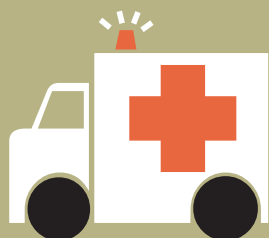


# Tailoring Immunization Programmes for Seasonal Influenza (TIP FLU)

A guide for increasing health care workers' uptake of seasonal influenza vaccination



World Health  
Organization

REGIONAL OFFICE FOR Europe



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# Abstract

Seasonal influenza vaccination (SIV) of health care workers (HCWs) is recommended to protect them and their patients from infection and to reduce the risk of hospital- or health-care-acquired influenza. Although annual vaccination of HCWs against seasonal influenza is recommended by WHO in most countries of the WHO European Region, vaccination uptake remains low. The WHO Regional Office for Europe is proposing an approach, tailoring immunization programmes for seasonal influenza (TIP FLU), to design evidence-informed solutions to increase uptake of SIV among HCWs. TIP FLU is grounded in behaviour change theories and health programme planning models, and provides tools for designing SIV programmes targeting HCWs, tailored to specific contexts and the needs of health care institutions and networks. This publication offers a step by step guide so that policy-makers and programme managers can understand and apply the approach, by conducting formative research, designing programmatic interventions and evaluating SIV programmes that target HCWs who work directly with patients.

## Keywords

OCCUPATIONAL HEALTH  
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# Contents

<b>Acknowledgements</b>	<b>iv</b>
<b>Acronyms</b>	<b>v</b>
<b>Part one. introduction</b>	<b>1</b>
Tailoring immunization programmes for seasonal influenza (TIP FLU) in the WHO European Region	1
WHO's position on SIV	3
HCWs and seasonal influenza	4
The TIP pathway and TIP FLU map for SIV of HCWs	5
TIP pathway to vaccination decision-making	6
TIP FLU map of determinants of HCW uptake of SIV	7
<b>Part two. the TIP FLU approach step by step</b>	<b>10</b>
The formative phase: listen, learn and diagnose	12
<b>Step 1:</b> examine available information on SIVs and HCWs	13
<b>Step 2:</b> conduct a SWOT analysis and create a preliminary TIP FLU map	15
<b>Step 3:</b> determine main issue(s) to address	17
<b>Step 4:</b> conduct new research if needed	18
<b>Step 5:</b> identify, prioritize and describe HCW target groups	21
<b>Step 6:</b> write TIP FLU situation summary	23
The planning phase: design, implement, assess and adjust	28
<b>Step 7:</b> set TIP FLU objective and subobjectives	28
<b>Step 8:</b> design TIP FLU programme	32
<b>Step 9:</b> monitor, evaluate and adjust (as needed) the TIP FLU programme interventions	36
<b>References</b>	<b>40</b>
<b>Annex 1. Methodology to create the TIP FLU conceptual map behavioural determinants to SIV uptake among HCWs</b>	<b>43</b>
<b>Annex 2. Qualitative component – semi-structured interviews (SSIs)</b>	<b>48</b>
<b>Annex 3. Qualitative component – survey questionnaire</b>	<b>59</b>
<b>Annex 4. Sample terms of reference template for research agency commissioned to assist in carrying out the formative research</b>	<b>70</b>
<b>Annex 5. Review of successful interventions to increase SIV rates among HCWS</b>	<b>74</b>

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# Acronyms

HCW	health care worker
HProImmune	Promotion of Immunization for Health Professionals in Europe
IEC	information, education and communication
IPH	institute of public health
PHCC	primary health care centre
SIV	seasonal influenza vaccination
SSI	semi-structured interview
SWOT	strengths, weaknesses, opportunities and threats
TIP FLU	tailoring immunization programmes for seasonal influenza
SMART	specific measurable attainable realistic timebound
WGIVI	working group on influenza vaccines and immunization







## Part one. introduction

### Tailoring immunization programmes for seasonal influenza (TIP FLU) in the WHO European Region

Annual seasonal influenza vaccination (SIV) remains the most effective way to prevent seasonal influenza among health care workers (HCWs) and is recommended to protect them and their patients from infection and to reduce the risk of hospital- or health-care-acquired influenza. Although annual vaccination of HCWs against seasonal influenza is recommended by most countries (95%) of the WHO European Region, vaccination uptake remains low in many countries (1).

Evidence has shown that the most successful SIV programmes include multiple interventions.<sup>1</sup> It is recommended that in order to achieve higher SIV rates among HCWs, a programme should cover interventions that increase demand, facilitate access and reduce provider-led barriers (2). More efforts are needed so that national and international SIV recommendations can be effectively translated into higher vaccination coverage in the Region. This requires SIV programmes to develop interventions based on a greater understanding of the drivers and barriers to vaccination among HCWs.

This publication, called the TIP FLU guide, describes an approach and provides tools, grounded in behaviour change theories and health programme planning models, to tailor SIV programmes to the needs and attitudes of frontline HCWs, those who work in direct contact with patients in a given context. Box 1 describes the origins of the TIP FLU guide.

