities and outcomes.

2. Methods

The federal platform for IPC developed and selected a set of indicators to measure and monitor the quality of the programme for the prevention and control of HAI in Belgian acute hospitals.

For each indicator, a weighted score between 1 and 4 has been defined by the federal platform for IPC. For a limited number of indicators, no score was defined. The weighted scores evolve over time, in which initially (2017) special attention was paid to the development of procedures and protocols, to evolve over time towards conducting audits and providing feedback (2019). In 2020 and 2021, the same scores as in 2019 were used.

Additionally, indicator groups were defined. For each of these groups, a quality score (= indicator group quality score) was calculated which is the sum of the individual indicator scores belonging to this group. Indicators that were not scored were not included in the calculation of the quality scores. For all indicators together, an overall quality score was calculated which is the sum of all individual indicator scores.

Based on the quality score, three quality classes were defined for each indicator group: "weak", "moderate" or "good". A quality score that achieved less than two-thirds (66.67%) of the maximum score was assigned the quality class "weak". A quality score that achieved 80% or more of the maximum score was assigned the quality class 'good'.

¹ See: https://www.ejustice.just.fgov.be/cgi/article_body.pl?language=nl&caller=summary&pub_date=17-06-30&numac=2017012829

Between February and July 2022, the 2021 data were submitted by the hospitals via the online platform Healthdata.be. The list of the number of funded full-time equivalents (FTE) of physicians and nurses dedicated to IPC tasks in Belgian hospitals and a list of the members of each regional platform were obtained from the Federal Public Service (FPS) Public Health. The number of beds per hospital were retrieved from the denominator surveillance, available through the Healthdata platform.

3. Results

In 2022, 72 hospitals (69%) reported 2021 data for the IPC quality indicators project. For Brussels 7 (50%) hospitals, for Flanders 41 (79%) hospitals and for Wallonia 24 (63%) hospitals participated.

3.1. ORGANISATION INDICATORS

Eighty-eight percent of hospitals achieve a good quality score for the organisation indicator group (figure 1). Scores for the individual indicators in this group were high; in 2021, three out of the six individual indicators were met by at least 95% of hospitals.

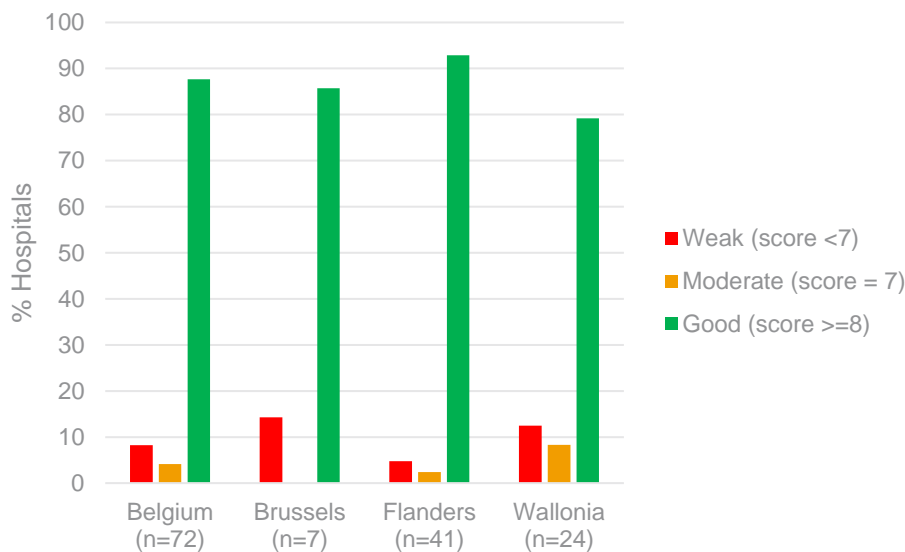


Figure 1 • Organisation indicators: proportion of hospitals per quality class at national and regional level, 2021

3.2. RESOURCE INDICATORS

Approximately 95% of hospitals achieve a good quality score for the resource indicator group (figure 2). For two out of five indicators in this group, hospitals achieve a score of at least 95%. Fifty-nine percent of the hospitals have at least one FTE IPC professional per 250 beds. Only 8% of the hospitals have at least one FTE IPC professional per 100 beds.

SUMMARY

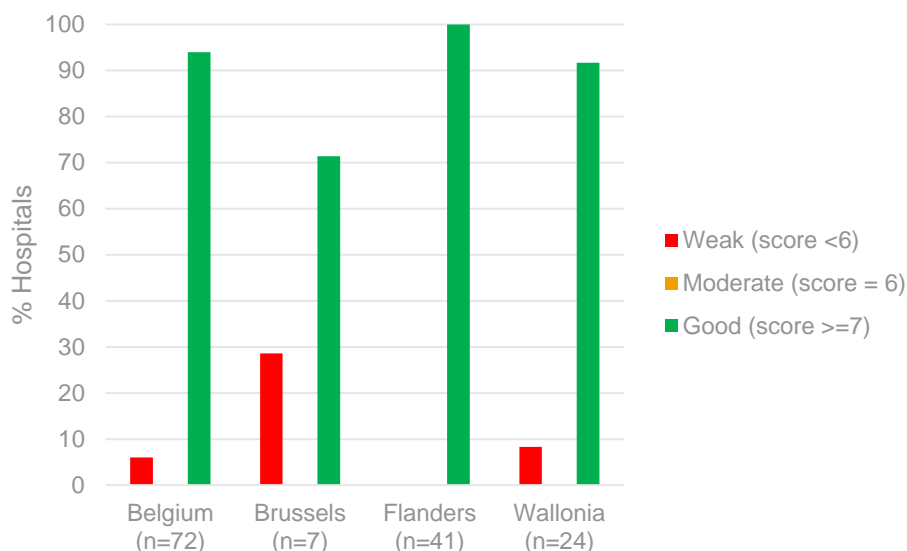


Figure 2 • Resource indicators: proportion of hospitals per quality class at national and regional level, 2021

3.3. ACTIVITY INDICATORS

About two-third (68%) of the hospitals achieve a good quality score for the activity indicator group for the reference year 2021 (figure 3). There are differences in the quality score for the activity indicator group across regions.

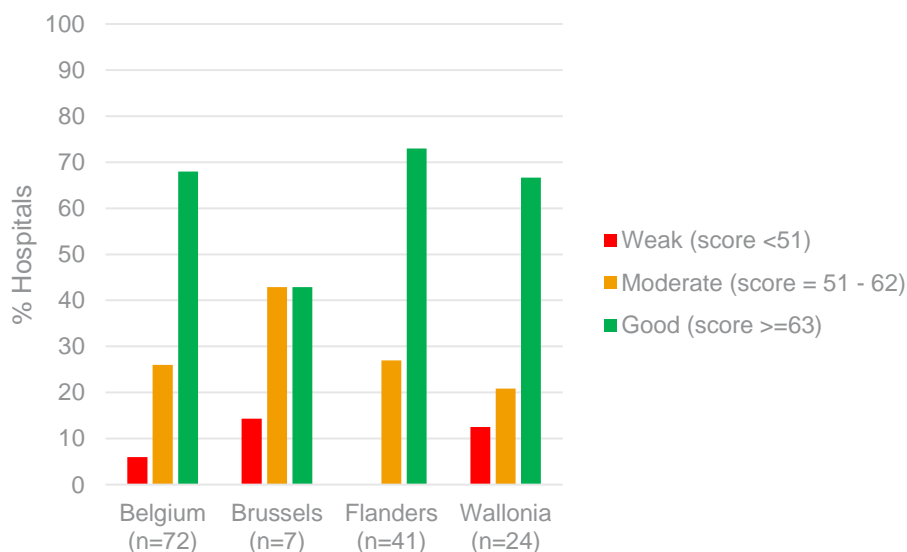


Figure 3 • Activity indicators: proportion of hospitals per quality class at national and regional level, 2021

The 2021 results for most of these indicators are similar to the 2015-2020 results.

Between 2019 and 2020, a decrease of more than 10% in the proportion of hospitals meeting the indicator, was observed for 12 indicators. Of these 10 were related to auditing. In 2021 no decrease of more than 10% was observed for any indicator compared to 2020. Even though the proportion of hospitals that implemented the indicator is increasing again for most of these 12 indicators in 2021 compared to 2020, the level of 2019 was not reached again.

3.4. PROCESS INDICATOR

In 2021, 79% of hospitals have an alcohol-based hand rub consumption that is higher than the 2016 average (2016 consumption is used as reference value). The median alcohol-based hand rub

consumption for 2021 is 36.4 litres/1,000 hospitalisation days. Between 2013 and 2020, this consumption increased, but a decrease has been observed between 2020 and 2021 (figure 4).

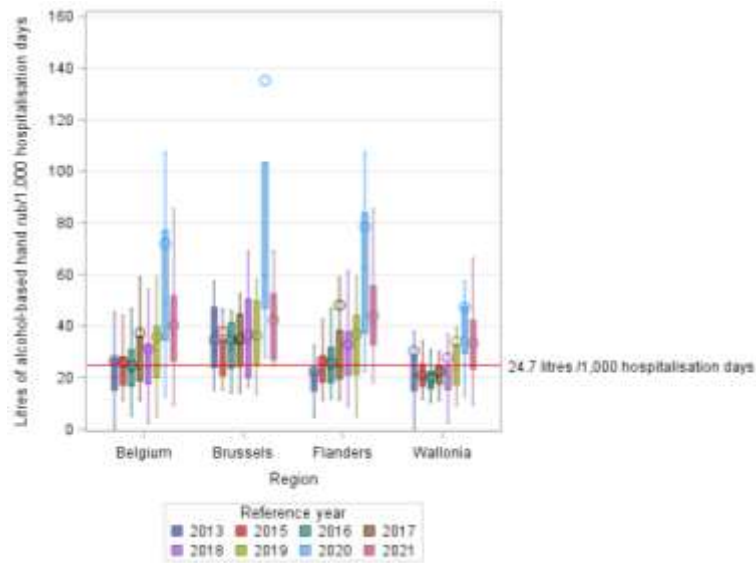
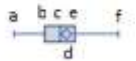


Figure 4 • Alcohol-based hand rub consumption in care units of Belgian hospitals, national and regional level, 2013 – 2021

Legend boxplot: a. maximum (without outliers, 1.5x interquartile range), b. 75th percentile (P75), c. median, d. mean, e. 25th percentile (P25), f. minimum (without outliers, 1.5x interquartile range)



3.5. OVERALL QUALITY SCORE

Seventy-nine percent of hospitals achieve a good overall IPC quality score (figure 5). However, differences in this overall quality score between regions are observed. Compared with Wallonia we found in Flanders 17% more hospitals with a good overall quality score and compared with Brussels we found in Flanders 31% more hospitals with good overall quality score.

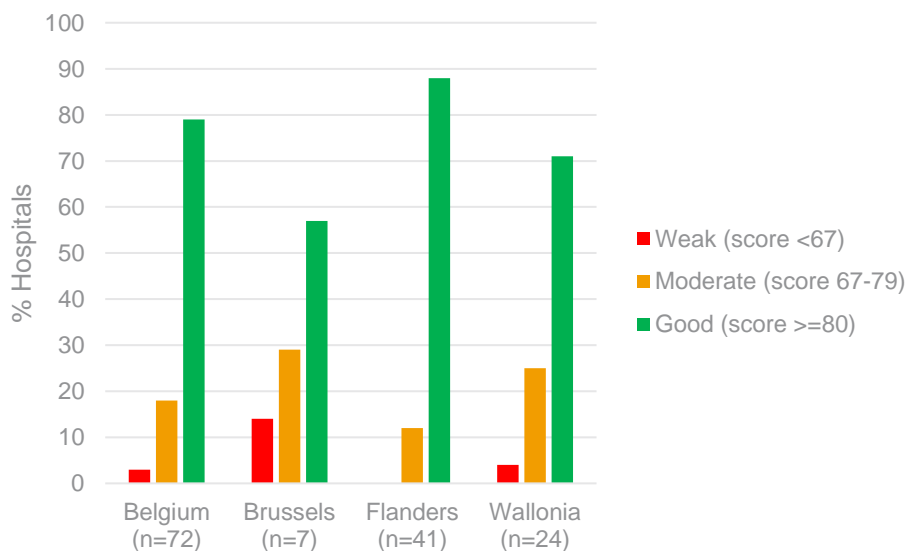


Figure 5 • Indicators: proportion of hospitals per quality class at national and regional level, 2021

4. Recommendations

4.1. RECOMMENDATIONS FOR HOSPITALS

- Continue to register IPC activities and outcomes in order to be able to monitor and improve the quality of the IPC programme within the hospital.

4.2. RECOMMENDATIONS FOR THE BAPCOC WORKING GROUP ON 'QUALITY INDICATORS FOR IPC' AND FOR THE RESEARCHERS RESPONSIBLE FOR THE DATA COLLECTION, ANALYSIS AND REPORTING OF THE QUALITY INDICATOR PROJECT (SCIENSANO)

- Define a limited set of indicators that provides the best possible assessment of the IPC quality in the hospital. Important in the choice of these indicators is that they are sensitive enough to detect improvement and differences in IPC quality and to identify weaker performances. A first step in this process, a systematic literature review, was conducted by the Sciensano research team in June 2022.
- Investigate the contents of a new set of indicators and develop a new protocol. Suggestions regarding this were formulated in the previous reports. Many hospitals comply with a high number of the current indicators for consecutive years already and therefore additional indicators are needed for further improvements. Now that the most quality indicators have been implemented in many hospitals, it may be possible to look more in depth to certain aspects (per theme) in order to further improve IPC management and implement more detailed indicators.
- Examine the extent to which data collected in other quality projects can be coordinated and integrated within this IPC quality indicator project, in order to reduce the workload of staff and to improve the efficiency of healthcare quality measurement. Additional research is needed for this.
- Investigate the extent to which the selected indicators can be harmonised with the minimal requirements for IPC programmes proposed by the World Health Organisation [1].
- Assess how the protocol for the surveillance of surgical site infections can be made more user friendly and feasible to implement, to enhance participation in this surveillance (local and/or national). Assess how the lack of resources/time to participate in the surveillance of intensive care unit infections and surgical site infections can be addressed. Assess if a surveillance for urinary tract infections on all wards is useful and wanted. Assess the streamlining and integration of these surveillances in other by Sciensano coordinated surveillances.
- Examine what could explain the differences in influenza vaccination coverage among nurses, midwives and nursing assistants between different regions and hospitals.
- Continue to improve and optimise the data collection tool (Healthdata) and the online reporting platform (Healthstat).

4.3. RECOMMENDATIONS FOR POLICY MAKERS

- Assess whether the current legislation regarding the number of FTE physicians and nurses assigned to IPC should be revised and adapted to current IPC needs in Belgium.
- Support the development and implementation of an external quality control (validation) of the data collected for the IPC indicator project. This external quality control could be conducted by Sciensano in collaboration with the BAPCOC working group 'Quality indicators for IPC'.
- Integration of the quality indicator project in one general project on measuring and improving the quality of care in the hospital in order to reduce the workload of staff and to promote efficiency in care quality measurement. Improving cooperation at all (policy) levels can contribute to an integrated approach and vision.
- Continuing to support this IPC quality indicator project so that the quality of the IPC programme within hospitals can be further monitored and improved. The current COVID-19 crisis emphasizes the importance of strengthening and supporting a well-functioning IPC policy and management at national and hospital level.

NEDERLANDSTALIGE SAMENVATTING

1. Achtergrondinformatie

De ontwikkeling en het definiëren van deze kwaliteitsindicatoren om de kwaliteit van ziekenhuishygiëne (ZHH) te meten in Belgische acute ziekenhuizen, is een initiatief van het federaal platform voor ZHH, onderdeel van de *Belgian Antibiotic Policy Coordination Committee* (BAPCOC). Het Koninklijk Besluit van 22 juni 2017² verplicht Belgische acute ziekenhuizen (universitaire ziekenhuizen en algemene ziekenhuizen met of zonder universitair karakter) om aan de hand van deze kwaliteitsindicatoren de kwaliteit van hun programma ter preventie en controle van zorginfecties op te volgen. Wegens de *coronavirus disease 2019* (COVID-19) pandemie heeft BAPCOC aan Sciensano en de ziekenhuizen meegedeeld dat voor het jaar 2021 de registratie van gegevens vrijwillig was.

Het algemeen doel van dit ZHH kwaliteitsindicatoren project is het definiëren, prioriteren en implementeren van strategieën en interventies ter preventie van zorginfecties teneinde de zorgkwaliteit in ziekenhuizen te verbeteren. Om dit algemeen doel te bereiken, zijn er drie specifieke doelstellingen opgesteld: (1) een evaluatie van het beleid, de planning en de activiteiten inzake ZHH in ziekenhuizen op nationaal niveau, om de beleidsmakers een algemeen beeld te geven van het ZHH-niveau en -trends; (2) het beoordelen van de kwaliteit van het programma ter preventie en controle van zorginfecties op ziekenhuisniveau door het evalueren van de middelen, het engagement en de inspanningen geleverd door het ziekenhuis in de strijd tegen zorginfecties en (3) het verbeteren van de kwaliteit van het programma ter preventie en controle van zorginfecties op ziekenhuisniveau door ziekenhuizen aan te sporen hun activiteiten en resultaten te meten en te verbeteren.

