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Catalan experience of deadoption of low-value practices in primary care

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ABSTRACT

Reducing ineffective practices is one way to ensure high-quality and efficient healthcare for the population. For this reason, several initiatives have been implemented worldwide to reduce low-value care. This article describes the experience of the *Essencial* project, a multifaceted deadoption strategy implemented in the Catalan primary care system. Lessons learnt from this project include the importance of considering the local context in deadoption strategies, providing adequate training and communication material to patients and clinicians and supporting the key role of clinical champions. Given the knowledge gaps regarding the conditions for successful deadoption strategies, the Catalan experience could provide enlightenment on how to implement, evaluate and sustain a large-scale collaborative deadoption strategy in primary healthcare.

BACKGROUND

Change is the rule for healthcare systems. However, in the last decade, we have witnessed unprecedented transformations on a global scale. The difference now is the accelerated pace at which these changes are taking place, and this is fueled by the increased capacity for information processing and knowledge application. Among the leading transformations in developed countries, increasing value in healthcare, notably through reducing low-value practices, is now a priority in several jurisdictions. Low-value practices are those with greater risks or for which more cost-effective alternatives exist. Additionally, scientific evidence either lends no support to the effectiveness of these practices or demonstrates their ineffectiveness.[1] Thus, deadoption of low-value care is necessary for quality improvement (QI) in order to optimise the use of scarce resources by eliminating clinical practices that are often costly and potentially harmful.

In 2013, The Catalan Agency for Healthcare Quality and Evaluation (Agència de Qualitat i Avaluació Sanitàries de Catalunya (AQuAS)) initiated the *Essencial* project with the purpose of contributing to the quality and sustainability of the healthcare system through the elaboration of evidence-based clinical recommendations for avoiding unnecessary care or low-value practices.[2 3] The Catalan Healthcare System is an autonomous national health system with universal coverage that is free at the point of care. It is mainly funded through state taxes. Primary care is usually the first point of contact with the system in Catalonia. There are close to 400 primary care teams that provide care to a population of about 7.6 million people in healthcare areas all around Catalonia.[4] The Catalan *Essencial* project could, thus, be seen as an exemplar of a structured large-scale QI initiative in primary healthcare that could inform deadoption efforts in similar contexts.

The *Essencial* project has three aims: (1) to identify low-value clinical practices relevant to the Catalan context with the involvement of scientific societies and healthcare professionals and to provide guidelines on avoiding these practices; (2) to raise awareness among healthcare professionals and involve them in the implementation of deadoption recommendations through a pilot study (inform healthcare providers on the existence of low-value practices, so that they can identify such practices and promote change) and (3) to implement communication strategies to disseminate the recommendations among healthcare professionals and patients. This paper presents the experience of the deadoption strategy employed in the Catalan primary care system through the *Essencial* project as well as lessons learnt from this project. The study uses secondary data collected from the *Essencial* project from 2013 until April 2020. Given that this was a QI initiative of the Catalan Healthcare System, ethical approval was not sought for this project.

IMPLEMENTATION OF A DEADOPTION STRATEGY TO AVOID UNNECESSARY CARE

The *Essential* project was conceived as a large-scale QI strategy, inspired by international initiatives such as the *Choosing Wisely* campaign,[5] and rooted in the principle of value-based healthcare.[6] Initially, the *Essencial* project targeted all primary care centres and hospitals in Catalan territory. However, for

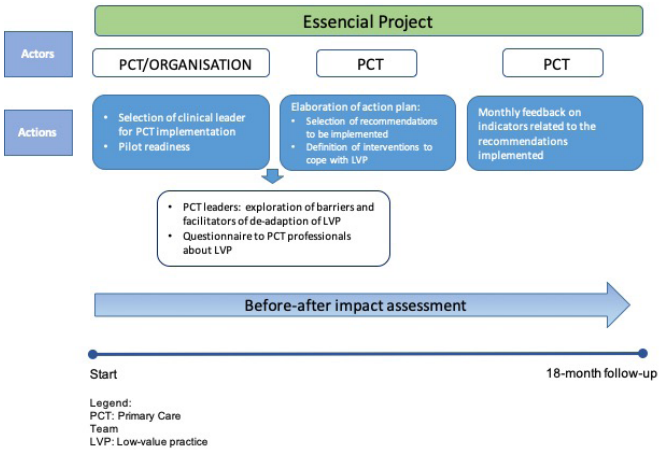


Figure 1 Implementation phases of the *Essencial* project. PCT, primary care team; LVP, low-value practice