The aim of the TIP FLU guide is to equip decision-makers and implementers of vaccination programmes with the means and methods to design and implement evidence-informed programmes to increase uptake of SIV among frontline HCWs in their professional establishment(s). It does this by giving guidance to carry out a sequence of activities, which help to:

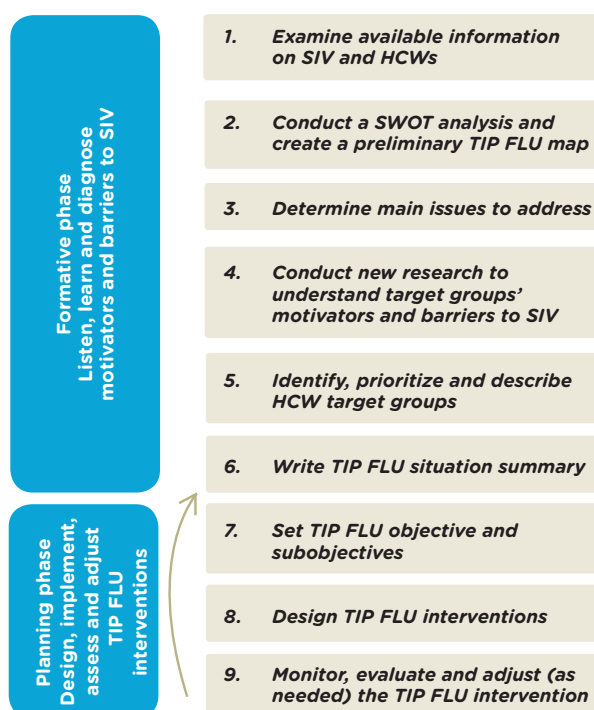
- 1. identify and prioritize target populations of HCWs**
- 2. diagnose the demand- and supply-side motivators and barriers to SIV**
- 3. design and assess programmatic interventions.**

The TIP FLU approach can be implemented by following nine steps, which are divided into two phases: the formative phase (steps 1-6) and the planning phase (steps 7-9) (Fig. 1). Each step is described in this guide. Tools or instruments are also presented for each step, including conducting a strengths, weaknesses, opportunities and threats (SWOT) analysis. It is recommended that these steps be adapted to the context of each setting in which TIP FLU is carried out.

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<sup>1</sup> The WHO Regional Office for Europe conducted a review of interventions that had successfully increased SIV coverage among HCWs and the factors that led to this positive outcome. A description of this review is provided in Annex 3.

**Fig. 1.** TIP FLU step by step



**This guide is intended for health professionals responsible for designing, implementing and assessing SIV programmes targeting frontline HCWs including:**

- national policy- and decision-makers
- public health, immunization and behaviour change programme managers.

Although developing and implementing a SIV programme for HCWs involves a number of stakeholders throughout the process, for the sake of simplicity, this guide refers to the professionals and stakeholders implementing the TIP FLU approach as one person, **the programme manager.**

### Box 1. What is TIP?

The WHO Regional Office for Europe published online the *Guide to Tailoring Immunization Programmes (TIP) (3)*, or TIP guide, in April 2013 to assist national immunization programmes to increase and maintain parental participation in child vaccination programmes in the Region. The Regional Office realized that to achieve this objective, vaccination programmes needed to distance themselves from a standard *one size fits all* approach and adopt an approach specially tailored to the parents of children who are not vaccinated or did not receive the recommended number of vaccine doses and, therefore, whose children may be susceptible to vaccine-preventable diseases. The TIP approach seeks to *understand* the individual, community/social and environmental reasons for parental decisions for vaccinating or not vaccinating their child (or children) and use this understanding to design evidence-informed programmes.

The TIP FLU guide is an adaptation of the TIP guide.

## WHO's position on SIV

In 2003, the Fifty-sixth World Health Assembly adopted resolution WHA56.19 urging Member States to increase SIV coverage of all people at high risk and to attain coverage of 75% among the elderly by 2010 (4). This ambition was reaffirmed by a European Council recommendation on SIV (2009/1019/EU), adopted on 22 December 2009, which calls on its Member States and European Economic Area countries to take action to mitigate the impact of seasonal influenza through national, regional or local action plans or policies and by improving SIV coverage with the aim of reaching, as early as possible, and preferably by the 2014–2015 winter season, a vaccination coverage rate of 75% for “older age groups” (5–6).



Seasonal influenza is a contagious acute respiratory infection caused by influenza viruses. In the northern hemisphere, annual epidemics caused by human influenza types A and B occur every winter. The virus is mainly transmitted between people by air, for example, through droplets when sneezing, coughing or talking, or by touching contaminated surfaces. Most prevalent in autumn and winter in the northern hemisphere, seasonal influenza is usually a mild illness but may cause severe pneumonia with multi-organ failure, exacerbation of underlying medical conditions and invasive bacterial co-infection and death.