2. Methoden

Het federaal platform voor ZHH ontwikkelde en selecteerde een set kwaliteitsindicatoren om de kwaliteit van het programma ter preventie en controle van zorginfecties in Belgische acute ziekenhuizen te meten en op te volgen.

Voor elke individuele indicator werd door het federaal platform voor ZHH een gewogen score tussen 1 en 4 gedefinieerd. Voor een beperkt aantal indicatoren werd geen score gedefinieerd. De gewogen scores evolueren in de tijd, waarin in het begin (2017) bijzondere aandacht gaat naar het uitwerken van procedures en protocollen om dan te evolueren naar audits en het geven van feedback (2019). In 2020 en 2021 werden dezelfde scores als in 2019 gebruikt.

Bovendien werden indicatorgroepen gedefinieerd. Voor elk van deze groepen werd een kwaliteitsscore (= indicatorgroep-kwaliteitsscore) berekend die de som is van de individuele indicatorencores die deel uitmaken van deze groep. De indicatoren waaraan geen score werd toegekend, werden niet meegenomen in de berekening voor de kwaliteitsscores. Voor alle indicatoren samen werd een totale kwaliteitsscore berekend die de som is van alle individuele indicatorencores

² Zie: https://www.ejustice.just.fgov.be/cgi/article_body.pl?language=nl&caller=summary&pub_date=17-06-30&numac=2017012829

Op basis van de indicatorgroep-kwaliteitsscore werden voor elke indicatorgroep drie kwaliteitsklassen gedefinieerd: 'zwak', 'matig' of 'goed'. Een indicatorgroep-kwaliteitsscore die minder dan twee-derde (66,67%) van de maximale score behaalde, kreeg de kwaliteitsklasse 'zwak' toegekend. Een indicatorgroep-kwaliteitsscore die 80% of meer van de maximale score behaalde, kreeg de kwaliteitsklasse 'goed'.

De gegevens van 2021 werden door de ziekenhuizen van februari tot en met juli 2022 via het online platform Healthdata.be ingebracht. De lijst met het theoretisch aantal gefinancierde voltijds equivalenten (VTE) arts- en verpleegkundige-ZHH in Belgische ziekenhuizen en een lijst met de leden van elk regionaal platform werden verkregen via de Federale Overheidsdienst Volksgezondheid. Het aantal bedden per ziekenhuis werd verkregen via de noemer module, beschikbaar op het Healthdata platform.

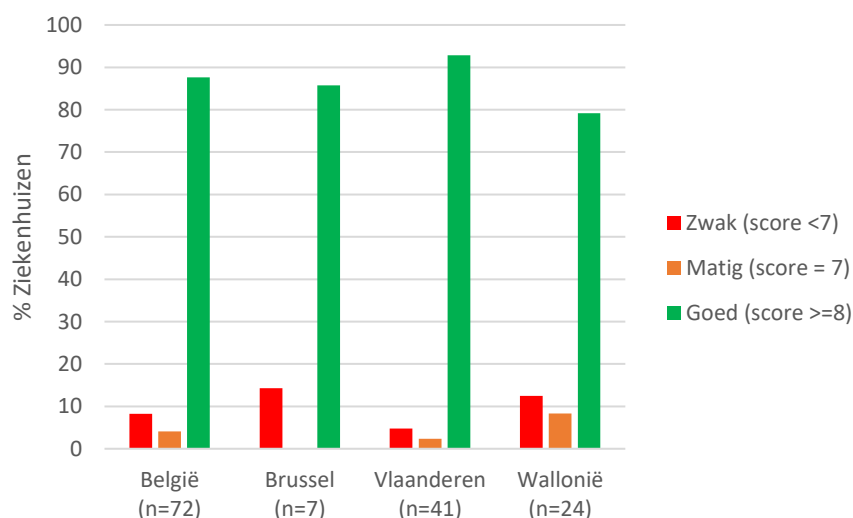
3. Resultaten

In 2022, registreerden 72 ziekenhuizen (69%) de ZHH kwaliteitsindicatoren voor 2021. Voor Brussel waren dit 7 (50%) ziekenhuizen, voor Vlaanderen 41 (79%) ziekenhuizen en voor Wallonië 24 (63%) ziekenhuizen.

3.1. ORGANISATIE INDICATOREN

Achtentachtig percent van de ziekenhuizen haalt een goede kwaliteitsscore voor de organisatie indicatorgroep (figuur 1).

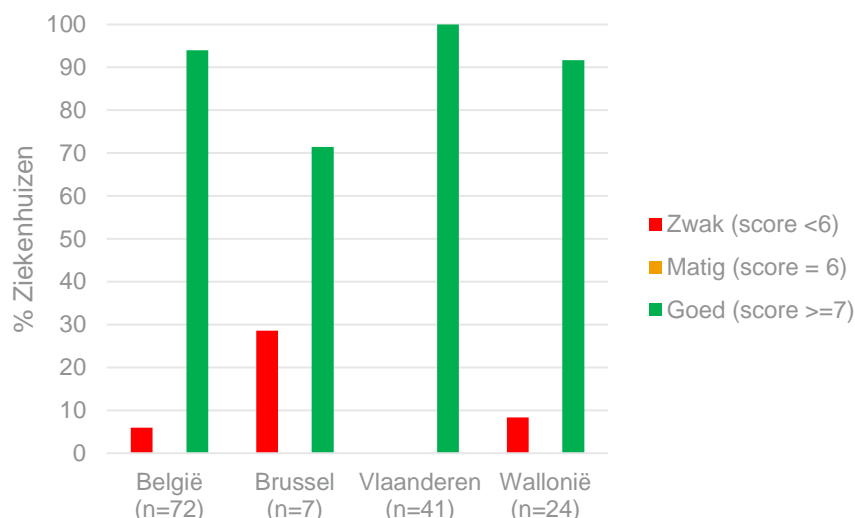
De scores van de individuele indicatoren in deze groep zijn hoog. In 2021 voldeed ten minste 95% van de ziekenhuizen aan drie van de zes individuele indicatoren.



Figuur 1 • Organisatie indicatoren: percentage ziekenhuizen per kwaliteitsklasse op nationaal en regionaal niveau, 2021

3.2. MIDDELEN INDICATOREN

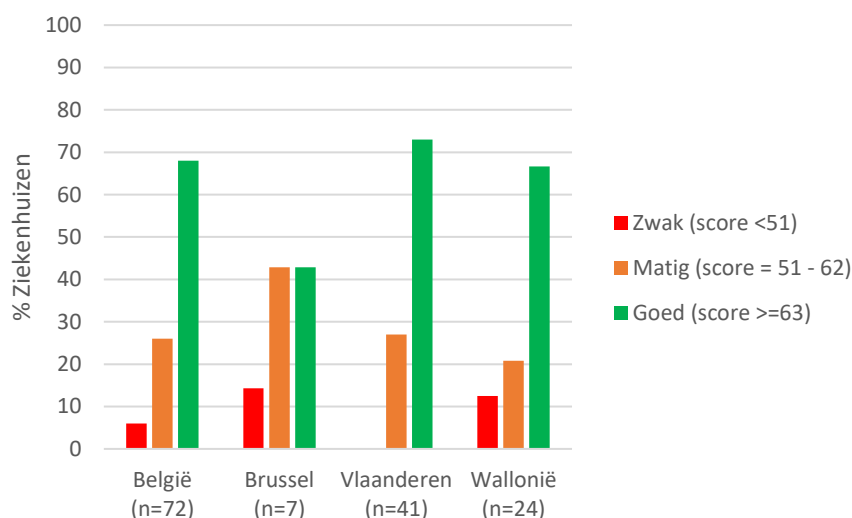
Ongeveer 95% van de ziekenhuizen haalt een goede kwaliteitsscore voor de middelen indicatorgroep (figuur 2). Voor twee van de vijf indicatoren in deze groep behalen de ziekenhuizen een score van ten minste 95%. Negenenvijftig procent van de ziekenhuizen heeft ten minste één VTE IPC-professional per 250 bedden. Slechts 8% van de ziekenhuizen heeft ten minste één VTE IPC-professional per 100 bedden.



Figuur 2 • Middelen indicatoren: proportie ziekenhuizen per kwaliteitsklasse op nationaal en regionaal niveau, 2021

3.3. ACTIVITEITEN INDICATOREN

Ongeveer twee derde (68%) van de ziekenhuizen haalt een goede kwaliteitsscore voor de activiteiten indicatorgroep voor het referentiejaar 2021 (figuur 3). Er zijn verschillen merkbaar in de kwaliteitsscore voor de activiteiten indicatorgroep tussen de verschillende regio's.



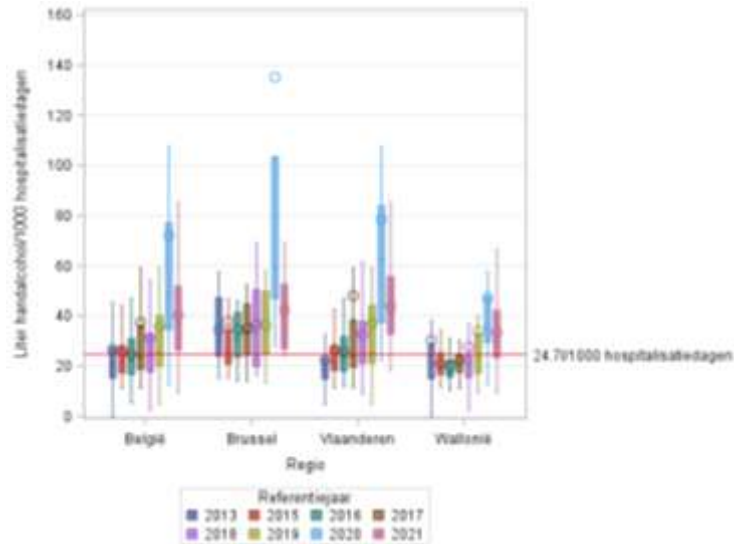
Figuur 3 • Activiteiten indicatoren: proportie ziekenhuizen per kwaliteitsklasse op nationaal en regionaal niveau, 2021

De 2021-resultaten voor de meeste van deze indicatoren zijn vergelijkbaar met de 2015-2020-resultaten.

Tussen 2019 en 2020 werd voor 12 indicatoren een daling van meer dan 10% in het percentage ziekenhuizen dat aan de indicator voldeed, waargenomen. Waarvan 10 met betrekking tot het uitvoeren van audits. Tussen 2020 en 2021 werd geen daling van meer dan 10% meer waargenomen. Hoewel de proportie ziekenhuizen dat de indicator implementeerde voor de meeste van deze 12 indicatoren in 2021 weer toeneemt ten opzichte van 2020, werd het niveau van 2019 niet meer gehaald.

3.4. PROCES INDICATOR

In 2021 heeft 79% van de ziekenhuizen een handalcohol-verbruik dat hoger ligt dan het gemiddelde van 2016 (het verbruik van 2016 wordt als referentiewaarde gebruikt). De mediaan voor het handalcohol-verbruik bedraagt voor 2021 36,4 liter/1000 hospitalisatiedagen. Tussen 2013 en 2020 steeg dit verbruik, maar tussen 2020 en 2021 werd een daling waargenomen (figuur 4).



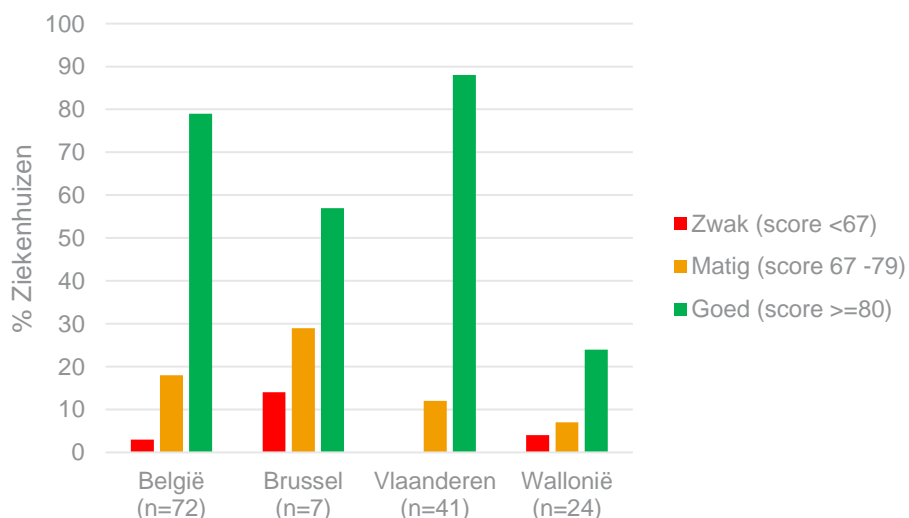
Figuur 4 • Handalcohol-verbruik in de zorgeenheden van Belgische ziekenhuizen, nationaal en regionaal, 2013-2021

Legende boxplot: a. maximum (zonder outliers, 1.5x interkwartielafstand), b. 75e percentiel (P75), c. mediaan, d. gemiddelde, e. 25e percentiel (P25), f. minimum (zonder outliers, 1.5x interkwartielafstand)



3.5. TOTALE KWALITEITSSCORE

Negenenzeventig percent van de ziekenhuizen haalt een goede totale ZHH kwaliteitsscore (figuur 5). Er zijn echter verschillen in totale ZHH kwaliteitsscore tussen de verschillende regio's. Vergeleken met Wallonië vonden we in Vlaanderen 17% meer ziekenhuizen met een goede totale ZHH kwaliteitsscore en vergeleken met Brussel vonden we in Vlaanderen 31% meer ziekenhuizen met een goede totale ZHH kwaliteitsscore.



Figuur 5 • Kwaliteitsindicatoren: percentage ziekenhuizen per kwaliteitsklasse op nationaal niveau, 2021

4. Aanbevelingen

4.1. AANBEVELINGEN VOOR DE ZIEKENHUIZEN

- Verder hun activiteiten en resultaten blijven registreren zodat ze de kwaliteit van het programma ter preventie en controle van zorginfecties binnen hun ziekenhuis kunnen blijven opvolgen en verbeteren.

4.2. AANBEVELINGEN VOOR DE BAPCOC-WERKGROEP 'KWALITEITSINDICATOREN VOOR ZIEKENHUISHYGIËNE' EN VOOR DE ONDERZOEKERS VERANTWOORDELIJK VOOR HET UITVOEREN VAN DE GEGEVENSVERZAMELING, ANALYSE EN RAPPORTAGE VAN HET KWALITEITSINDICATOREN PROJECT (SCIENSANO)

- Definiëren van een beperkte set indicatoren die een zo goed mogelijke evaluatie geven van de voornaamste en belangrijkste aspecten van infectiecontrole en de kwaliteit van infectiepreventie in het ziekenhuis. Belangrijk in de keuze van deze indicatoren is dat ze sensitief genoeg zijn om verbetering en verschillen in infectiecontrole kwaliteit te detecteren en zwakkere prestaties te identificeren. Een eerste stap in dit proces, een *systematic literature review*, werd in juni 2022 uitgevoerd door het onderzoeksteam van Sciensano.
- De inhoud van een nieuwe set indicatoren onderzoeken en een nieuw protocol ontwikkelen. In de vorige rapporten werden hiervoor suggesties geformuleerd. Veel ziekenhuizen voldoen al jaren op rij aan een groot aantal van de huidige indicatoren en daarom zijn aanvullende indicatoren nodig voor verdere verbeteringen.. Nu de meeste kwaliteitsindicatoren in veel ziekenhuizen zijn geïmplementeerd, kan wellicht dieper worden ingegaan op bepaalde aspecten (per thema) om het IPC-management verder te verbeteren en gedetailleerdere indicatoren te implementeren.
- Nagaan in welke mate gegevens verzameld in andere kwaliteitsprojecten afgestemd en geïntegreerd kunnen worden binnen dit kwaliteitsindicatoren project, dit om de werklast van het personeel te verlagen en efficiëntie van de zorgkwaliteitsmeting te bevorderen. Aanvullend onderzoek is hiervoor nodig.
- Nagaan in welke mate de opgestelde kwaliteitsindicatoren afgestemd kunnen worden met de indicatoren voor infectiepreventie en controle voorgesteld door de Wereldgezondheidsorganisatie [1].
- Nagaan hoe het protocol voor de surveillance van postoperatieve wondinfecties gebruiksvriendelijker en haalbaar om te implementeren kan worden, zodat er meer deelgenomen wordt aan deze surveillance (lokaal en/of nationaal). Nagaan hoe er tegemoet kan gekomen worden aan de ontbrekende middelen/tijd om te kunnen deelnemen aan de surveillance van infecties op de intensieve zorgen afdeling en van postoperatieve wondinfecties. Nagaan of een surveillance voor urineweginfecties op alle afdelingen nuttig en gewenst is. De stroomlijning en integratie van deze surveillances in andere door Sciensano gecoördineerde surveillances nagaan.
- Nagaan wat de verschillen in de vaccinatiegraad voor verpleegkundigen, vroedvrouwen en verpleeghulpverleners voor influenza tussen de verschillende regio's en ziekenhuizen onderling kan verklaren.