feasibility reasons, modifications were made to the implementation strategy. The implementation started as a pilot project via the initial random selection of 11 primary care teams across Catalonia and subsequent collaboration with those that were motivated. Other teams that showed interest in the project joined the initiative over time.[1] In collaboration with a team from Sistema d'Informació dels Serveis d'Atenció Primària (Primary Care Information System; SISAP), managed by the Catalan Institute of Health, the AQuAS submitted this project and obtained funding for 3 years (2013–2015).

The *Essencial* project applied a change management approach similar to the QI implementation framework proposed by the *Choosing Wisely* campaign.[5] Implementation strategies included the participation of clinical opinion leaders, multichannel communication strategies, tailored training as well as feedback and benchmarking activities. It proposed the use of specific indicators and baseline data for the follow-up and evaluation of each deadoption recommendation within each participating organisation. The AQuAS had various roles in the realisation of the project, notably to develop a set of recommendations regarding low-value care in collaboration with clinicians, to support local clinical teams in preparing their action plans and to work with scientific societies to develop, appraise and disseminate the training material.

The *Essencial* project comprised four phases (see figure 1):

1. The identification of low-value practice recommendations from various sources (healthcare professionals and scientific societies).
2. The prioritisation of the recommendations to avoid low-value care according to the disease burden (prevalence and incidence), the frequency of use and the risk–benefit ratio (organisational impact and patient preferences were also considered but not directly assessed).
3. Active communication through the design of specific dissemination strategies tailored to each recommendation and adapted to healthcare professionals and patients.
4. Impact assessment through the evaluation of clinician knowledge and adoption of the recommendations as well as changes in the provision of care in relation to the recommendation.

The final phase encompassed the implementation of recommendations for the deadoption of low-value clinical practices.

A mixture of top-down and bottom-up approaches were used in the implementation process at the primary care level. In the first step of the implementation, participating healthcare organisations were invited to identify clinical leaders within each primary care team who would act as local champions for the promotion of the project. A total of 170 clinician leaders were involved in the various sessions that were organised to identify potential barriers and facilitators to the deadoption of unnecessary care in a local context within organisation. The local leaders were responsible for mobilising and train their respective teams in order to select the recommendations from the *Essencial* project that they wanted to implement. The role of the project leaders at AQuAS was to support these local teams through monthly feedback on the clinical indicators of recommendations and follow-up of the change strategies that were implemented within each organisation three times during the 18 months of follow-up (eg, the training of professionals).

The second step of the implementation comprised the development of action plans within each primary care team of the participating organisation. To do so, primary care teams were provided with an initial list of low-value practices, which had been identified by the *Essencial* project team. From this list, primary care teams were invited to prioritise the practices that were the most relevant to them. They could also propose other low-value practices for deadoption, which were not on the list, as long as they aligned with the criteria and objectives of the project. In total, 77 recommendations have been proposed to date by the *Essencial* project. Of these, 24 have been implemented in the action plans of the participating primary care centres.[7] As of 1 April 2020, a total of 169 primary care teams have participated or are still participating in the pilot experience of the *Essencial* project.

A summary of the implemented recommendations with the number of teams that have implemented them is provided in table 1.

Following the identification of low-value practices targeted for deadoption, the third step was the development of monitoring indicators to assess the progress related to each recommendation. With the collaboration of the SISAP, the project leaders at AQuAS developed 30 clinical indicators in relation to the low-value practices that were targeted for deadoption. A monthly follow-up of the indicators was provided to each participating primary care team using the SISAP visualisation tool. An example of the indicator monitoring that was provided to the local teams is presented in figure 2.

