Assessing the scalability of innovations in primary care: a cross-sectional study

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Abstract

Background: Scaling up health innovations is essential for impactful primary care, but we know little about how to evaluate these innovations' scale-up potential. Therefore, we sought to analyze the scalability of primary care innovations in the province of Quebec.

Methods: We performed a cross-sectional study. Eligible participants were 33 innovation teams selected for the 2019 Quebec College of Family Physicians' Symposium on Innovations. We invited them to complete a Web-based survey with two sections: 1) innovation characteristics (e.g., type) and 2) the Innovation Scalability Self-administered Questionnaire (ISSaQ). The latter includes 16 scalability assessment criteria grouped into five dimensions: theory (one criterion), impact (six), coverage (four), setting (three), and cost (two). We classified innovation types using the International Classification of Health Interventions. Within each dimension, we calculated the mean number and standard deviation (SD) of innovations that met the criteria.

Results: Out of 33 teams, 24 participated (73%), with one innovation each. The types of innovation were management (15/24), prevention (8/24), and therapeutic (1/24). Most management innovations focused on patient navigation (9/15). In order of frequency, innovations met the impact criteria (mean=19, SD=3), followed by theory (mean=19, SD=0), cost (mean=19, SD=4), setting (mean=14, SD=4), and coverage (mean=13, SD=6). Most innovations (n=16) met 10 criteria or more: management (10/16), prevention (5/16), and therapeutic (1/16). Fidelity was the least assessed criterion (6/24).

Interpretation: The scalability of a primary care innovation varied according to its type. Management innovations are the most prevalent and appear to be most prepared for primary care scale-up in Canada.

Keywords: Primary care, innovations, scalability, scaling up, knowledge translation, implementation science, Innovation Scalability Self-administered Questionnaire (ISSaQ), measurement, Quebec College of Family Physicians

Introduction

Primary care refers to care received in the context of patients' first contact with the healthcare system.(1–3) In Canada, primary care is at the centre of major reforms.(4) However, if primary care is to improve quality of care nationally, innovations (i.e., practices or products perceived as new in terms of knowledge, persuasion, or a decision to adopt(5,6)), for which an evidence base has been established, must be expanded or "scaled up" to reach more patients.(7,8) Increasing the impact of health innovations would reduce waste in health and health inequities while improving the health of Canadians.(4,9,10) In knowledge translation (KT) and implementation science (both hereafter referred to as KT), the differences between "scaling up," "scaling out," "scaling," and "spread" are nuanced.(8,11–14) Here, we define the process of "scaling up" as "deliberate efforts to increase the impact of successfully tested health innovations so as to benefit more people and to foster policy and program development on a lasting basis."(6)

To be successful, scaling up should follow a number of steps: 1) scalability assessment, 2) development of a scaling-up strategy, 3) implementation and evaluation of the strategy, and 4) promoting the long-term sustained use of the successfully scaled up innovation.(6,15–18) But determining the scalability of an innovation, the preliminary and essential step in scaling-up process, is often overlooked.(8,19) "Scalability" refers to the "ability of a health innovation shown to be efficacious on a small scale and/or under controlled conditions to be expanded under real world conditions to reach a greater proportion of the eligible population, while retaining effectiveness."(20) To be scalable, an innovation should meet certain minimum criteria.(6,9,15,20–22) For example, fidelity is a critical scalability assessment criterion that is directly tied to the success of scaling up.(23) It refers to the extent to which practitioners implement a scaled-up innovation as it was originally intended and designed to be delivered.(24,25) In Canada, despite a

growing interest in scaling up health innovations, there are few systematic guides to assessing scalability.(9) As such, policy-makers face a predicament when choosing between innovations to scale up in primary care. This contributes to a lag between knowledge generation and scaling up, delaying communities' access to effective primary care innovations.(7,9)

As the voice of family medicine in Canada, the College of Family Physicians of Canada plays an active role in promoting primary care innovations to improve the health of Canadians.(26) As part of this mission, the Quebec chapter of the College held a Symposium on Innovations in 2019 to catalyze the scaling up of primary care innovations across the province by gathering together innovation teams, patients, citizens, clinicians, and decision makers.(27) In this study, we report on our analysis of the scalability of the primary care innovations produced by these innovation teams.

Methods

We report our study according to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.(28)

Study design

We performed a cross-sectional study using a Web-based survey.