Verder de gegevensverzamelingsstool (Healthdata) en het online rapportageplatform (Healthstat) blijven verbeteren en optimaliseren.

4.3. AANBEVELINGEN VOOR BELEIDSMAKERS

- Nagaan of de huidige wetgeving in verband met het aantal voltijds equivalent artsen en verpleegkundigen bestemd voor ziekenhuishygiëne herzien en aangepast dient te worden aan de huidige infectiepreventienoden in België.
- Het opzetten en uitvoeren van een externe kwaliteitscontrole (validatie) van de gegevens verzameld voor het ZHH kwaliteitsindicatoren project ondersteunen. Deze externe kwaliteitscontrole zou door Sciensano uitgevoerd kunnen worden in samenwerking met de BAPCOC-werkgroep 'Kwaliteitsindicatoren voor ziekenhuishygiëne'.

- Integratie van het ZHH kwaliteitsindicatoren project in één algemeen project rond het meten en verbeteren van de zorgkwaliteit in het ziekenhuis dit om de werklast van het personeel in verband met gegevensverzameling te verlagen en efficiëntie van de zorgkwaliteitsmeting te bevorderen. Het verbeteren van de samenwerking op alle (beleid)niveaus kan bijdragen tot een geïntegreerde aanpak en visie.
- Doorgaan met de ondersteuning van dit ZHH kwaliteitsindicatoren project zodat de kwaliteit van het programma ter preventie en controle van zorginfecties binnen de ziekenhuizen verder opgevolgd en verbeterd kan worden. De huidige COVID-19-crisis benadrukt het belang van het versterken en ondersteunen van een goed werkend infectiepreventie en -controlebeleid en management op nationaal en ziekenhuisniveau.

RESUME EN FRANÇAIS

1. Informations générales

Le développement et la définition de cette série d'indicateurs de qualité, destinés à mesurer la qualité de l'hygiène hospitalière (HH) dans les hôpitaux belges aigus, est une initiative de la Plateforme fédérale d'HH, qui fait partie de la *Commission belge de coordination de la politique antibiotique* (BAPCOC). L'Arrêté royal (AR) du 22 juin 2017³ mentionne l'obligation pour les hôpitaux belges aigus (hôpitaux universitaires et hôpitaux généraux ayant ou non un caractère universitaire) de suivre la qualité de leur politique d'HH à l'aide de ces indicateurs de qualité. En raison de la pandémie du COVID-19, la BAPCOC a communiqué à Sciensano et aux hôpitaux que l'enregistrement des données pour 2021 se faisait sur une base volontaire.

L'objectif général de ce projet relatif aux indicateurs de qualité en HH est de définir, de hiérarchiser et de mettre en œuvre des stratégies et interventions de prévention des infections liées aux soins afin d'améliorer la qualité des soins dans les hôpitaux. Pour atteindre cet objectif général, trois objectifs spécifiques ont été établis: (1) L'évaluation de la politique, de la planification et des activités hospitalières en matière d'HH au niveau national afin de donner aux responsables politiques une vision d'ensemble du niveau d'HH et des tendances; (2) L'appréciation de la qualité du programme de prévention et de contrôle des infections liées aux soins à l'hôpital par une évaluation des moyens, de l'engagement et des efforts fournis par l'hôpital dans sa lutte contre les infections liées aux soins ; et (3) L'amélioration de la qualité du programme de prévention et de contrôle des infections liées aux soins à l'hôpital en encourageant les hôpitaux à enregistrer et améliorer leurs activités et leurs résultats.

2. Méthodes

La plateforme fédérale pour l'HH a sélectionné et défini un ensemble d'indicateurs de qualité afin de mesurer et de suivre la qualité du programme de prévention et de contrôle des infections liées aux soins dans les hôpitaux aigus belges.

Pour chaque indicateur individuel, la plateforme fédérale d'HH a défini un score pondéré situé entre 1 et 4. Pour un petit nombre d'indicateurs, aucun score n'a été défini. Les scores pondérés évoluent dans le temps, avec au début (2017) une attention particulière pour le développement de procédures et de protocoles pour évoluer ensuite vers les audits et le feedback (2019). En 2020 et en 2021, les mêmes scores ont été utilisés qu'en 2019.

De plus, des groupes d'indicateurs sont également définis. Pour chacun de ces groupes était calculé un score de qualité (= score de qualité du groupe d'indicateurs) égal à la somme des scores d'indicateurs individuels faisant partie de ce groupe. Les indicateurs n'ayant pas reçu de score n'ont pas été repris dans le calcul destiné aux scores de qualité. Pour l'ensemble de tous les indicateurs, un score de qualité total a été calculé, égal à la somme de tous les scores d'indicateurs individuels.

³ Voir: https://www.ejustice.just.fgov.be/cgi/article_body.pl?language=nl&caller=summary&pub_date=17-06-30&numac=2017012829

Sur la base du score de qualité du groupe d'indicateurs, trois classes de qualité ont été définies pour chaque groupe d'indicateurs: 'faible', 'moyenne' ou 'bonne'. Un score de qualité du groupe d'indicateurs ayant obtenu moins de deux-tiers (66,67%) du score maximal a reçu la classe de qualité 'faible'. Un score de qualité du groupe d'indicateurs ayant obtenu 80% ou plus du score maximal a reçu la classe de qualité 'bonne'.

Les données de 2021 ont été saisies par les hôpitaux de février à juillet 2022 inclus via la plateforme en ligne Healthdata.be. La liste du nombre théorique d'équivalents temps plein (ETP) financés dans les hôpitaux belges, médecins et/ou infirmiers/infirmières en HH et une liste reprenant les membres de chaque plateforme régionale, ont été fournies par le service public fédéral Santé publique. Le nombre de lits par hôpital a été obtenu via le module dénominateur, disponible sur la plateforme Healthdata.

3. Résultats

En 2022, 72 hôpitaux (69%) ont enregistré des données relatives aux indicateurs de qualité en HH pour 2021: 7 (50%) hôpitaux à Bruxelles, 41 (79%) hôpitaux en Flandre et 24 (63%) hôpitaux en Wallonie.

3.1. INDICATEURS D'ORGANISATION

Quatre-vingt-huit pourcent des hôpitaux obtiennent un bon score de qualité pour le groupe des indicateurs d'organisation (figure 1). Les scores des indicateurs individuels de ce groupe sont élevés. En 2021, au moins 95% des hôpitaux répondent à 3 des 6 indicateurs individuels.

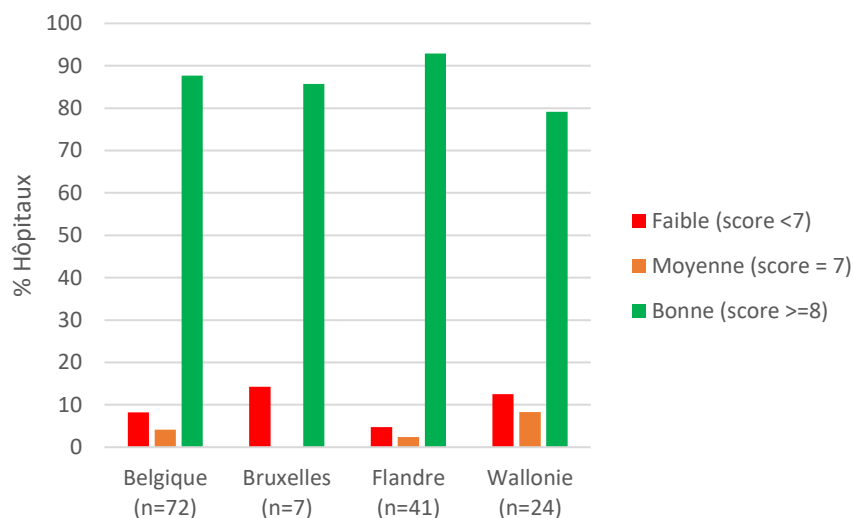


Figure 1 • Indicateurs d'organisation; proportion d'hôpitaux par classe de qualité au niveau national et régional, 2021

3.2. INDICATEURS DE MOYENS

Environ 95% des hôpitaux obtiennent un bon score de qualité pour le groupe des indicateurs de moyens (figure 2). Pour 2 des 5 indicateurs de ce groupe, les hôpitaux obtiennent un score d'au moins 95%. Cinquante-neuf pourcent des hôpitaux ont au moins un professionnel HH ETP pour 250 lits. Seulement 8% des hôpitaux ont au moins un professionnel HH ETP pour 100 lits.

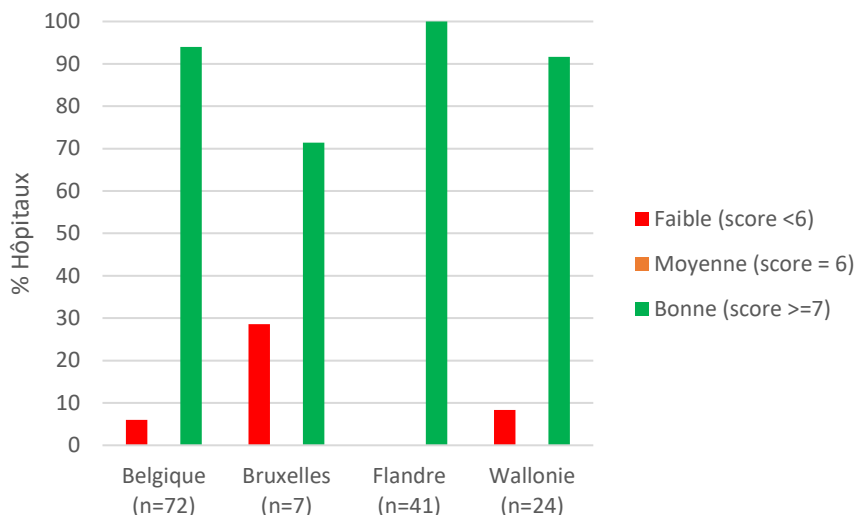


Figure 2 • Indicateurs de moyens; proportion d'hôpitaux par classe de qualité au niveau national et régional, 2021

3.3. INDICATEURS D' ACTIONS

Environ deux tiers (68%) des hôpitaux obtiennent un bon score de qualité pour le groupe d'indicateurs d'actions pour l'année de référence 2021 (figure 3). Des différences sont perceptibles dans le score de qualité pour le groupe d'indicateurs d'actions entre les différentes régions.

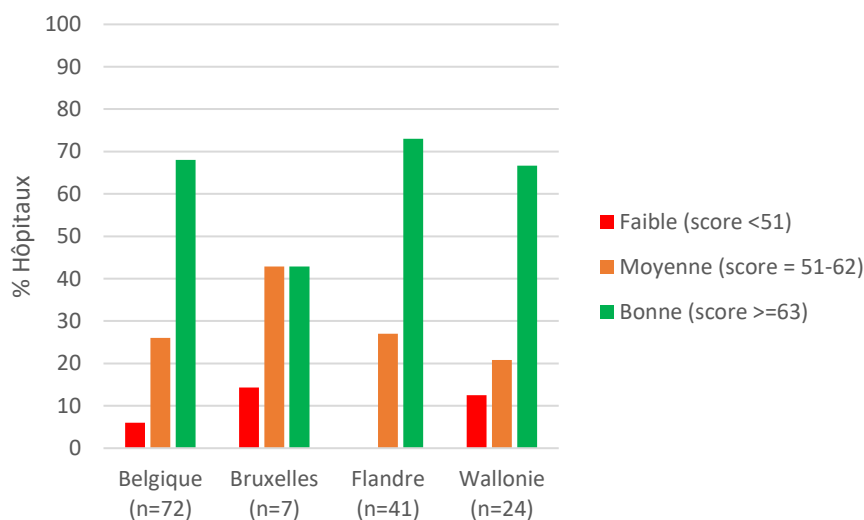


Figure 3 • Indicateurs d'actions; proportion d'hôpitaux par classe de qualité au niveau national et régional, 2021

Les résultats de 2021 pour la plupart de ces indicateurs sont comparables à ceux de la période 2015-2020.

Entre 2019 et 2020, une baisse de plus de 10% a été observée pour 12 indicateurs dans le pourcentage d'hôpitaux qui répondaient à l'indicateur. D'entre eux, 10 étaient des indicateurs relatifs à la réalisation d'audits. Entre 2020 et 2021, plus aucune baisse de plus de 10% n'a été observée. Même si la proportion d'hôpitaux ayant mis en œuvre l'indicateur augmente à nouveau pour la plupart de ces 12 indicateurs en 2021 par rapport à 2020, le niveau de 2019 n'a pas été atteint.

3.4. INDICATEUR DE PROCESSUS

En 2021, 79% des hôpitaux ont une consommation de solution hydro-alcoolique supérieure à la moyenne de 2016 (la consommation de 2016 est utilisée comme référence). La médiane pour la consommation de solution hydro-alcoolique s'élève à 36,4 litres/1000 journées d'hospitalisation en 2021. Cette consommation a augmenté entre 2013 et 2020 mais entre 2020 et 2021, une baisse a été observée (Figure 4).

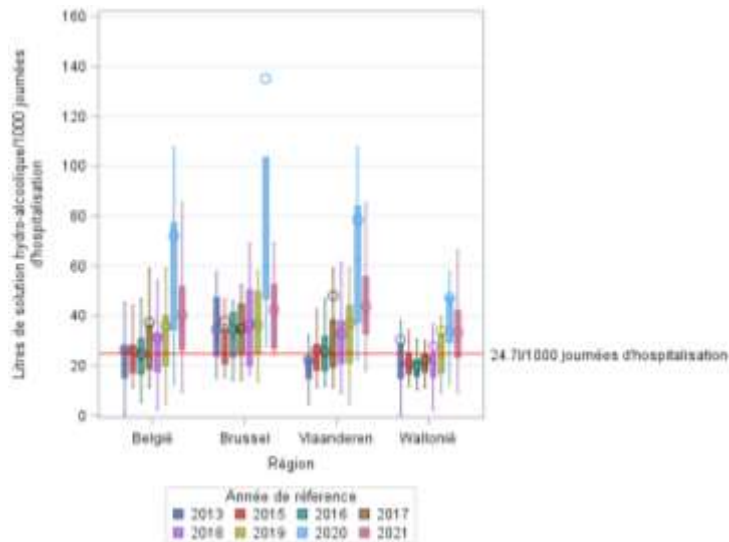


Figure 4 • Consommation de solution hydro-alcoolique dans les unités de soins des hôpitaux belges au niveau national et régional, 2013-2021

Légende diagramme en boîte : a. valeur maximale (sans valeurs aberrantes, 1,5 fois l'écart interquartile), b. 3ième quartile (Q3), c. médiane, d. moyenne, e. 1er quartile (Q1), f. valeur minimale (sans valeurs extrêmes, 1,5 fois l'écart interquartile).



3.5. SCORE DE QUALITÉ TOTAL

Soixante-dix-neuf pourcent des hôpitaux obtiennent un bon score de qualité total en HH (figure 5). Il existe toutefois des différences dans le score de qualité total entre les régions. Par rapport à la Wallonie, nous avons trouvé 17% d'hôpitaux en plus avec un bon score de qualité total en Flandre et par rapport à Bruxelles, nous avons trouvé 31% d'hôpitaux en plus avec un bon score de qualité total en Flandre.

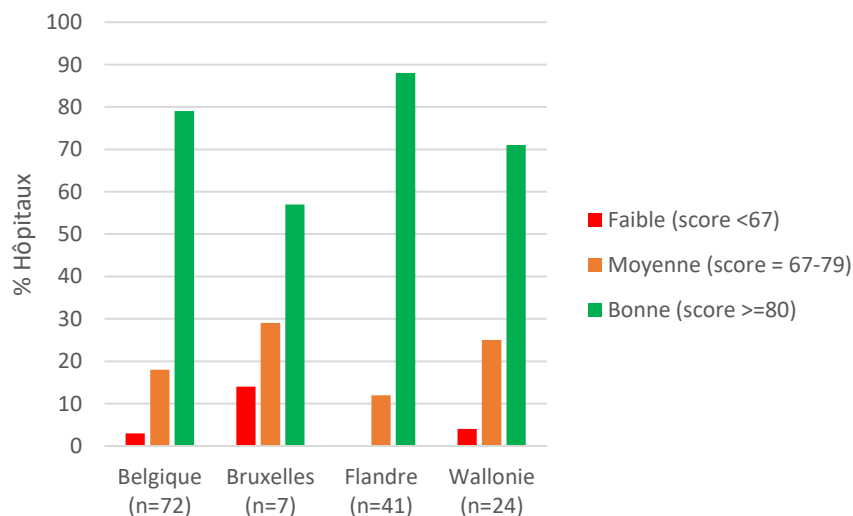


Figure 5 • Indicateurs de qualité; proportion d'hôpitaux par classe de qualité au niveau national et régional, 2021

4. Recommandations

4.1. RECOMMANDATIONS POUR LES HÔPITAUX

- Continuer à enregistrer leurs activités et résultats afin de pouvoir continuer à suivre et à améliorer le programme de prévention et de contrôle des infections liées aux soins au sein de leur hôpital.

