IMPLEMENTATION PLAN AND HEALTH OUTCOMES MEASUREMENT IMPLEMENTATION TOOLKIT FOR VALUE-BASED HEALTH CARE

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Background & Objectives

Currently, the main innovation in healthcare is the value-based healthcare (VBHC) framework, supposedly a way to solve the sustainability problem of health services. Implementing innovations in a complex institution, such as a tertiary hospital, is a challenge. Even though the situation is quite different among different institutions and countries and our experience is limited, a lot of the work already done could be adapted to other cases of interest, and some of the right choices were adopted and the mistakes avoided. We present in this work the strategies and approaches that help us in the implementation and the barriers identified.

Material & Methods

A two-round modified Delphi method was used to evaluate the consensus on the work packages. The budget estimation tool was developed, adapting it from the work packages using a simplified Time-Driven Activity-Based Costing (TDABC) analysis. The lists of professional roles were inferred from a comparison of successful and unsuccessful approaches in different projects. The barriers and facilitators for implementation included individual semi-structured interviews and discussion groups with professionals, patients, and experts on quality of care, informatics, and ICT and clinical practice. The Delphi questionnaire was developed by the Quality Unit.

Results

We estimate that the implementation phase will last a minimum of 18 and 24 months, depending on the medical condition's clinical process complexity. The first semester is the moment for inclusion of the medical condition in the implementation procedure, analysis of the situation, resources estimation, and advocacy of the project within the CT, complexity, and feasibility evaluated. During these months, the tools for proper data recording and teams' coordination should be implemented. The following two semesters are the piloting phase that will help test the tools and evaluate the appropriateness of the innovation applied in this medical condition. During the second semester of the second year, the institution has to introduce the innovations within the daily tasks of the clinical process (with minimum intervention of the project and data managers), analyze the first-year data, and give feedback to the clinicians and patients with the evaluation of the health technology innovation proposed. After that, the innovations should work out in the daily care process without incrementing the professionals' workload.

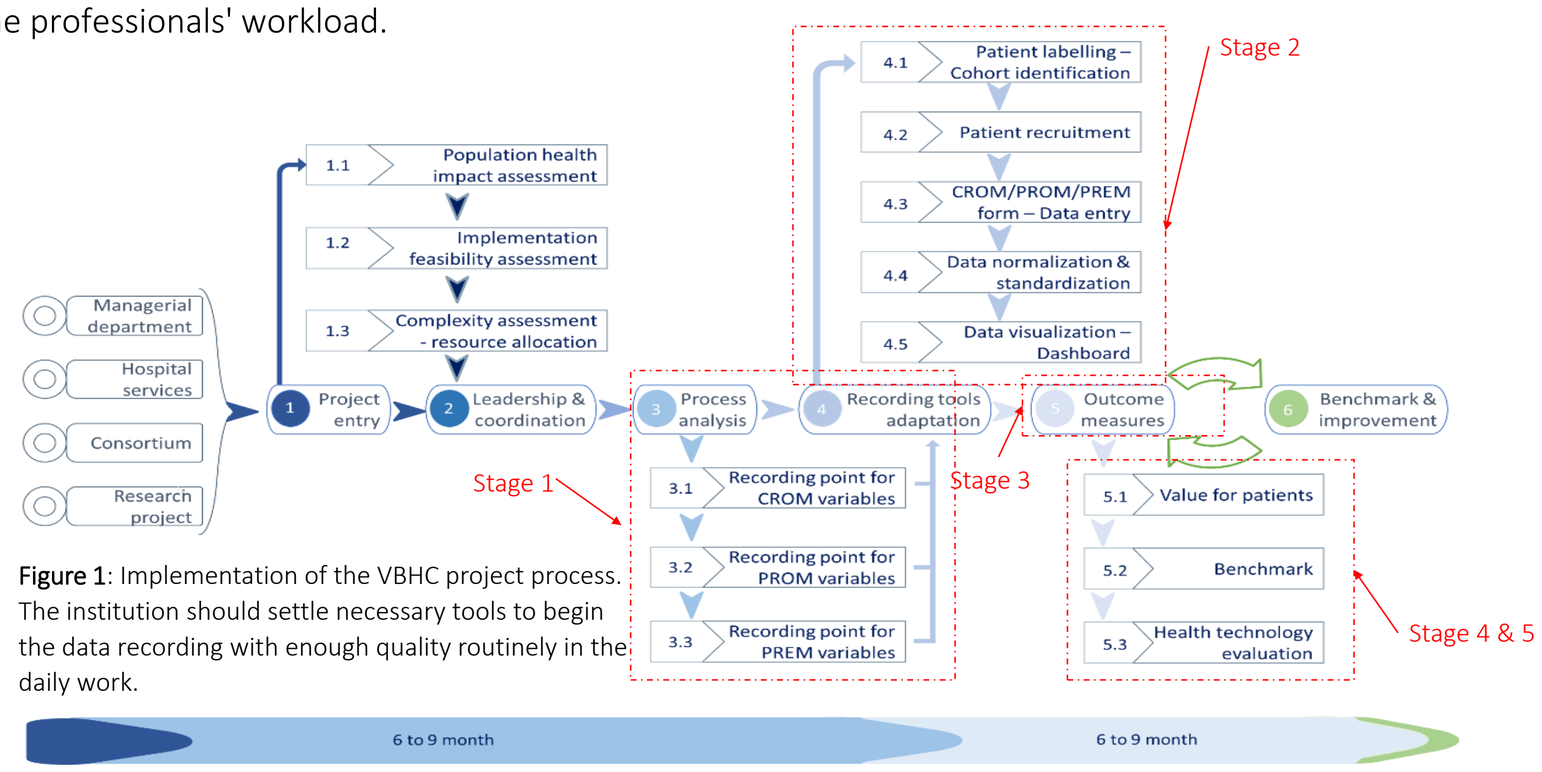

Figure 1: Implementation of the VBHC project process. The institution should settle necessary tools to begin the data recording with enough quality routinely in the daily work.