Setting

The Quebec College of Family Physicians held the second edition of the Symposium on Innovations on 31st May 2019 in Montreal, Canada. A call for the submission of innovations, covering the period from 24th September to 31st November 2019, was issued by the symposium planning committee in collaboration with the Quebec SPOR-SUPPORT Unit,(29) Réseau-1 Québec,(30) and McGill University.(31) To be selected for the symposium, innovations had to

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meet the following criteria: 1) have a potentially significant impact on the organization of primary care in the province of Quebec, 2) be aligned with the vision of the Patient's Medical Home, and 3) contribute to a culture of continuous quality improvement. We collected data between the 11th of February and the 18th of March 2019.

Participants

Eligible participants were the 33 innovation teams that met the criteria for participating in the symposium. Of the 37 innovations that were submitted, 33 were selected and 29 were presented.(32) Teams included patients, family physicians, and decision makers as well as researchers. We invited, by email, the corresponding members of the 33 selected teams to complete our Web-based survey in French. Non-respondents were sent two reminder messages.

Data collection

Our survey included two sections: 1) characteristics of the innovation (e.g., type and aim) and 2) the Innovation Scalability Self-administered Questionnaire (ISSaQ) (**Additional file 1**).(9) ISSaQ aims to assess the scalability of innovations in primary care. It includes 16 criteria grouped into five dimensions: theory used for the development of the innovation (one criterion), impact of the innovation (six), likely coverage (four), setting (three), and cost (two).(9) For each criterion, there are five possible responses: 1) "Yes", criterion was assessed; 2) "No", criterion was not assessed; 3) "UE", criterion was under evaluation; 4) "NP", criterion assessment was not planned; and 5) "NA", not applicable. Space was provided for additional comments on each criterion, including an adequate rationale if "not applicable".

We translated the ISSaQ from English to French using the cross-cultural adaptation process.(33) First, two French translators (an expert in the KT field and a translator without knowledge in KT), whose mother tongue is French, produced two independent translations. The developer of the

original ISSaQ (ABC) checked the accuracy of the translations, resolved any discrepancies through consensus with the translators, and produced the first French draft. Second, two English translators (an expert in the KT field and a translator without knowledge in KT), whose mother tongue is English, translated the first French draft back into English. A few minor differences emerged when the backwards translations were compared to the original ISSaQ. These differences were related to changes in wording rather than content. All differences were discussed within the research group and modified to achieve comprehensibility, conceptual equivalence, and produce the French version of ISSaQ.

Eight key stakeholders validated the content of the ISSaQ: four family physicians, one healthcare administrator, one scientific coordinator, and two postdoctoral researchers (four men and four women). The resulting refinement of its structure and content improved understanding of the scalability assessment criteria. The whole survey (including the ISSaQ) takes about 10 minutes to complete.

Data analysis

First, two authors (ABC, LK) independently classified the innovations using the International Classification of Health Interventions which covers all parts of the health system.(34,35) This classification includes three axes: 1) Target (the entity on which the action is carried out), 2) Action (the deed done by an actor to the target), and 3) Means (the processes and methods by which the action is carried out). In this study, we used the Action axis as it was the most appropriate for describing the innovations. Within this axis are six mutually exclusive types of innovation: managing (e.g., patient navigation), preventing (e.g., capacity building), therapeutic (e.g., promoting physical exercise), diagnostic (e.g., biopsy), other (i.e., not elsewhere classified), and

unspecified action. Any discrepancies were resolved through consensus between ABC, LK, and a third author (JM or HTVZ).

Second, as suggested by stakeholders in an earlier exercise in scalability assessment using the ISSaQ,(9) we grouped the response options for the 16 scalability assessment criteria into three categories: 1) criterion met (i.e., responses corresponding to "criterion was assessed" and "criterion was under evaluation"), 2) criterion not met (i.e., responses corresponding to "criterion was not assessed" and "criterion assessment was not planned"), and 3) not applicable. Then we scored each innovation according to the number of criteria met (i.e., score ranged from 0 to 16). Higher scores indicate the innovation team had collected diverse and important information relevant to decision making about that component of scaling up the innovation. Based on previous findings,(9) we grouped innovations as follows: those whose scalability assessment ranked as *high* (i.e., innovations met 10 criteria or more), *medium* (i.e., innovations met 4 to 9 criteria), and *low* (i.e., innovations met 3 criteria or less). The "not applicable" response was considered equal to "criterion not met" because few cases were reported and no adequate rationale was provided.

Finally, we performed a descriptive analysis using simple frequency counts, means, and standard deviation (SD). Innovation was the unit analysis. Within the dimensions of ISSaQ, we calculated the arithmetic mean number of innovations that met the criteria. As we had no missing data, no specific analysis was conducted. Data was analyzed using R software (version 3.5.1).