4.2. RECOMMANDATIONS POUR LE GROUPE DE TRAVAIL BAPCOC 'INDICATEURS DE QUALITÉ EN HYGIÈNE HOSPITALIÈRE' ET POUR LES CHERCHEURS RESPONSABLES DE LA COLLECTE DES DONNÉES, DE L'ANALYSE ET DU RAPPORTAGE DU PROJET INDICATEURS DE QUALITÉ (SCIENSANO)

- Définir un petit nombre d'indicateurs qui donnent une évaluation aussi bonne que possible des aspects les plus importants du contrôle des infections et de la qualité de la prévention des infections à l'hôpital. Ce qui est important dans le choix de ces indicateurs c'est qu'ils doivent être suffisamment sensibles que pour détecter une amélioration et des différences dans la qualité du contrôle des infections et pour identifier les prestations plus faibles. Une première étape dans ce processus, une revue systématique de la littérature, a été réalisée par l'équipe de recherche Sciensano en juin 2022.
- Investiguer le contenu d'une nouvelle série d'indicateurs et développer un nouveau protocole. Des suggestions ont été formulées à cet effet dans les rapports précédents. De nombreux hôpitaux respectent un grand nombre d'indicateurs actuels depuis plusieurs années consécutives et des indicateurs supplémentaires sont donc nécessaires pour améliorer la situation. A présent que la plupart des indicateurs de qualité ont été implémentés dans de nombreux hôpitaux, certains aspects (par thème) pourront probablement être approfondis afin de poursuivre l'amélioration du management HH et l'implémentation des indicateurs plus détaillés.
- Investiguer dans quelle mesure les données collectées dans le cadre d'autres projets de qualité peuvent être harmonisées et intégrées dans ce projet d'indicateurs de qualité, ceci afin de diminuer la charge de travail du personnel et d'améliorer l'efficacité de la mesure de la qualité des soins. Des recherches supplémentaires sont nécessaires à cette fin.
- Vérifier dans quelle mesure les indicateurs de qualité fixés peuvent être harmonisés avec les indicateurs de prévention et de contrôle des infections proposés par l'Organisation mondiale de la santé (1).
- Vérifier comment le protocole pour la surveillance des infections post-opératoires peut être plus facilement implémenté, afin que la participation à cette surveillance augmente (au niveau local et/ou national). Vérifier comment pallier au manque de moyens/de temps pour pouvoir participer à la surveillance des infections aux unités de soins intensifs et des infections post-opératoires. Vérifier si une surveillance des infections des voies urinaires est utile et souhaitable dans toutes les unités. Vérifier la rationalisation et l'intégration de ces surveillances dans d'autres surveillances coordonnées par Sciensano.
- Vérifier ce qui pourrait expliquer les différences dans les taux de couverture vaccinale contre la grippe des infirmières, des sages-femmes et des aides-soignantes entre les différentes régions et hôpitaux.
- Poursuivre l'amélioration et l'optimisation de l'outil de collecte de données (Healthdata) et de la plateforme de rapport en ligne (Healthstat).

4.3. RECOMMANDATIONS POUR LES RESPONSABLES POLITIQUES

- Investiguer si la législation actuelle relative au nombre de médecins et infirmiers HH en ETP doit être revue et adaptée en fonction des besoins actuels en prévention des infections en Belgique.
- Initier et soutenir l'installation et l'exécution d'un contrôle de qualité externe (validation) des données collectées pour le projet 'indicateurs de qualité' HH. Ce contrôle de qualité externe pourrait être effectué par Sciensano en collaboration avec le groupe de travail BAPCOC-'Indicateurs de qualité en HH'.

- Intégrer les indicateurs de qualité en HH dans un seul projet général relatif à la mesure et à l'amélioration de la qualité des soins à l'hôpital, ceci afin de diminuer la charge de travail du personnel chargé de la collecte des données et de favoriser l'efficacité de la mesure de la qualité des soins. L'amélioration de la collaboration à tous les niveaux (politiques) peut contribuer à une approche et à une vision intégrées.
- Poursuivre le soutien de ce projet 'Indicateurs de qualité en HH' afin que la qualité du programme de prévention et de contrôle des infections liées aux soins dans les hôpitaux puisse continuer à être suivie et améliorée. L'actuelle crise du COVID-19 souligne l'importance de renforcer et de soutenir une politique et une gestion de prévention et de contrôle des infections fonctionnant bien au niveau national et au niveau des hôpitaux.

INTRODUCTION

The development and description of indicators to measure the quality of infection prevention and control (IPC) provided in Belgian acute care hospitals is an initiative of the Federal Platform for IPC, part of the Belgian Antibiotic Policy Coordination Committee (BAPCOC). All Belgian acute care hospitals (university hospitals and general hospitals with or without university character) [2] are legally obliged to monitor the quality of the programme for the prevention and control of healthcare-associated infections (HAI) using these indicators (see Royal Decree 30/06/2017) [3].

This report presents the 2021 results of the IPC quality indicator project. Reports with the results of the previous years can be found at the Sciensano website: <https://www.sciensano.be/en/projects/quality-indicators-infection-prevention-and-control-acute-hospitals>

1. Objectives

The overall objective of the IPC quality indicators project is to define, prioritise and implement strategies and interventions to prevent HAI in Belgian hospitals in order to improve the quality of care provided in these hospitals.

The project has three specific objectives:

1. To evaluate the hospital IPC policies, planning and activities at national level in order to provide policy makers an overall view of the IPC levels and trends.
2. To assess the quality of the IPC management at hospital level by evaluating the resources, commitment and efforts made by the hospital in fighting HAI.
3. Improve the quality of the IPC management at hospital level through encouraging hospitals to measure and improve their IPC activities and outcomes.

In order to meet the three specific objectives mentioned before, the IPC indicator data are used; for,

1. Objective 1: through a publication of aggregated quality scores at national and regional level.
2. Objective 2: through a publication of quality scores per hospital. These scores are available via Healthstat.be.
3. Objective 3: by making an individualised IPC quality report available for each hospital (see Healthstat.be).

This report contains the quality scores at national and regional level for the 2021 data. The results of previous years (2013, 2015-2020) are reported for comparison.

METHODS

1. Quality assessment of the programme for infection prevention and control of healthcare associated infections

The federal platform for IPC developed and selected a set of indicators to measure and monitor the quality of the programme for the prevention and control of healthcare-associated infections in Belgian acute hospitals. This set of IPC indicators was adapted for the reference year 2017. This updated indicators set includes all indicators used in 2013, 2015 and 2016 (historical indicators) supplemented by additional indicators and has been set for three years. In this updated set of indicators, progressively more importance is given to indicators related to the implementation of IPC related process audits. Due to the coronavirus disease 2019 (COVID-19) pandemic, it was decided to keep the same indicators for 2020 and 2021 data, rather than developing and implementing a new protocol.

The set of indicators included four indicator groups:

1. organisation indicators,
2. resource indicators,
3. activity indicators, and
4. process indicator.

Each of these four groups contained one or more individual indicators (Table 1). A detailed description of the indicators can be found in the protocol [4].

Based on these indicators, an extensive quality assessment was performed using both individual indicator results and compiled quality scores.

1.1. INDIVIDUAL INDICATORS

For each indicator, the proportion (percentage) of hospitals that met the indicator was calculated. For each indicator group, the average of the proportions of hospitals that met the individual indicators was calculated as well.

1.2. QUALITY SCORE

For each individual indicator, a weighted score between 1 and 4 has been defined by the federal platform for IPC. For a limited number of indicators, no score was defined. The weighted scores evolve over time. Initially (2017) special attention was paid to the development of procedures and protocols. This evolved over time towards conducting IPC related audits and providing feedback (2019). In 2020 and 2021, the same scores as in 2019 were used. The scores used in 2021 can be found in table 1.

When the individual indicator was met, the weighted score was assigned. If the indicator was not met, a '0' score was assigned. When answering with 'not applicable', the corresponding weighted score was assigned if the motivation for answering 'not applicable' was valid (Table 1).

For each indicator group, a quality score (= indicator group quality score) was calculated which is the sum of the individual indicator scores belonging to this group. Indicators that were not scored were not included in the calculation of the quality scores. For all indicators together, an overall quality score was calculated which is the sum of all individual indicator scores.

1.3. QUALITY CLASSES

Based on the quality score, three quality classes were defined for each indicator group: "weak", "moderate" or "good". A quality score that achieved less than two-thirds (66.67%) of the maximum score was assigned the quality class "weak". A quality score that achieved 80% or more of the maximum score was assigned the quality class 'good'. This definition of quality classes is based on the definition used in the old set of indicators (until 2016). The quality classes are shown in table 1. Similarly, three quality classes (weak, moderate or good) were defined for the overall quality score for IPC.

1.4. IPC PROFESSIONAL PER BEDS RATIO

The World Health Organisation (WHO) recommended a minimum ratio of one full-time equivalent IPC professional (nurse or doctor) per hospital 250 beds. In the IPC full requirements conditions, they even recommended a ratio of one IPC professional per 100 beds. This due to increased patient acuity and complexity, as well as the multiple roles and increasing responsibilities of the IPC professional [1, 5]. To assess the current ratio is for Belgian hospitals, the median and interquartile range of IPC professionals per hospital bed were calculated. The proportion of hospitals having a ratio of one full-time equivalent (FTE) IPC professional per ≤ 250 beds and the proportion of hospitals having a ratio of one FTE per ≤ 100 beds was calculated.

2. Data collection

The protocol contains a detailed description of the indicators and instructions for data collection and the supporting documents to be kept [4]. A paper registration form has been developed for hospitals who want to prepare their registration.

Between February and July 2022, the 2021 data were submitted by the hospitals via the online platform Healthdata.be. Hospitals who did not register their data when this report was published can still submit these. For hospitals consisting of several campuses, the data are collected per fusion (RIZIV/INAMI number) and not per campus. The list of the number of FTE of physicians and nurses dedicated to IPC tasks in Belgian hospitals and a list of the members of each regional platform were obtained from the Federal Public Service (FPS) Public Health. The number of hospital beds were retrieved from the denominator surveillance, available through the Healthdata platform.

3. Data analyses

The statistical software SAS Enterprise Guide 7.13 (SAS Institute Inc., Cary, North Carolina, USA) was used to analyse the data.

4. Reporting

The reporting of the quality of the IPC programme in Belgian hospitals on the national and regional level differs from the reporting on the hospital level.

At national and regional levels, (1) for each individual indicator the proportion of hospitals complying with the indicator was calculated, (2) for each indicator group as well as for the total set of indicators the median and range quality score of all hospitals was calculated, (3) for each indicator group the average of the proportions of hospitals complying with the individual indicators belonging to the indicator group concerned was calculated and (4) for each quality class the proportion of hospitals belonging to class 'weak, moderate and good' was calculated. For comparison, the proportion of hospitals that met the indicator in previous years (2013, 2015-2020) is also reported.

METHODS

At hospital level, (1) the quality scores per indicator group were calculated and (2) based on this indicator group quality scores, it was determined whether the quality class was 'weak', 'moderate' or 'good'. These results and individual indicator results per hospital are available on Healthstat.be.

Table 1 • Indicators for IPC used to calculate a quality score and to measure the quality of the programme for the prevention and control of HAI in Belgian hospitals (for data 2021).

Indicator group and indicators (corresponding indicator code as mentioned in the protocol and registration form)	Score per indicator	Quality score - scale	Calculation of quality scores
1. Organisation indicators			
1. (O.1.a) Presence of a general long-term strategic plan (3-5 years) for IPC, approved by the IPC committee.	1	<i>Number of indicators:</i> 6 <i>Quality score indicator group:</i> maximum 10 – minimum 0 <i>Classification by quality class:</i> <ul style="list-style-type: none"> • Weak: score <7 • Moderate: score = 7 • Good: score ≥8 	<ul style="list-style-type: none"> • Each individual indicator was assigned the corresponding score if the answer was "yes" and the score "0" if the answer was "no". • The quality score is the sum of the results of the individual indicators belonging to this group
2. (O.1.b) The strategic plan is integrated in the hospital's strategic plan.	2		
3. (O.2) Number of meetings of the IPC committee ≥4 per year	1		
4. (O.3) A detailed action plan for IPC is present and approved by the IPC committee.	1		
5. (O.4) An annual report on IPC is present and approved by the IPC committee.	1		
6. (O.5) The IPC nurse(s) is/are part of the nursing middle management.	4		
2. Resource indicators			
1. (M.1) The effective number of IPC physicians ≥ 90% of the funded number	2	<i>Number of indicators:</i> 8 (5 dichotomous and 3 numeric indicators) <i>Quality score indicator group:</i> maximum 9 – minimum 0 <i>Classification by quality class:</i> <ul style="list-style-type: none"> • Weak: score <6 • Moderate: score = 6 • Good: score ≥7 	<ul style="list-style-type: none"> • Each individual indicator was assigned the corresponding score if the answer was "yes" and the score "0" if the answer was "no". • If no intensive care unit was present, the maximum number of points was assigned for indicator M.4. • Numeric indicators (last 3 indicators in the 1st column): No score was assigned to these indicators. Consequently, these indicators were not included in the calculation of the indicator group quality score. • The indicator group quality score is the sum of the results of the individual indicators belonging to this group
2. (M.2) The effective number of IPC nurses ≥ 90% of the funded number	2		
3. (M.3) Presence of referents for infection control	1		
4. (M.4) Number of referents in ICU / number of ICU ≥ 1	2		
5. (M.5) Number of referents in units (including ICU) / number of units (including ICU) ≥ 1	2		
6. (M.6.a) Number of hours for training on IPC provided by the IPC team to the hospital staff, per funded number of FTE for IPC (physicians and nurses)	No score		
7. (M.6.b) Number of participants in these trainings, per funded number of FTE for IPC (physicians and nurses)	No score		
8. (M.6.c) Number of hours of e-learning training on IPC followed by the hospital staff, per funded number of FTE for IPC (physicians and nurses).	No score		

