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# Software for clinics: what to test before signing a contract

*Appointment scheduling, clinical information, remote consultations, data protection and operational continuity*

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## Abstract

Procuring software for a clinic should take account of both everyday use and the sensitivity of the information and consequences of a failure. This article presents a narrative and documentary review, bringing together literature on information systems evaluation, telemedicine guidance, data protection and the regulatory framework for software with a medical purpose. It proposes an evaluation based on complete workflows and mandatory selection requirements, with tests covering identification, permissions, records, remote consultations, recovery and export. It distinguishes consent to receive care from the legal basis for data processing, and administrative management from clinical decision-making functions. It includes an evidence matrix and a migration plan with integrity checks. The main conclusion is that selection should evaluate the combination of system, professionals, processes and suppliers, avoiding equating the presence of a feature with its safe implementation. The article is a tool for technical and organisational analysis, subject to adaptation to the professional context and the obligations applicable to the care provider.

**Keywords:** clinical software; remote consultation; data protection; security; systems evaluation; continuity.

## 1. Introduction

A clinic may need appointment scheduling, patient management, documents, payments, reports and remote consultations. These needs are connected, but they are not equivalent. A change in appointment time can affect communications; a professional leaving can affect access; an incomplete export can compromise continuity of care.

The selection criterion should be how the complete service operates. A demonstration allows the interface to be observed under favourable conditions. The evaluation should add situations

involving errors, unavailability, changes in the team and leaving the supplier. These are the cases in which the quality of information and procedures becomes more apparent.

DeLone and McLean propose an evaluation of information systems success that relates system, information and service quality to use, satisfaction and benefits. The model is conceptual and does not certify clinical products. Its value for this analysis is to remind us that a technically available application can still produce inadequate information or operational difficulties. (DeLone & McLean, 2003)

## 2. Method and context of application

The documentary research was conducted with sources consulted on 20 November 2026. It included scientific literature on systems evaluation and original sources from the World Health Organization, the Portuguese Health Regulatory Authority, CNPD, the EDPB and the European institutions. Search terms included «telemedicine implementation», «clinical software evaluation», «controller processor health data» and «software qualification MDR».

Sources with verifiable institutional or bibliographic identification were selected. International guidelines are used as technical references, rather than Portuguese legislation. No clinic audit, clinical trial or conformity assessment of any product was performed. The following workflows and criteria are proposed checks and should be adapted to the professions, specialities, treatments and risks involved.

## 3. Separate functions before comparing products

The inventory should distinguish at least four groups: administrative management, clinical documentation, remote care and decision support. An appointment calendar organises resources; a clinical record supports health information; a video tool enables communication; a function that recommends a diagnosis or treatment may involve a different regulatory framework.

MDCG 2019-11 rev. 1 addresses software qualification and classification under the MDR and IVDR. The analysis depends on the intended purpose and the characteristics of the function. The presence of software in a clinic does not automatically make all its functions medical devices, just as the label «AI» does not demonstrate suitability for clinical decision-making. Before procuring this type of function, its purpose, applicable classification and corresponding evidence should be requested. The MDCG guidance is not legally binding. (MDCG, 2025)

This distinction also avoids incorrect expectations. Having a video link does not demonstrate integration with the clinical record. Exporting a list of patients is not equivalent to exporting the entire record. An income and expenditure module may not issue tax documents. The limits of each function should be set out in the proposal and observable in the demonstration.

## 4. A complete workflow for a fictitious patient

The proposal is to evaluate a fictitious case from the first appointment through to leaving the service or transferring information. The aim is to observe consistency and permissions without using real people's health data during the demonstration.

**Table 1. Evaluation workflow with a fictional patient**

| Stage | Proposed test | Evidence to retain |
|---|---|---|
| Registration | Create two people with similar names | Correct identification and prevention of selecting the wrong record |
| Appointment | Select a professional, duration and resource | Conflicts and unavailability addressed |
| Access | Sign in as an administrative user and as a healthcare professional | Separation of information by role |
| Documentation | Create and correct a fictitious record | Authorship, date and handling of changes |
| Remote consultation | Join using a valid link and attempt unauthorised access | Access control and failure workflow |
| Information request | Prepare an export of the case | Understandable content, relationships and attachments |
| Continuity | Simulate unavailability or a change of supplier | Documented procedure and responsibilities |

**Table 1 note.** Author's own framework. The tests are selection criteria, rather than a compliance audit or clinical validation.

### 4.1. Identification and integrity

The system should make it possible to distinguish patients and prevent a name search from leading to the wrong person. The clinic should define a confirmation procedure proportionate to the activity and channel. During the demonstration, it is useful to include similar names, changed contact details and duplicate records. Corrections should preserve the relationship between the data and the right person.

Dates, authorship and changes are important for understanding the context of a record. It should be checked who can make corrections, how a correction is identified and what historical information remains accessible. The specific approach depends on the type of record and the applicable professional rules; a simple «last updated» column may not meet every need.

## 5. Personal data and the allocation of responsibilities

Health data are subject to the conditions of Article 9 of the GDPR, together with an applicable legal basis under Article 6. Consent to receive care and the grounds for processing data are distinct issues. A generic consent box that attempts to cover every purpose should be avoided. The analysis needs to consider purpose, information given to the patient, retention, access and any disclosure to third parties. (Parlamento Europeu & Conselho da União Europeia, 2016)

It is necessary to identify who determines the purposes and means, who processes data on whose behalf and which suppliers are involved. The EDPB's guidelines emphasise that roles depend on actual activities. For procurement, a description of the service and responsibilities should be obtained, including assistance with the exercise of rights and at the end of processing. (CEPD, 2021)

A clinic should ask where the data are held, who can access them and from which countries access or processing may take place. «Server in Europe» does not, on its own, address the complete chain of subprocessors, support, backups and associated tools. The supplier should provide sufficient information to assess the configuration actually being contracted, without generic promises of total compliance.

