# Telepharmacy indicators scorecard

*STRATEGY FOR THE EXPANSION AND DEVELOPMENT OF TELEPHARMACY IN SPAIN*

*Methodological support documents*

MAPEX

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## Abbreviations

| | |
|---|---|
| **GDPR** | General Data Protection Regulation |
| **HP** | Hospital Pharmacist |
| **HPD** | Hospital Pharmacy Department |
| **LCSP** | *Ley de Contratos del Sector Público* (Public Sector Contracts' Law) |
| **LODPGDD** | *Ley Orgánica de protección de Datos Personales y Garantía de los Derechos Digitales* (Law on Personal Data Protection and Digital Rights' Guarantees) |
| **PFU** | Pharmacotherapeutic follow-up |
| **PREMs** | Patient-Reported Experience Measures |
| **PROMs** | Patient-Reported Outcome Measures |
| **RDIDD** | Remote dispensing and informed delivery of drugs |
| **SEFH** | *Sociedad Española de Farmacia Hospitalaria* (Spanish Society of Hospital Pharmacists) |
| **SOP** | **Standard** Operating Protocol |

# 1. Introduction: Telepharmacy Indicators Scorecard

This document **"Telepharmacy Indicators Scorecard"** is part of the strategy for the development and expansion of telepharmacy in Spain promoted by the Spanish Society of Hospital Pharmacists, SEFH.

SEFH defines telepharmacy as "a set of remote pharmaceutical practices developed through the use of information and communication technologies." Telepharmacy covers four **main areas:** pharmacotherapeutic follow-up, remote dispensing and informed drug delivery, patient education and information, and coordination with the healthcare team.

With this in mind, this document presents a Scorecard of Indicators that **aims** to **facilitate management and decision making in the field of telepharmacy**, providing information on the extent to which hospitals have implemented the practice as well as the tools required to monitor its performance.

This Scorecard is a tool for hospital pharmacists (HPs), heads of departments and managers, designed to facilitate **the measurement and assessment of the most relevant aspects of telepharmacy**, such as care activity, clinical effectiveness, logistics, patient and professional experience, and/or economic assessment of results.

A **Working Group** made up of HPs from different hospitals in Spain – with prior experience in the development of telepharmacy – drafted this document. They also took part in the different actions carried out, according to the **methodology** used, based on the analysis and review of reference literature and workshops. The development of the work and validation of the document took place between May and November 2021.

*Table 1. Working Group Members*

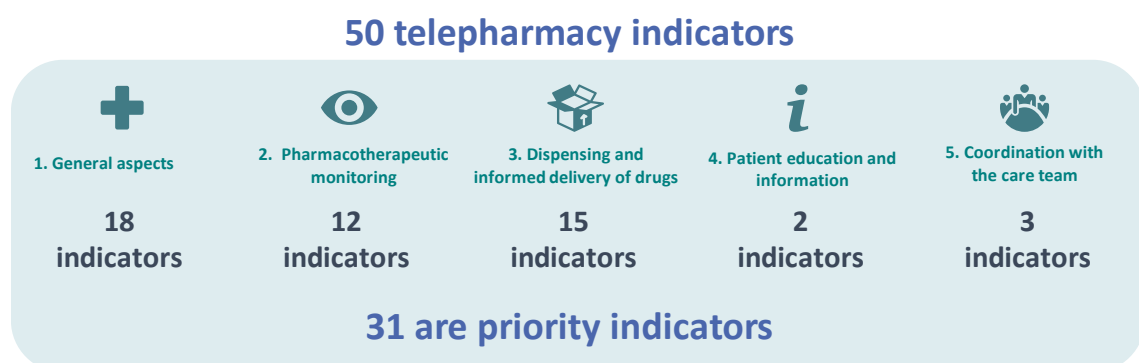| Name | Workplace |
|---|---|
| Luis Margusino (Coordinator) | *Complejo Hospitalario Universitario A Coruña* |
| Amparo Talens | *Hospital General Universitario de Elda* |
| Elena Villamañan | *Hospital Universitario La Paz* |
| Irene Mangues | *Hospital Universitario Arnau de Vilanova Lleida* |
| Olatz Ibarra | *Hospital Galdakao* |
| Patricia Sanmartín | *Hospital Universitario Fundación Alcorcón* |

## *2. Executive summary*

The following is a summary of this document's contents, which showcase the **key aspects of the Indicators Scorecard:**

**1.** This Scorecard has been designed to help hospital pharmacy departments (HPDs) **manage their telepharmacy programs and make telepharmacy-related decisions**, ensuring their proper **implementation and performance**.

**2.** **Reference literature** in the fields of telepharmacy, telemedicine and healthcare indicators was taken into consideration when drafting this Scorecard, making sure it was **aligned** with the Strategic Telepharmacy Framework developed by the MAPEX Project, the Q-PEX Manual/Regulation, as well as with the methodological support documents prepared within the framework of SEFH's Strategy for the Development and Expansion of Telepharmacy in Spain.

**3.** The Working Group organized **workshops and individual online assessment sessions** on the merits of each indicator and their suitability, usefulness/relevance and feasibility.

**4.** The Scorecard comprises a set **of 50 indicators** divided into 5 dimensions: a broader, cross-cutting dimension touching on aspects relative to the implementation of telepharmacy, and four others specific to each area covered by a telepharmacy program. The latter are: pharmacotherapeutic follow-up, remote dispensing and informed drug delivery, patient education and information, and coordination with the healthcare team (Figure 1).

*Figure 1. Scope of application and indicators of the Scorecard*



## 50 telepharmacy indicators

| 1. General aspects | 2. Pharmacotherapeutic monitoring | 3. Dispensing and informed delivery of drugs | 4. Patient education and information | 5. Coordination with the care team |
|---|---|---|---|---|
| 18 indicators | 12 indicators | 15 indicators | 2 indicators | 3 indicators |

## 31 are priority indicators

*Source: Prepared by the authors.*

**5.** Out of the 50 indicators, **31 are priority indicators** which the Working Group deemed essential – be it for their appropriateness, usefulness/relevance and feasibility – to measure the development of a telepharmacy program in an HPD.

**6.** All indicators have an individual **descriptive factsheet**, with information aimed at making their application easier: justification or quality criteria, dimension, formula, priority, explanation of terms, population, type, regularity, standard, data sources, and comments *(see Annex I. Indicator Fact Sheets).*

**7.** A **repository of variables and glossary of terms** has been prepared to help with the compilation of the quantitative variables to be assessed in the Scorecard, and the understanding of the terms included in the descriptive sheets *(see Annex II. Repository of variables and glossary of terms).*

**8.** To facilitate use of this document, there is a **working tool** intended to facilitate the collection of the variables to be used to evaluate the implementation of the telepharmacy indicators defined in the **Scorecard.** This tool is indicative and dynamic, so HPDs can use or adapt it according to their needs.

**9.** **General recommendations** have been defined **for the proper use of the Scorecard**, as well as specific considerations on the measurement of the indicators *(See section 6. Recommendations for the use of the Scorecard).*

**10.** The Indicators Scorecard outlined in this document is a proposal made at a time when **telepharmacy is still evolving,** so indicator definitions should be dynamic, and adapt themselves to the reality of each HPD and to the future of telepharmacy.

# 3. Rationale and objectives

Telepharmacy is a **complementary tool** to onsite pharmaceutical care which, like other pharmaceutical care interventions, should be assessed for quality, efficiency and safety, and used for monitoring the care activity of its programs.

Therefore, in order to develop a telepharmacy program, HPDs should have a **Strategic Telepharmacy Plan** with a **Quality Plan** that measures results and continuous improvement. This Quality Plan should periodically review and evaluate the **criteria, standards or quality indicators** defined for the development of telepharmacy and, having done that, identify avenues for improvement.

The HPD should create a **team** to define the program and its follow-up procedures, establish a **quality management program** – such as the PDCA cycle (PLAN-DO-CHECK-ACT) or a continuous improvement circle (20) and conform to the objectives and needs of the HPD and the healthcare organization it belongs to.

Within this framework, by creating a **reference framework** that can be adapted to the reality of each HPD, this document seeks to define an Indicators Scorecard for telepharmacy to **provide HP specialists, heads of department, and managers** an idea of the degree to which telepharmacy has been implemented by a HPD, monitor telepharmacy activities, and facilitate management and decision making. To achieve the main objective, the following **specific goals** have been defined:

**1**    Identify and define **indicators** to measure and evaluate telepharmaceutical practices.

**2**    Define a **Scorecard** to review and present indicators to monitor the evolution of the impact of telepharmacy and facilitate decision making in this regard.

**3**    Establish **recommendations** to simplify the implementation of the Scorecard.

# 4. Development methodology

The definition of the Scorecard comprised four phases, which were preceded by an organization phase in which the project's Working Group was formed and picked the milestones to follow.

- ❑ **Phase 1.** Literature review.
- ❑ **Phase 2.** Preparation of a preliminary proposal on quality criteria and indicators.
- ❑ **Phase 3.** Assessment of indicators and adjustment of proposals and priority indicators.
- ❑ **Phase 4**. Drafting of fact sheets, the scorecard proper, and approval.

The following is a detailed description of the work carried out in each phase.

*It should be noted that the definitions of both the quality criteria and the indicators were drafted in parallel and in line with the development of the methodological support documents prepared within the framework of SEFH's Strategy for the Expansion and Development of Telepharmacy in Spain.*

1) *Telepharmacy guidelines for professionals.*
2) *Telepharmacy guidelines for patients.*
3) *Efficient and safe provision of telepharmacy.*
4) *Validation of technological tools in telepharmacy.*
5) *Patient prioritization model.*
6) *Remote interviewing guidelines in pharmaceutical care.*
7) *Telepharmacy Indicators Scorecard.*

## Phase 1. Literature review.

During this phase, the Working Group **reviewed** the **reference literature** they had selected in order to establish a basis from which to define a proposal for quality criteria and indicators in telepharmacy, both for the implementation of the program and for each area it covers. In this review, reference documents were analyzed from the fields of telemedicine, telepharmacy, hospital pharmacy; different healthcare indicators were also considered. The documentation reviewed included the following:

**Reference documentation specializing in telemedicine.** Among the main publications identified were the American Medical Association's *Telehealth Implementation Playbook* and *The optimal use of telehelth to deliver safe patient care* by The Joint Commission Division of Healthcare Improvement.[2]

**Reference documentation on hospital pharmacy and telepharmacy**. At the national level, the following documents were considered: the *Marco Estratégico en Telefarmacia* (Strategic Telepharmacy Framework),[3] the *Manual de Certificación de las Unidades de Pacientes Externos* (Certification Manual for Outpatient Units or Q-PEX Manual), and the *Reglamento de Certificación de las Unidades de Pacientes* (Certification Regulations for Outpatient Units or Q-PEX Regulations)[4], drafted by SEFH.[5] Recent Spanish publications on telepharmacy were reviewed as well.[6–9] At an international level, the Canadian Society of Hospital Pharmacists' *Guidelines on Telepharmacy,[10]* the ASHP's *Statement on* Telepharmacy,[11] the United Kingdom General Pharmaceutical Council's *Guidance for registered pharmacies providing pharmacy services at a distance, including on the internet*[12] and the review of the implementation of telepharmacy in the United States[13] were all part of the review.