For each of the low-value practice identified, baseline indicators were provided to the clinical teams and

Table 1 Published recommendations to avoid low-value practices from the *Essencial* project and number of primary care teams that have implemented them (15 April 2020)*

Target of the recommendation to avoid low-value practices	Year of publication	Number of primary care teams that have implemented the recommendation
Proton-pump inhibitors in in patients over 65 or subject to polypharmacy	2013	65
Statins in population with low or moderate coronary risk	2013 (updated in 2019)	25
PSA for prostatic cancer screening	2013	21
Bisphosphonates in postmenopausal women with low risk of fracture	2013	19
Benzodiazepines for insomnia in elderly people	2014	15
Antibiotics in acute otitis media in children	2013	13
Vitamin D use for elderly patients living in the community	2014	13
Bronchodilators in infants with bronchiolitis	2015	9
NSAIDs in heart disease, chronic kidney disease or liver failure	2015	8
Sedative drugs and benign paroxysmal positional vertigo	2016	8
Antibiotics in bronchitis in children	2016	7
Antidepressants for major mild depressive episode	2014	4
DXA bone densitometry for people not receiving pharmacologic treatment	2013	4
Imaging tests in low back pain	2013	4
Treatment of asymptomatic hyperuricemia	2016	3
ACEI and ARB in patients with cardiac failure	2013	3
Antibiotics and asymptomatic bacteriuria	2014	2
Mammograms in women under 50 and without additional risk	2013	2
Imaging tests in evaluating headache	2013	2
Imaging studies in paediatric sinusitis	2014	2
Antibiotics in acute rhinosinusitis in infants	2015	2
Antibiotics in pharyngitis in adults	2016	1
Antibiotics in lower airways infections in adults	2016	1
Annual blood testing in healthy adults	2016	1