Seasonal influenza epidemics contribute to increases in hospitalization and medical costs, higher workforce absenteeism and decreases in productivity (2,7–8). It is estimated that influenza occurs globally with an annual attack rate at 5–10% in adults and 20–30% in children (8–9).

Seasonal vaccination against influenza is safe, and timely administration yearly remains the single best way to prevent influenza. Vaccine effectiveness can vary with age, presence of chronic medical conditions in the person vaccinated, and how well the viral antigens included in the vaccine match circulating viruses. Vaccination can benefit all age groups, but is especially important for people at higher risk of serious influenza complications and for individuals with a higher risk of exposure.

WHO recommends prioritizing annual SIV to the following groups:

- pregnant women;
- individuals aged 6 months and older with chronic heart or lung diseases, metabolic or renal disease, chronic liver disease, chronic neurological conditions or immunodeficiencies;
- elderly persons over a nationally defined age limit, irrespective of other risk factors;
- residents of long-term care facilities for older persons and the disabled;
- children aged 6–59 months; and
- HCWs, including those who work in facilities that care for the elderly or persons with disabilities (8).

## HCWs and seasonal influenza

Frontline HCWs are a priority group for SIV for several reasons.<sup>2</sup>



- HCWs have a higher risk of contracting seasonal influenza compared with adults working in non-health-care settings. A 2011 systematic review of the incidence of influenza in healthy adults and HCWs<sup>3</sup> calculated a pooled annual incidence of infection of 18.7 per 100 HCWs per season in unvaccinated HCWs and 6.5 per 100 HCWs per season in vaccinated HCWs. These incidence estimates were significantly higher than the incidence rates in adults working in non-health care settings (9).
- HCWs who have contracted seasonal influenza may infect their patients and colleagues. This is particularly important in settings with patients at increased risk of complications following influenza infection, including those who may not produce a sufficient immune response to influenza vaccination.<sup>4</sup>
- There is evidence that a proportion of HCWs with influenza may be asymptomatic and, therefore, are unaware that they can transmit the disease to their patients. A survey of Glasgow (Scotland, United Kingdom) HCWs found serological evidence of infection among 23% of HCWs during the 1993/1994 influenza season, with 28–59% of these cases not associated with a self-reported influenza-like illness.<sup>5</sup>
- The absence of HCWs in the workplace due to influenza illness may have negative effects on patient health, particularly in intensive care units. Some studies focusing on the outcomes of SIV of HCWs have found evidence of a decrease in absenteeism from work among vaccinated HCWs (9).
- HCW vaccination against seasonal influenza has been shown to have a protective effect on patients. A Cochrane meta-analysis of the effect of HCW vaccination on health outcomes in elderly patients found significant protective effects against pneumonia mortality and all-cause mortality rates.<sup>6</sup>

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<sup>2</sup> WHO established a Working Group on Influenza Vaccines and Immunization (WGIVI) to update WHO's recommendations issued in 2005. Revised recommendations were based on WGIVI's review of evidence gathered through systematic reviews, some of which focused on the effectiveness of vaccination of HCWs for the protection of patients at higher risk of developing severe disease following influenza infection. Some key references are cited below; however, the WGIVI background paper (9) and the Weekly Epidemiological Record (8) provide more information and resources.

<sup>3</sup> The systematic review referenced in the WGIVI background paper is: Kuster SP, Shah PS, Coleman BL, Lam P-P, Tong A, Wormsbecker A et al. Incidence of influenza in healthy adults and healthcare workers: a systematic review and meta-analysis. *PLoS One*. 2011;6:e26239. This paper provides a meta-analysis from 29 studies conducted from 1957 to 2009 including 59 000 subjects.

<sup>4</sup> Cited in the WGIVI background paper: Salgado CD, Farr BM, Hall KK, Hayden FG. Influenza in the acute hospital setting. *Lancet Infect Dis*. 2002;2:145-55.

<sup>5</sup> Cited in the WGIVI background paper: Elder AG, O'Donnell B, McCrudden EAB, Symington IS, Carman WF. Incidence and recall of influenza in a cohort of Glasgow healthcare workers during the 1993-4 epidemic: results of serum testing and questionnaire. *BMJ*. 1996;313:1241-2

- There is also evidence of a positive relationship between physicians' and patients' preventive health practices. A study conducted in the largest health maintenance network in Israel found that patients of HCWs who received the influenza vaccine appeared to be more likely to be vaccinated against seasonal influenza than patients of HCWs who did not receive the vaccine (10).

Box 2 explains why promoting SIV among HCWs is important.