<p>3. Activity indicators</p> <p>3.1. Meetings</p> <p>1. (A.1) Participation of the management to the meetings of the IPC committee</p> <p>2. (A.2) Participation of the infection control team to the meetings of the regional platform for IPC</p> <p>3.2. Surveillances</p> <p>3. (A.3.a) MRSA (local)</p> <p>4. (A.3.b) MRSA (nationaal)</p> <p>5. (A.4.a) Bloodstream infections (local)</p> <p>6. (A.4.b) Bloodstream infections (national)</p> <p>7. (A.5.a) Multi-resistant Gram-negative bacteria (local)</p> <p>8. (A.5.b) Multi-resistant Gram-negative bacteria (national)</p> <p>9. (A.6) Toxigenic <i>Clostridioides difficile</i> infections (local)</p> <p>10. (A.7) Infections in Intensive Care Units (local)</p> <p>11. (A.8) Surgical site infections (local)</p> <p>12. (A.9) Vancomycin-resistant enterococci (local)</p> <p>13. (A.10) Other surveillances (local)</p> <p>14. (A.11) Presence of a systematic interaction between the laboratory and the IPC team (warning system)</p> <p>3.3. Process audits</p> <p>15. (A.13.a) Approach for optimizing the choice of venous vascular access</p> <p>16. (A.13.b) Procedure for the prevention of central line-associated bloodstream infections</p> <p>17. (A.13.c) The application of this procedure was audited</p> <p>18. (A.14.a.) Procedure for the prevention of catheter-associated urinary tract infections</p> <p>19. (A.14.b.) The application of this procedure was audited</p> <p>20. (A.15.a) Procedure for the prevention of infections related to invasive mechanical ventilation</p> <p>21. (A.15.b.) The application of this procedure was audited</p> <p>22. (A.16.a) Procedure for the prevention of surgical site infections</p> <p>23. (A.16.b) The application of this procedure was audited</p> <p>24. (A.17) Other audits related to IPC</p>	<p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>No score</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>No score</p>	<p><i>Number of indicators: 57</i></p> <p><i>Quality score indicator group: maximum 79 – minimum 0</i></p> <p><i>Classification by quality class:</i></p> <ul style="list-style-type: none"> • Weak: score <51 • Moderate: score 51-62 • Good: score ≥63 <p><i>Quality score per subgroup</i></p> <p><i>3.1 Meetings</i> maximum 3 – minimum 0</p> <p><i>1.2 Surveillances</i> maximum 11 – minimum 0</p> <p><i>1.3 Process audits</i> maximum 13 – minimum 0</p> <p><i>1.4 National campaign/ prevalence study</i> maximum 5 – minimum 0</p> <p><i>1.5 Other</i> maximum 47 – minimum 0</p>	<ul style="list-style-type: none"> • Each individual indicator was assigned the corresponding score if the answer was "yes" and the score "0" if the answer was "no". • If no intensive care unit was present, the maximum number of points was assigned for the indicators A.7 and A.15. • When for indicator A.24 was indicated that there are 0 nurses/midwives/nursing assistants working in the hospital, this indicator was considered as missing. • The corresponding score was assigned to the individual indicators where the answer was 'not applicable' and the motivation for this answer was justified. • Since 2018 the antibiotic prophylaxis in surgery audit from BAPCOC has not been organised. Therefore the corresponding score of the indicator (A.28) was assigned to all hospitals in 2018,2019, 2020 and 2021. • The indicator group quality score is the sum of the results of the individual indicators belonging to this group. Indicators were no score was assigned to, were not included in the calculation of the indicator group quality score.
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3.4. National campaign/ prevalence study			
25. (A.18) Participation in the national campaign “You’re in good hands”.	1		
26. (A.12.a.) Local audits related to hand hygiene compliance (outside the national campaign)	2		
27. (A.12.b) At least 150 hand hygiene opportunities (outside the national campaign) have been reported.	1		
28. (A.19) Participation in the point prevalence study related to HAI and antimicrobial use	1		
3.5. Other			
29. (A.20) Information for the patient regarding the risk of infections	4		
30. (A.21) Approach for the prevention of accidental blood exposure	2		
31. (A.22) Procedure for the management of accidental blood exposure	2		
32. (A.23) An influenza vaccination campaign for staff	2		
33. (A.24) Staff vaccination coverage for influenza	No score		
34. (A.25) Participation of the IPC team in the medical devices committee meetings	1		
35. (A.26) Participation of the IPC physician in the antimicrobial stewardship group meetings	1		
36. (A.27.a) Procedure for antibiotic prophylaxis in surgery	1		
37. (A.27.b) The application of this procedure was audited	2		
38. (A.28) Participation in the antibiotic prophylaxis in surgery audit from BAPCOG	1		
39. (A.29.a) Procedure for the prevention of contact/droplet/airborne transmission	1		
40. (A.29.b) The application of these preventive measures was audited	2		
41. (A.30.a) Procedure to prevent transmission by screening of patients	1		
42. (A.30.b) The application of these preventive measures was audited	2		
43. (A.31.a) Procedure related to admission of patients who are known MDRO carriers	1		
44. (A.31.b) The application of these preventive measures was audited	2		
45. (A.34) A preventive approach regarding the transmission of tuberculosis	4		
46. (A.35) A preventive approach regarding the risk of Creutzfeld Jacob disease	2		
47. (A.32) Procedure for the disinfection of endoscopes	2		
48. (A.33.a) Procedure for the disinfection of endocavity ultrasound probes	1		
49. (A.33.b) The application of these preventive measures was audited	2		

METHODS

50. (A.36) An approach to prevent the risk of infection related to the management of construction works	2		
51. (A.37) An approach to prevent the risk of infection related to the cleaning and disinfection of surfaces and non-medical equipment	1		
52. (A.38) An approach to prevent the risk of infection related to the cleaning and disinfection of non-critical medical materials	1		
53. (A.39) Risk management plan with regard to the distribution of warm water for sanitary purposes	1		
54. (A.40.a) Procedure to prevent the risk of infection in operating rooms and rooms for interventional techniques	1		
55. (A.40.b) The application of this procedure was audited	2		
56. (A.41.a) Procedure to prevent the risk of infection in delivery rooms	1		
57. (A.41.b) The application of this procedure was audited	2		
4. Process indicator			
1. (R.1) Alcohol-based handrub consumption (litres /1000 hospitalisation days) > mean of 2016	2	<p><i>Number of indicators: 1</i></p> <p><i>Quality score indicator group: maximum 2 – minimum 0</i></p> <p><i>Classification by quality class:</i> /</p>	<ul style="list-style-type: none"> • The mean alcohol-based handrub consumption in 2016 was 24.7l/1000 hospitalisation days. • Each individual indicator was assigned the corresponding score if the answer was "yes" and the score "0" if the answer was "no".
All indicators for IPC		<p><i>Overall quality score:</i> <i>Maximum 100 – minimum 0</i></p> <p><i>Classification by quality class:</i></p> <ul style="list-style-type: none"> • Weak: score <67 • Moderate: score 67-79 • Good: score ≥80 	<ul style="list-style-type: none"> • The overall quality score is the sum of the results of the individual indicators. Indicators where no score was assigned to, were not included in the calculation of the overall quality score.

BAPCOC, Belgian Antibiotic Policy Coordination Committee; FTE, full time equivalent; HAI, healthcare-associated infections; ICU, intensive care unit; IPC, infection prevention and control; MRSA, Methicillin-resistant *Staphylococcus aureus*

RESULTS

In this chapter you find aggregated quality scores at national level. The results at regional level can be found in the supplement of this report via <https://www.sciensano.be/en/biblio/quality-indicators-infection-prevention-and-control-acute-care-hospitals-supplement-report-2022>. Individual indicator results per hospital are available via healthstat.be.

1. Results at national level

In 2022, 72 out of 104 eligible hospitals⁴ (69%) (identified by RIZIV/INAMI number) reported 2021 data for the IPC quality indicators project. For Brussels 7 out of 14 (50%) hospitals, for Flanders 41 out of 52 (79%) hospitals and for Wallonia 24 out of 38 (63%) hospitals participated.

1.1. ORGANISATION INDICATORS

The organisation indicator group contains 6 individual indicators (Table 1).

Eighty-eight percent of hospitals achieve a good quality score for the organisational indicator group. The median quality score is 10 at national level and for the Flemish region, which is also to the maximum score. The variation in the quality score of the organisational indicator group between hospitals remains low.

Scores in this group are high (Table 2, 3 and Figure 6). In 2021, three out of the six individual indicators were met by at least 95% of hospitals. The indicator 'The general strategic plan for IPC is integrated in the strategic plan of the hospital' (88% in 2021) had a lower score compared with the other organisational indicators (Table 3).

Table 2 • Median and range of the quality score for the organisation indicator group in Belgian hospitals and proportion of hospitals per quality class, national and regional level, 2021

	Belgium 2021 (n=72)	Brussels 2021 (n=7)	Flanders 2021 (n=41)	Wallonia 2021 (n=24)
Median quality score (range) (min.=0 – max.=10)	10 (3 – 10)	9 (3 – 10)	10 (6 - 10)	10 (4 – 10)
Proportion (%) of hospitals per quality class				
Weak (score <7)	8	14	5	13
Moderate (score = 7)	4	0	2	8
Good (score ≥8)	88	86	93	79

n, number of hospitals

⁴ Based on the address list of general & psychiatric hospitals in Belgium on 01/01/2021, obtained from the FPS Public Health, Safety of the Food Chain and Environment, DG GS, Data and Policy Information Service

RESULTS

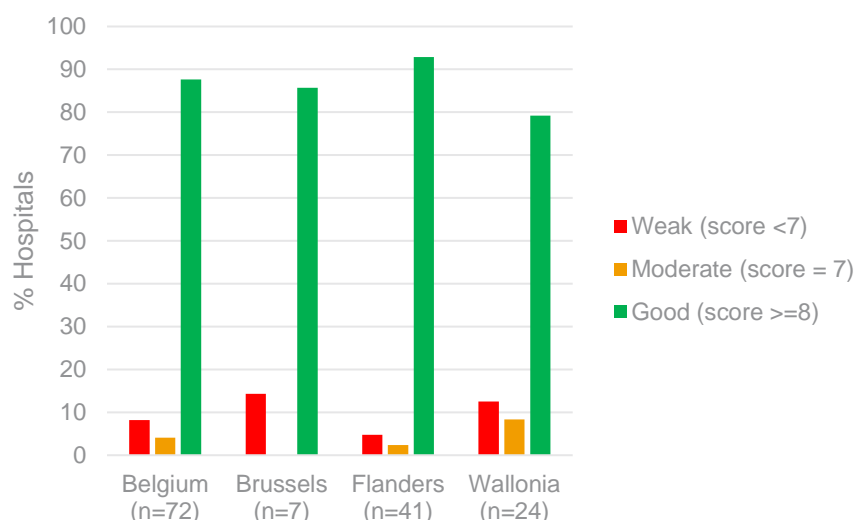


Figure 6 • Organisation indicators: proportion of hospitals per quality class at national and regional level, 2021

Table 3 • Proportion (%) of hospitals meeting each individual organisation indicator, national level, 2013 - 2021

Indicator Description	Belgium								
	2013 n=104	2015 n=103	2016 n=103	2017 n=103	2018 n=102	2019 n=98	2020 n=73	2021 n=72	
Presence of a general long-term strategic plan (3-5 years) for IPC, approved by the IPC committee	79	97	100	99	98	100	97	97	
The general strategic plan for IPC is integrated in the strategic plan of the hospital	39	70	79	86	82	90	88	88	
The number of meetings for the IPC committee ≥ 4 per year	93	100	98	100	98	100	78	93	
Presence of a detailed action plan for IPC, approved by the IPC committee	87	97	99	100	98	99	97	99	
Presence of an annual report, approved by the IPC committee	87	100	99	100	100	99	96	99	
The IPC nurse(s) is/are part of the nursing middle management	88 ¹	94 ¹	95 ¹	92	94	95	95	92	
Mean proportion	79	93	95	96	95	97	92	95	

n, number of hospitals; IPC, infection prevention and control

¹in 2013, 2015 and 2016 only one IPC nurse had to be a member of the nursing middle management

1.2. RESOURCE INDICATORS

The resource indicator group contains 8 individual indicators (Table 1).

Approximately 95% of hospitals achieve a good quality score for the resource indicator group (Table 4 and Figure 7). The median quality score at both national and all regional levels is 9, which is equal to the maximum score (Table 4). The variation in the quality score of the resource indicator group between hospitals remains low.

For two out of five indicators in this group, hospitals achieve a score of at least 95% (Table 4, 5 and Figure 7). All hospitals work with IPC referents and in 88% of hospitals there are at least as many referents as units present. In 9 out of 10 hospitals, the effective number of IPC physicians and the effective number of IPC nurses are close to the funded number (expressed in FTE; calculated using the number of beds accounted for by the government to finance this activity, as described in the Royal Decree) (Table 5). The median of the number of beds per FTE IPC professional is 221 (IQR: 160-316) in 2021. Fifty-nine percent of the hospitals have at least one FTE IPC professional per 250 beds. Only 8% of the hospitals have at least one FTE IPC professional per 100 beds.

A large variation between hospitals regarding the number of IPC training courses and participants has been observed. E-learning tools are only used to a limited extent as a training tool (Table 6).

Table 4 • Median and range of the quality score for the resource indicator group in Belgian hospitals and proportion of hospitals per quality class, national and regional level, 2021

	Belgium 2021 (n=72)	Brussels 2021 (n=7)	Flanders 2021 (n=41)	Wallonia 2021 (n=24)
Median quality score (range) (min.=0 – max.=9)	9 (3 – 9)	9 (5 – 9)	9 (7 - 9)	9 (3 – 9)
Proportion (%) of hospitals per quality class				
Weak (score <6)	6	29	0	8
Moderate (score = 6)	0	0	0	0
Good (score ≥7)	94	71	100	92

n, number of hospitals



Figure 7 • Resource indicators: proportion of hospitals per quality class at national and regional level, 2021

RESULTS

Table 5 • Proportion (%) of hospitals meeting each individual resource indicator, national level, 2013 - 2021

Indicator Description	Belgium								
	2013 n=104	2015 n=103	2016 n=103	2017 n=103	2018 n=102	2019 n=98	2020 n=73	2021 n=72	
The effective number of IPC physicians ≥ 90% of the funded number (expressed in number of FTE)	81	87	90	91	93	90 ³	93	92	
The effective number of IPC nurses ≥ 90% of the funded number (expressed in number of FTE)	92	91	90	93	92	94 ³	97	94	
Presence of referents for infection control	90	96	99	99	100	100	100	100	
Number of referents in ICU / number of ICU ≥ 1	80 ¹	91 ¹	96 ²	96 ¹	99 ¹	99 ¹	99 ¹	96 ¹	
Number of referents in units (including ICU) / number of units (including ICU) ≥ 1	65	82	91	93	92	93	92	88	
Mean proportion	82	89	93	95	95	95	96	94	

FTE, fulltime equivalent; ICU, intensive care unit; IPC, infection prevention and control; n, number of hospitals

¹This indicator was not applicable in 1 hospital, ²This indicator was not applicable in 2 hospitals, ³The financed number of FTEs was missing for 1 hospital

Table 6 • Median and percentile 25 and 75 for the three numeric indicators belonging to the resource indicator group, national level, 2013-2021

Indicator Description	Belgium								
	2013 n=104	2015 n=103	2016 n=103	2017 n=103	2018 n=102	2019 n=98	2020 n=73	2021 n=72	
Number of hours for training on IPC provided by the IPC team to the hospital staff, per funded number of FTE for IPC (physicians and nurses)	15 (9-32)	22 (13-36)	21 (12-34)	20 (12-32)	18 (10-35)	19 (12-33)	37 (13-71)	17 (10-46)	
Number of participants in these trainings, per funded number of FTE for IPC (physicians and nurses)	191 (96-289)	237 (140-365)	238 (132-407)	277 (148-454)	204 (130-404)	247 (119-448)	276 (150-530)	190 (87-338)	
Number of hours of e-learning training on IPC followed by the hospital staff, per funded number of FTE for IPC (physicians and nurses).				0 (0-38)	0 (0-27)	0 (0-41)	3 (0-61)	25 (0-93)	

FTE, full time equivalents; IPC, infection prevention and control; n, number of hospitals

Table 7 • Median and percentile 25 and 75 for the number of beds per IPC professional and the proportion of hospitals for the minimal and higher ratio's defined by the World Health Organization, national level, 2013-2021

Indicator Description	Belgium								
	2013 n=101	2015 n=101	2016 n=103	2017 n=99	2018 n=94	2019 n=87	2020 n=66	2021 n=60	
Number of beds per full-time equivalent IPC professional (nurse or doctor) (median + IQR)	211 (145-300)	201 (141-289)	201 (141-298)	207 (149-292)	216 (156-304)	211 (153-299)	211 (157-299)	221 (160-316)	
Number of beds per full-time equivalent IPC professional (nurse or doctor) ≤250 (proportion of hospitals)	61%	65%	62%	61%	60%	60%	64%	59%	
Number of beds per full-time equivalent IPC professional (nurse or doctor) ≤100 (proportion of hospitals)	9%	12%	10%	8%	7%	9%	8%	8%	

FTE, full time equivalents; IPC, infection prevention and control; n, number of hospitals

1.3. ACTIVITY INDICATORS

The activity indicator group contains 57 individual indicators (Table 1). This indicator group contains the largest number of indicators. The majority of activity indicators achieve high scores (Table 9 and 11).

About two-third (68%) of the hospitals achieve a good quality score for the activity indicator group for the reference year 2021 (Figure 8, Table 8). There are large differences in the quality score for the activity indicator group between the various regions. In Flanders and Wallonia, up to 30% more of the participating hospitals achieve a good quality score for this indicator group compared to Brussels (Table 8). The median quality score at the national level is 67 (Table 8), the maximum score is 79. The variation in the quality score of the activity indicator group is shown in a boxplot (Figure 9).