**Reference documentation on health indicators.** To identify the main aspects that can be transferred to a telepharmacy program – as well as any associated quality criteria – the working group consulted the methodology for the creation of health and social services indicators,[14] the WHO Model for the Assessment of Telemedicine Applications,[15] the *Guía de Evaluación de Telemedicina del Ministerio de Sanidad* (Telemedicine Evaluation Guidelines of the Spanish Ministry of Health),[16] and the health indicators published by the WHO[17,18] and AMETIC.[19] Other documents were also consulted in the framework of quality criteria or indicator projects, such as GeSIDA[20] and SECA's[21] Quality of Care Guidelines for HIV Patients, the *Guía de Calidad Asistencial de Pacientes con Leucemia Mieloide Crónica* (Quality Care Guidelines for Patients with Chronic Myeloid Leukemia),[22] the *Modelo de Acreditación de Calidad de Las Unidades de*

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*Enfermedad Renal Crónica Avanzada* (Quality Accreditation Model for Advanced Chronic Kidney Disease Units),[23] and the Ministry of Health's[24,25] Indicators on Oncological Aspects.

## Phase 2. Preparation of a preliminary set of proposed quality criteria and indicators.

During this phase, the preliminary proposal for **quality criteria and indicators** was prepared and several **workshops** were held by the Working Group to make any necessary adjustments.

Detailed below is the development of the activities carried out in this phase:

✓ Definition of the **quality criteria** for the development and monitoring of a telepharmacy program in an HPD, according to the analysis of national and international HP and telepharmacy reference documents, aligned with the rest of the methodological support documents.

  o The proposed quality criteria were grouped into **5 areas**. A general, broader telepharmacy area, and four specific ones for each area covered by a telepharmacy program: pharmacotherapeutic follow-up, remote dispensing and informed delivery of drugs, patient education and information, and coordination with the care team.

  o Each proposed quality criterion had an **evaluation dimension** assigned to it, which referred to the areas that had an effect on the implementation of a telepharmacy program or around which a result derived from this activity is produced: organization, regulation and ethics, clinical activities, interaction with patients and professional experience, training, human resources, economic assessment, quality, clinical effectiveness, and logistics.

✓ Preparation of the **preliminary set of proposed indicators**, aligned with established quality criteria and the review of reference documentation in the field of telemedicine, as well as of indicators on quality of care.

✓ Preliminary set of proposed quality criteria and indicators **sent online** to the Project's **Working Group** for review.

✓ **Workshop 1 was held to adjust** the preliminary list of proposed indicators and add any possible modifications to the same proposal.

✓ **Adjustment of the list of proposed indicators and online submission** of the adjusted preliminary proposal to the Working Group for review.

✓ **Workshop 2** was held for **validation of the** preliminary proposal of indicators and incorporation of possible modifications to the same proposal.

## Phase 3. Evaluation of indicators, adjustment of proposal and priority indicators.

The Working Group carried out an **indicator assessment** exercise during this phase, in which they identified **priority indicators. Workshop 3** was held to approve **the proposal for quality criteria and indicators**.

Detailed below is a list of the activities carried out in this phase:

✓ Delivery of a working document to the Working Group for the **individual assessment** of the indicators agreed upon during the previous workshops, according to **their suitability, usefulness/relevance, and feasibility**. The Working Group received basic instructions for the exercise and for including relevant observations or comments on the proposed indicators.

- o **Adequacy:** it was evaluated according to the scientific validity or capacity of the indicator to measure the achievement of each objective or expected result. It was rated on a scale from 1 to 5, where 1 represented very low adequacy (low scientific validity) and 5 very high adequacy (high scientific validity).

- o **Usefulness/relevance:** it was evaluated according to the indicator's capacity to help in the decision-making processes related to the management of a telepharmacy program in a HPD or to contribute to an academic purpose. It was rated on a scale from 1 to 5, where 1 represented very low usefulness or relevance (not very useful) and 5 very high usefulness or relevance (very useful).

- o **Feasibility:** it was evaluated depending on whether the indicator could be easily measured given the available data, whether its calculation was too complex, or whether it was not possible to monitor its evolution in a simple way. Rating was from 1 to 5, where 1 indicated low feasibility (low feasibility of measuring the indicator), and 5 high feasibility (high feasibility of measuring the indicator).

✓ **Aggregate analysis** of individual ratings.

✓ **Workshop 3** was held to adjust the indicators' proposal based on the results obtained from the Working Group's assessment of the indicators. A consensus on priority indicators was sought and reached.

- o **Priority indicator:** Any indicator which, due to its suitability, usefulness and feasibility, was considered by the Working Group an **essential indicator** to gauge the development of a telepharmacy program in an HPD.

✓ Online submission of the agreed quality criteria and indicators to the Working Group for **validation.**

## Phase 4. Preparation of fact sheets, scorecard tool, and approval.

The **descriptive factsheets**, the **repository of variables and glossary of terms**, the scorecard **tool** and the **methodological support document** were prepared as well as approved during this phase.

The activities carried out in this phase are detailed below:

✓ **Drafting of factsheets** to help HPs in their evaluation. Each indicator contains a factsheet describing the following aspects: **criteria justification or quality, dimension, formula, priority, explanation of terms, population, type, regularity, standard, data sources and comments.**

✓ Development of a **repository of variables and glossary of terms** to help with the compilation of all quantitative variables rated by the Scorecard and assist with the understanding of the terms.

✓ Enable a **Scorecard through** a **work tool** that facilitates the collection of variables to be measured. This was intended to help evaluate the implementation of the defined telepharmacy indicators. It should be noted that this tool was conceived as indicative and dynamic, so that HPDs would be able to use or adapt it according to their characteristics.

✓ Preparation of the Indicator Scorecard **methodological support document** and establishment of **recommendations** for its appropriate use in healthcare practice.

✓ Online submission of the methodological support document to the Working Group for **validation**.

## *5. Indicator Scorecard*

The final result of the aforementioned methodological process was a scorecard made up of **50 indicators** intended to allow for the monitoring of the implementation and provision of telepharmacy services by an HPD.

**Indicators were grouped into 5 areas, according to previously defined quality criteria.** One area included indicators of **a general nature**, encompassing all the areas covered by a telepharmacy program, whereas **four were specific.**

### 1. General aspects

This area included **18 indicators that cut across all four areas where telepharmacy is applied**. Depending on the dimension they gauge, there were indicators related to the **organization of telepharmacy** in an HPD (8 indicators), **regulation and ethics** (1 indicator), **care activity** (2 indicators), **interaction with patients and professional experience** (2 indicators), **training** (1 indicator), **human resources** (1 indicator), and **economic assessment** (3 indicators). The purpose of these indicators was to allow HPDs to monitor the **implementation of the Strategic Telepharmacy Plan, of the care services provided, the user's experience,** or **the economic impact of these interventions.**

### 2. Pharmacotherapeutic follow-up

The **twelve** pharmacotherapeutic follow-up indicators were divided into **care activity** (7 indicators), **clinical effectiveness** (4 indicators) and **quality** (1 indicator).  The purpose of these indicators was to enable the HPD to evaluate and establish a record of the **patients served, the remote consultations made, any complaints and suggestions received through telepharmacy programs, as well as the measurement of pharmacotherapeutic objectives, PROMs and associated PREMs.**

### 3. Dispensing and informed delivery of drugs

**Fifteen indicators** related to care activity (6 indicators), logistics (4 indicators), clinical effectiveness (4 indicators), and quality (1 indicator) were identified under the dispensing and informed delivery of drug programs. The objective of these indicators was for the HPD to have a **record of patients, remote consultations, any dispensing complaints and suggestions received through telepharmacy programs, as well as the measurement of pharmacotherapeutic objectives, PROMs and PREMs.**

### 4.  Patient education and information

**Patient education and information** encompasses **two indicators** related to the **clinical setting, focused on evaluating and establishing a registry of patients who resort to telepharmacy to avail themselves of education and information channels and programs.**

### 5.  Coordination with the care team

**Coordination with the care team** includes **3 indicators** related to **healthcare activity, aimed at evaluating and establishing a record of all consultations included in the patient's clinical record through different information & communication tools to enhance coordination with the healthcare team.**

*Figure 2. Scope, dimensions and indicators of the Scorecard*
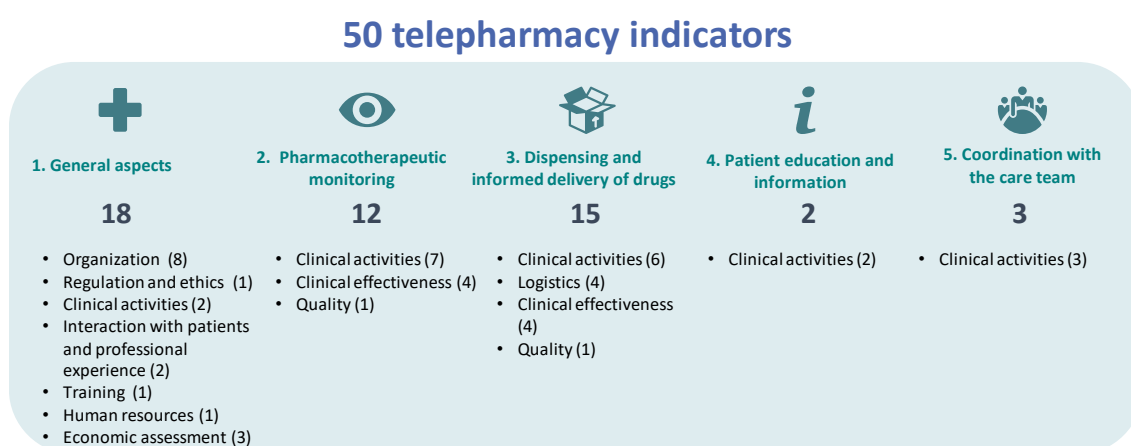


Source: Prepared by the authors.