### Box 2. **Why promote SIV among frontline HCWs?**

Annual vaccination against seasonal influenza among HCWs helps to protect their patients, colleagues and families. It ensures the availability and continuity of health care services, and can reduce the risk and consequences of influenza transmission to vulnerable patients, and of epidemics in health care institutions and beyond. **Importantly, along with other HCW vaccinations, SIV of HCWs lies at the crossroads of a number of priority health areas, including infection prevention and control, occupational safety and patient-centred care.** What is more, as HCWs are trusted sources of information on preventive health for patients, **encouraging HCWs to act as champions advocating for SIV could be a powerful intervention to increase uptake of SIV among other priority groups.**

## The TIP pathway and TIP FLU map for SIV of HCWs

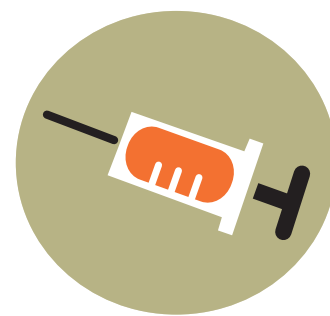
The **TIP pathway** to vaccination decision-making and the **TIP FLU map** of behavioural determinants of SIV uptake among HCWs form the foundation of the TIP FLU approach. They are intended to offer comprehensive yet simplified visual pictures of the many factors that may be at play in vaccination decision-making and uptake. In doing so, they serve as a guide for the vaccination programme at three main points during the implementation of the TIP FLU approach:

1. information collection;
2. analysis of behavioural determinants and other information collected; and
3. the choice of determinants on which to intervene and the design of programmatic interventions

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<sup>6</sup> Cited in the WGIVI background paper: Thomas RE, Jefferson T, Lasserson TJ. Influenza vaccination for healthcare workers who work with the elderly. Cochrane Database Syst Review. 2010;(2):CD005187

## TIP pathway to vaccination decision-making



The pathway to vaccination decision-making, shown in **Fig. 2**,<sup>7</sup> can be used to describe the decision-making process of individuals belonging to a specific target group for any type of vaccination. The pathway proposes that an individual's acceptance of and participation in vaccination is mediated by a number of determinants, which are categorized into different types of factors<sup>8</sup> that influence this decision-making process.

- **Personal factors** are tied to internal knowledge, perceptions, beliefs and assessments that influence an individual's **motivation** to accept and/or participate (or not) in vaccination.
- **Social and community factors** reflect the **networks** to which an individual is connected, the degree of community **support** for vaccination and the **norms** that guide vaccination behaviours. They are related to **how factual, practical and experiential knowledge is shared within communities**, as well as the influence of professional and personal relationships, and social networks such as media (traditional and social) and professional associations.
- **Environmental factors** are outside of the control of the individual, yet an individual reacts to them. Policy shapes desired norms, while factors related to vaccination service availability and cost facilitate **opportunities** for vaccination.
- The **encounter with a HCW** is a critical moment, which can maintain, encourage or discourage an individual's vaccination acceptance and participation.

The model recognizes that a HCW's behaviour is also mediated by the same categories of determinants. The arrows depict the network of possible relationships whereby the factors may influence and be influenced by one another.

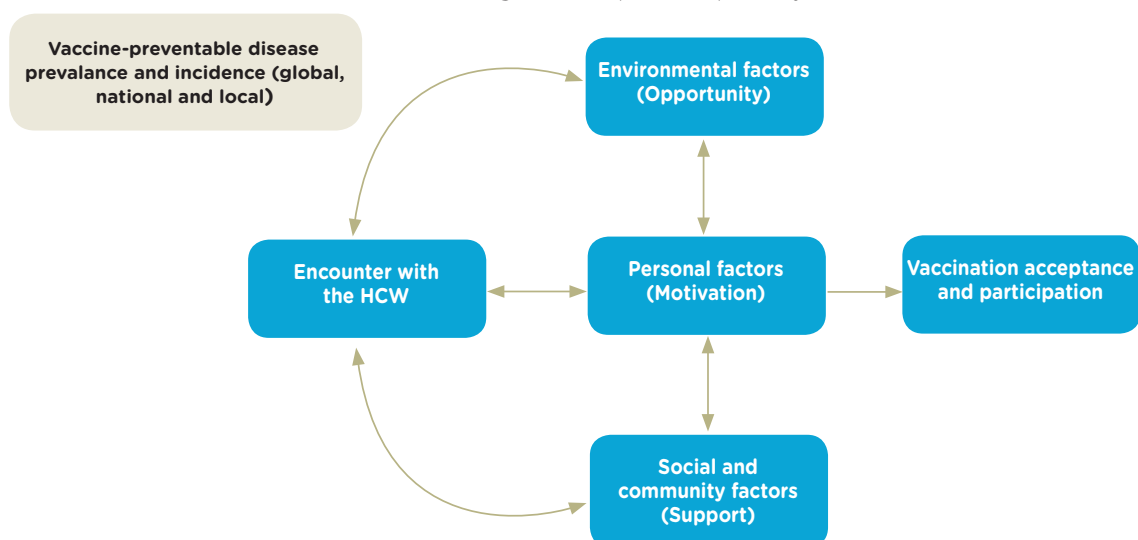
Lastly, the model recognizes that an individual's vaccination behaviour is also determined by the overall context particularly in relation to the current burden of **vaccine-preventable diseases** at global, national and local levels. For example, should there be an influenza outbreak in a hospital setting, it is possible that HCWs and other target groups' risk perceptions regarding SIV would change and that SIV uptake would increase.