Results

Participants

Out of 33 contacted innovation teams, 24 participated (73% response rate) for one innovation each (**Figure 1**); nine other teams did not for various reasons (e.g., lack of time, lack of results, and withdrawal).

Types of health innovations

Types of innovations were in the management (n=15), prevention (n=8), and therapeutic (n=1) categories (**Table 1**).

Management innovations focused on patient navigation (i.e., assisting patients to identify or to access appropriate services and resources; 9/15), followed by interprofessional collaboration (i.e., working together with patients, healthcare providers, and other stakeholders; 4/15), and prescription service (i.e., recommendation to obtain or pursue a specified health intervention; 2/15).

Preventive innovations focused on capacity building (i.e., providing resources or initiating strategies to increase the ability of an organization or community to address health issues by creating new structures, approaches, or values; 3/8), followed by public health surveillance (i.e., ongoing, systematic collection, analysis, and interpretation of health-related data to support the planning, implementation, and evaluation of public health practice; 3/8), marshalling health services (i.e., organizing or directing existing health services and personnel to provide health interventions to meet a specified population health need; 1/8), and restrictions on advertising, promotion, or the sponsorship of products (1/8).

The only therapeutic innovation focused on assisting or promoting an exercise (i.e., supporting or guiding regular or repeated use of a function or an activity: cognitive, physical, or sensory exercises).

Scalability assessment dimensions

As shown in **Table 2**, impact was the dimension wherein scalability assessment criteria were most often met (mean=19, SD=3), followed by theory (mean=19, SD=0), cost (mean=19, SD=4), setting (mean=14, SD=4), and coverage (mean=13, SD=6). On average, 11 of the 16 scalability assessment criteria were met by the 24 innovations. Fidelity was the least assessed criterion (n=6).

Rankings for scalability

Scalability was ranked as *high* for 16 innovations, *medium* for six innovations, and *low* for two innovations (Table 1). Types of these 16 high-ranking innovations were in the management (n=10), preventive (n=5), and therapeutic (n=1) categories. The 10 high-ranking management innovations focused on patient navigation (8/10), interprofessional collaboration (1/10), and prescription service (1/10).

Interpretation

Our study analyzed the scalability of primary care innovations in the province of Quebec. The majority of these innovations were management innovations, and most ranked high for scalability. About half addressed all scalability assessment dimensions, but fidelity is a critical criterion that remained largely unaddressed. These findings lead us to make the following observations.

First, most innovations were management innovations focused on patient navigation and interprofessional collaboration. This finding reflects the evolution of primary care philosophy towards patient-oriented approaches to care delivered by multidisciplinary healthcare

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providers.(4,36–40) It also reflects the nature of current health research funding priorities in Canada: the Canadian Institutes of Health Research, for example, increasingly favors affordable innovations such as management and preventive innovations in primary care over other types of innovations.(9,41) Canadian underserved and vulnerable populations face the negative impacts of social determinants of health that affordable innovations can mitigate.(42–45) Promoting management innovations, more than other types of innovations, could allow Canadian primary care systems to cross new performance thresholds without expensive health infrastructure.

Second, management innovations were also those that ranked highest for scalability, which suggests the type of an innovation influences its potential for scale up. Producers of management innovations are more aware of the need for and relevance of evaluating scalability as part of their design and implementation processes. For example, the *PrescribeIT,* a management innovation, is a Canadian not-for-profit electronic prescription service(32,46) that met all of the scalability assessment criteria. Its development was based on stakeholders' needs to improve health outcomes or behavior. In this case, stakeholders had a sustained interest in its implementation and scaling up and therefore investigated all criteria related to its scalability. However, this is not necessarily the case for therapeutic innovations for which development and evaluation are potentially complex and expensive.(44) Likewise, it has been shown that those designing methodological innovations (e.g., frameworks(47)) are less likely to undertake scalability assessments, as stakeholders were less interested in scaling up an innovation that does not appear to directly improve health functioning or conditions.(9,48) At this time, our analysis shows that management innovations integrate scalability assessments the most; consequently, catalyzing the scaling up of this type of innovations will improve quality of primary care nationally.

