Quality process design to change radiodiagnostic equipment to minimize the impact on waiting lists in a public health imaging diagnostic provider

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Introduction

Spanish INVEAT plan to reduce obsolescence of the National Health System image technological park

2021
- Equipment retirement
- New equipment installation
- Start up
- Administrative procedures

2022
- Nuclear Safety Council (NSC) new regulations affects IDI INVEAT implementation process

2022-2023
- IDI implements 17 new high-tech equipment in 7 hospitals throughout Catalonia

IDI Lleida
- 1 MR
- 1 PET-CT
- 1 SPECT-CT

IDI Vall d’Hebron
- 1 MR
- 1 CT
- 1 PET-CT

IDI Girona
- 1 MR
- 3 CT
- 1 SPECT-CT

IDI Metropolitana Sud
- 1 CT
- 1 PET-CT

IDI Tarragona
- 1 CT
- 1 SPECT-CT

IDI Terres de l’Ebre
- 1 CT
How do these changes affect the INVEAT implementation process?

**INVEAT deadlines**
- Operational equipment by 30th September, 2023
- Possibility of delay waiting for administrative authorization

**Waiting lists**
- The equipment is ready for use but no medical activity can be performed
- Backlog of tests and longer waiting time for appointments

**Patient Care**
- Discomfort due to delays in tests scheduling
- Referral of tests to external centers

**Introduction**
Objective

Redesign IDI INVEAT plan to minimize its impact on care performance

Radiological Protection Area
- Acceptance tests
- Radiation level control
- Installation conformity certificate
- NSC administrative procedure

Infrastructure Area
- Works planning design
- Uninstallation, works and installation follow-up

The plan involves

External stakeholders
- Old equipment uninstallation
- Premises adaptation and works
- Equipment installation
- Equipment registration paperwork
- Staff training
Before redesigning: equipment retirement and installation process

Before redesigning: the process took 117 days

Duration (days)
0  10  20  30  40  50  60  70  80  90  100  110  120

Equipment retirement process:
- Equipment retirement document
- Planning
- Uninstallation
- Tube destruction and deletion
- Destruction certificate
- Removal of equipment
- Space adaptation works
- Equipment installation
- Acceptance tests
- Documentation collection for equipment registration
- CSN administrative procedure
- Discharge resolution
- Personnel training
- Signing of acceptance certificate
- Start of assistance activity

Equipment deregistration (grey)
Equipment installation (orange)
Actions implemented (I)

- Agile communication system between areas involved
- Radiological Protection Area
- Infrastructure Area

Real-time information of works status

- Collection of documentation during the process and not at the end of the process

Action
- Destruction certificate: 3 days
- Documentation collection for equipment registration: 5 days
- NSC administrative procedure: 8 days
Actions implemented (II)

**Greater involvement of stakeholders**

- Sales and technical assistance companies
- Radiophysics and radiation protection services

**External stakeholders**

- Commitment to reduce work time
- Less documentation preparation time after equipment installation

**Actions implemented**

- Uninstallation
  - 2 days reduction
- Equipment removal
  - 4 days reduction
- Documentation collection for equipment registration
  - 5 days reduction
Actions implemented (III)

Response time optimization

Radiological Protection Area
Infrastructure Area

NEW

Work plan redesign
Definition of incoming documentation flow
Paperwork reduction and signature forms

Action
NSC administrative procedure

8 day reduction
After redesigning: equipment retirement and installation process

After redesigning: the process takes 95 days

- Equipment retirement document
- Planning
- Uninstallation
- Tube destruction and deletion
- Destruction certificate
- Removal of equipment
- Space adaptation works
- Equipment installation
- Acceptance tests

Documentation collection for equipment registration
- CSN administrative procedure
- Discharge resolution
- Personnel training
- Signing of acceptance certificate
- Start of assistance activity

Equipment deregistration (grey)  Equipment installation (orange)
The redesigned process:

- The whole process of deregistration, removal, installation and start-up was shortened by 22 days.
- Improved communication and team building.

Critical points that can affect the flow of the process:

- Interdependence between the parts involved.
- Most of the documentation required depends on external companies.