Table 8 • Median and range of the quality score for the activity indicator group in Belgian hospitals and proportion of hospitals per quality class, national and regional level, 2021

	Belgium 2021 (n=72)	Brussels 2021 (n=7)	Flanders 2021 (n=41)	Wallonia 2021 (n=24)
Median quality score (range) (min.=0 – max.=79)	67 (42 – 79)	62 (42 – 71)	69 (51 - 79)	65 (42 – 77)
Proportion (%) of hospitals per quality class				
Weak (score <51)	6	14	0	13
Moderate (score 51-62)	26	43	27	21
Good (score ≥63)	68	43	73	67

n, number of hospitals

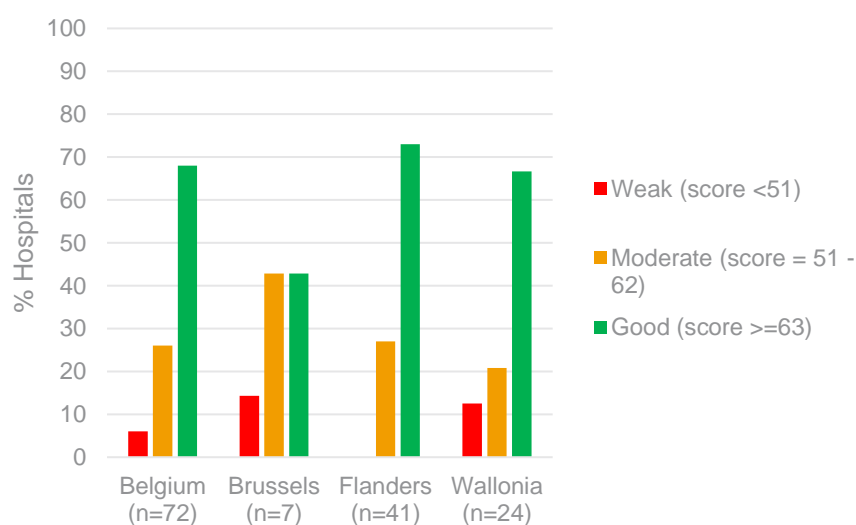


Figure 8 • Activity indicators: proportion of hospitals per quality class at national and regional level, 2021

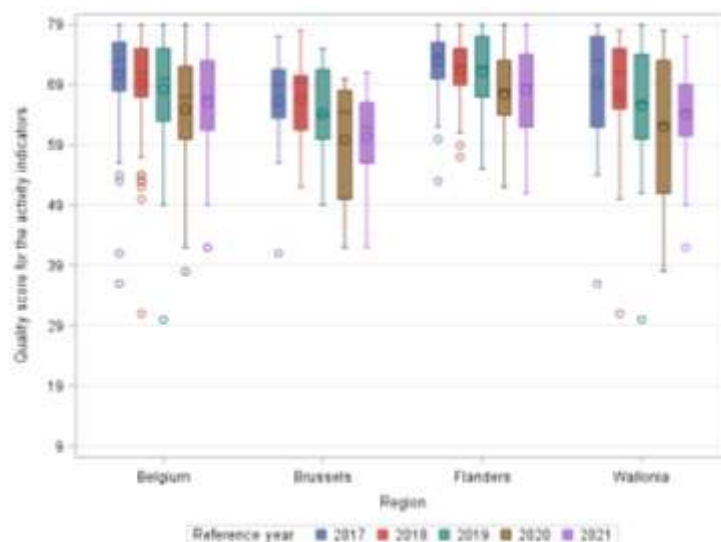


Figure 9 • Activity indicators: boxplot for quality scores at national and regional level, 2017-2021
Legend boxplot: a. maximum (without outliers, 1.5x interquartile range), b. 75th percentile (P75), c. median, d. mean, e. 25th percentile (P25), f. minimum (without outliers, 1.5x interquartile range)

1.3.1. Activity indicators collected in all previous data collections (2013-2021)

In all participating hospitals, the management participates to meetings of the IPC committee and the IPC team participates to meetings of the regional platform for IPC (Table 9).

Participation in surveillances organised at hospital (local) and/or national level reach high scores (97% - 100%), except for the 'infections in intensive care units' and 'surgical site infections' surveillances. Only 76% and 56% of hospitals organise these surveillances at local level, respectively. However, since 2013, the number of hospitals organising these two surveillances increased. A systematic interaction between the laboratory and the IPC team (alarm system) is present in all hospitals (Table 9).

At least half of the hospitals conduct the process audits surveyed since 2013 (Table 9 and Figure 10). Figure 10 visually shows the proportion of hospitals that comply with these process audits and shows an increase in conducting these process audits until 2019. Between 2019 and 2020, a decrease in hospitals conducting these audits was observed. Between 2020 and 2021 an increase for most of these indicators has been observed again.

The pre-campaign observation period of the national hand hygiene (HH) campaign has been cancelled in 2020 and only the post-campaign observation was conducted in 2021. In 2021, 79% of hospitals participated in the national HH campaign, which is a clear decrease compared to previous years. Local audits regarding HH compliance were conducted by 76% of hospitals outside the national campaign. In the process, 71% of hospitals observed more than 150 HH opportunities (Table 9).

The organisation of and participation in other surveillances and audits than those mentioned in the questionnaire are also asked. The answers to these open questions are not used in the composition of the quality score. An overview of the most common answers to these questions can be found in chapter 2 (Tables 15 and 16).

Table 9 • Proportion (%) of hospitals meeting each individual activity indicator for the indicators collected in all previous data sets, national, 2013 - 2021

Indicator Description	Belgium							
	2013 n=104	2015 n=103	2016 n=103	2017 n=103	2018 n=102	2019 n=98	2020 n=73	2021 n=72
1. Meetings								
Participation of the management in the meetings of the IPC committee	95	94	97	96	97	98	97	100
Participation of the infection control team in the meetings of the regional platform for IPC	96	93	92	96	97	96	99	100
2. Surveillances								
MRSA (local)	99	100	100	100	100	100	100	100
MRSA (national)	99	100	100	99	100	98	95	99
Bloodstream infections (local)	90	100	100	98	100	100	99	99
Bloodstream infections (national)	85	99	99	97	100	98	97	99
Multi-resistant Gram-negative bacteria (local)	88	100	100	99	100	100	99	100
Multi-resistant Gram-negative bacteria (national)	71	99	100	98	100	98	92	100
Toxigenic <i>Clostridioides difficile</i> infections (local)	97	97	98	98	100	98	99	99
Infections in Intensive Care Units (local)	53	68	72	72 ¹	75 ¹	71 ¹	75 ¹	76 ¹
Surgical site infections (local)	18	40	50	58 ¹	59 ¹	60 ²	58 ¹	56 ¹
Vancomycin-resistant enterococci (local)	69	94	96	95	98	99	100	97
Other surveillances (local)			66	68	71	65	66	72
Presence of a systematic interaction between the laboratory and the IPC team (warning system)	97	98	99	99	100	100	100	100
3. Process audits								
Audit of the procedure for the prevention of central line-associated bloodstream infections (CLABSI)	35	59	72	54	76	88	73	69
Audit of the procedure for the prevention of catheter-associated urinary tract infections (CAUTI)	19	53	66	58	74	78	66	74
Audit of the procedure for the prevention of infections related to invasive mechanical ventilation	56	65	67	47 ¹	60 ¹	69 ¹	52 ¹	53 ¹
Audit of the procedure for the prevention of SSI	18	43	45	34 ¹	55 ¹	57 ¹	41 ¹	50 ¹
Other audits related to IPC			62	68	66	67	64	78
4. National campaign/prevalence study								
Participation in the national campaign "You're in good hands".	94	95	96	99	99	97	/	79
Local audits related to hand hygiene compliance (outside the national campaign)	47	79	83	84	83	85	71	76
At least 150 hand hygiene opportunities (outside the national campaign) have been reported.	39	59	74	74	76	71	59	71
Mean proportion	60	78	83	86	86	86	82	84

CLABSI, central line-associated bloodstream infections; MRSA, Methicillin-resistant *Staphylococcus aureus*; n, number of hospitals; SSI, surgical site infections; CAUTI, catheter-associated urinary tract infections; IPC, infection prevention and control

¹This indicator was not applicable in 1 hospital, ²This indicator was not applicable in 2 hospitals

RESULTS

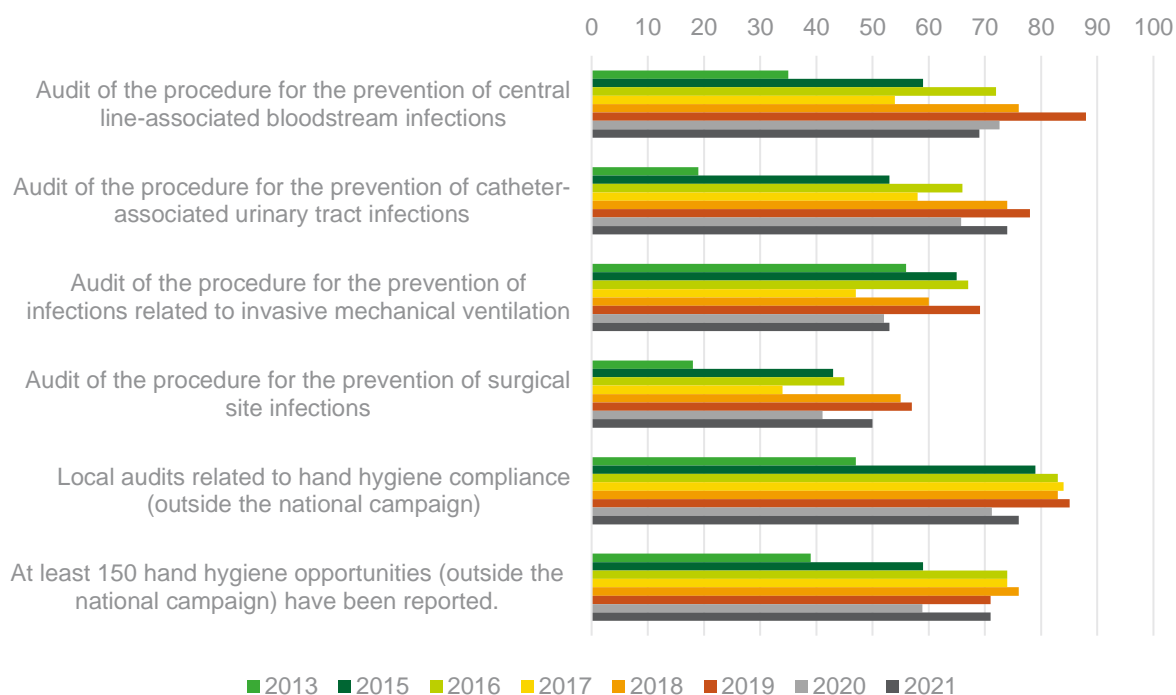


Figure 10 • Proportion of hospitals meeting the individual activity; process audits, national level, 2013 - 2021

1.3.2. Activity indicators collected since 2017 (2017-2021)

The indicators on the presence of procedures score high (>90%), with the exception of the indicators 'Approach for optimizing the choice of venous vascular access' (83%), 'Procedure for the prevention of infections related to invasive mechanical ventilation' (89%), 'Procedure for the prevention of surgical site infections' (86%) and 'Procedure to prevent infection risk in delivery rooms' (78%) (Table 11).

In contrast to previous years, only one procedure (audit of the procedure for the prevention of contact/droplet/airborne transmission) was audited by at least 70% of hospitals. The following procedures were audited by less than half of the hospitals:

- Audit of the procedure for antibiotic prophylaxis in surgery (49%);
- Audit of the procedure for disinfection of endocavitary ultrasound probes (43%); and
- Audit of the procedure to prevent the risk of infection in delivery rooms (36%).

In 2021, the surgical antibiotic prophylaxis audit of BAPCOC did not take place. Only 50% of hospitals participated in a point prevalence study related to HAI and antimicrobial use.

Figure 11 documents the activity indicators on the implementation of an audit, collected since 2017. Until 2019, an increase in the number of hospitals meeting these activity indicators for all seven audits was observed whereas in 2020 a decrease in conducting these audits was observed. Between 2020 and 2021 an although small but further decrease has been observed for the indicators: 'Audit of the procedure to prevent transmission by screening of patients', 'Audit of the procedure related to admission of patients who are known MDRO carriers' and 'Audit of the procedure to prevent the risk of infection in delivery rooms'.

Participation in the medical device committee meetings by the IPC team and participation in the antibiotic therapy policy group meetings by the IPC physician score high (99%). Information on infection risk for the patient is present in 94% of hospitals (Table 10).

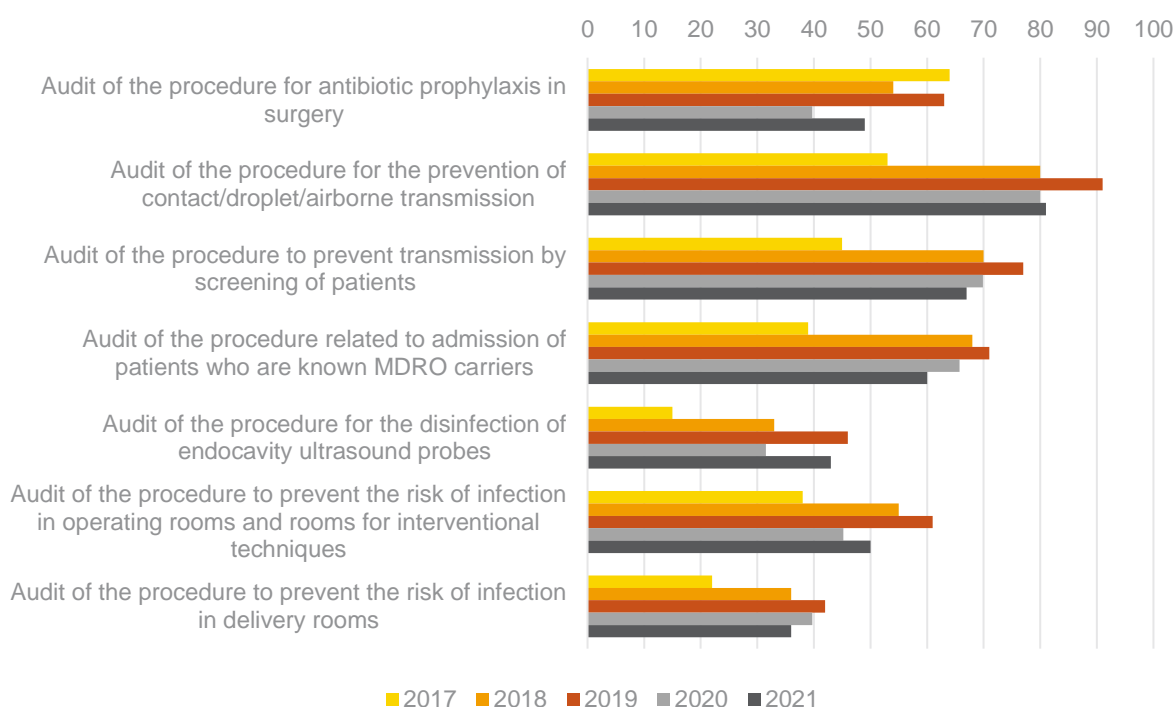
All hospitals (100%) performed an influenza vaccination campaign. The median vaccination coverage among nurses, midwives and nursing assistants is 58% and is slightly decreasing following an increase during previous years (Table 9).

Table 10 • Median and percentile 25 and 75 for the two numeric indicators in % belonging to the activity indicator group, national level, 2017-2021

Description	Belgium				
	2017 n=103	2018 n=102	2019 n=94	2020 n=73	2021 n=72
Staff vaccination coverage for influenza (expressed in percentage)	39% ³ (20% – 54%)	45% ² (28%– 65%)	52% ¹ (31%– 67%)	64% (33%– 79%)	58% ² (31%– 74%)
Number of observed hand hygiene opportunities (outside the national campaign)	440 (155 – 1077)	570 (187 – 1105)	641 (169 – 1766)	204 (151 – 743)	345 ⁴ (190– 937)

n, number of hospitals;

¹This indicator was missing for 1 hospital, ²This indicator was missing for 2 hospitals, ³This indicator was missing for 3 hospitals, ⁴ In 2022 the reporting tool of the hand hygiene campaign migrated to Healthstat. Due to this migration, not all hospitals had already access to the exact number of hand hygiene opportunities they observed and therefore reported an estimate.



