Additional file 3. Preparation focus groups

Summary of influencing factors in the dissemination of innovation

We have search the existing literature for factors the influence the dissemination of de-implementation interventions. Unfortunately we did not find any. Therefore we changed our scope to influencing factors of the spread of all kinds of innovations and interventions.

Methods
We have searched MEDLINE and Embase for articles between 1995 and December 2020. Articles on dissemination of innovations or interventions in healthcare in OECD member countries were included. We excluded articles that aimed quality improvement in a specific organization. We did a full-text screening on 88 articles, in which relevant text passages were highlighted in all parts of the included articles. Passages were selected and marked if they contained information about factors or processes that influence dissemination. We did a qualitative analysis on the extracted text passages: we have coded all factors that influenced the dissemination of an innovation or intervention, and identified themes and subthemes. These steps were iteratively evaluated in group meetings with the all authors.

The result
This resulted in a framework of influencing factors. All factors are categorized into four themes, which can be found in the table on the next page. You’ll find a description of these factors on the following pages.

Expert group meeting
During the meeting, we will discuss the influencing factors, as presented in the table. We will focus on two main questions:

1. Do all factors that are described in the framework also influence the dissemination of de-implementation interventions?

2. Is this conceptual framework lacking any factors that influence the dissemination of de-implementation?
### Table: influencing factors of the dissemination of innovations.

| THEME             | SUBTHEME                    | INFLUENCING FACTORS                                                                 |
|-------------------|-----------------------------|-------------------------------------------------------------------------------------|
| 1. Strategy       | Ownership                   | - Responsible team with commitment                                                  |
|                   |                             | - Dissemination plan                                                                 |
|                   |                             | - Partnerships                                                                      |
|                   | Reach of adopters           | - Mass media campaigns                                                               |
|                   |                             | - Social networks                                                                   |
|                   |                             | - Champions and opinion leaders                                                     |
|                   |                             | - Homophily (peer to peer learning)                                                 |
|                   | Resources                   | - Financial resources                                                                |
|                   |                             | - Skilled team members with knowledge of national context                           |
|                   |                             | - Sufficient time                                                                   |
| 2. External context | Incentives for use         | - Political and economic alignment                                                  |
|                   |                             | - Regulatory arrangements                                                            |
|                   |                             | - Adequate payment system                                                            |
|                   |                             | - Economic climate                                                                  |
|                   | General needs and interest  | - General interest or need for a product                                            |
|                   |                             | - Public support                                                                    |
| 3. Innovation     | Relative advantage          | - Gain; relevant to performance, financial advantage, perceived benefit             |
|                   |                             | - Investments; costs and workload                                                    |
|                   |                             | - Risks                                                                             |
|                   |                             | - Efficacy                                                                          |
|                   |                             | - Evidence                                                                          |
|                   | Feasibility                 | - Compatible with: values and believes, local context, past experiences, and needs of potential adopters |
|                   |                             | - Reinvention                                                                       |
|                   |                             | - Observability                                                                     |
|                   |                             | - Trialability                                                                       |
|                   |                             | - Complexity                                                                        |
| 4. Adopters       | Adaptability of the adopters| - Governance; flexibility, fast-decision making and support                          |
|                   |                             | - Available resources; financial, technical and human                                |
|                   |                             | - Openness to change; need for change                                               |
|                   |                             | - Adopters characteristics; age, attitude                                           |
|                   |                             | - Partnerships                                                                       |
|                   | Project management          | - Accountability                                                                    |
|                   |                             | - Leadership                                                                        |
|                   |                             | - Plan, do, monitor, evaluate, adapt                                                |
|                   |                             | - Provide feedback                                                                  |
|                   |                             | - Opinion leaders and champions                                                      |
Description of the factors within the themes and subthemes

Strategy

Ownership

Someone or a team should be responsible for the dissemination of the innovation. This team should make a plan to disseminate the innovation, and partner with stakeholders and the potential adopters. Which stakeholders depend on the innovation, they could be from multiple disciplines, and from provincial or national organizations. Partnerships preferably start in the developmental stage of the innovation or when the innovation is prepared for dissemination. The team should provide support to the adopters, including implementation training and technology support with benchmark data. This allows practices and local teams to target areas for improvement and monitor the effects on patient outcomes. Support can also be accomplished by facilitating a learning community. Such communities can exchange experiences, knowledge and insights about the innovation, implementation and adoption.