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<sup>7</sup> This figure is adapted with permission from the copyright holder from a model presented in Sturm LA et al (2005) p. 442 (11).

<sup>8</sup> This categorization of behavioural determinants is inspired by the conceptual thinking and programmatic work of a number of organizations that promote life-saving health behaviours worldwide, including (but not limited to) Population Services International (12), PATH (13) and the World Bank Water and Sanitation Program (14).

Fig. 2. Conceptual TIP pathway



Source: Adapted with permission from the copyright holder from Sturm, Mays & Zimet (11).

Considering SIV of HCWs, it is clear that HCWs can be viewed both as recipients of SIV and recommenders of SIV for other risk groups. **The TIP FLU guide presents HCWs as recipients of SIV.**

## TIP FLU map of determinants of HCW uptake of SIV

In 2013, the Regional Office reviewed a selection of peer-reviewed articles published between 2000 and May 2013<sup>9</sup> to identify and categorize determinants associated with HCW acceptance of and participation in SIV (determinants associated with HCW acceptance and participation in, or refusal of, SIV.) **Fig. 3** describes the main categories and subcategories of these determinants. The related **Table 1** describes each determinant, by category and subcategory. It therefore provides a comprehensive list of actionable items<sup>10</sup> that can be taken into consideration in the planning, design and implementation of programmes to increase HCW uptake of SIV (Box 3).

### Box 3. Using the TIP FLU map

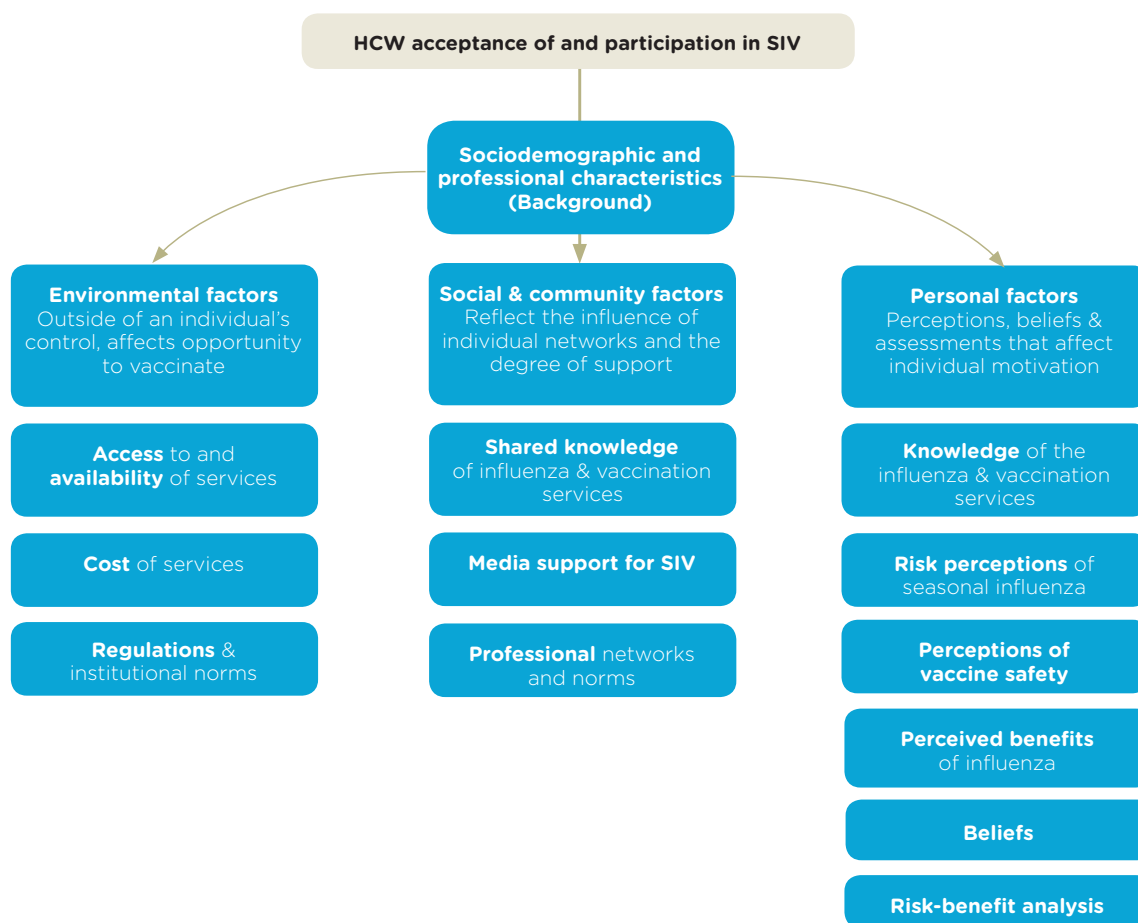
The TIP FLU map can be used for certain actions.