### 5.1. Access and security

CNPD's Diretriz/2023/1 reinforces the need for appropriate organisational and technical measures, including access protection, encryption where appropriate, and secure, tested backups. Selection should turn this guidance into evidence: access profiles, revocation, activity logging and a demonstration of recovery. (CNPD, 2023)

Testing should include a member of staff leaving, account recovery and remote access. It should be checked that administrative functions do not expose more information than necessary and that a procedure exists for exceptional access. An activity log is useful when it allows who did what to be reconstructed; it must, in turn, be protected and subject to a retention policy.

## 6. Remote consultation as an organised service

The WHO frames telemedicine implementation as a process that requires planning, organisation, resources, maintenance and evaluation. Choosing a tool should go hand in hand with defining its intended users, forms of delivery and conditions of use. A service may have a functioning platform and still fail in providing information beforehand or making referrals when a remote consultation is unsuitable. (OMS, 2022)

In Portugal, the ERS states that the patient should receive information about the form of consultation, alternatives, costs and any recording, with consent documented in the clinical record. It also distinguishes situations in which consent must be written, notably in the SNS

and when recording takes place. Its specific application should take account of the establishment and the healthcare activity, without reducing all situations to a single rule. (ERS, 2025)

### 6.1. Requirements for the demonstration

Check participant identification, information provided before the consultation, joining the session and behaviour when someone arrives early or late. A link should have access controls appropriate to the service, and the professional needs to understand who has joined. Testing should include a lost connection and a defined alternative for resuming or rearranging contact.

Whether a remote consultation is appropriate for a case is a clinical decision for qualified professionals. The system should make it possible to implement the decision and record what is necessary. Recording audio and video should not be confused with the clinical record: capturing image and sound is an additional operation with its own conditions. The privacy of the physical spaces and equipment used should also be considered.

The WHO-ITU standard on telehealth accessibility identifies the need to accommodate people with different limitations in vision, hearing, communication, mobility and comprehension. In selection, this justifies testing the workflow with a keyboard, magnification, clear instructions and appropriate assistive solutions. Referring to the standard does not allow an assumption that any platform is certified or that the same workflow suits everyone. (OMS & UIT, 2022)

## 7. Continuity, recovery and export

A backup meets the need only when the data can be recovered under known conditions. The clinic should define the maximum tolerable interruption and acceptable data loss for each process. These objectives should be discussed with the supplier and demonstrated in appropriate tests, rather than inferred from the advertised frequency of backups.

The unavailability plan should state who makes decisions, how the appointment calendar is managed, how temporary information is retained and how work is reconciled after restoration. The team needs to know when to suspend a task because reliable information is unavailable. The procedure should avoid creating personal copies and parallel channels that are subsequently not properly integrated or deleted.

An export should be evaluated by its content and subsequent use. Request a sample of patients, appointments, documents and attachments, with identifiers and relationships preserved. Confirm formats, the field dictionary, encoding and how files are accessed. Providing PDFs may allow reading, but may not support structured migration. An existing API does not prove that an integration is ready either: operations, permissions and errors need to be confirmed.

## 8. Migration and acceptance

Before migration, inventory sources, responsible parties, data types and quality criteria. Prepare a verified copy, map fields and test with a sample. Compare counts and relationships; a correct patient count can coexist with documents associated with the wrong person. Cases involving accents, attachments, dates and duplicates warrant explicit checks.

Define a transition window, the primary source during the change and rollback criteria. The previous service should be retained for as long as necessary to validate data, access and continuity. After launch, monitor incidents, requests from the team and communication failures. Acceptance should be documented by responsible people able to assess both operations and the clinical content within their remit.

**Table 2. Essential requirements and decision criteria**

| Area | Decision question | Possible exclusion criterion |
|---|---|---|
| Identification | Can we distinguish and correct records? | Incorrect association without control or correction |
| Access | Does each role see only what is necessary? | Widespread exposure of sensitive information |
| Recovery | Is there evidence and a usable procedure? | No demonstrable recovery |
| Remote consultation | Is there information, access and an alternative if it fails? | Essential workflow without adequate control |
| Leaving the service | Is the necessary information returned in a usable form? | Documented inability to maintain continuity |

**Table 2 note.** Author's own framework. The criteria should be defined by the organisation before reviewing proposals and adapted to the specific risk.

## 9. Discussion and conclusion

Selecting clinical software is a sociotechnical decision: it involves the application, information, people, processes and suppliers. A sound evaluation observes complete workflows and retains evidence of essential requirements. Usability, data protection and continuity should be analysed together with the functions the clinic intends to use.

The sources consulted differ in nature and scope. The information systems success model is conceptual; international guidelines support planning; legislation and professional rules require application to the specific case. This article does not certify any product or replace a

legal, clinical or security assessment needed for procurement. It provides a guide so that such an assessment starts with clear technical questions and verifiable results.

## Appendix A. Documents and evidence to request

1. Functional scope, intended purpose and limits of AI functions.
2. Information on data processing, suppliers and responsibilities.
3. Permissions matrix and procedure for professionals joining and leaving.
4. Demonstration of records, corrections and correct association of documents.
5. Remote consultation procedure, patient information and management of failures.
6. Evidence of recovery, continuity objectives and incident plan.
7. Sample export, migration criteria and conditions for leaving the service.

## Editorial disclosure

Institutional authorship and editing: Lyntev. A narrative review and applied analysis, prepared with artificial intelligence support and not submitted for peer review. Frameworks and scenarios identified as our own do not constitute empirical research results.

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