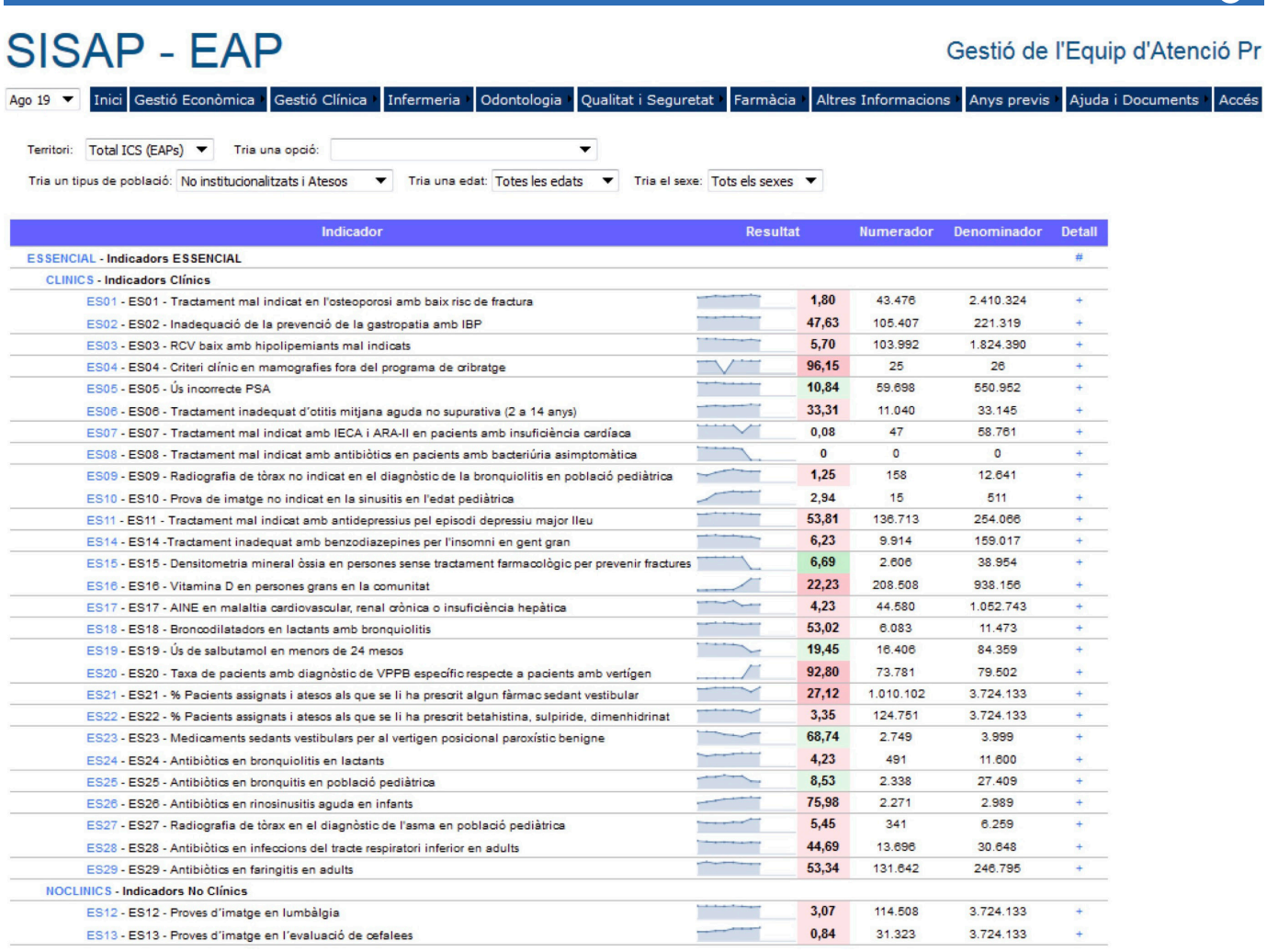
*Detailed information about the recommendations is available on the *Essencial* project website: http://essencialsalut.gencat.cat/en/recomanacions/index.html
ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; DXA, dual-energy X-ray absorptiometry; NSAIDs, Nonsteroidal anti-inflammatory drugs; PSA, prostate-specific antigen.

monitored throughout the project. The *Essencial* project website includes dashboards (in Catalan) for the monitoring of the various clinical indicators. For instance, the inadequate use ofprostate-specific antigen (PSA) for prostatic cancer screening was reduced of about a third in the year following implementation of the *Essencial* project in one of the participating healthcare areas.[7]

Finally, impact assessment, the last step of the implementation strategy, consisted of an overall evaluation of the project. The project team at AQuAS was in charge of the formative evaluation that was provided through the follow-up of indicators of the use of low-value practices. In addition, the AQuAS assessed clinicians' uptake of the deadoption recommendations as well as changes in clinical practices that were associated with the recommendations and in clinician knowledge following the intervention.

The *Essencial* project team used various methods and indicators to assess the project's impact. First, its impact on clinician knowledge and perceptions was analysed informally throughout the accompanying change process conducted by the AQuAS. Second, the prevalence of low-value practices before and after the implementation of *Essencial* recommendations was monitored through available data from the SISAP. Recently, the *Essencial* project began evaluating the impact of implementing deadoption recommendations on health outcomes and costs.[8]

Numerous communication strategies were developed in relation to the *Essencial* project. A website (http://essencialsalut.gencat.cat/ca/inici/) was created to provide