1. Guide which questions to ask during research (quantitative and qualitative) with HCWs and the individuals who influence them.
2. Help identify the main determinants that encourage or discourage SIV uptake among HCWs in a given context.
3. Pinpoint the variables that differentiate subgroups of HCWs (segmentation).
4. Select which determinants to act upon in order to increase HCWs' uptake of SIV.
5. Define the indicators to track changes in knowledge, attitudes and behaviours or practices of each target group, as a result of the TIP FLU programme.

<sup>9</sup> This was based on a review of literature through PubMed (15); the references and a description of the methodology are in Annex 1.

<sup>10</sup> This map is an adaptation of the TIP map published in the *Guide to Tailoring Immunization Programmes (TIP)* (3).

**Fig. 3.** TIP FLU map of determinants of HCW uptake of SIV



**Table 1.** Key determinants influencing HCWs' uptake of SIV based on the literature review

MAIN CATEGORY	SUBCATEGORY	POTENTIAL INFLUENCING DETERMINANTS
<b>Background characteristics</b>	Demographic and professional factors	<ul style="list-style-type: none"> <li>• HCWs' age</li> <li>• HCWs' type of profession (physician or nurse)</li> <li>• HCWs' seniority in the profession</li> </ul>
<b>Environmental factors (Opportunity)</b>	Access to and availability of SIV services	<ul style="list-style-type: none"> <li>• HCWs' perceptions of convenience of where to get vaccinated</li> <li>• HCWs' perceptions of convenience of the days and hours of service</li> <li>• HCWs' competing responsibilities during vaccination service hours</li> </ul>
	Cost of SIV services	<ul style="list-style-type: none"> <li>• HCWs' concern with the cost of SIV services</li> </ul>
	Regulations and institutional norms regarding SIV	<ul style="list-style-type: none"> <li>• Degree to which regulations and/or recommendations are perceived to be actively implemented (or mandatory)</li> </ul>



MAIN CATEGORY	SUBCATEGORY	POTENTIAL INFLUENCING DETERMINANTS
<b>Social and community factors (Support)</b>	Influence of information on, shared knowledge of and community support for seasonal influenza and its vaccination	<ul style="list-style-type: none"> <li>• HCWs' exposure to information and knowledge on SIV (factual, practical and experiential) through vaccination education/promotion campaigns</li> <li>• HCWs' exposure to information and knowledge on SIV (factual, practical and experiential) shared by communities that influence HCWs' beliefs and behaviours</li> <li>• Extent to which people close to HCWs (e.g. family) encourage or discourage SIV</li> </ul>
	Media support for SIV	<ul style="list-style-type: none"> <li>• Extent to which media, including the Internet, encourages or discourages SIV</li> </ul>
	Influence of professional networks and norms for SIV	<ul style="list-style-type: none"> <li>• HCWs' beliefs that getting vaccinated is the professional duty of medical providers (do no harm to patients)</li> <li>• Extent to which peer medical professionals participate in and recommend SIV</li> </ul>
<b>Personal factors (Motivation)</b>	Knowledge of seasonal influenza and its vaccination within the community: <ul style="list-style-type: none"> <li>- factual</li> <li>- practical</li> <li>- experiential</li> </ul>	<ul style="list-style-type: none"> <li>• HCWs' knowledge of the degree to which SIV reduces the risk of seasonal influenza disease</li> <li>• HCWs' knowledge of health regulations/guidelines/recommendations regarding SIV</li> <li>• HCWs' awareness that they are a priority target group for SIV</li> <li>• HCWs' knowledge that SIV is recommended given their state of health (chronic illness/age)</li> <li>• HCWs' practical knowledge of when and where to get SIV</li> <li>• HCWs' personal experience of having (or knowledge of someone who has) suffered from seasonal influenza</li> <li>• HCWs' past use of and experience with SIV</li> </ul>
	HCW risk perceptions of seasonal influenza	<ul style="list-style-type: none"> <li>• HCWs' perceptions of the personal risk of contracting seasonal influenza</li> <li>• HCWs' perceptions of the risk of their transmitting seasonal influenza to patients</li> <li>• HCWs' perceptions of the risk of their transmitting seasonal influenza to family members and/or friends</li> <li>• HCWs' perceptions of how serious or life threatening seasonal influenza is</li> </ul>
	Perceptions of seasonal influenza vaccine safety	<ul style="list-style-type: none"> <li>• HCWs' perceptions regarding the safety of seasonal influenza vaccine</li> </ul>
	HCW perceived benefits of SIV	<ul style="list-style-type: none"> <li>• Strength of HCWs' belief that vaccination protects them (reduces the risk) from getting seasonal influenza</li> <li>• Strength of HCWs' belief that their vaccination protects patients from getting seasonal influenza</li> <li>• Strength of HCWs' belief that their vaccination protects family members from getting seasonal influenza</li> </ul>