After the first year of implementation we defined the implementation process flow chart (Figure 1) and developed a series of tools for implementation aid:

1. Work Packages and Tasks (List of must-do tasks by implementation phase) – Table 1
2. Budget Estimation Aid (Budget Estimation Spreadsheet) – Figure 2
3. Professional Roles Weighted per implementation phase (List of professional expertise needed for each implementation phase – Figure 3

Transversal management of the project.	Step 1 - Data adequacy (structured)	Stage 2 - Adequacy of tools	Stage 3 - Recording of structured data.	Stage 4 - data analysis and visualization.	Stage 5 - innovation and research
▪ Definition of project objectives, team, governance and methodology.	▪ Specification of the data set	▪ Review and creation of the univocal identifiers of the variables	▪ Integration of external collection tools	▪ Characteristics of the target population	▪ Observational epidemiological cohort studies
▪ Development of data management protocol and analysis plan.	▪ Modeling of data elements	▪ Design and development of data recording systems	▪ Description and analysis of the care process	▪ Stratification and cohort clusters for analysis	▪ Population impact studies and project appropriateness
▪ Development of the internal and external communication plan.	▪ Specification of the terminology links	▪ Database integration	▪ Follow-up of cohort patients	▪ Data exploitation	▪ Economic evaluation
▪ Administrative management	▪ Definition and validation of the standardized catalog and archetypes	▪ Implementation of support tools for quality data recording	▪ Follow-up of patient-reported questionnaires Especially important is the follow-up of the completion of PROM questionnaires that cannot be collected at times other than the one proposed.	▪ Data management, structuring, formatting	▪ Decision support tools (Continuous improvement of clinical practice)
▪ Protection of intellectual property rights (where applicable).	▪ Training for healthcare teams on structured data recording with quality.	▪ Integration of external collection tools	▪ Data quality audits	▪ Statistical support	▪ Development of predictive models and learning algorithms
▪ Monitoring of the project plan and deliverables.	▪ Registry quality studies	▪ Labeling of patients		▪ Data visualization	
▪ Administrative Management		▪ Creation of cohort follow-up dashboards		▪ Provide clinical practice feedback to healthcare professionals	
				▪ Benchmarking with other healthcare organizations	

Table 1: Work Packages and Tasks (List of must-do tasks by implementation phase)

Professional profiles

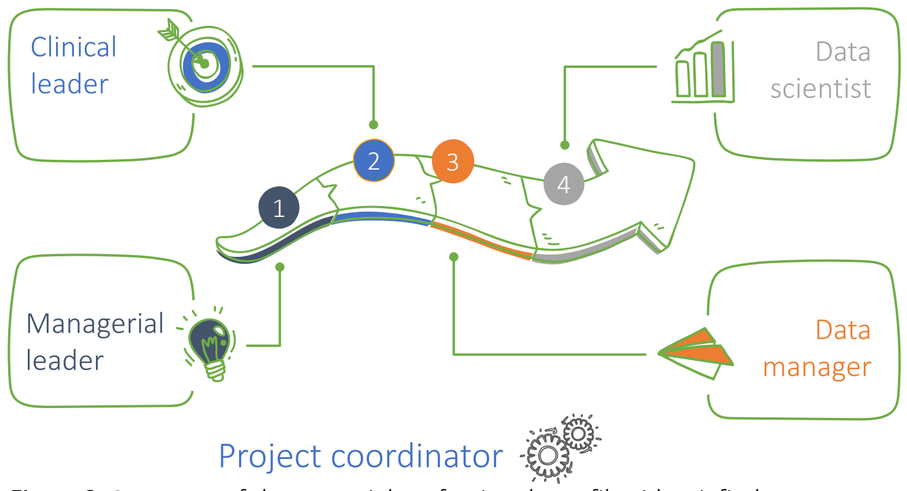

Figure 2: Summary of the essential professionals profiles identigfied

Human resources	E	A	Person per year (high complexity)	Person per year (low complexity)	% adjusted budget (**)
Medical condition leaders	X		1	0,5	24,31%
Managerial leader		X	0,2	0,1	0,00%
Communication manager	X		0,1	0,1	1,70%
Project manager	X		0,5	0,25	8,51%
Quality coordinator	X		0,25		5,47%
Process engineer or analyst		X	0,25	0,25	5,47%
Data manager		X	0,75	0,25	0,00%
Epidemiologist/data scientist	X		0,5	0,15	8,51%
Case manager		X	0,75	0,25	0,00%
ICT engineer	X		0,2	0,2	4,38%
EHR referral	X		0,2	0,1	4,38%

Table 2: standardization of the implementation costs

Conclusions:

The VBHC implementation in complex organizations such as tertiary hospitals is challenging requiring a structured work plan and careful reflection of the resources allocation. It has several implementation costs that should not be overlooked when planning to implement one of these healthcare innovations.

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Thanks!