#### Priority indicators

Of the 50 indicators in the Scorecard, **31 are priority indicators** the Working Group deemed **essential** to measure the development of a telepharmacy program in an HPD. Most of these priority indicators are general (15), or refer to monitoring (6) or remote dispensing (7). Patient education and information (1) and coordination with the care team (2), however, are not as heavily featured on this list.

The quality criteria and corresponding indicators of the Telepharmacy Indicators Scorecard are shown below, singling out the ones that have been considered priority [P]. For more details on the indicators, see *Annex I. Indicator Fact Sheets*, and the section on recommendations.

*Table 2.  Quality criterion and Telepharmacy Indicators Scorecard.*

| ✚ General |
|---|

## Organization

| Quality criterion | Indicator |
|---|---|
| The HPD has a Strategic Plan with defined telepharmacy-specific objectives, lines of action and organizational aspects required for the development of telepharmacy. The Strategic Plan should include, among others, the following: | |
| • Definition of the telepharmacy program's goals, mission and vision. | 1. Objectives, mission and vision defined in the Strategic Telepharmacy Plan **[P]**. |
| • SOPs for each area of telepharmacy, which include the required protocols and procedures, and define the technological tools used. | 2. SOPs for each area in the telepharmacy program **[P]**. |
| • A structural and technological resources plan that defines the necessary requirements for the implementation of telepharmacy, as well as its integration, registration, and coding in hospital information systems. | 3. Structural and technological resources plan **[P]**. |
| • A human resources plan that defines the functions and skills needed by the personnel taking part in the telepharmacy program. | 4. Human resources plan **[P]**. |
| • A training plan for HP staff, defining training related to technological qualifications, service delivery, relevant procedures, quality and safety standards, and patient communication strategies. | 5. Training plan for HP staff **[P]**. |
| • A patient-targeted education plan in which all necessary interventions for the proper use of telepharmacy are clearly defined. | 6. Patient education plan **[P]**. |
| • A quality management plan defining the Quality Assurance, Change Control, Quality Control, and Quality Improvement Plan for the telepharmacy program, as well as its integration into the HPD quality certification system. | 7. Quality management plan **[P]**. |
| • A contingency plan defining the process for assessing risks derived from unforeseeable events that may occur during the delivery of the telepharmacy program. | 8. Capacity and contingency plan **[P]**. |

## Regulation and ethics

| Quality criterion | Indicator |
|---|---|

| | |
|---|---|
| The HPD establishes regulatory and ethical guarantees – both for staff members and patients – for the development of telepharmacy. | 9. SOP aligned with current regulations and with the *Código Español de Ética Farmacéutica* (Spanish Code of Pharmaceutical Ethics) **[P]**. |

## Clinical activities

| | |
|---|---|
| The HPD has a record of the total number of patients included in the telepharmacy program. | 10. Patients included in the telepharmacy program when compared to HPD patients **[P]**. |
| | 11. Patients included in the telepharmacy program by scope when compared to the total number of patients in the telepharmacy program **[P]**. |

## Patient and professional experience

| | |
|---|---|
| The HPD has satisfaction surveys for patients and staff members involved in the provision of telepharmacy programs and establishes improvement plans based on obtained results. | 12. Patient satisfaction surveys conducted and analyzed **[P]**. |
| | 13. Professional satisfaction surveys conducted and analyzed **[P]**. |

## Training

| | |
|---|---|
| The HPD has a record of the training activities carried out for their staff members' benefit to ensure appropriate implementation of the telepharmacy program. | 14. Training activities for HPD staff members to ensure appropriate implementation of the telepharmacy program **[P]**. |

## Human Resources

| | |
|---|---|
| The HPD monitors its staff members' commitment with the development of the telepharmacy program. | 15. Recorded time devoted to the telepharmacy program compared to the HPD's total hours. |

## Economic assessment

| | |
|---|---|
| The HPD gauges the economic impact of the telepharmacy program developed. | 16. Yearly cost of the telepharmacy program **[P]**. |
| | 17. Yearly cost of the telepharmacy program per patient. |
| | 18. Cost studies to evaluate the economic impact of the telepharmacy program. |

| 👁 Pharmacotherapeutic follow-up | |
|---|---|
| **Clinical activities** | |
| Quality criteria | Indicator |
| The HPD has a registry of patients included in the telepharmacy PM program. | 19. Patients included in the telepharmacy PM program compared to HPD patients **[P]**. |
| | 20. Patients included in the telepharmacy program for PM through teleconsultation when compared to the HPD's patients. |
| | 21. Patients included in the telepharmacy program for PM through telemonitoring compared to HPD patients. |
| The HPD has a registry for remote PM consultations. | 22. Remote PM consultations scheduled compared to all HPD-scheduled consultations **[P]**. |
| | 23. Scheduled remote consultations run for PM compared to the total number of scheduled remote PM consultations **[P]**. |
| | 24. Scheduled remote PM consultations per patient. |
| | 25. Unscheduled remote consultations performed as a percentage of all remote consultations performed **[P]**. |
| **Clinical effectiveness** | |
| The HPD develops clinical research studies associated with the telepharmacy PM program in which pharmacotherapeutic objectives defined according to the patient's clinical history, PROMs and PREMs are evaluated. | 26. Clinical research studies or projects conducted associated with the telepharmacy PM program **[P]**. |
| | 27. Research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy PM program. |
| | 28. Research studies evaluating PROMs in patients on a telepharmacy PM program. |
| | 29. Research studies evaluating PREMs in patients on a telepharmacy PM program. |

| Quality | |
|---|---|
| **Quality criterion** | **Indicator** |
| The HPD keeps a record of the complaints and suggestions received during PM and establishes appropriate corrective actions. | 30. Complaints and suggestions received pertaining to the telepharmacy PM program regarding patients are included in the telepharmacy PM program **[P]**. |

| Dispensing and informed delivery of drugs | |
|---|---|
| **Clinical activities** | |
| The HPD has a registry of patients included in the telepharmacy RDIDD program. | 31. Patients included in the telepharmacy RDIDD program with respect to HPD outpatients **[P]**. |
| | 32. Patients included in the telepharmacy RDIDD program with respect to patients on a telepharmacy program. |
| The HPD has a registry of remote RDIDD consultations. | 33. Remote RDIDD consultations as a percentage of total scheduled HPD consultations **[P]**. |
| | 34. Scheduled remote RDIDD consultations as a percentage of all remote RDIDD consultations **[P]**. |
| | 35. Scheduled remote RDIDD consultations per patient. |
| | 36. Scheduled remote RDIDD consultations with respect to all RDIDDs. |

| Logistics | |
| --- | --- |
| **Quality criterion** | **Indicator** |
| The HPD has a RDIDD registry. | 37. Scheduled RDIDDs compared to scheduled HPD dispensations **[P]**. |
| | 38. RDIDDs with recorded incidents with respect to scheduled RDIDDs **[P]**. |
| | 39. RDIDDs carried out at point of delivery compared to overall RDIDDs. |
| | 40. RDIDDs performed per patient. |

| Clinical effectiveness | |
| --- | --- |
| The HPD undertakes clinical research studies associated with the telepharmacy RDIDD program where they define pharmacotherapeutic objectives according to the patient's clinical record, PROMs and PREMs are evaluated. | 41. Clinical research studies or projects conducted associated with the telepharmacy RDIDD program **[P]**. |
| | 42. Research studies assessing the achievement of pharmacotherapeutic objectives in patients on a telepharmacy RDIDD program. |
| | 43. Research studies assessing PROMs in patients on a telepharmacy RDIDD program. |
| | 44. Research studies evaluating PREMs in patients on a telepharmacy RDIDD program. |

| Quality | |
| --- | --- |
| The HPD has a registry of all complaints and suggestions received during RDIDD and establishes the appropriate corrective actions. | 45. Complaints and suggestions received regarding the telepharmacy RDIDD program from patients included in the telepharmacy RDIDD program **[P]**. |

| *i* Patient education and information | |
|---|---|
| **Clinical activities** | |
| Quality criterion | Indicator |
| The HPD has a registry of patients who make use of the education and information channels and programs made available by the telepharmacy program. | 46. HPD patients who access the telepharmacy remote education and information program compared to HPD patients **[P]**.<br><br>47. Number of accesses to the remote education and information program compared to the total number of HPD patients. |

| 👣 Coordination with the care team | |
|---|---|
| **Clinical activities** | |
| The HPD includes all remote consultations in the patient's clinical record via communication tools in order to aid cross-coordination within the care team. | 48. Registration of remote consultations with HPD staff in the patient's clinical record.<br><br>49. Inpatient remote consultations included in the patient's medical record.<br><br>50. Outpatient remote consultations included in the patient's medical record. |

# 6. Recommendations for the use of the Scorecard

The following are recommendations for the effective implementation of the telepharmacy scorecard:

❑ The Indicators Scorecard shown in this document is a proposal made at a time when **telepharmacy is still evolving,** so this proposal should be considered a dynamic baseline document and it should be molded as telepharmacy develops.

❑ The Scorecard should be **adjusted to each HPD**, so they can modify the indicators proposed in this document thereby reflecting the implementation of the telepharmacy programs in their HPD more accurately. Along these lines, it is recommended that health providers involved in the provision of telepharmacy (head of the HPD, HPD staff, management, other health providers, etc.), as well as patients, committees or associations, participate in the definition and monitoring of these indicators.

❑ HPDs should **focus on the evaluation of priority indicators**, mainly linked to the general implementation of telepharmacy and the areas it covers, e.g., pharmacotherapeutic follow-up and remote dispensing and informed delivery of drugs.  It is also recommended that the assessment of all indicators linked to the management of the HPD and the availability of data in hospital information systems be prioritized.

❑ It is advisable to use the **telepharmacy Indicators Scorecard tool** developed within the framework of this project **as a support tool** when monitoring and following-up on indicators. A repository of all quantitative variables needed to formulate the indicators and a series of instructions for their use are included.

❑ When assessing an indicator, **its corresponding descriptive factsheets** should be reviewed (*see Annex I. Indicator Fact Sheets*), which discuss aspects that can help with their interpretation and measurement (e.g., **formula, priority, explanation of terms, population, type, regularity, standard, data sources and comments).** In addition, the **repository of variables and glossary of terms** should be reviewed *see Annex II. Repository of variables and glossary of terms).*

❑ In reference to specific aspects of the indicators defined in the Scorecard, take into account the following considerations:

- Most indicators represent a **ratio – or percentage – in order** to compare and monitor results over time. To measure indicators in **absolute terms, use the repository of variables** provided in Annex II as a reference.

- Certain indicators, such as surveys or cost studies, are **qualitative or dichotomous [Yes/No],** although they can be quantifiable. They have been designed this way because the quality criterion entails they be applied regardless of volume. However, HPDs can adapt the indicators to quantify these aspects.