MDRO: multidrug resistant organisms

Figure 11 • Proportion of hospitals meeting the individual activity indicators collected since 2017; process audits, national level, 2017 – 2021

Table 11 • Proportion (%) of hospitals meeting each individual activity indicator for the indicators collected since 2017, national, 2017 - 2021

Indicator Description	Belgium				
	2017 n=103	2018 n=102	2019 n=98	2020 n=73	2021 n=72
3. Process audits					
Approach for optimizing the choice of venous vascular access	64	76	82	85	83
Procedure for the prevention of central line-associated bloodstream infections	89	95	97	96	94
Procedure for the prevention of catheter-associated urinary tract infections	90	90	94	96	97
Procedure for the prevention of infections related to invasive mechanical ventilation	82 ¹	88 ¹	92 ¹	89 ¹	89 ¹
Procedure for the prevention of surgical site infections	79 ¹	84 ¹	85 ¹	84 ¹	86 ¹
4. National campaign/ prevalence study					
Participation in the point prevalence study related to HAI and antimicrobial use	79	44	65	30	50
5. Other					
Information for the patient regarding the risk of infections	95	95	95	96	94
Approach for the prevention of accidental blood exposure	97	99	99	97	97
Procedure for the management of accidental blood exposure	98	99	97	99	100
An influenza vaccination campaign for staff	100	99	100	100	100
Participation of the IPC team in the medical devices committee meetings	93	98	98	96	99
Participation of the IPC physician in the antimicrobial stewardship group meetings	99	99	97	96	99
Procedure for antibiotic prophylaxis in surgery	92 ¹	90 ¹	96 ¹	96 ¹	94 ¹
Audit of the procedure for antibiotic prophylaxis in surgery	64 ¹	54 ¹	63 ¹	40 ¹	49 ¹
Participation in the antibiotic prophylaxis in surgery audit from BAPCOC	77 ²	/	/	/	/
Procedure for the prevention of contact/droplet/airborne transmission	99	98	100	100	100
Audit of the procedure for the prevention of contact/droplet/airborne transmission	53	80	91	80	81
Procedure to prevent transmission by screening of patients	95	96	99	100	99
Audit of the procedure to prevent transmission by screening of patients	45	70	77	70	67
Procedure related to admission of patients who are known MDRO carriers	89	96	97	99	97
Audit of the procedure related to admission of patients who are known MDRO carriers	39	68	71	66	60
Procedure for the disinfection of endoscopes	91	92	99	99	99
Procedure for the disinfection of endocavity ultrasound probes	73 ²	81 ²	87 ¹	89	92
Audit of the procedure for the disinfection of endocavity ultrasound probes	15 ²	33 ²	46 ¹	32	43
A preventive approach regarding the transmission of tuberculosis	94	97	97	97	97
A preventive approach regarding the risk of Creutzfeldt Jacob disease	72	79	85	89	88
An approach to prevent the risk of infection related to the management of construction works	91	94	93	97	97
An approach to prevent the risk of infection related to the cleaning and disinfection of surfaces and non-medical equipment	98	99	97	99	99
An approach to prevent the risk of infection related to the cleaning and disinfection of non-critical medical materials	89	94	96	99	97
Risk management plan with regard to the distribution of warm water for sanitary purposes	87	90	96	89	97
Procedure to prevent the risk of infection in operating rooms and rooms for interventional techniques	88 ¹	89 ¹	91 ¹	88 ¹	90 ¹
Audit of the procedure to prevent the risk of infection in operating rooms and rooms for interventional techniques	38 ¹	55 ¹	61 ¹	45 ¹	50 ¹
Procedure to prevent the risk of infection in delivery rooms	73 ³	76 ⁴	75 ⁵	75 ³	78 ³
Audit of the procedure to prevent the risk of infection in delivery rooms	22 ³	36 ⁴	42 ⁵	40 ³	36 ³
Mean proportion	78	83	87	83	85

BAPCOC, *Belgian Antibiotic Policy Coordination Committee*; MDRO, multidrug resistant organisms; n, number of hospitals; IPC, infection prevention and control; HAI, healthcare-associated infections

¹This indicator was not applicable in 1 hospital, ²This indicator was not applicable in 2 hospitals, ³This indicator was not applicable in 6 hospitals, ⁴This indicator was not applicable in 7 hospitals, ⁵This indicator was not applicable in 8 hospitals

1.4. PROCESS INDICATOR

Only one process indicator was included within the IPC indicators, being the 'total alcohol-based hand rub consumption'.

In 2021, 79% of hospitals reported an alcohol-based hand rub consumption that was higher than the 2016 average (the 2016 average is used as reference number) (Table 12). The median alcohol-based hand rub consumption for 2021 was 36 litres/1,000 hospitalisation days (IQR: 26 – 52 /1,000 hospitalisation days) (Table 13). The variability in alcohol-based hand rub consumption between hospitals is shown in a boxplot (Figure 12).

Table 12 • Proportion (%) of hospitals meeting the process indicator, national, 2017-2021

Indicator Description	Belgium				
	2017 n=103	2018 n=102	2019 n=98	2020 n=73	2021 n=72
Hand rub consumption (litres/1,000 hospitalisation days) ≥ mean in 2016 (24.7 litres/1,000 hospitalisation days)	43	42	54	92	79

n, number of hospitals

Table 13 • Median and percentile 25 and 75 for the alcohol-based hand consumption (in litres/1,000 hospitalisation days) in care unites in Belgian hospitals, national level, 2013-2021

	Belgium							
	2013 n=104	2015 n=103	2016 n=98	2017 n=103	2018 n=102	2019 n=98	2020 n=73	2021 n=72
Alcohol-based hand rub consumption, median	20.3 (15.2 – 27.4)	21.3 (17.2 – 28.1)	22.3 (16.7 – 30.7)	23.4 (18.8- 35.9)	24.1 (17.6 – 32.5)	25.4 (20.0 – 39.9)	49.0 (34.5 – 77.0)	36.4 (26.4 – 51.8)

n, number of hospitals

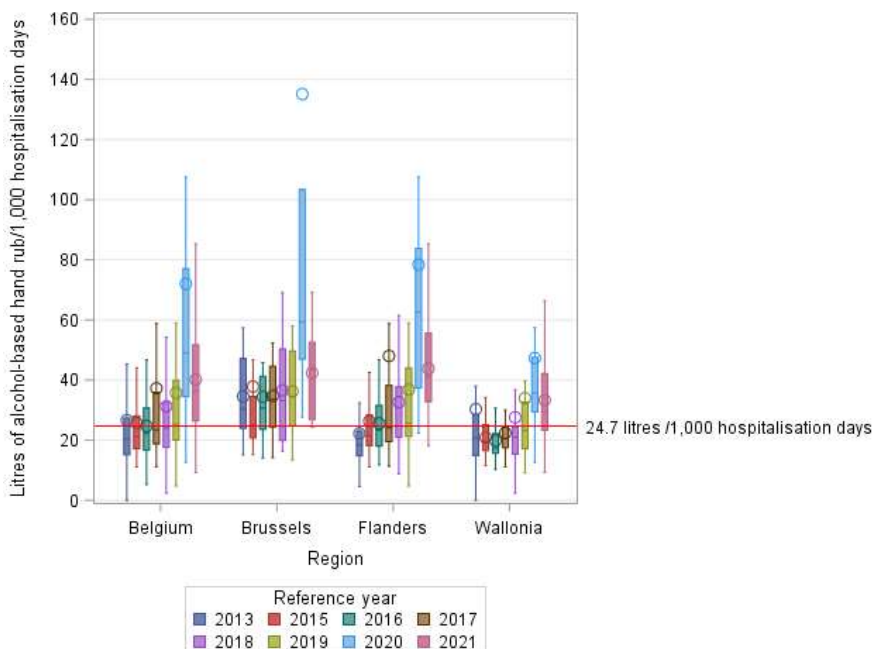


Figure 12 • Alcohol-based hand rub consumption in care units of Belgian hospitals, national and regional level, 2013 – 2021

Legend boxplot: a. maximum (without outliers, 1.5x interquartile range), b. 75th percentile (P75), c. median, d. mean, e. 25th percentile (P25), f. minimum (without outliers, 1.5x interquartile range)



1.5. OVERALL QUALITY SCORE FOR IPC

Seventy-nine percent of hospitals achieve a good overall IPC quality score (Table 14 and Figure 13). However, differences in this overall quality score between regions are observed. Compared with Wallonia we found in Flanders 17% more hospitals with a good overall quality score and compared with Brussels we found in Flanders 31% more hospitals with good overall quality score.

The median overall quality score at the national level is 86, the maximum score is 100 (Table 14). The variation in the overall quality score is shown in a boxplot (Figure 14).

Table 14 • Median and range of the overall quality score in Belgian hospitals and proportion of hospitals per quality class, national and regional level, 2021

	Belgium 2021 (n=72)	Brussels 2021 (n=7)	Flanders 2021 (n=41)	Wallonia 2021 (n=24)
Median quality score (range) (min.=0 – max.=100)	86 (52 – 100)	81 (52 – 90)	89 (71 - 100)	83 (57 – 97)
Proportion (%) of hospitals per quality class				
Weak (score <67)	3	14	0	4
Moderate (score 67 - 79)	18	29	12	25
Good (score ≥80)	79	57	88	71

n, number of hospitals

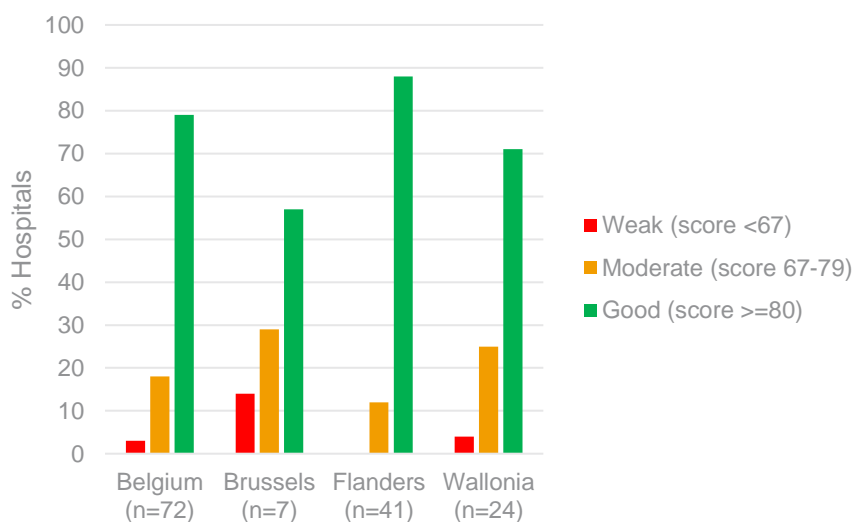


Figure 13 • Indicators: proportion of hospitals per quality class at national and regional level, 2021

RESULTS

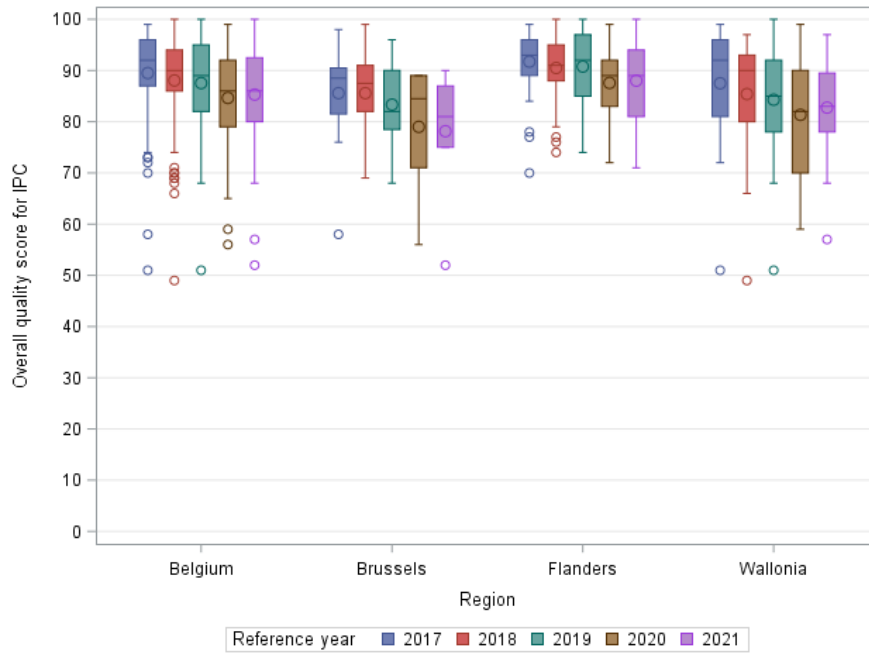
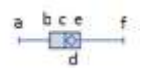


Figure 14 • Indicators: boxplot for quality scores at national and regional level, 2017-2021
 Legend boxplot: a. maximum (without outliers, 1.5x interquartile range), b. 75th percentile (P75),
 c. median, d. mean, e. 25th percentile (P25), f. minimum (without outliers, 1.5x interquartile range)



2. Participation in surveillances and audits other than those mentioned in the questionnaire

2.1. PARTICIPATION IN A LOCAL SURVEILLANCE SYSTEM FOR HEALTHCARE-ASSOCIATED INFECTIONS/MULTIRESISTANT BACTERIA

Answers to this question included surveillances that were already included in the general list, such as participation in a surveillance of carbapenemase-producing *enterobacteriaceae* (CPE) or *Pseudomonas aeruginosa*. Both are part of the surveillance of multi-resistant Gram-negative bacteria.

Table 15 gives an overview of the most common surveillances that were given as an answer to this open question and that do not appear in the general questionnaire.

Table 15 • Overview of the most common answers given by the hospitals on the question to which surveillances beside these included in the questionnaire, they participated, Belgium, 2021

Surveillance related to	Surveillance
1. Other infecties	<ul style="list-style-type: none"> • COVID-19 (n=23) • Influenza (n=11) • Norovirus (n=8) • <i>Legionella</i> (n=8) • Tuberculosis (n=8)
2. Infections associated with the use of an invasive device	<ul style="list-style-type: none"> • Catheter-associated urinary tract infections (and urinary tract infections) (n=9)

COVID-19: coronavirus disease 2019

4.2. PARTICIPATION IN LOCAL AUDITS OF HEALTHCARE PROCESSES AND/OR HEALTHCARE-ASSOCIATED INFECTIONS

Again, answers included audits that were already included in the general questionnaire, such as conducting a local HH audit.

Table 16 gives an overview of the most common audits given as an answer to this open question and that do not appear in the general questionnaire.

Table 16 • Overview of the most common answers given by the hospitals on the question to which audits beside these included in the questionnaire, they participated, Belgium, 2021

Audits of	Audit
1. Infrastructure	<ul style="list-style-type: none"> • Kitchen, kitchen on the service and milk kitchen (HACCP) (n=20) • Linens and laundry (n=11) • Cleaning and disinfection (n=8) • Construction, renovation and technical work (n=7)
2. Medical Equipment	<ul style="list-style-type: none"> • Endoscopes (n=11)
3. IPC guidelines	<ul style="list-style-type: none"> • Isolation measures (n=12) • Basic requirements for hand hygiene and staff clothing¹ (n=9) • Standard and additional precautions (n=8)

HACCP: Hazard analysis – Critical Control Point

¹An audit of the compliance with the basic requirements is an (optional) part of the hand hygiene campaign and therefore does not belong in this list. Within the VIKZ (Vlaams Instituut voor Kwaliteit van Zorg) project, both internal and external audits are set up to check to what extent the basic requirements for good hand hygiene are being observed. As it is not clear whether the hospitals mean an external or internal audit, the non-mandatory nature of the hand hygiene campaign and the large number of hospitals that gave this answer, this audit has been included in the overview.

DISCUSSION

Many of the discussion points from the previous reports (2017, 2018, 2019 and 2020 data) still apply. These points are addressed to a limited extent in this report.

1. Effect of the COVID-19 pandemic on the IPC quality indicator results

In 2021, as in 2020, the COVID-19 pandemic caused a considerable burden on Belgian acute care hospitals. Between 15 March 2020 and 11 July 2022 129,315 patients were admitted in Belgium due to a laboratory-confirmed COVID-19 infection [6]. In addition to providing care to these patients, many COVID-19 related IPC procedures had to be written, implemented and updated and the fight against the COVID-19 pandemic became a priority for all IPC teams and many other healthcare workers. Support was offered to long-term care facilities and other institutions in need of assistance.

The current set of indicators was originally developed to be used three years (up to and including 2019) [4]. A protocol describing a set of indicators to be used for this project from 2020 onwards, is not yet available. Nevertheless, due to the COVID-19 pandemic the importance of infection prevention measures such as general precautions (including cough hygiene), the importance of cleaning and disinfection and principles of isolation became very clear. It was therefore decided that in order to assess the effect of COVID-19 on the existing IPC indicators, the 2019 version of the protocol would continue to be used on a voluntary basis in 2020 and 2021.

Yet, for several years, the proportion of hospitals that meet certain indicators has been very high ($\geq 95\%$). In recent years, the indicators with lower scores have made only very limited progress. Compared to the pre-COVID-19 period, a small decrease in the median of the overall quality score from 90/100 in 2019 to 86/100 in 2021 has been observed. In 2020 and 2021 the same protocol and scoring as in 2019 were used, therefore a change in the methodology could not explain this decrease. In 2020, a decrease of more than 10% in the proportion of hospitals that complied with the indicator, has been observed for 12 IPC indicators. Of these 10 indicators were related to auditing. Even though, in 2021, the proportion of hospitals that implemented the indicator is increasing again for most of these 12 indicators, the level of 2019 was not reached again. Recommendations on how hospitals can evaluate and improve their scores (Significant Event Analysis) are formulated in the report of 2020 [7].

Summarised, only a limited number of indicators, most related to audits were impacted by the COVID-19 pandemic, and there are few differences compared to the pre-COVID-19 period for the other indicators. The authors would like to point out the importance and need for a new protocol with new indicators and/or new benchmarks to monitor and evaluate IPC in hospitals, as the current set of indicators, in accordance with our findings, is no longer suitable for this purpose. In previous reports, several suggestions on how to improve the quality indicator project have been formulated [7-10].