Third, fidelity was the least assessed criterion, which suggests that it was less pertinent for or unknown to the innovation teams. The concept of scalability is still new and poor documentation of its components could be explained by a lack of human resources within teams. When an innovation is not implemented with fidelity, it is less likely to be effective, potentially leading to faulty conclusions about its potential for scale up.(25,49,50) Achievement of high fidelity is one of the best ways of replicating the success of innovations resulting from original research.(23,51,52) Evidence suggests that higher fidelity are associated with better patient outcomes.(53) Barriers to assessing the fidelity of innovations could include: a lack of available technical support, limited resources and time, and adapting the innovation to local conditions.(25) Indeed, to make innovations more acceptable, adaptability is often built in, but this adaptability makes fidelity more difficult to achieve.(53,54) One study found that for three-tenths of primary care innovations, the fidelity criterion was rated as "not applicable" without an adequate rationale. Yet, there is consensus that fidelity of innovations needs to be systematically evaluated as it remains a best estimate of implementation quality.(25) Several common methods to guide and facilitate such assessments have been described.(25,51,55,56) However, we know little about comprehensive fidelity plans or reliable and valid measures for measuring scaling-up fidelity.

Limitations

Finally, the current version of ISSaQ collects data on the presence of information necessary for assessing the scalability of innovations; and it has now been translated, refined and validated by key stakeholders. It still cannot inform us on the results of those assessments. However, we asked teams if they had documented their assessments and we found that some had collected significant amounts of information to facilitate a future scaling-up plan. Our study shares the general limitations of any approach using self-administered questionnaires (e.g., overestimation of

evaluated criteria). And while not all of the teams responded to our survey, we had a satisfactory rate of response. Some of the innovations assessed were still at a preliminary stage.

Conclusion

We analyzed the scalability of several primary care innovations in the province of Quebec. Overall, the scalability of an innovation varied according to its type. Management innovations appear to integrate scalability assessments the most and this type of innovation seemed to be most ready for primary care scale-up in Canada. Our findings contribute to an important understanding of scalability assessments in primary care that is relevant to knowledge users. Future evaluations of the activities of the teams should investigate data and measures relating to the fidelity of the innovations.

List of abbreviations

ISSaQ, Innovation Scalability Self-administered Questionnaire; **KT,** Knowledge Translation (or Implementation Science); **SD,** Standard Deviation; **SPOR-SUPPORT,** Strategy for Patient-Oriented Research (SPOR) Support for People and Patient-Oriented Research and Trials (SUPPORT); **STROBE,** Strengthening the Reporting of Observational Studies in Epidemiology.

Declarations

Ethics approval and consent to participate

Ethical approval was waived as our study assessed research innovations and did not collect data on human participants.

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Consent for publication

Not applicable

Availability of data and material

Study data is maintained by the Knowledge Translation component of the Quebec Strategy for Patient-Oriented Research (SPOR) Support for People and Patient-Oriented Research and Trials (SUPPORT) Unit. Please send all requests for study data to Dr. France Légaré (france.legare@mfa.ulaval.ca).

Competing interests

The authors have none to declare.

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Authors' contributions

ABC, HTVZ, and FL participated in the conception of the study. ABC, HTVZ, JM, MDP, EB, AG, MJC, and FL participated in the design of the study. ABC, JM, and MC coordinated data collection. ABC, HTVZ, JM, and LK contributed to the data analysis. ABC drafted the manuscript. All authors

contributed to the interpretation of data, revised the manuscript critically for important intellectual content, gave final approval of the version to be published and agreed to be accountable for all aspects of the study.

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Figures

Figure 1: Flow chart for identification of health innovations

Tables

Table 1: Characteristics of health innovations (n=24)

Table 2: Description of scalability assessment criteria among 24 health innovations

Additional files

Additional file 1: The English and French versions of the Innovation Scalability Self-administered

Questionnaire (ISSaQ)

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Innovations submitted to the 2019 Symposium on Innovations of the Quebec College of Family physician (n=37)

Innovations excluded by the symposium planning committee (n=4)

Innovations selected for the symposium (n=33)

Innovation teams did not wish to rate their innovations for scalability (n=9)