- Some indicators use an aggregation of **outpatients, day patients and inpatients**. In the event that the center's computer systems do not allow for this information to be accessed, the indicator can be established using only those patients whose information is available and when the HPD deems it appropriate.

- Certain indicators included in the Scorecard can only be obtained through **research studies**. Therefore, each HPD should select any indicators it considers to be priority within its particular research strategy.

- As to how often **indicators must be assessed**, it would be advisable to review them on an annual basis. Bear in mind, however, that this is only a recommendation and can be changed to meet different implementation and HPD requirements, or at the HP's discretion.

- Pertaining to the **indicative standard or desirable level of the indicator**, 100% compliance with the quality criterion is required for dichotomous indicators (indicators 1-9, 12-13 and 18). As for the remaining indicators – given the incipient and heterogeneous nature of the implementation of telepharmacy –, each HPD should establish them based on their own data history and quality objectives, since there are few, if any, references in the literature available and there is not enough data to establish an objective standard.

- The **timetable for the fulfillment of each indicator** has not been specified in the descriptive factsheets, since it must be established for each HPD. It is recommended that compliance with the objectives be in accordance with the duration of the Strategic Telepharmacy Plan, which is generally reviewed every 3-5 years according to the specificities of each HPD and the characteristics of the environment.

# Annex I. Indicator Fact Sheets

Below are the descriptive sheets for each of the 50 indicators defined in the Telepharmacy Indicators Scorecard.

For this purpose, the definitions of the content of the descriptive sheets are shown.

**Description of the indicator sheets**

| | |
|---|---|
| Justification or Quality criterion | Reason why the indicator is considered valid. |
| Dimension | Aspect of quality being evaluated. |
| Formula | Mathematical expression used to quantify the indicator. |
| Priority | Specifies whether the indicator is a priority indicator or not. |
| Explanation of terms | Clarification of any terms that may be ambiguous or susceptible to different interpretations in the terms of the formula. |
| Population | Describes the specific group the indicator seeks to measure. |
| Type | Indicators may evaluate structural, procedural or resultative aspects:<br>• Structure: measurement of aspects related to the technological, human or organizational resources necessary for healthcare practice, as well as to the availability of protocols.<br>• Process: these indicators measure the way in which healthcare practice is developed, if it makes use of the available resources, protocols, and scientific evidence.<br>• Outcome: they express the consequences of the care process, in terms of patients, remote consultations, dispensations, studies, etc. |
| Regularity | How often the indicator is assessed. |
| Standard | Desirable indicator level or compliance with the quality criterion. |
| Source of data | Source or location of information or data needed to quantify the indicator. |
| Comments | Clarifications or useful additional information. |

Pertaining to the indicative standard or desirable level of the indicator, full compliance with the quality criterion is required for dichotomous indicators (indicators 1-9, 12-13 and 18). Regarding the remaining indicators, each HPD should establish them based on their existing data and quality objectives, since it is currently considered that there are no literature references available and there is not enough data to establish an objective standard, given the incipient and heterogeneous nature of the implementation of telepharmacy.

## General aspects

## Indicator 1: Objectives, mission and vision defined in the Strategic Telepharmacy Plan.

| | |
|---|---|
| Quality criterion | The HPD has a Strategic Telepharmacy Plan that is clear about the goals, the mission and the vision of their telepharmacy program. |
| Dimension | Organization. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | HPD. |
| Type | Structure. |
| Regularity | Review every 3-5 years according to the each HPD's specificities as well as the environment's characteristics. |
| Standard | 100% (Objectives, mission and vision of the strategic plan defined and updated). |
| Source of data | HPD internal documentation. |

**Indicator 2: SOPs for each area in the telepharmacy program.**

| | |
|---|---|
| Quality criterion | The HPD has a Strategic Telepharmacy Plan that comprises at least one SOP for each area covered by the telepharmacy program, including the required protocols and procedures and a definition of the technological tools used. |
| Dimension | Organization. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | HPD. |
| Type | Structure. |
| Regularity | Yearly. |
| Standard | 100% (SOPs defined and updated). |
| Source of data | HPD internal documentation. |
| Comments | It is recommended that each HPD develop a SOP for each area covered by telepharmacy: patient education and information, coordination with the care team, pharmacotherapeutic follow-up, and remote dispensing and informed delivery of drugs.<br><br>The SOPs must fit with the corresponding characteristics of each center, although the key elements that guarantee the development of the activity must be defined.<br><br>It is recommended that each SOP defines, at least, the following aspects: goal of the activity, technological tools used, team in charge, main procedures (e.g. prioritization model, remote dispensing, remote interviews, incident log), and the definition or identification of monitoring indicators related to the activity or the quality of the procedure. |

## Indicator 3: Structural and technological resources plan.

| | |
|---|---|
| Quality criterion | The HPD has a Strategic Telepharmacy Plan that includes, at least, a Structural and Technological Resources Plan that defines the necessary requirements for the implementation of the telepharmacy program and its integration, registration and embedding in the hospital information systems. |
| Dimension | Organization. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | HPD. |
| Type | Structure. |
| Regularity | Yearly. |
| Standard | 100% (Structural and material resources plan prepared and updated). |
| Source of data | HPD internal documentation. |
| Comments | It is recommendable to prepare a Structural and Technological Resources Plan that includes, at least, the following aspects:<br><br>Description of physical spaces: defining and establishing a specific consultation space for the development of some telepharmacy activities, especially those related to synchronous communication, such as remote consultations within the framework of pharmacotherapeutic follow-up or informed drug delivery.<br><br>Identification of available equipment: minimum technological components and/or requirements for the development of the program and the implementation of the tools required (remote access, data transmission, communications, hardware and software).<br><br>Registration of available tools and resources: establishment of a registry of the technological tools used for telepharmacy (video-call platforms, e-learning programs, apps, others) and the different areas it covers, and inclusion of these tools in the telemedicine platform of the health center and the corresponding SOPs.<br><br>Documentation: a record must be kept of the documentation generated during the implementation of the telepharmacy program (reference guides, user manuals, work support materials, patient education and training materials, etc.). |

**Indicator 4: Human Resources plan.**

| | |
|---|---|
| Quality criterion | The HPD has a Strategic Telepharmacy Plan that includes, among others, a Human Resources Plan that defines the functions and competencies of the personnel involved in the telepharmacy program. |
| Dimension | Organization. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | HPD. |
| Type | Structure. |
| Regularity | According to the time horizon of the Strategic Telepharmacy Plan. |
| Standard | 100% (Human resources plan prepared and updated). |
| Source of data | HPD internal documentation. |
| Comments | A Human Resources Plan should be drafted, which encompasses, at least, the following aspects:<br><br>Work team: All telepharmacy-related roles as well as the professional competencies of the pharmacy staff members and of the support staff working under their direct supervision must be clearly defined in order to ensure the proper delivery, quality and safety of telepharmacy programs.<br><br>Organization: it is advisable to monitor the dedication of staff members involved in developing the telepharmacy program in order to review time and workload distributions, optimizing the availability of staff and monitoring workflows.<br><br>Training: staff members involved in providing the telepharmacy program should have a career plan developed for them.<br><br>Capacity-building: A training program for students, residents, or doctoral fellows should be implemented to promote the incorporation of telepharmacy in the HPD and encourage research in this field. |

## Indicator 5: Training plan for staff members

| | |
|---|---|
| Quality criterion | The HPD has a Strategic Telepharmacy Plan that includes a training plan for professionals that defines training related to technological training, service provision, relevant procedures, quality and safety standards and communication strategies with patients. |
| Dimension | Organization. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | HPD. |
| Type | Structure. |
| Regularity | Yearly. |
| Standard | 100% (Professional training plan prepared and updated). |
| Source of data | HPD internal documentation. |
| Comments | The professional training plan should be aimed at staff members involved in the provision of telepharmacy programs (pharmacists, pharmacy assistants, pharmacy technicians or similar, professionals). The definition or contents of these programs should mold itself to the needs of each HPD. It would be advisable to establish periodic training activities, which can be more continuous at the beginning of the implementation of the tool, as well as activities to raise awareness of the potential benefits of the program. It would also be advisable to periodically gauge the efficiency of the training activities in order to improve and update them. |

## Indicator 6: Patient-targeted education plan.

| | |
|---|---|
| Quality criterion | The HPD has a Strategic Telepharmacy Plan that includes, among others, a patient-targeted education plan that defines the necessary interventions to make proper use of the telepharmacy program. |
| Dimension | Organization. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | HPD. |
| Type | Structure. |
| Regularity | Yearly. |
| Standard | 100% (Patient education plan prepared and updated). |
| Source of data | HPD internal documentation. |
| Comments | It is recommended to establish communication strategies with patients to teach them proper use of telepharmacy tools and programs, either through activities (e.g. workshops, focus groups), or by giving them user manuals and practical examples (e.g. brochure, telepharmacy essential information kit). |

## Indicator 7: Quality management plan.

| | |
|---|---|
| Quality criterion | The HPD has a Strategic Telepharmacy Plan that includes, among others, a Quality Management Plan in which Quality Assurance, Change Control, Quality Control, and a Quality Improvement Plan for the telepharmacy program, are not only properly defined, but integrated into the HPD's quality certification system. |
| Dimension | Organization. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | **Quality assurance** entails planning and identifying the objectives, requirements or standards to meet the needs of the telepharmacy program, and compliance with all defined strategies. <br><br> **Change control** consists of the definition of the processes and procedures that are necessary for the assurance of the quality plan. <br><br> **Quality control** involves the verification of the results of the actions carried out and comparing them with the established objectives or standards (KPI's measurement). <br><br> **Continuous improvement** is an analysis of obtained data and, when appropriate, the implementation of alternative proposals for improvement (KPI analysis). |
| Population | HPD. |
| Type | Structure. |
| Regularity | Yearly. |
| Standard | 100% (Quality plan prepared and updated). |
| Source of data | HPD internal documentation. |
| Comment | It is recommended that, for the development of the quality plan, a person responsible for its review and follow-up be assigned. |

## Indicator 8: Capacity and contingency plan.

| | |
|---|---|
| Quality criterion | The HPD has a Strategic Telepharmacy Plan that includes, among others, a Capacity and Contingency Plan that guarantees efficient and safe operation of telepharmacy programs under normal conditions, and defines how to proceed when unforeseeable events occur. |
| Dimension | Organization. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | **The capacity plan** defines the processes and workflows – according to the available resources – required to meet the expected demands in an efficient manner and ensure that the HPD keeps operating normally.<br><br>**The contingency plan** defines preventive and corrective actions or measures to anticipate potential risks or fluctuations that may occur under unforeseeable circumstances. |
| Population | HPD. |
| Type | Structure. |
| Regularity | Yearly. |
| Standard | 100% (Capacity and contingency plan defined). |
| Source of data | HPD internal documentation. |
| Comments | In order to ensure adequate capacity and develop a suitable contingency plan, it would be appropriate to conduct an analysis of the situation of telepharmacy in the HPD (level of demand, organization of human and material resources, scope, limitations, regulations, assessment of potential risks). |