During the previous two years, HH has been widely promoted due to the COVID-19 pandemic [11]. Nevertheless, the proportion of hospitals participating in the HH campaign has never been as low as in 2021 (79%). Since 2013, alcohol-based hand rub consumption has been increasing annually, with a sharp increase observed between 2019 and 2020. This might indicate a possible effect of the COVID-19 pandemic on HH compliance among healthcare workers. Monitoring HH with direct observation (currently the most common method used) will remain important. Yet, given the need for social distancing and minimize contacts to control COVID-19, this strategy is more difficult to implement [12,13]. Several studies used electronic HH monitoring systems, mostly to observe HH compliance at entries and exits of patient rooms, to evaluate the impact of the COVID-19 pandemic on HH compliance [14–18]. Four out of five studies observed an improvement in compliance rates during the COVID-19 pandemic [14–17], but these compliance rates gradually decreased again over time [14,14,17,18]. In

2021 a decrease in the alcohol-based hand rub consumption compared to 2020 has been observed (2020: 49.0 l/1,000 hospitalisation days; 2021: 36.4 l/1,000 hospitalisation days).

There are several potential effects of the diversion of routinely available IPC resources to the COVID-19 response; for example surveillance response and IPC process measures (e.g. compliance with HH) could be hindered due to crisis situation and competing priorities [13]. As in 2020, the effect of the COVID-19 pandemic seems to affect only the IPC process measures. The process indicators showed a decrease in conducting of IPC related audits compared to the pre COVID-19 period. Possible hypotheses for this decrease are (1) time constraints due to additional tasks by the COVID-19 pandemic for the IPC team and the absence of IPC staff due to a COVID-19 infection or quarantine; and (2) COVID-19 mitigation measures have hindered the implementation of these components hospital wide [12,13]. However, the remaining high scores for many indicators indicate that the efforts made by the hospitals continue to have an effect during the COVID-19 pandemic. The fact that the proportion of hospitals that performed certain indicators did not decrease further in 2021 and the increase in the proportion for some indicators may indicate that by 2021 many hospitals were already able to allocate more resources to IPC than during the first year of the COVID-19 pandemic.

The report of the visit of the European Centre for Disease Prevention and Control to Belgium in 2017 stated that the number of FTE physicians and nurses for IPC was rather low compared to the accepted standards [19]. WHO recommends a minimum ratio of one full-time equivalent IPC professional (nurse or physician) per 250 hospital beds. In the IPC full requirements conditions, they even recommend a ratio of one IPC professional per 100 beds [1]. In 2021, 59% of the Belgian hospitals (for who data was available) met this minimal requirement and 8% had the higher ratio. As mentioned before, the COVID-19 pandemic caused a considerable burden on the hospitals and IPC resources were diverted to the COVID-19 pandemic, in addition to the already increased patient acuity and complexity, the multiple roles and increased responsibilities of the IPC professional [1].

2. Next steps

A number of hospitals indicated that the current indicators do no longer cover fully IPC for HAI. No specific indicators related to prevent hospital-associated SARS-CoV-2 infections were added to the protocol. A surveillance for urinary tract infections (UTI) currently only exists for intensive care units, although, hospitals commented that a surveillance to monitor UTI on all wards might be required, as this is a frequent HAI [20]. Additionally, for several years now, the proportion of hospitals that meet certain indicators has been very high ($\geq 95\%$). In recent years, the indicators with lower scores have made only very limited progress. In previous reports, several suggestions on how to improve the quality indicator project have been formulated [7–10].

Following Zingg et al., there is already a considerable amount of evidence-based measures that address HAI and antimicrobial resistance (AMR) challenges. The IPC community should therefore invest in methods that improve the implementation of evidence-based measures and further integrate IPC and AMR by merging existing IPC and AMR networks [21]. Focusing more on inter-hospital collaboration in networks such as the regional platforms or the Hospital Outbreak Support Teams (HOST) project may be the way forward to enhance implementation of the few remaining lower scoring indicators in all hospitals.

The impact of the COVID-19 crisis on the results of the IPC quality indicator project, although minimal, remains to be seen in 2021. This is mainly the case for the process indicators related to auditing. This stresses the need for a robust and feasible crisis preparedness plan for the Belgian healthcare sector, in order to continue to guarantee high-quality of care during crises. Reflecting on these advises, it is questionable if the current staffing ratio is sufficient to achieve implementation, networking, new IPC educational and training approaches, etc.

3. Strengths and limitations

3.1. STRENGTHS

- For 2021, 72 Belgian acute hospitals participated in the quality indicator project, which corresponds to a response rate of 69%. Despite the COVID-19 pandemic, the voluntary participation and the not to the changing situation adapted set of indicators, most hospitals participated. However, selection bias may have occurred.
- This indicator set was developed in response to the need to develop IPC programmes in hospitals in a coordinated and project-based way. The protocol and the IPC quality indicators project can be seen as an instrument to enhance the IPC strategy of the federal IPC platform.
- The quality indicator project contains indicators selected and developed at federal level whose results are publicly available. However, the use of these indicators to assess the quality of IPC programmes is widely supported and we feel that this project is initiating improvement of IPC processes within hospitals. This project does not only mobilise the IPC teams within the hospitals, but also the hospital management, the regional IPC platforms and the HOST.

3.2. LIMITATIONS

- The data provided by the hospitals to compile the indicators have not been and are not being validated. The need for data validation was already mentioned in the feasibility study for this project [22] and in the previous reports [7–10,23].
- The quality of the IPC programme in hospitals is in this project mainly evaluating whether certain tasks part of the IPC programme are performed in the hospital or not. The quality of how these tasks are performed and their impact on the IPC and the overall quality of care is not evaluated by this project [23].
- Achieving a good score on predefined IPC indicators does not automatically mean that the IPC related care provided to individual patients and at hospital level is of good quality. Most indicators require further research and validation before it can be stated with certainty that the IPC is 'good' or 'weak' [24,25]. It can be questioned whether the use of indicators and quality scores is the best way to measure and improve the quality of care in Belgian hospitals [7–10].
- This report shows the impact on the indicators that were available before the COVID-19 pandemic. Through these indicators it was not possible to identify the effect of the COVID-19 pandemic on the workload or on the emotional burden of the IPC teams. Other surveys (e.g. survey done by Belgian Infection Control Society [26], the COVID-19 Health Interview Survey [27], the COVID-19 HEROES study) may provide additional information.

4. Recommendations

4.1. RECOMMENDATIONS FOR HOSPITALS

- Continue to register IPC activities and outcomes in order to be able to monitor and improve the quality of the IPC programme within the hospital.

4.2. RECOMMENDATIONS FOR THE BAPCOC WORKING GROUP ON 'QUALITY INDICATORS FOR IPC' AND FOR THE RESEARCHERS RESPONSIBLE FOR THE DATA COLLECTION, ANALYSIS AND REPORTING OF THE QUALITY INDICATOR PROJECT (SCIENSANO)

- Define a limited set of indicators that provide the best possible assessment of the IPC quality in the hospital. Important in the choice of these indicators is that they are sensitive enough to detect improvement and differences in IPC quality and to identify weaker performances. A first step in this process, a systematic literature review, was conducted by the Sciensano research team in June 2022.

- Investigate the contents of a new set of indicators and develop a new protocol. Suggestions regarding this were formulated in the previous reports. Many hospitals comply with a high number of the current indicators for consecutive years already and therefore additional indicators are needed for further improvements. Now that the most quality indicators have been implemented in many hospitals, it may be possible to look more in depth to certain aspects (per theme) in order to further improve IPC management and implement more detailed indicators.
- Examine the extent to which data collected in other quality projects can be coordinated and integrated within this IPC quality indicator project, in order to reduce the workload of staff and to improve the efficiency of healthcare quality measurement. Additional research is needed for this.
- Investigate the extent to which the selected indicators can be harmonised with the minimal requirements for IPC programmes proposed by the WHO [1].
- Assess how the protocol for the surveillance of surgical site infections can be made more user friendly and feasible to implement, to enhance participation in this surveillance (local and/or national). Assess how the lack of resources/time to participate in the surveillance of intensive care unit infections and surgical site infections can be addressed. Assess if a surveillance for UTI on all wards is useful and wanted. Assess the streamlining and integration of these surveillances in other by Sciensano coordinated surveillances.
- Examine what could explain the differences in influenza vaccination coverage among nurses, midwives and nursing assistants between different regions and hospitals.
- Continue to improve and optimise the data collection tool (Healthdata) and the online reporting platform (Healthstat).

4.3. RECOMMENDATIONS FOR POLICY MAKERS

- Assess whether the current legislation regarding the number of fulltime equivalents (FTE) physicians and nurses assigned to IPC should be revised and adapted to current IPC needs in Belgium.
- Support the development and implementation of an external quality control (validation) of the data collected for the IPC indicator project. This external quality control could be conducted by Sciensano in collaboration with the BAPCOC working group 'Quality indicators for IPC'.
- Integration of the quality indicator project in one general project on measuring and improving the quality of care in the hospital in order to reduce the workload of staff and to promote efficiency in care quality measurement. Improving cooperation at all (policy) levels can contribute to an integrated approach and vision.
- Continuing to support this IPC quality indicator project so that the quality of the IPC programme within hospitals can be further monitored and improved. The current COVID-19 crisis emphasizes the importance of strengthening and supporting a well-functioning IPC policy and management at national and hospital level.

CONCLUSION

A set of quality indicators was developed to measure and evaluate the quality of the programme for the prevention and control of healthcare-associated infections in hospitals. The project mainly uses structure and process indicators. This set of indicators fulfils the objective of the project by giving an overview of the presence or absence of conditions necessary to minimise HAIs.

The current COVID-19 crisis emphasises the importance of strengthening and supporting a well-functioning IPC policy and management at national and hospital level. It is therefore important to continue this registration and reporting in order to evaluate the effect of the COVID-19 crisis on the quality of care and infection prevention and control in hospitals and, if necessary, to formulate measures, guidelines and actions to adjust and optimise the quality of care and IPC policy and management in times of health crisis.

Despite the COVID-19 pandemic, the participating Belgian hospitals continued to implement the quality indicators for IPC in 2021. Less implemented IPC core measures were often related to auditing for which between 2019 and 2020 a clear decrease of more than 10% was observed. In 2021, a decrease of more than 10% in the proportion of hospitals has not been observed compared to 2020. Possible hypotheses for this decrease are (1) time constraints due to additional tasks by the COVID-19 pandemic for the IPC team and the absence of IPC staff due to a COVID-19 infection or quarantine; (2) COVID-19 mitigation measures have hindered the implementation of these components hospital wide. Compared to 2020, an increase in the consumption of alcohol-based hand rub could no longer be observed in 2021. Through this registration we could not verify if this implied poorer HH compliance.

VISION OF THE FEDERAL PLATFORM FOR IPC (BAPCOC) AND THE FPS OF HEALTH, FOOD CHAIN SAFETY AND ENVIRONMENT

1. Version en français

Les enseignements principaux que l'on peut retirer de l'enquête portant sur les indicateurs qualité de l'année 2021 dans les hôpitaux aigus sont essentiellement une diminution de la participation rendue possible par le caractère facultatif de la collecte, un impact vraisemblable de la pandémie covid sur une série d'indicateurs, en particulier les plus « time-consuming », à savoir la réalisation d'audits, et enfin une variation importante de la consommation de solution hydro-alcoolique.

Ce dernier point est probablement d'ailleurs en partie justifié par l'impossibilité de différencier ce qui a été utilisé dans les unités de soins pour les soins aux patients de toutes les autres utilisations qui ont explosé.

La plateforme fédérale souligne que le set d'indicateurs ne permet pas d'évaluer les très importantes modifications de l'activité des équipes d'IPC durant la pandémie. Avec d'importantes variations d'une équipe à l'autre, les équipes IPC ont été fortement impliquées dans gestion de la capacité hospitalière et des trajets de soins, la formation du personnel aux mesures spécifiques, le contact Tracing des cas dans le personnel et/ou les patients, la maîtrise des clusters, le suivi des vaccinations (patients et personnel), le suivi des stratégies de dépistage, l'implémentation des différents protocoles sanitaires, la communication avec les autorités de santé régionale et fédérale,...

Il faut donc rester très prudent sur la valeur à accorder à ce rapport sur les indicateurs qualité collectés pendant les années 2020 et 2021.

Nonobstant cet élément très important, 2 éléments doivent retenir l'attention. Le premier est la nécessité de modifier le set d'indicateurs sur base de la maturité grandissante des programmes en place dans nos institutions, des données scientifiques récentes, et des modifications de l'organisation de la lutte contre l'infection et la résistance aux antibiotiques en Belgique. En effet, les Hospital Outbreak Support Teams déployés en 2021 sont amenés à modifier profondément à la fois les moyens disponibles et l'efficacité des stratégies de prévention dans une dimension réseau. Les bénéfices de cette importante évolution devraient idéalement être également captés par ce set d'indicateurs.

Le deuxième élément déjà évoqué précédemment est l'indispensable déploiement d'un outil de validation externe de ces indicateurs qualité au risque dans le cas contraire de voir ceux-ci ne plus refléter la réalité de terrain.

Il est donc très pertinent de déployer un nouveau set d'indicateurs relookés qui entreraient en vigueur en 2024, mais dont l'impact reste intimement lié à l'investissement des différentes entités (le fédéral et les entités fédérées) dans un projet de validation externe.

La volonté des autorités de santé fédérale ayant été d'augmenter les ressources allouées à la lutte contre l'infection en déployant ces ressources dans un niveau supra-hospitalier, il s'agira d'observer avec attention et d'accompagner la maturation progressive d'outils de lutte contre l'infection dans ce nouveau périmètre en l'associant chaque fois que pertinent avec la lutte contre la résistance aux antibiotiques et le bon usage de ceux-ci.

2. Nederlandstalige versie

De belangrijkste conclusies van de enquête over de kwaliteitsindicatoren in de acute ziekenhuizen in 2021 zijn de daling van de deelname door het facultatieve karakter van de verzameling, de waarschijnlijke invloed van de coronapandemie op een reeks indicatoren, in het bijzonder de meest tijdrovende zoals de uitvoering van audits, en de aanzienlijke verschillen in de consumptie van handalcohol. Dit laatste is waarschijnlijk deels toe te schrijven aan het feit dat het onmogelijk is een onderscheid te maken tussen wat op de zorgunits voor de patiëntenzorg werd gebruikt en alle andere toepassingen die zijn geëxplodeerd.

Het federaal platform onderstreept dat de set van indicatoren niet toelaat om de heel grote veranderingen in de activiteiten van de IPC-teams tijdens de pandemie te evalueren. Met aanzienlijke verschillen van team tot team, zijn de IPC-teams sterk betrokken bij het beheer van de ziekenhuiscapaciteit en de zorgtrajecten, de opleiding van het personeel wat de specifieke maatregelen betreft, de contacttracing van gevallen onder personeelsleden en/of patiënten, de clustercontrole, de opvolging van vaccinaties (patiënten en personeelsleden), de opvolging van screeningstrategieën, de implementatie van verschillende gezondheidsprotocollen, de communicatie met regionale en federale gezondheidsautoriteiten, ...

Daarom moeten we heel voorzichtig blijven met de waarde die we hechten aan dit rapport over de kwaliteitsindicatoren verzameld in de jaren 2020 en 2021.

Ondanks dit heel belangrijke element moeten er nog twee elementen worden onderstreept. Het eerste element is de noodzaak om de set indicatoren aan te passen op basis van de toenemende maturiteit van de programma's in onze instellingen, de recente wetenschappelijke gegevens en de veranderingen in de organisatie van de strijd tegen infecties en antibioticaresistentie in België. De Hospital Outbreak Support Teams ingezet in 2021 worden ertoe geleid zowel de beschikbare middelen als de doeltreffendheid van de preventiestrategieën in netwerkverband ingrijpend te wijzigen. De voordelen van deze belangrijke evolutie worden idealiter ook door de set indicatoren in kaart gebracht. Het tweede element is de noodzaak van een extern validatie-instrument voor de kwaliteitsindicatoren omdat zij anders wellicht de realiteit in het veld niet meer weerspiegelen.

Het is dus absoluut relevant om een nieuwe reeks hertekende indicatoren in te voeren die in 2024 zouden gelden maar waarvan de impact nauw verbonden blijft met de investering van de verschillende entiteiten (federale en gefedereerde) in een extern validatieproject.

Aangezien de federale gezondheidsautoriteiten meer middelen wens toe te kennen in de strijd tegen infecties door deze middelen in te zetten op een supra-ziekenhuisniveau, moet de progressieve maturiteit van de middelen ter bestrijding van infecties binnen deze nieuwe perimeter nauwlettend worden geobserveerd en begeleid door ze in verband te brengen met de bestrijding van antibioticaresistentie en het juiste gebruik van antibiotica telkens wanneer dat relevant is.

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