Innovations assessed for scalability (n=24)
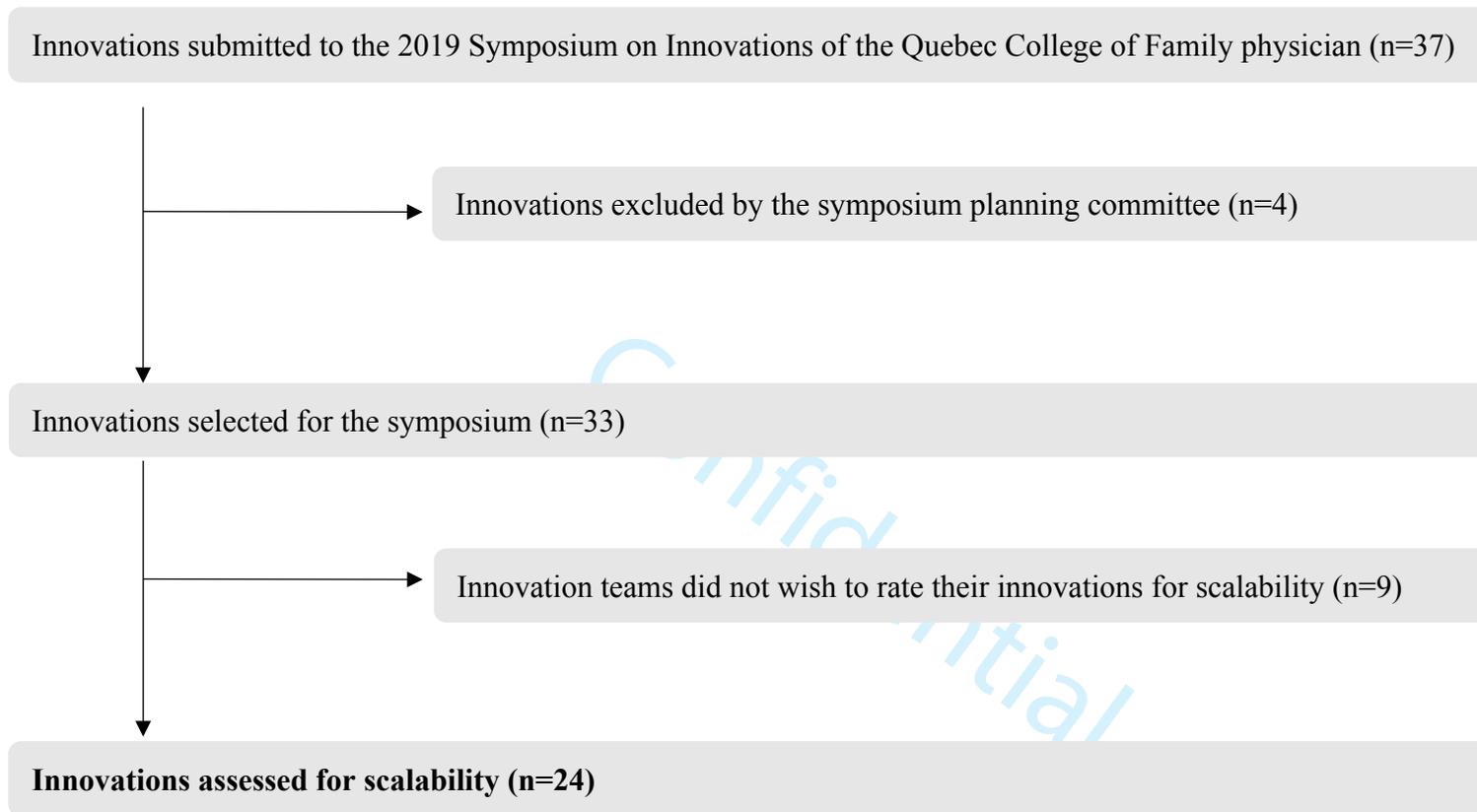
Figure 1: Flow chart for identification of health innovations

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Table 1: Characteristics of health innovations (n=24)

Type of innovation		Scalability ranking (criteria met)			Aim(s) of the innovation[1]
Type	**Subtype**	**High (10-16)**	**Medium (4 to 9)**	**Low (0 to 3)**	
Managing (n=15)	Navigating			☑	Adapt our service to reach a very vulnerable clientele who needs care.
	Navigating	☑			Communicate with the elderly alone to stimulate their cognition, help them with local services, help remind them to take their medication, detect falls at home, take their blood pressure and saturation, and transmit their vital signs to home care services, connect them with their families using artificial intelligence.
	Navigating	☑			Improve access to a family physician for socially disadvantaged patients.
	Navigating	☑			Implement and evaluate the integration of chronic disease prevention and management services by nurses and other professionals with training in this approach and work with the family medicine group
	Navigating	☑			Support and guide patients on how to discuss their health with their caregivers and prepare their medical appointments to facilitate their active involvement in self-care.
	Navigating	☑			Improve marginalized peoples' access to and quality of health services.
	Navigating	☑			Reduce pressure on primary care services while contributing to patient empowerment.
	Navigating	☑			Make pulmonary rehabilitation service and the related specialized interdisciplinary teams accessible.
	Navigating	☑			Allow the user to be quickly supported by the right person in the right place while respecting the services that are already in place in the health system network as well as in the family medicine group.
	Collaborating		☑		Facilitate the collaboration between healthcare professionals with a free access platform that uses knowledge transfer and the sharing of best clinical practices to optimise the quality of care to patients.
	Collaborating	☑			Disseminate the results of health research to the general public.
	Collaborating			☑	Systematize, in a collaborative and interdisciplinary manner, the management of work stoppages for common mental health problems.
	Collaborating		☑		Modify the paradigm of approach and treatment of mental health disorders by the family physician.
	Prescription		☑		Promote the self-management of chronic pain for reducing its functional impact.