**Indicator 9: SOP aligned with current regulations and with the *Código Español de Ética Farmacéutica* (Spanish Code of Pharmaceutical Ethics).**

| | |
|---|---|
| Quality criterion | The HPD establishes regulatory and ethical guarantees to both staff members and patients for the development of the telepharmacy program. |
| Dimension | Regulation and ethics. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | HPD. |
| Type | Structure. |
| Regularity | Yearly. |
| Standard | 100% (SOPs prepared and updated in accordance with current regulations and the *Código Español de Ética Farmacéutica*). |
| Source of data | HPD internal documentation. |
| Comments | The HPD must guarantee that SOPs are aligned with the corresponding regulatory standards that safeguard patient confidentiality and informed consent, comply with the General Data Protection Regulation (GDPR), the Law on Personal Data Protection and Guarantee of Digital Rights (LODPGDD) and the Public Sector Contracts Law (LCSP). In addition, the development of telepharmacy must be aligned with the Spanish Pharmaceutical Ethics Code. |

**Indicator 10: Patients included in the telepharmacy program as compared with all patients served by the HPD.**

| | |
|---|---|
| Quality criterion | The HPD has a record of the total number of patients included in the telepharmacy program. |
| Dimension | Clinical activities. |
| Formula | Formula: $(a_1+a_2+a_3+a_4/b) *100$<br>$a_i$ = Number of patients included in the telepharmacy program.<br>b = Total number of HPD patients |
| Priority | Priority indicator |
| Explanation of terms | **Number of patients included in the telepharmacy program**: total number of patients included in the telepharmacy programs delivered by the HPD in each area covered by the telepharmacy program:<br>• Pharmacotherapeutic follow-up $(a_1)$.<br>• Dispensing and informed delivery of drugs $(a_2)$.<br>• Patient education and information $(a_3)$.<br>• Coordination with the care team $(a_4)$.<br><br>**Number of HPD patients:** total outpatients and day patients (b). |
| Population | HPD patients. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |
| Comment | The HPD should identify patients participating in the telepharmacy programs, and for whom measurements are possible.<br><br>Pertaining to the telepharmacy activity in the area of coordination with the care team $(a_4)$, it is proposed that HPDs identify the patients for whom remote consultations have been carried out and included in the clinical record. |

**Indicator 11: Patients included in the telepharmacy program by area covered as compared with the total number of patients on a telepharmacy program.**

| | |
|---|---|
| Quality criterion | The HPD has a record of the total number of patients included in the telepharmacy program. |
| Dimension | Clinical activities. |
| Formula | Formula:<br>$(a_1/b) *100$<br>$(a_2/b) *100$<br>$(a_3/b) *100$<br>$(a_4/b) *100$<br><br>$a_i$ = Number of patients included in the telepharmacy program for each area covered.<br>b = Number of patients included in the telepharmacy program. |
| Priority | Priority indicator |
| Explanation of terms | **Number of patients included in the telepharmacy program:** total number of patients included in the telepharmacy programs delivered by the HPD in each area covered:<br>• Pharmacotherapeutic follow-up ($a_1$).<br>• Dispensing and informed delivery of drugs ($a_2$).<br>• Patient education and information ($a_3$).<br>• Coordination with the care team ($a_4$). |
| Population | Patients included in the telepharmacy program. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |
| Comment | Pertaining to the telepharmacy activity in the area of coordination with the care team ($a_4$), it is proposed that the HPD should identify the patients for whom remote consultations have been carried out and included in the clinical record. |

## Indicator 12: Patient satisfaction surveys

| | |
|---|---|
| Quality criterion | The HPD has patient satisfaction surveys pertaining to the provision of the telepharmacy program and establishes improvement plans based on the results obtained. |
| Dimension | Patient experience. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | Patients included in the telepharmacy program. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | 100% (Patient satisfaction surveys conducted). |
| Source of data | HPD quality management systems. |
| Comments | The survey may include aspects such as ease of use of the telepharmacy tools, impact on quality of life or assessment of the information received, among others. |

## Indicator 13: Staff member satisfaction surveys

| | |
|---|---|
| Quality criterion | The HPD has satisfaction surveys for professionals regarding the provision of the telepharmacy program and establishes improvement plans based on the results obtained. |
| Dimension | Experience of professionals. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Priority indicator. |
| Explanation of terms | Not applicable. |
| Population | Professionals involved in the telepharmacy program. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | 100% (Professional satisfaction surveys conducted). |
| Source of data | HPD quality management systems. |
| Comments | The survey may include aspects such as ease of use of the tools, or impact on professional performance, among others. |

## Indicator 14: Staff-targeted training activities for the development of the telepharmacy program.

| | |
|---|---|
| Quality criterion | The HPD has a record of professional-training activities carried out for the development of the telepharmacy program. |
| Dimension | Training. |
| Formula | Amount of staff-targeted training activities |
| Priority | Priority indicator. |
| Explanation of terms | **Number of staff-targeted training activities:** total number of training activities (sessions, workshops, courses, etc.) carried out at the HPD on telepharmacy aimed at staff members involved in the provision of telepharmacy programs (pharmacists, pharmacist assistants, pharmacy technicians, or other professionals). |
| Population | Staff members involved in the telepharmacy program. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | It is recommended that the training activities developed be aimed at staff members involved in the provision of telepharmacy programs (pharmacists, pharmacy assistants, pharmacy technicians, or other professionals).<br><br>The definition or contents of these programs should be adapted to the needs of each HPD. Periodic training activities should be established, which may be more frequent at the beginning of the implementation of the tool, as well as activities to promote awareness of the potential benefits of the program. It is also advisable to periodically evaluate the effectiveness of the training activities in order to establish improvements and update them.<br><br>On the other hand, it is recommended that this telepharmacy training be included in the undergraduate, postgraduate and continuing education activities that could take place at the HPD. |

**Indicator 15: Time devoted to the telepharmacy program as a percentage of total HPD hours.**

| | |
|---|---|
| Quality criterion | The HPD monitors the dedication of its staff to the development of the telepharmacy program. |
| Dimension | Human resources. |
| Formula | Formula: (a/b) *100<br>a = Time dedicated to the telepharmacy program.<br>b = Total HPD time |
| Priority | Non-priority indicator. |
| Explanation of terms | **Time devoted to the telepharmacy program**: total HPD hours dedicated to the development of the telepharmacy program.<br><br>**Total number of HPD hours**: total HPD hours worked by HPD staff. |
| Population | Staff members involved in the telepharmacy program. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |

## Indicator 16: Yearly cost of the telepharmacy program.

| | |
|---|---|
| Quality criterion | The HPD evaluates the economic impact of the telepharmacy program developed. |
| Dimension | Economic assessment. |
| Formula | Formula: (a/b) *100<br>a = Yearly cost of the telepharmacy program<br>b = HPD budget |
| Priority | Priority indicator |
| Explanation of terms | **Yearly cost of the telepharmacy program:** total direct expenses associated to the development of the telepharmacy program. These include investments made in room fittings, technological equipment, software, licenses, as well as their respective maintenance expenses; the costs associated to both additional personnel hired to carry out telepharmacy tasks; and to personnel who dedicate part of their time to carrying out telepharmacy tasks, and expenses derived from remote dispensing.<br><br>**HPD Budget:** The budget will be subject to each HPD's criteria. |
| Population | HPD. |
| Type | Result |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD financial statements. |

## Indicator 17: Yearly cost of the telepharmacy program per patient.

| | |
|---|---|
| Quality criterion | The HPD evaluates the per patient economic impact of the telepharmacy program. |
| Dimension | Economic assessment. |
| Formula | Formula: a/b<br>a = Yearly cost of the telepharmacy program<br>b = Number of patients on a telepharmacy program |
| Priority | Non-priority indicator |
| Explanation of terms | **Yearly cost of the telepharmacy program:** total direct expenses associated to the development of the telepharmacy program. These include investments made in room fittings, technological equipment, software, licenses, as well as their respective maintenance expenses; the costs associated to both additional personnel hired to carry out telepharmacy tasks; and to personnel who dedicate part of their time to carrying out telepharmacy tasks, and expenses derived from remote dispensing.<br><br>**Number of patients included in the telepharmacy program:** total patients included in the telepharmacy programs delivered by the HPD in each area covered:<br>• Pharmacotherapeutic follow-up.<br>• Dispensing and informed delivery of drugs.<br>• Patient education and information.<br>• Coordination with the care team. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD financial statements. |

**Indicator 18: Cost studies conducted to evaluate the economic impact of the telepharmacy program.**

| | |
|---|---|
| Quality criterion | The HPD evaluates the total costs of the telepharmacy program. |
| Dimension | Economic assessment. |
| Formula | Dichotomous [Yes/No]. |
| Priority | Non-priority indicator. |
| Explanation of terms | Not applicable. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | 100% (Cost studies performed). |
| Source of data | HPD internal documentation. |
| Comments | It is recommended that the economic impact the telepharmacy program has on the HPD be evaluated, periodically promoting an analysis of its direct and indirect costs, as well as its return on investment. |