Indicador	Resultat	Numerador	Denominador	Detall
ESSENCIAL - Indicadors ESSENCIAL				#
CLINICS - Indicadors Clínics				
ES01 - ES01 - Tractament mal indicat en l'osteoporosi amb baix risc de fractura	1,80	43.476	2.410.324	+
ES02 - ES02 - Inadequació de la prevenció de la gastropatia amb IBP	47,63	105.407	221.319	+
ES03 - ES03 - RCV baix amb hipolipemiants mal indicats	5,70	103.992	1.824.390	+
ES04 - ES04 - Criteri clínic en mamografies fora del programa de cribratge	96,15	25	26	+
ES05 - ES05 - Ús incorrecte PSA	10,84	59.698	550.952	+
ES06 - ES06 - Tractament inadequat d'otitis mitjana aguda no supurativa (2 a 14 anys)	33,31	11.040	33.145	+
ES07 - ES07 - Tractament mal indicat amb IECA i ARA-II en pacients amb insuficiència cardíaca	0,08	47	58.761	+
ES08 - ES08 - Tractament mal indicat amb antibiòtics en pacients amb bacteriúria asimptomàtica	0	0	0	+
ES09 - ES09 - Radiografia de tòrax no indicat en el diagnòstic de la bronquiolitis en població pediàtrica	1,25	158	12.641	+
ES10 - ES10 - Prova de imatge no indicat en la sinusitis en l'edat pediàtrica	2,94	15	511	+
ES11 - ES11 - Tractament mal indicat amb antidepressius pel episodi depressiu major lleu	53,81	136.713	254.066	+
ES14 - ES14 -Tractament inadequat amb benzodiazepines per l'insomni en gent gran	6,23	9.914	159.017	+
ES15 - ES15 - Densitometria mineral òssia en persones sense tractament farmacològic per prevenir fractures	6,69	2.606	38.954	+
ES16 - ES16 - Vitamina D en persones grans en la comunitat	22,23	208.508	938.156	+
ES17 - ES17 - AINE en malaltia cardiovascular, renal crònica o insuficiència hepàtica	4,23	44.580	1.052.743	+
ES18 - ES18 - Broncodilatadors en lactants amb bronquiolitis	53,02	6.083	11.473	+
ES19 - ES19 - Ús de salbutamol en menors de 24 mesos	19,45	16.406	84.359	+
ES20 - ES20 - Taxa de pacients amb diagnòstic de VPPB específic respecte a pacients amb vertígen	92,80	73.781	79.502	+
ES21 - ES21 - % Pacients assignats i atesos als que se li ha prescrit algun fàrmac sedant vestibular	27,12	1.010.102	3.724.133	+
ES22 - ES22 - % Pacients assignats i atesos als que se li ha prescrit betahistina, sulpiride, dimenhidrinat	3,35	124.751	3.724.133	+
ES23 - ES23 - Medicaments sedants vestibulars per al vertigen posicional paroxístic benigne	68,74	2.749	3.999	+
ES24 - ES24 - Antibiòtics en bronquiolitis en lactants	4,23	491	11.600	+
ES25 - ES25 - Antibiòtics en bronquitis en població pediàtrica	8,53	2.338	27.409	+
ES26 - ES26 - Antibiòtics en rinosinusitis aguda en infants	75,98	2.271	2.989	+
ES27 - ES27 - Radiografia de tòrax en el diagnòstic de l'asma en població pediàtrica	5,45	341	6.259	+
ES28 - ES28 - Antibiòtics en infeccions del tracte respiratori inferior en adults	44,69	13.696	30.648	+
ES29 - ES29 - Antibiòtics en faringitis en adults	53,34	131.642	246.795	+
NOCLINICS - Indicadors No Clínics				
ES12 - ES12 - Proves d'imatge en lumbàlgia	3,07	114.508	3.724.133	+
ES13 - ES13 - Proves d'imatge en l'evaluació de cefalees	0,84	31.323	3.724.133	+

Figure 2 Screenshot of indicator monitoring regarding de-adoption recommendations provided to Essencial Project Primary Care Teams. SISAP = Sistema d'informació dels serveis d'atenció primària (Primary Care Information System); EAP, Equip d'atenció primària (Primary Care Team).

information about the project, monitor progresses and offer support material to clinicians and patients. For clinicians, information sheets and short videos (3–5 min) were made to offer details on the low-value practices that should be eliminated and propose evidence-based alternatives.[3] Twenty-two recommendations specifically directed at patients are currently available on the website. Documents and presentations related to the project are also publicly available in order to ensure transparency and increase awareness in the population.