Type of innovation		Scalability ranking (criteria met)			
	Prescription	☑			Improve the safety of drugs by providing a collaborative service on electronic prescriptions while protecting patient data.
Preventing (n=8)	Capacity building		☑		Illustrate the usefulness of the PARS3 platform in a real world context though the use of a tool aiming to obtain information on the management of diabetes in a family medicine group in a context of continuous improvement quality.
	Capacity building	☑			Maintain skills, integrate evidence into practice, and establish standardized practices.
	Capacity building	☑			Foster the culture of care and the quality improvement of services.
	Public health surveillance	☑			To implement a routine prevention strategy to reduce the harmful effects of polypharmacy in older adults.
	Public health surveillance	☑			Personalize the treatments of patients in primary health care.
	Public health surveillance		☑		Collect anonymous, valid, and reliable information about primary care patients from electronic medical records (EMR) used by family physicians and nurse practitioners to facilitate research, monitoring and continuous improvement practices
	Marshalling health services or health-related services		☑		Promote a healthy lifestyle.
	Restrictions on advertising, promotion or sponsorship of products	☑			Optimize the use of medications by seniors.
Therapeutic (n=1)	Assisting or promoting exercise	☑			Improve the quality of life and decrease exacerbations and hospitalizations of patients with chronic obstructive pulmonary disease.

Note: [1]We translated information provided in French by the innovation teams

Table 2: Description of scalability assessment criteria among 24 health innovations

Assessment dimension	Criterion	Number of innovations (% row)			Number of innovations met criteria per dimension: mean[1] (SD)
		Criterion met	Criterion not met	Criterion not applicable	
Impact assessments (6 criteria)	Acceptability	21 (87.5)	2 (8.3)	1 (4.2)	19.3 (3.3)
	Feasibility	21 (87.5)	2 (8.3)	1 (4.2)	
	Efficacy	19 (79.2)	4 (16.7)	1 (4.2)	
	Adaptability	13 (54.2)	8 (33.3)	3 (12.5)	
	Effectiveness	22 (91.7)	2 (8.3)	0 (0.0)	
	Results documented	20 (83.3)	4 (16.7)	0 (0.0)	
Use of theory (1 criterion)	Innovations developed with theory	19 (79.2)	5 (20.8)	0 (0.0)	19.0 (0.0)
Cost assessments (2 criteria)	Cost-effectiveness	16 (66.7)	7 (29.2)	1 (4.2)	18.5 (3.5)
	Resources needed for the scaling up (affordability)	21 (87.5)	2 (8.3)	1 (4.2)	
Setting assessments (3 criteria)	Implemented in setting comparable to target setting	14 (58.3)	10 (41.7)	0 (0.0)	14.3 (3.5)
	Compatibility with similar innovations in target settings	11 (45.8)	11 (45.8)	2 (8.3)	
	Consistency with policy directives	18 (75.0)	6 (25.0)	0 (0.0)	
Coverage assessments (4 criteria)	Reach	11 (45.8)	9 (37.5)	4 (16.7)	13.0 (6.3)
	Adoption	14 (58.3)	8 (33.3)	2 (8.3)	
	Fidelity	6 (25.0)	16 (66.7)	2 (8.3)	
	Maintenance	21 (87.5)	3 (12.5)	0 (0.0)	

Abbreviation: SD, standard deviation

Note: [1]Mean = sum of the number of innovations (n) that met the criteria in each dimension divided by the total number of criteria in that dimension

Additional file 1: The English and French versions of the Innovation Scalability Self-administered Questionnaire (ISSaQ – V1.0)