Reach of adopters

Potential adopters have to be made aware of the innovation. Ways to reach potential adopters are the use of mass media campaigns and social networks. Mass media campaigns spread knowledge fast and they could shorten the time between awareness and use. Social networks can also be addressed to create awareness. The social network of the dissemination team can be nurtured by the use of champions and opinion leaders (enthusiasts of the innovation), and by use of the networks of the engaged stakeholders. In reaching potential adopters, it should be taken into account that peer to peer learning is more effective than innovators promoting their own innovation. This underlines the importance of opinion leaders in the dissemination strategy. Opinion leaders are persons within an organization or field, who earned respect by high competence. They have strong influence on individual attitudes towards the innovation, which can be used in advantage of the dissemination of the innovation.

Resources

Resources are necessary for the dissemination of innovations. Financial resources are needed to execute the dissemination strategy, and the dissemination team should have skilled members. These members need to have knowledge of the external context in which the innovation is disseminated, with the current regulatory arrangements. With this knowledge, financial and organizational barriers and facilitators can be addressed more effectively. Dissemination occurs slowly, therefore sufficient time to disseminate is needed.

External context

Incentives for use

Incentives are drivers for the use of an innovation, on top of the advantage of the innovation itself. They can act on an individual and organizational level. Incentives for use can, for example, be induced by political activities. Politicians and policy-makers could stimulate the use of an innovation by making facilitating regulatory arrangements, such as a payment system that covers the cost of the innovation. The willingness to create such incentives can be influenced by multiple factors. For example, the economic climate can drive strategic priorities of politicians and influence choices for budgeting.
**General needs and interests**

Dissemination is eased by a general demand for the innovation. A demand can start by an urge for change from within the society. This urge combined with public support could stimulate organizations to look for ways to achieve the change, and eventually, result in a demand for a specific innovation that facilitates the change.

**Innovation**

**Relative advantage**

Relative advantage is the perceived advantage of the innovation, compared to the situation without it. Not only should there be an advantage for patients, but also for the adopters, and/or the adaptors’ organization. Sometimes it helps if even third parties advantage from it. The limitation of necessary investments, such as costs and workload, and the risk of failing, will increase the relative advantage further. The gains should be relevant to the adopter or the adopting organization. The innovation could for example increase the adaptors’ performance or be financially beneficial by reducing costs or increasing profit. The effects of the innovation should be substantiated with evidence about improved outcomes without being a risk to patients.

**Feasibility**

The feasibility of the innovation is determined by its compatibility, observability, trialability and complexity. The innovation should be compatible with the existing values, beliefs, past experiences, and needs of potential adopters. Since organizations differ, it is necessary that the innovation can be modified by the adopters to fit with local needs and conditions. This reinvention should be allowed and supported. Moreover, the effects of the innovation should be easily observed and monitored; insights into the progression motivates the adopters to continue. This way, adopters can also act on unforeseen results. Trialability, the ability to test the innovation on a small scale, lowers the initial investment in the innovation and allows the adaptors to experiment. Lastly, the innovation should be relatively simple. A complex innovation could be simplified by implementing it in a stepwise manner.

**Adopter or adopting organization**

**Adaptability**

Adaptability is the adopter’s or adopting organization’s capacity to change. It depends on the governance regarding the change implementation, the available resources and the adaptors’ openness to change. The organization’s governance can be supportive towards innovations, and stimulating implementation by showing flexibility and fast decision-making. Furthermore, sufficient financial, technical and human resources are needed for the implementation. Openness to change includes the perceived need for change and it is associated with several of the adopter’s characteristics. Influencing characteristics are for example the adopter’s age and attitude towards the innovation, including confidence, optimism, commitment and support to the proposed change. On an organization level, openness to change depends on the relative balance of opponents and supporters of the change. This can be influenced with engagement strategies within the organization. Partnerships with people of different levels within the organization can help to gain broad support of the innovation.

**Project management**

The key is to fit the innovation into the organization. This requires someone or a team that is
accountable for this implementation project. An implementation plan and strong leadership of this team can facilitate the implementation. Partnering with end-users in early stages helps to make the innovation compatible with the current way of working. Furthermore, one should nurture the social system of the organization with opinion leaders and champions and make use of their strong influence on individual attitudes towards an innovation. After implementation, continuously monitoring, evaluating and adapting is recommended. Monitor the impact and frequently evaluate the innovation to increase and sustain the gains. Provide feedback to the users to motivate the use of the innovation and sustain their positive perception.