Table 1 *contd*

MAIN CATEGORY	SUBCATEGORY	POTENTIAL INFLUENCING DETERMINANTS
<b>Personal factors (Motivation)</b>	HCW beliefs	<ul style="list-style-type: none"> <li>• Strength of HCWs' perceptions that getting vaccinated to prevent seasonal influenza is an essential practice of a good medical professional</li> <li>• HCWs' agreement with SIV regulations and/or recommendations</li> <li>• HCWs' preference for, and use of, other types of preventive care (naturopathic, homeopathic, other)</li> <li>• HCWs' fundamental beliefs regarding immunization as a preventive measure</li> </ul>
	Risk-benefit analysis	<ul style="list-style-type: none"> <li>• Extent to which HCWs perceive that the benefits of SIV outweigh the risks of adverse effects following immunization</li> <li>• Degree of HCW complacency regarding SIV (perception of importance)</li> </ul>

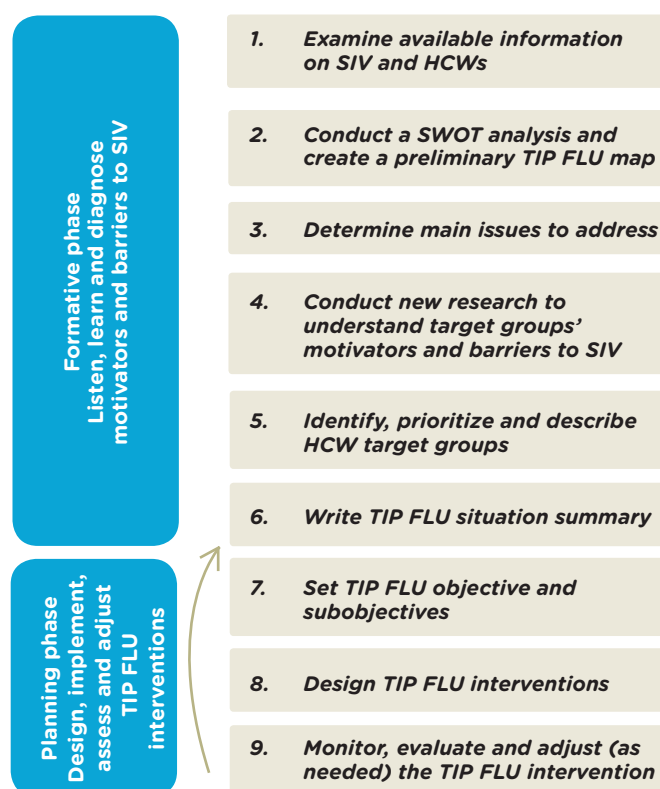


## Part two. the TIP FLU approach step by step

The TIP FLU approach gives guidance on how professionals responsible for creating SIV programmes targeted to HCWs, and stakeholders who participate in the process, can design programmes tailored to the unique context and needs of each country, health facility and health network. These professionals and stakeholders are collectively referred to as the programme manager.

The TIP FLU approach proposes a number of steps depicted in **Fig. 4**. Though the steps appear in sequence, the process for developing evidence-informed programmes is not as straightforward as it appears. Many steps overlap, which requires the programme manager to go back and forth between steps in order to complete the process.

Fig. 4. TIP FLU step by step



Overall, the TIP FLU approach helps the SIV programme to perform certain actions.

- **Describe and prioritize target groups of HCWs for SIV.** Frontline HCWs are a heterogeneous group, whose professions, experiences, seniority, health status, perceptions and preferences influence their acceptance of and participation in annual SIV campaigns. By understanding what determines their choices and behaviours through research, the programme manager can uncover what differentiates the behaviours of HCWs who vaccinate from those who do not, and create distinct segments or target groups of HCWs who share similar characteristics. Then the programme manager can take into consideration these differences, prioritize HCW target groups and tailor SIV programmatic interventions towards priority target groups.
- **Diagnose the motivators and barriers to SIV among HCW target groups.** Mapping the determinants of HCWs' choices and behaviours makes it possible for the programme manager to differentiate the many factors that influence participation in SIV from HCWs' perspectives. Creating unique maps for each segment or target group allows the programme manager to understand in greater detail the drivers and barriers to uptake, who are the greatest influencers of each target group's attitudes and behaviours, and what the programme should focus on to increase annual uptake of SIV.

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- **Design evidence-informed responses to increase uptake of SIV among targeted HCWs.** Programme managers utilize evidence collected from different sources – formative research, document reviews, participatory workshops and lessons learnt from the implementation of successful SIV programmes, as well as their own expertise – to guide the design, implementation, monitoring and evaluation of SIV programmes.