English version of ISSaQ

Dimensions	Items	Yes	No	UE	NP	NA+	Comment
Theory	Did a theory, model, or framework inform the development of the innovation?	☐	☐	☐	☐	☐	
Impact	Do you have data on the acceptability of the innovation?	☐	☐	☐	☐	☐	
	Do you have data on the feasibility of the innovation?	☐	☐	☐	☐	☐	
	Do you have data on the adaptability of the innovation?	☐	☐	☐	☐	☐	
	Do you have data on the efficacy of the innovation (i.e., testing under optimal conditions)?	☐	☐	☐	☐	☐	
	Do you have data on the effectiveness of the innovation (i.e., testing in real-world conditions)?	☐	☐	☐	☐	☐	
	Have the results of the testing of the innovation been documented?	☐	☐	☐	☐	☐	
		Yes	No	UE	NP	NA+	Comment
Coverage	Do you have data on the reach of the innovation (numerator & denominator)?	☐	☐	☐	☐	☐	
	Do you have data on the adoption of the innovation (numerator & denominator)?	☐	☐	☐	☐	☐	
	Do you have data on the fidelity of the implementation and use of the innovation?	☐	☐	☐	☐	☐	
	Do you have data on the maintenance of the innovation? If yes for how long can it be sustained (please specify)?	☐	☐	☐	☐	☐	
		Yes	No	UE	NP	NA+	Comment
Setting	Did you implement the innovation in a setting (e.g., at individual, community, cultural, political, workforce or organizational levels) comparable to that of the new setting to which it will be scaled up and/or spread?	☐	☐	☐	☐	☐	
	Did you assess if the innovation is compatible with similar innovations in the same setting?	☐	☐	☐	☐	☐	
	Did you determine if the innovation is consistent with policy directives in the setting in which it will be scaled and/or spread?	☐	☐	☐	☐	☐	
		Yes	No	UE	NP	NA+	Comment
Cost	Do you have data on the cost-effectiveness of the innovation (compared to existing equivalent innovations or alternatives)?	☐	☐	☐	☐	☐	
	Do you have data on financial and human resources needed to scale up and/or spread the innovation?	☐	☐	☐	☐	☐	

Abbreviations: *UE*, Under Evaluation; *NP*, Not Planned; **NA**, Not Applicable (+ please specify why NA).

French version of ISSaQ

Dimensions	Questions	Oui	Non	En éval.	NP	S.O.[+]	Commentaire
Théorie	Une théorie, un modèle ou un cadre a-t-il éclairé l'élaboration de l'innovation ?	☐	☐	☐	☐	☐	
Impact	Disposez-vous de données portant sur l'acceptabilité de l'innovation ?	☐	☐	☐	☐	☐	
	Disposez-vous de données portant sur la faisabilité de l'innovation ?	☐	☐	☐	☐	☐	
	Disposez-vous de données portant sur l'adaptabilité de l'innovation ?	☐	☐	☐	☐	☐	
	Disposez-vous de données portant sur l'efficacité potentielle de l'innovation (c.-à-d., testée dans des conditions expérimentales) ?	☐	☐	☐	☐	☐	
	Disposez-vous de données portant sur l'efficacité de l'innovation en contexte réel de l'innovation (c.-à-d., testée dans des conditions du monde réel) ?	☐	☐	☐	☐	☐	
	Les résultats des évaluations de l'innovation ont-ils été documentés ?	☐	☐	☐	☐	☐	
		Oui	Non	En éval.	NP	S.O.[+]	Commentaire
Couverture	Disposez-vous de données sur la portée de l'innovation (numérateur et dénominateur) ?	☐	☐	☐	☐	☐	
	Disposez-vous de données portant sur l'adoption de l'innovation (numérateur et dénominateur) ?	☐	☐	☐	☐	☐	
	Disposez-vous de données portant sur la fidélité de la mise en œuvre et l'utilisation de l'innovation ?	☐	☐	☐	☐	☐	
	Disposez-vous de données portant sur la pérennisation de l'innovation ? Si oui, quelle sera la durée (veuillez préciser) ?	☐	☐	☐	☐	☐	
		Oui	Non	En éval.	NP	S.O.[+]	Commentaire
Contexte	Avez-vous mis en œuvre l'innovation dans un contexte (p. ex., au niveau individuel, de la communauté, culturel, politique, du personnel ou de l'organisation) comparable au nouveau contexte dans lequel elle sera mise à l'échelle ?	☐	☐	☐	☐	☐	
	Avez-vous évalué si l'innovation est compatible avec des innovations similaires dans le même contexte ?	☐	☐	☐	☐	☐	
	Avez-vous déterminé si l'innovation est conforme aux directives en matière de politique du contexte dans lequel l'innovation sera mise à l'échelle ?	☐	☐	☐	☐	☐	
		Oui	Non	En éval.	NP	S.O.[+]	Commentaire
Coût	Disposez-vous de données portant sur le rapport coûts-efficacité de l'innovation (comparativement à des innovations équivalentes existantes ou des innovations alternatives) ?	☐	☐	☐	☐	☐	
	Disposez-vous de données portant sur les ressources financières et humaines nécessaires pour mettre à l'échelle l'innovation ?	☐	☐	☐	☐	☐	

Abréviations : *En éval.*, en cours d'évaluation ; *NP*, non prévue ; **S.O.**, sans objet ([+] veuillez préciser pourquoi ceci est S.O.).