## Pharmacotherapeutic follow-up

### Indicator 19: Patients included in the telepharmacy PM program as compared with all HPD patients.

| | |
|---|---|
| Quality criterion | The HPD has a registry of patients included in the telepharmacy PM program. |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of patients included in the telepharmacy PM program.<br>b = Total number of HPD patients. |
| Priority | Priority indicator. |
| Explanation of terms | **Number of patients included in the telepharmacy PM program**: total number of patients included in the telepharmacy PM program, both in teleconsultation and telemonitoring programs.<br><br>**Teleconsultation** refers to synchronous remote consultations (e.g. telephone, video call) included in the HPD's PM appointments register (not related to remote dispensing).<br><br>**Telemonitoring** refers to programs that use portable devices (wearables) or mobile applications (apps) with the aim of keeping a record and remotely monitoring the information provided by the patient. It can be asynchronous (whenever data is stored or recorded for later transfer to the healthcare provider) or synchronous (in real time).<br><br>**Number of HPD patients:** total outpatients and day patients |
| Population | HPD patients. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 20: Patients included in the telepharmacy PM program engaging in teleconsultation as compared with total HPD patients.**

| | |
|---|---|
| Quality criterion | The HPD has a registry of patients included in the telepharmacy PM program via teleconsultation. |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of patients included in the telepharmacy PM program engaging in teleconsultation.<br>b = Total number of HPD patients |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of patients included in the telepharmacy PM program engaging in teleconsultation**: total number of patients included in the telepharmacy PM program engaging in teleconsultation. Teleconsultation refers to synchronous remote consultations (e.g., telephone, video call) included in the HPD's PM appointments register (not linked to remote dispensing).<br><br>**Number of HPD patients**: total outpatients and day patients. |
| Population | Patients included in the telepharmacy program. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 21: Patients included in the telepharmacy PM program subject to telemonitoring as compared with HPD patients.**

| | |
|---|---|
| Quality criterion | The HPD has a registry of patients included in the telepharmacy PM program subject to telemonitoring. |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of patients included in the telepharmacy PM program subject to telemonitoring.<br>b = Total number of HPD patients |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of patients included in the telepharmacy PM program subject to telemonitoring**: total number of patients included in the telepharmacy PM program subject to telemonitoring. Telemonitoring refers to programs that use portable devices (wearables) or mobile applications (apps) in order to create a digital registry and monitor the information the patient provides. It can be asynchronous (when data is stored or recorded for later transfer to the healthcare provider) or synchronous (in real time).<br><br>**Number of HPD patients:** total outpatients and day patients. |
| Population | Patients included in the telepharmacy program. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 22: Remote telepharmacy PM consultations scheduled as compared with total HPD consultations.**

| | |
|---|---|
| Quality criterion | The HPD has a registry of remote PM-consultations (not linked to remote dispensing). |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of remote PM consultations<br>b = Total number of scheduled HPD consultations. |
| Priority | Priority indicator |
| Explanation of terms | **Number of scheduled telepharmacy PM consultations**: total number of remote PM consultations that are not linked to remote dispensing and that are included in the HPD's PM appointments register.<br><br>**Total number of scheduled HPD consultations**: total number of scheduled consultations, held both onsite and remotely. |
| Population | Patients included in the telepharmacy program. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

## Indicator 23: Remote PM consultations delivered as compared with the total of remote PM consultations scheduled

| | |
|---|---|
| Quality criterion | The HPD has a record of remote PM consultations (not linked to remote dispensing). |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of delivered remote PM consultations<br>b = Number of scheduled remote PM consultations |
| Priority | Priority indicator. |
| Explanation of terms | **Number of delivered remote PM consultations**: total number of remote PM consultations not linked to remote dispensing, but which are included in the HPD's PM appointments register and which have been delivered.<br><br>**Total number of scheduled HPD consultations**: total number of scheduled remote and onsite consultations. |
| Population | Patients included in the telepharmacy program. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 24: Scheduled remote PM consultations per patient.**

| | |
|---|---|
| Justification / Quality criterion | The HPD has a record of remote PM consultations (not linked to remote dispensing). |
| Dimension | Clinical activities. |
| Formula | Formula: a/b<br>a = Number of scheduled remote PM consultations<br>b = Number of patients included in the telepharmacy PM program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of scheduled remote PM consultations**: total number of scheduled consultations for PM that are not linked to remote dispensing, are included in the HPD's PM appointments register and have been delivered.<br><br>**Number of patients included in the telepharmacy PM program**: total number of patients included in the telepharmacy PM program. |
| Population | Patients included in the telepharmacy program. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

## Indicator 25: Unscheduled remote consultations performed as compared with all remote consultations performed.

| | |
|---|---|
| Quality criterion | The HPD has a record of remote PM consultations (not linked to remote dispensing). |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of unscheduled remote PM consultations<br>b = Total number of remote PM consultations |
| Priority | Priority indicator |
| Explanation of terms | **Number of unscheduled remote PM consultations**: total number of unscheduled remote PM consultations that are not linked to remote dispensing, are included in the HPD's PM appointments register and have been delivered.<br><br>**Number of remote PM consultations**: total number of remote consultations performed, whether scheduled or unscheduled.<br><br>**Teleconsultation:** refers to synchronous remote consultations (e.g. telephone, video call) included in the HPD's PM appointments register (not related to remote medication dispensing). |
| Population | Patients included in the telepharmacy program. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 26: Clinical research studies or projects associated with the telepharmacy PM program.**

| | |
|---|---|
| Quality criterion | The HPD develops clinical research studies on their telepharmacy PM program in which pharmacotherapeutic objectives defined according to the patient's clinical history; PROMs and PREMs are evaluated. |
| Dimension | Clinical effectiveness. |
| Formula | Number of clinical research studies or projects carried out associated with the telepharmacy PM program. |
| Priority | Priority indicator. |
| Explanation of terms | **Number of clinical research studies or projects carried out associated with the telepharmacy PM program**: total number of clinical research studies or projects carried out associated with the telepharmacy PM program.<br><br>**Pharmacotherapeutic objectives:** these should include, among others, the detection of drug-drug interactions and of adverse events, the management of therapeutic adherence, a review of pharmacotherapy and an evaluation of health outcomes.<br><br>**PROMs: Patient-Reported Outcomes.**<br><br>**PREMs:** Patient Reported Experience *Measures*. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | The studies must be conducted within the framework of research studies. |

**Indicator 27: Research studies evaluating the achievement of pharmacotherapeutic goals in patients on a telepharmacy PM program.**

| | |
|---|---|
| Quality criterion | The HPD develops clinical research studies on their telepharmacy PM program in which the pharmacotherapeutic objectives defined according to the patient's clinical history are evaluated. |
| Dimension | Clinical effectiveness. |
| Formula | Number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy PM program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy PM program**: total number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy PM program.<br><br>**Pharmacotherapeutic objectives** should include, among others, the detection of drug-drug interactions and adverse events, the management of therapeutic adherence, a review of pharmacotherapy and an evaluation of health outcomes. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | The studies must be conducted within the framework of research studies. |

**Indicator 28: Research studies evaluating PROMs in patients on a telepharmacy PM program.**

| | |
|---|---|
| Quality criterion | The HPD develops clinical research studies on their telepharmacy PM program in which PROMs are evaluated. |
| Dimension | Clinical effectiveness. |
| Formula | Number of research studies evaluating PROMs in patients on a telepharmacy PM program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of research studies evaluating PROMs in patients on a telepharmacy PM program** refers to the total number of research gauging PROMs in patients on a telepharmacy PM program.<br><br>**PROMs:** Patient-Reported Outcomes. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | The studies must be conducted within the framework of research studies. |

**Indicator 29: Research studies evaluating PREMs in patients on a telepharmacy PM program.**

| | |
|---|---|
| Quality criterion | The HPD develops clinical research studies on their telepharmacy PM program in which PREMs are evaluated. |
| Dimension | Clinical effectiveness. |
| Formula | Number of research studies evaluating PREMs in patients on a telepharmacy PM program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of research studies evaluating PREMs in patients on a telepharmacy PM program**: total number of research studies evaluating PREMs in patients on a telepharmacy PM program.<br><br>**PREMs: Patient Reported Experience Measures**. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | The studies must be conducted within the framework of research studies. |

**Indicator 30: Complaints and suggestions received about the telepharmacy PM program from patients included in such programs.**

| | |
|---|---|
| Quality criterion | The HPD keeps a record of the complaints and suggestions received during PM and establishes the appropriate corrective actions. |
| Dimension | Quality. |
| Formula | Formula: a/b<br>a = Number of complaints and suggestions received regarding the telepharmacy PM program.<br>b = Number of patients included in the telepharmacy PM program. |
| Priority | Priority indicator. |
| Explanation of terms | **Number of complaints and suggestions received pertaining to the telepharmacy PM program**: total number of complaints and suggestions received pertaining to the telepharmacy PM programs.<br><br>**Number of patients included in the telepharmacy PM program**. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |

## Dispensing and informed delivery of drugs

## Indicator 31: Patients included in the telepharmacy RDIDD program with respect to HPD outpatients.

| | |
|---|---|
| Quality criterion | The HPD has a registry of patients who are included in the telepharmacy RDIDD program. |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of patients included in the telepharmacy RDIDD program.<br>b = Number of HPD outpatients |
| Priority | Priority indicator. |
| Explanation of terms | **Number of patients included in the telepharmacy RDIDD program**: total number of patients included in the telepharmacy RDIDD program.<br><br>**Number of HPD outpatients**: total number of outpatients who do not require hospital care, but do require medication that is provided in the hospital, because it is medication for hospital use. |
| Population | HPD outpatients. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 32: Patients included in the telepharmacy RDIDD program with respect to patients on the telepharmacy program.**

| | |
|---|---|
| Quality criterion | The HPD has a registry of patients who are included in the telepharmacy RDIDD program. |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of patients included in the telepharmacy RDIDD program.<br>b = Number of patients included in the telepharmacy program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of patients included in the telepharmacy RDIDD program**: total number of patients included in the telepharmacy RDIDD program.<br><br>**Number of patients included in the telepharmacy program**: total number of patients included in the telepharmacy programs developed in the HPD in each area covered by the telepharmacy program:<br>• Pharmacotherapeutic follow-up.<br>• Dispensing and informed delivery of drugs.<br>• Patient education and information.<br>• Coordination with the care team. |
| Population | Patients included in the telepharmacy program |
| Type | Result |
| Regularity | Yearly |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 33: Remote RDIDD consultations compared to total scheduled HPD consultations.**

| | |
|---|---|
| Quality criterion | The HPD has a registry of remote RDIDD consultations. |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of remote RDIDD consultations<br>b = Number of scheduled HPD consultations |
| Priority | Priority indicator |
| Explanation of terms | **Number of remote RDIDD consultations**: total number of synchronous remote consultations (e.g., telephone, video call) scheduled in the HPD's RDIDD appointments register.<br><br>**Total number of scheduled HPD consultations**: total number of scheduled remote and onsite consultations. |
| Population | HPD patients. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |
| Comments | Scheduled consultations for HPD RDIDDs only affect outpatients. |

## Indicator 34: Remote RDIDD consultations delivered as compared with total remote RDIDD consultations scheduled

| | |
|---|---|
| Justification / Quality criterion | The HPD has a registry of remote RDIDD consultations. |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b) *100<br>a = Number of delivered remote RDIDD consultations<br>b = Number of remote RDIDD consultations scheduled |
| Priority | Priority indicator. |
| Explanation of terms | **Number of scheduled remote RDIDD consultations delivered**: total number of remote RDIDD consultations, which are included in the HPD's RDIDD appointments register and which have been delivered.<br><br>**Number of remote RDIDD consultations scheduled**: total number of synchronous remote consultations (e.g. telephone, video call) scheduled in the HPD's RDIDD appointments register. |
| Population | Patients included in the telepharmacy program. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 35: Scheduled remote RDIDD consultations performed per patient.**

| | |
|---|---|
| Quality criterion | The HPD has a registry of remote RDIDD consultations. |
| Dimension | Clinical activities. |
| Formula | Formula: a/b<br>a = Number of scheduled remote RDIDD consultations performed<br>b = Number of patients included in the telepharmacy RDIDD program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of remote RDIDD consultations**: total number of synchronous remote consultations (e.g., telephone, video call) scheduled in the HPD's RDIDD appointments register.<br><br>**Number of patients included in the telepharmacy RDIDD program**: total number of patients included in the telepharmacy RDIDD program. |
| Population | Patients included in the telepharmacy program. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