The *Essencial* project was still ongoing in 2021, and its long-term impacts will continue to be monitored. The availability of quality indicators for primary care in Catalonia that are accessible through the SISAP health information system is an asset in evaluating the *Essencial* project's impact.

CONDITIONS FOR SUCCESS

The *Essencial* project emerged in a context that was supportive of the implementation of change in primary care due to several local, national and global policies. The fact that global movements, such as 'Choosing Wisely'[5] and 'Less is More',[9] gained traction at the local level within each primary care team is of particular interest. The recommendations for deadoption were identified by professionals at the local level. Some of them are similar to those produced at the international and national levels but with a particular focus on those who were common in primary care. The fact that the *Essencial* project proposed a flexible and incremental approach made its local adaptation possible while keeping it consistent with other initiatives at the national (Spain) and international levels.

The *Essencial* project adopted a collaborative approach with actors in the field and involved local leaders in key decisions regarding deadoption. The fact that each clinical team was responsible for determining its priorities in terms of low-value practices ensured the adaptation of the innovation to the local context in line with the preferences of professionals. Each team prepared its own action plan and was responsible for leading change. Therefore, clinical teams saw the deadoption initiative as their own and were, thus, more willing to invest time and effort in its implementation and monitoring.

For the AQuAS, the *Essencial* project was seen as strategic since it was linked to other strategic functions of the organisation. Thus, a dedicated team was working to promote the project in the participating primary care centres. However, human and financial resources were limited, so it was necessary for the AQuAS to revisit its initial implementation objectives for the *Essencial* project. One of the key factor of success was the accompanying role of AQuAS, which was perceived as a trusted external entity by healthcare actors in the field. According to one of the project leads, such a transformative project could not have been implemented by the department of health. The fact that the AQuAS was an independent agency in health evaluation and research provided sufficient distance with the government, and, thus, it was not seen as an authoritarian and controlling entity.

CHALLENGES

Change requires time; thus, maintaining the interest of the primary care teams involved in the *Essencial* project beyond the pilot phase was a major challenge. To better understand the factors that influence the success of such initiative, an analysis of the characteristics of the clinical teams that succeeded in reaching the project's objectives and effectively reducing the use of low-value practices is recommended. This would identify good practices and foster networking among healthcare professionals, so that they can share their experiences.

Various factors, such as the characteristics of clinicians, the lack of continuity between the levels of care and factors related to patients and the general population, can explain low-value practice.[10 11] Therefore, one additional challenge for ensuring the long-term success of the *Essencial* project is the adequate raising of awareness, not only among health professionals but also among patients and the general public, notably by showing how reducing low-value care can create additional resources for high-value practices. Targeted communication strategies are, thus needed in order to adapt this message to the different stakeholder groups.

LESSONS LEARNED REGARDING DEADOPTION IN CATALONIA

The *Essential* project is one of the first deadoption projects focusing on primary care.[2 3] Thus, lessons learnt from this project could be useful for similar future interventions. This project employed a blend of top-down and bottom-up approaches, based on key principles from the implementation and diffusion of innovation frameworks. It also used multifaceted strategies and a flexible management plan, which are recommended for a complex change intervention such as deadoption. Interestingly, although the *Essencial* project was developed in parallel to other deadoption initiatives, it is very similar to the framework proposed by Niven *et al*[12] and the recent Choosing Wisely De-Implementation Framework (CWDIF) proposed by Grimshaw *et al*[13]

The *Essencial* project targeted various levels (systemic, organisational, professional and individual) and adopted a tailored approach to develop context-specific strategies with the support of local clinical champions. The strategies were aligned with known determinants of deadoption, but the process was done intuitively, inspired by models for the implementation of clinical guidelines. Even though the *Essencial* project team did not explicitly used a QI model nor an implementation framework, its bottom-up approach is consistent with recommended change management strategies.[5] Retrospectively, it was possible to identify some key factors of success and relate them to behavioural determinants from implementation and diffusion frameworks. In the future, it is recommended to make the theoretical foundations of deadoption strategies more explicit in order to compare the results across studies, to better synthesise knowledge on deadoption determinants and to establish the effectiveness of specific strategies. Frameworks, such as the CWDIF, offer an interesting starting point to guide future deadoption initiatives.[13]