Notes related to the scalability assessment criteria within ISSaQ

Criterion related to the dimension Theory (1 Items)[19,47]

- *Theory:* A set of analytical principles or statements designed to structure our observation, understanding and explanation of the world (e.g., Theory of Diffusion).
- *Model:* A deliberate simplification of a phenomenon or a specific aspect of a phenomenon (e.g., Knowledge-to-Action Model).
- *Framework:* A structure, overview, outline, system or plan consisting of various descriptive categories such as concepts, constructs, or variables, and the relations between them that are thought to account for a phenomenon (e.g., RE-AIM).

Criteria related to the dimension Impact (6 Items)[6,15]

1. *Acceptability*: The extent to which the innovation is judged to be appropriate by relevant stakeholders (e.g., perception among stakeholders that the innovation is agreeable, palatable, or satisfactory and leads to an improved general service experience).
2. *Feasibility*: The extent to which the innovation is compatible, relevant, and implementable within a given context or setting.
3. *Adaptability*: The extent to which the innovation incorporates the values and beliefs of the target population.
4. *Efficacy*: The capacity of the innovation to produce a beneficial change under ideal circumstances such as in a research setting.
5. *Effectiveness*: The capacity of the innovation to produce a beneficial change under real-world circumstances.
6. *Results documented*: Any written documentation of results about impact of the innovation.

Criteria related to the dimension Coverage (4 items)[8,23]

1. *Reach*: Proportion (numerator and denominator) of target population experiencing the innovation. The numerator and the denominator, respectively, reflects the number of individual units that received the innovation and the total number targeted.
2. *Adoption*: Proportion (numerator and denominator) of settings that will adopt the innovation. The numerator and the denominator, respectively, reflect the number of organizational units that received the innovation and the total number targeted.
3. *Fidelity*: The extent to which the innovation is consistently implemented or used as originally intended and designed to be delivered.
4. *Maintenance*: The extent to which the innovation is renewed and established over time in a setting's ongoing operations.

Criteria related to the dimension Setting (3 items)[6,15]

1. *Feasibility:* The extent to which the innovation is compatible, relevant, and implementable within a given context or setting.
2. ***Compatibility with similar innovations in target settings.***
3. ***Consistency with policy directives.***

Criteria related to the dimension Cost (2 items)[6,15]

1. *Cost-effectiveness:* The amount it costs to use the innovation to achieve its desired effect – the cost per unit of health gain (e.g., ratio of incremental costs to incremental quality-adjusted life years).
2. *Affordability:* An assessment of the cost and value of the innovation in comparison with other similar innovations that have a similar cost.

STROBE (Strengthening The Reporting of OBservational Studies in Epidemiology) Checklist

A checklist of items that should be included in reports of observational studies. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Section and Item	Item No.	Recommendation	Reported on Page No.
Title and Abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	
Introduction			
Background/Rationale	2	Explain the scientific background and rationale for the investigation being reported	
Objectives	3	State specific objectives, including any prespecified hypotheses	
Methods			
Study Design	4	Present key elements of study design early in the paper	
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	

Section and Item	Item No.	Recommendation	Reported on Page No.
Data Sources/ Measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	
Bias	9	Describe any efforts to address potential sources of bias	
Study Size	10	Explain how the study size was arrived at	
Quantitative Variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	
Statistical Methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	
		(*b*) Describe any methods used to examine subgroups and interactions	
		(*c*) Explain how missing data were addressed	
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy	
		(*e*) Describe any sensitivity analyses	
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	
		(b) Give reasons for non-participation at each stage	
		(c) Consider use of a flow diagram	
Descriptive Data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	
		(b) Indicate number of participants with missing data for each variable of interest	
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	
Outcome Data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	
		Cross-sectional study—Report numbers of outcome events or summary measures	

Section and Item	Item No.	Recommendation	Reported on Page No.
Main Results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	
		(*b*) Report category boundaries when continuous variables were categorized	
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	
Other Analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	
Discussion			
Key Results	18	Summarise key results with reference to study objectives	
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	
Generalisability	21	Discuss the generalisability (external validity) of the study results	
Other Information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.