## Indicator 36: Scheduled remote RDIDD consultations as compared with all RDIDDs

| | |
|---|---|
| Quality criterion | The HPD has a registry of remote RDIDD consultations. |
| Dimension | Clinical activities. |
| Formula | Formula: a/b<br>a = Number of scheduled remote consultations performed for RDIDD<br>b = Number of RDIDDs performed |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of scheduled remote consultations performed for RDIDD**: total number of remote RDIDD consultations, which are included in the HPD's RDIDD appointments register and which have been performed.<br><br>**Number of RDIDDs performed**: total number of RDIDDs performed at each delivery point (patient's home, primary care center, community pharmacy, social and health center, geolocation). |
| Population | Patients included in the telepharmacy program |
| Type | Result. |
| Regularity | Yearly. |
| Standard | 1. A scheduled teleconsultation is recommended for each RDIDD performed in order to verify that all remote dispensing is performed with informed delivery. However, each HPD should define their standards based on their historical data and quality objectives. |
| Source of data | Hospital information system. |

## Indicator 37: Scheduled RDIDDs compared to scheduled HPD dispensations.

| | |
|---|---|
| Quality criterion | The HPD has a register of RDIDDs. |
| Dimension | Logistics. |
| Formula | Formula: (a/b) *100<br>a = Number of Scheduled RDIDDs<br>b = Total number of scheduled HPD dispensations |
| Priority | Priority indicator |
| Explanation of terms | **Number of Scheduled RDIDDs**: total number of RDIDDs scheduled in the HPD.<br><br>**Total number of scheduled HPD dispensations**: total number of scheduled dispensations of the service, performed remotely and onsite at the HPD. |
| Population | HPD patients. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 38: RDIDDs where incidents have occurred as compared with all scheduled RDIDDs.**

| | |
|---|---|
| Quality criterion | The HPD has a register of RDIDDs. |
| Dimension | Logistics. |
| Formula | Formula: (a/b) *100<br>a = Number of RDIDDs with incidents<br>b = Number of scheduled RDIDDs |
| Priority | Priority indicator |
| Explanation of terms | **Number of RDIDDs with recorded incidents**: total number of RDIDDs that have presented any incident.<br><br>**Number of Scheduled RDIDDs**: total number of RDIDDs scheduled in the HPD. |
| Population | Patients included in the telepharmacy program. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 39: RDIDDs carried out by delivery point as compared with all RDIDDs.**

| | |
|---|---|
| Quality criterion | The HPD has a register of RDIDDs. |
| Dimension | Logistics. |
| Formula | Formula:<br>$(a_1/b) * 100$<br>$(a_2/b) * 100$<br>$(a_3/b) * 100$<br>$(a_4/b) * 100$<br><br>$a_i$ = Number of RDIDDs performed per delivery point<br>b = Number of RDIDDs performed |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of RDIDDs performed by delivery point**: depending on the model developed, this may include the patient's home ($a_1$), primary care center ($a_2$), community pharmacy ($a_3$), social and health centers ($a_4$), or others ($a_x$).<br><br>**Number of RDIDDs performed**: total number of RDIDDs performed at each delivery point (patient's home, primary care center, community pharmacy, social and health center, geolocation). |
| Population | Patients included in the telepharmacy program. |
| Type | Process. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 40: RDIDDs performed per patient.**

| | |
|---|---|
| Justification / Quality criterion | The HPD has a register of RDIDDs. |
| Dimension | Logistics. |
| Formula | Formula: a/b<br>a = Number of RDIDDs performed<br>b = Number of patients included in the telepharmacy RDIDD program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of RDIDDs performed**: total number of RDIDDs performed at each delivery point (patient's home, primary care center, community pharmacy, social and health center, geolocation).<br><br>**Number of patients included in the telepharmacy RDIDD program**: total number of patients included in the telepharmacy RDIDD program. |
| Population | Patients included in the telepharmacy program. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

## Indicator 41: Clinical research studies or projects on a telepharmacy RDIDD program.

| | |
|---|---|
| Quality criterion | The HPD develops clinical research studies on their telepharmacy RDIDD program in which the pharmacotherapeutic objectives defined according to the patient's clinical history are evaluated, bearing in mind both PROMs and PREMs. |
| Dimension | Clinical effectiveness. |
| Formula | Number of clinical research studies or projects carried out associated with the telepharmacy RDIDD program. |
| Priority | Priority indicator. |
| Explanation of terms | **Number of clinical research studies or projects carried out associated with the telepharmacy RDIDD program**: total number of clinical research studies or projects carried out associated with the telepharmacy RDIDD program. <br><br> **Pharmacotherapeutic objectives**: these should include, among others, the detection of drug-drug interactions and adverse events, the management of therapeutic adherence, a review of pharmacotherapy and an evaluation of health outcomes. <br><br> **PROMs:** Patient-Reported Outcomes. <br><br> **PREMs:** Patient Reported Experience Measures. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | The studies must be conducted within the framework of research studies. |

**Indicator 42: Research studies assessing the achievement of pharmacotherapeutic objectives in patients on a telepharmacy RDIDD program.**

| | |
|---|---|
| Quality criterion | The HPD develops clinical research studies on their telepharmacy RDIDD program in which they gauge the pharmacotherapeutic objectives according to the patient's clinical history. |
| Dimension | Clinical effectiveness. |
| Formula | Number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy RDIDD program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy RDIDD program**: total number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy RDIDD program. |
| | **Pharmacotherapeutic objectives**: these should include, among others, the detection of drug interactions and adverse events, the management of therapeutic adherence, a review of pharmacotherapy and an evaluation of health outcomes. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | The studies must be conducted within the framework of research studies. |

**Indicator 43: Research studies assessing PROMs in patients on a telepharmacy RDIDD program.**

| | |
|---|---|
| Quality criterion | The HPD develops clinical research studies on their telepharmacy RDIDD program in which they evaluate PROMs. |
| Dimension | Clinical effectiveness. |
| Formula | Number of research studies evaluating PROMs in patients on a telepharmacy RDIDD program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of research studies evaluating PROMs in patients on a telepharmacy RDIDD program**: total number of research studies evaluating PROMs in patients on a telepharmacy RDIDD program. <br><br> **PROMs:** Patient-Reported Outcomes. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | The studies must be conducted within the framework of research studies. |

**Indicator 44: Research studies evaluating PREMs in patients on a telepharmacy RDIDD program.**

| | |
|---|---|
| Quality criterion | The HPD develops clinical research studies on their telepharmacy RDIDD program in which they evaluate PREMs. |
| Dimension | Clinical effectiveness. |
| Formula | Number of research studies evaluating PREMs in patients on a telepharmacy RDIDD program. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of research studies evaluating PREMs in patients on a telepharmacy RDIDD program**: total number of research studies evaluating PREMs in patients on a telepharmacy RDIDD program.<br><br>**PREMs:** Patient Reported Experience Measures. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |
| Comments | The studies must be conducted within the framework of research studies. |

**Indicator 45: Complaints and suggestions received regarding the telepharmacy RDIDD program from patients included in the telepharmacy RDIDD program.**

| | |
|---|---|
| Quality criterion | The HPD has a record of complaints and suggestions received during RDIDD and establishes the appropriate corrective actions. |
| Dimension | Quality. |
| Formula | Formula: a/b<br>a = Number of complaints and suggestions received regarding the telepharmacy RDIDD program.<br>b = Number of patients included in a telepharmacy RDIDD program |
| Priority | Priority indicator. |
| Explanation of terms | **Number of complaints and suggestions received pertaining to the telepharmacy RDIDD program**: total complaints and suggestions received pertaining to the telepharmacy RDIDD programs. |
| Population | HPD. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | HPD internal documentation. |

## Patient education and information

**Indicator 46: HPD patients who benefit from the telepharmacy's education and information program compared to all HPD patients.**

| | |
|---|---|
| Quality criterion | The HPD has a registry of patients who make use of the education and information channels and programs through the telepharmacy program. |
| Dimension | Clinical activities. |
| Formula | Formula: (a/b)*100<br>a = Number of patients included in the telepharmacy patient education and information program.<br>b = Number of HPD patients. |
| Priority | Priority indicator. |
| Explanation of terms | **Number of patients included in the telepharmacy patient education and information program**: total number of patients included in the telepharmacy patient education and information program.<br><br>**Number of HPD patients**: total outpatients and day patients. |
| Population | HPD patients. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |
| Comments | Remote education and information: through the use of ICTs, rigorous and truthful training/information is transmitted to patients.<br>(web, social networks, blogs, wikis and other interconnected multimedia services).<br><br>The technologies should, to the extent possible, automatically record the number of participating users.<br>The center's inpatients have been included since they also have access to the remote education and information programs. |

**Indicator 47: Number of accesses to the remote education and information program compared to the total number of HPD patients.**

| | |
|---|---|
| Quality criterion | The HPD has a registry of patients who make use of the information and training channels and programs through the telepharmacy program. |
| Dimension | Clinical activities. |
| Formula | Formula: a/b<br>a = Number of accesses to the remote education and information program.<br>b = Number of HPD patients. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Remote education and information:** through the use of ICTs, rigorous and truthful training/information is transmitted to patients (web, social networks, blogs, wikis, and other interconnected multimedia services).<br><br>**Number of accesses to the remote education and information programs**: total number of accesses counted through the use of information technologies to remote education and information platforms (web, social networks, blogs, wikis and other interconnected multimedia services).<br><br>**Number of HPD patients**: total outpatients and day patients |
| Population | HPD patients. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |
| Comments | The technologies should, to the extent possible, automatically record the number of participating users. |