At the level of healthcare providers, effective strategies, such as a collaborative approach in the design of deadoption strategies as well as the identification of clinical leaders, were implemented. These strategies have also been identified as key to achieving successful deadoption of low-value clinical practices.[14 15] The role of communication was crucial in the *Essencial* project and several efforts were dedicated to preparing and disseminating training and information material in various formats to gain and maintain the interest of participants and other stakeholders. In the future, it is important to establish strategies to maintain and update long-term communication efforts.

The *Essencial* project also depended on structural support from the Catalan Health Ministry, the national health insurer (CatSalut) and the Catalan Health Institute. The accompanying role of the AQuAS was positively perceived as this organisation is not directly linked to the Health Ministry or professional organisations, so it did not present a threat to professionals. This finding is congruent with the literature that stresses the role of support from system leaders who hold key positions in civil service administration (eg, safety and quality commissions).[14] To ensure the sustainability of the *Essencial* project, it is important to maintain an independent structure with a collaboration between the health system and clinicians in order to facilitate deadoption initiatives. Savings arising from the deadoption of low-value clinical practices could be reinvested in added-value practices among clinical teams as an incentive system. This would also directly contribute to raising the commitment of clinical teams to QI and supporting a culture of excellence in primary healthcare.

STRENGTHS AND LIMITATIONS

The *Essencial* project is among the first to promote the deadoption of low-value care on a large scale in primary care. The main strength of this study is to report on this

unique experience covering a period of 7 years in order to inform other jurisdictions in their efforts to promote the deadoption of low-value care. This study also shares insights into experts who were involved in the *Essencial* project, providing a rich source of experiential knowledge. However, this study is limited by the fact that it used secondary material from the *Essencial* project that was not originally collected for the purpose of research. Clinical data on the deadoption of low-value care are available to assess the impact of the *Essencial* project, but such evaluation is beyond the scope of this study. Also, due to time limitations, it was not possible to conduct interviews with clinical teams and managers involved in the *Essencial* project. It would, thus, be necessary to pursue knowledge development regarding deadoption strategies using rigorous evaluation methods.

CONCLUSION

While current healthcare systems are being challenged by increasing demand, rising costs and human resource shortages, strategies to support the judicious use of health resources are crucial for sustaining the gains in global health and attaining universal coverage for all. Change is a function of individual, structural and cultural factors, is fundamentally complex and is time specific and context specific. The deadoption of low-value practices should be rooted in the ethical and theoretical foundations of value-based care, ideologies such as professionalism, culture of safety, patient-centred care and learning health system.

The Catalan *Essencial* project presents a rich and illustrative experience of a large-scale initiative of deadoption in primary care. Lessons learnt could inform decision-makers, clinicians, patients and researchers worldwide. Concretely, adopting a bottom-up approach, the *Essencial* project recognised professional autonomy and the role of clinical champions. The change management strategy favoured the reinvention of deadoption at the local level, with the AQuAs playing a role of facilitator. A major condition for success is then the time needed for integrating deadoption principles into the local culture. The position of AQuAS as an external (in contrast to the Ministry of Health) but accessible organisation was certainly a benefit. Moreover, the promoting team comprised researchers with clinical background, and its members dedicated a lot of time to field work with local teams, which was also important to promote trust and a shared vision. Some inherent risks to such bottom-up strategies include competing demands, the turnover of champions, 'change fatigue' as well as the lack of incentives and infrastructures to sustain change.

The sustainability of the *Essencial* project will depend on its capacity for institutionalisation, while maintaining its 'distance' from the system. An independent entity responsible for deadoption with recurrent funding would provide ideal grounds for pursuing the mission. The Catalan case could serve as an example of a successful deadoption initiative that achieved a right balance between top-down policies and bottom-up strategies.

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