## Coordination with the care team

**Indicator 48: Remote consultations included in the patient's medical record by HPD staff.**

| | |
|---|---|
| Quality criterion | The HPD has a record of the remote consultations logged in the patient's clinical record through communication tools in order to enhance coordination with the healthcare team. |
| Dimension | Clinical activities. |
| Formula | Formula: a/b<br>a = Number of remote consultations included in the patient's medical record.<br>b = Number of pharmacy professionals in the HPD. |
| Priority | Non-priority indicator. |
| Explanation of terms | **Number of remote consultations documented in the patient's medical record**: total number of remote consultations logged in the patient's medical record received or sent to hospital pharmacy.<br><br>**Number of pharmacy professionals in the HPD**: total number of HP specialists who are part of the HPD team. |
| Population | HPD staff members involved in the telepharmacy program |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |
| Comments | At a more advanced stage of telepharmacy, it would be advisable to evaluate the adaptation of this indicator by level of care (hospital and primary care), service, type of professional (physician, nurse, etc.) and care setting (inpatient, day hospital, outpatient). |

**Indicator 49: Remote consultations included in the patient's medical record as compared with the number of inpatients in the hospital.**

| | |
|---|---|
| Quality criterion | The HPD has a record of the remote consultations logged in the patient's clinical record through communication tools in order to enhance coordination with the healthcare team. |
| Dimension | Clinical activities. |
| Formula | Formula: a/b<br>a = Number of remote consultations included in the patient's medical record.<br>b = Number of patients admitted to the center. |
| Priority | Priority indicator. |
| Explanation of terms | **Number of remote consultations documented in the patient's medical record**: total number of remote consultations logged in the patient's medical record received or sent to the HPD with other hospital departments or care units.<br><br>**Number of patients admitted to the facility**: total number of patients admitted to a hospital or other health care institution. |
| Population | Patients admitted to the center. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

**Indicator 50: Remote outpatient consultations included in the patient's medical record as compared with all outpatient consultations.**

| | |
|---|---|
| Quality criterion | The HPD has a record of the remote consultations logged in the patient's clinical history through communication tools in order to enhance coordination with the healthcare team. |
| Dimension | Clinical activities. |
| Formula | Formula: a/b<br>a = Number of remote outpatient consultations included in the patient's medical record<br>b = Number of HPD outpatients |
| Priority | Priority indicator. |
| Explanation of terms | **Number of remote consultations documented in the patient's medical record**: total number of remote consultations logged in the patient's medical record received or sent to the HPD with other out-of-hospital care services or units (primary care pharmacists, primary care physicians, health providers from social and health centers, etc.).<br><br>**Number of HPD outpatients:** Outpatients include those patients who do not require hospital care, but do require medication that is provided in the hospital because it is a medication for hospital use. |
| Population | HPD outpatients. |
| Type | Result. |
| Regularity | Yearly. |
| Standard | To be defined by each HPD based on their historical data and their own quality objectives. |
| Source of data | Hospital information system. |

# *Annex II. Repository of variables and glossary of terms*

In order to simplify the collection of the data needed to develop the indicators, a list of all the quantitative variables included in the formulas of the indicators in Annex I, as well as an explanation of the terms, is shown below.

| ➕ General |
|---|

| Clinical activities |
|---|

**Number of patients included in the telepharmacy PM program**: total number of patients included in the telepharmacy PM program.

**Number of patients included in the telepharmacy RDIDD program**: total number of patients included in the telepharmacy RDIDD program.

**Number of patients included in the telepharmacy patient education and information program**: total number of patients included in the telepharmacy patient education and information program.

**Number of patients included in the telepharmacy program for Coordination with the care team**: total number of patients included in the telepharmacy program for Coordination with the care team. Refers to patients for whom remote consultations have been performed and documented in the medical record.

**Number of patients included in the telepharmacy program**: total number of patients included in the telepharmacy programs developed in the HPD in each area covered by such programs (PM, RDIDD, patient education and information and coordination with the care team).

**HPD patients**: total outpatients and day patients. Outpatients are those patients who do not require hospital care but do require medication that is provided in the hospital because it is hospital-use medication. Day patients are those patients who visit a healthcare facility for diagnostic or treatment reasons without staying overnight.

| Training |
|---|

**Number of staff-targeted training activities**: total number of telepharmacy related training activities (session, workshop, course, etc.) carried out at the HPD aimed at staff members involved in the provision of a telepharmacy program (pharmacists, pharmacist assistants, pharmacy technicians or other professionals).

**Number of registered hours dedicated to the telepharmacy program**: total registered hours of the HPD allocated to the development of telepharmacy programs.

**Total number of HPD hours**: total HPD hours worked by HPD staff.

Economic assessment

**Yearly cost of the telepharmacy program**: total direct expenses associated with the telepharmacy program. These include investments made in room fittings, technological equipment, software, licenses, as well as their respective maintenance expenses; the costs associated to both additional personnel hired to carry out telepharmacy tasks; and to personnel who dedicate part of their time to carrying out telepharmacy tasks, and expenses derived from remote dispensing.

**HPD Budget**: The budget will be subject to each HPD's criteria.

👁 Pharmacotherapeutic follow-up

Clinical activities

**Number of patients included a teleconsultation-based telepharmacy PM program**: total number of patients included in the telepharmacy PM program who participate in remote consultations. Teleconsultation refers to synchronous remote consultations (e.g., telephone, video call) included in the HPD's PM appointments register (not linked to remote dispensing).

**Number of patients included in a telemonitoring-based telepharmacy PM program**: total number of patients included in the telepharmacy PM program who are subject to telemonitoring. Telemonitoring refers to the use portable devices (wearables) or mobile applications (apps) in order to create a digital registry and monitor the information provided by the patient. It can be asynchronous (when data is stored or recorded for later transfer to the healthcare provider) or synchronous (in real time).

**Number of scheduled remote PM consultations**: total number of remote PM consultations that are not linked to remote dispensing and that are included in the HPD's PM appointments register.

**Total number of scheduled HPD consultations**: total number of scheduled remote and onsite consultations.

**Number of scheduled remote PM consultations**: total number of scheduled consultations for PM that are not linked to remote dispensing, that are included in the HPD's PM appointments register and that have been performed.

**Number of unscheduled remote PM consultations**: total number of unscheduled remote PM consultations that are not linked to remote dispensing, that are included in the HPD's PM appointments register and that have been performed.

**Number of remote PM consultations**: total number of remote consultations performed, whether scheduled or unscheduled.

<div style="background-color:#17a9a9; color:white; padding:4px 10px;">Clinical effectiveness</div>

**Number of clinical research studies or projects carried out associated with the telepharmacy PM program**: total number of clinical research studies or projects carried out associated with the telepharmacy PM program.

**Number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy PM program**: total number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy PM program.

**Number of research studies evaluating PROMs in patients on a telepharmacy PM program**: total number of research studies evaluating PROMs in patients on a telepharmacy PM program.

**Number of research studies evaluating PREMs in patients on a telepharmacy PM program**: total number of research studies evaluating PREMs in patients on a telepharmacy PM program.

<div style="background-color:#17a9a9; color:white; padding:4px 10px;">Quality</div>

**Number of complaints and suggestions received in connection with the telepharmacy PM program**: total number of complaints and suggestions received pertaining to the telepharmacy PM programs.

<div style="background-color:#808080; color:white; padding:4px 10px;">Dispensing and informed delivery of drugs</div>

<div style="background-color:#17a9a9; color:white; padding:4px 10px;">Clinical activities</div>

**Number of HPD outpatients**: total number of outpatients who do not require hospital care, but do require medication that is provided in the hospital, because it is medication for hospital use.

**Number of remote RDIDD consultations**: total number of synchronous remote consultations (e.g., telephone, video call) scheduled in the HPD's RDIDD appointments register.

**Number of scheduled remote RDIDD consultations**: total number of remote RDIDD consultations, which are included in the HPD's RDIDD appointments register and which have been performed.

**Number of RDIDDs performed at the patient's home**: total number of RDIDDs performed where the point of delivery is the patient's home.

**Number of RDIDDs performed at the primary care center**: total number of RDIDDs performed whose point of delivery is the primary care center.

**Number of RDIDDs performed in the community pharmacy**: total number of RDIDDs carried out whose point of delivery is the community pharmacy.

**Number of RDIDDs performed in social-health centers**: total number of RDIDDs carried out whose point of delivery is the social-health center.

**Number of RDIDDs performed through geolocation**: total number of RDIDDs carried out based on geolocation.

**Number of RDIDDs performed through hospital dispensing with prior teleconsultation**: total number of RDIDDs carried out based on hospital dispensing with prior teleconsultation.

**Number of RDIDDs performed**: total number of RDIDDs performed at each delivery point (patient's home, primary care center, community pharmacy, social and health center, geolocation).

<div style="background:#1a9e9e;color:white;padding:4px 12px">Logistics</div>

**Number of scheduled RDIDDs**: total number of Scheduled RDIDDs in the HPD.

**Total number of scheduled HPD dispensations**: total number of scheduled dispensations of the service, performed both remotely and onsite at the HPD.

**Number of RDIDDs with recorded incidents**: total number of RDIDDs that have presented any incident.

<div style="background:#1a9e9e;color:white;padding:4px 12px">Clinical effectiveness</div>

**Number of clinical research studies or projects carried out on telepharmacy RDIDD programs**: total number of clinical research studies or projects carried out on telepharmacy RDIDD programs.

**Number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy RDIDD program**: total number of research studies evaluating the achievement of pharmacotherapeutic objectives in patients on a telepharmacy RDIDD program.

**Number of research studies evaluating PROMs in patients on a telepharmacy RDIDD program**: total number of research studies evaluating PROMs in patients on a telepharmacy RDIDD program.

**Number of research studies evaluating PREMs in patients on a telepharmacy RDIDD program**: total number of research studies evaluating PREMs in patients on a telepharmacy RDIDD program.

<div style="background:#1a9e9e;color:white;padding:4px 12px">Quality</div>

**Number of complaints and suggestions received pertaining to the telepharmacy RDIDD program**: total complaints and suggestions received pertaining to the telepharmacy RDIDD programs.

| $i$ Patient education and information |
| --- |
| Clinical activities |

**Number of patients admitted to the facility**: total number of patients admitted to a hospital or other health care institution.

**Number of accesses to the remote education and information program**: total number of accesses counted through the use of information technologies to remote education and information platforms (web, social networks, blogs, wikis and other interconnected multimedia services).

| Coordination with the care team |
| --- |
| Clinical activities |

**Number of remote consultations logged in the medical record**: total number of remote consultations recorded in the medical record received or sent to hospital pharmacy.

**Number of pharmacy processionals in the HPD**: total number of HPs on the HPD team.

**Number of remote hospital consultations logged in the medical record**: total number of remote consultations recorded in the medical record received or sent to the HPD by other hospital departments or care units.

**Number of out-of-hospital remote consultations logged in the medical record**: total number of remote consultations recorded in the medical record received or sent to the hospital pharmacy by other out-of-hospital care departments or units (primary care pharmacists, primary care physicians, health providers from social and health centers, etc.).

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