The TIP FLU approach follows nine steps, divided into two phases: the formative phase (steps 1-6) and the planning phase (steps 7-9). Each phase and its related steps are described in the following subsections.

## The formative phase: listen, learn and diagnose

During the formative phase of the TIP FLU approach, the programme manager identifies the main barriers that hinder HCWs' uptake of SIV and prioritizes these challenges in a systematic and thorough manner. The programme manager also explores what facilitates or motivates HCWs to be vaccinated to understand what triggers the desired behaviour. The main barriers and motivators are organized according to environmental, social/community and personal determinants, and can be visually depicted by adapting the TIP FLU map using these findings. This is why it is important to carry out TIP FLU's formative phase thoroughly.

The formative phase of the TIP FLU approach encourages the programme manager to *actively investigate* what is happening, importantly by talking with frontline HCWs and *listening* to what they have to say about SIV. Information collected by means of document reviews, key informant interviews, participatory workshops and research allows the programme manager to *learn* about what influences SIV uptake among HCWs. An analysis of the information enables the programme manager and other SIV stakeholders to *identify* the main issues to act upon and prioritize groups to target.

During the TIP FLU formative phase, the programme manager strives to answer certain questions.

- What are the strengths, weaknesses, opportunities and threats of the existing SIV programme?
- Who are the frontline HCWs working in health institutions? How are they categorized?
- What motivates and prevents HCWs from getting vaccinated against seasonal influenza every year? Who influences their choices and actions?
- Which HCWs are more likely and less likely to vaccinate against seasonal influenza? Which HCW target groups should be prioritized? What are each target group's characteristics – how can they be described using behavioural determinants?

TIP FLU guides the programme manager to answer these questions and analyse the responses in six distinct steps.

## **Step 1: examine available information on SIVs and HCWs**

The first task in the process is to collect and review information on existing SIV policy, current SIV programmes and HCW practices with regard to SIV, in the setting where the TIP FLU programme will be implemented. This review aims to provide a comprehensive picture of the landscape in which SIV of HCWs is currently set.

A number of sources can be utilized to collect this information. They include print and web-based publications and reviews, survey data and other research reports (published and unpublished). Relevant information can also be found in national health ministries and related institutions with mandates to work on vaccination, the formative and continuing education of HCWs, infection control and/or occupational safety. The names of these institutions can vary depending on the country. Organizing key informant interviews and/or participatory workshops to gather information on the current knowledge, attitudes, perceptions and practices regarding SIV is recommended.

Table 2 gives guidance on the areas of inquiry, related questions and sources of information that can be used to carry out the analysis of the situation regarding SIV of HCWs in a given country or context.

**Table 2.** Available information on policy, programmes and practices related to SIV of HCWs

AREA OF INQUIRY	QUESTIONS	INFORMATION SOURCES
<b>National SIV coverage and trends</b>	<p>What was the SIV coverage among HCWs during the most recent influenza season? And during the last 5 years?</p> <p>How is SIV coverage monitored?</p> <p>Which risk groups are monitored?</p> <p>What is the quality of coverage data?</p> <p>Are estimates of the burden of influenza available?</p> <p>Have any institutional influenza outbreaks occurred?</p> <p>Who (people or institutions) was most affected by the outbreak(s)? In what ways were they affected?</p>	<p>SIV coverage reports/data</p> <p>Influenza surveillance data</p> <p>Available with health ministry, national communicable diseases/public health/infection control centres</p>
<b>National SIV policy and guidelines</b>	<p>What are the national policy and guidelines regarding SIV in general and for HCWs?</p> <p>Is there a national occupational health strategy? Does this strategy include SIV of HCWs and if yes, how?</p> <p>Is there a national infection prevention and control strategy, guidelines or recommendations? Do they include recommendations on the prevention of nosocomial infections?</p>	<p>Health ministry,</p> <p>National public health institutes</p> <p>National laws, policy papers, protocols, guidelines</p>

Table 2 *contd*

AREA OF INQUIRY	QUESTIONS	INFORMATION SOURCES
<p><b>National SIV programme</b></p>	<p>Which institution leads the national SIV programme?</p> <p>What are this institution's strengths and weaknesses in terms of:</p> <ul style="list-style-type: none"> <li>• organization and resources (budget, people, time);</li> <li>• vaccine procurement and supply;</li> <li>• monitoring vaccination coverage;</li> <li>• monitoring of adverse events following vaccination;</li> <li>• training/capacity building;</li> <li>• injection safety; and</li> <li>• risk communications and media relations?</li> </ul> <p>How are SIV services structured and delivered?</p> <p>What, if any, activities has the programme implemented to increase participation in SIV? Who was targeted? What are the lessons learnt from these efforts?</p> <p>What, if any, changes in vaccine administration and vaccine technology have affected the programme?</p>	<p>Document review</p> <p>Key informant interviews</p> <p>Participatory workshops</p>
<p><b>Main stakeholders and potential partners</b></p>	<p>Who are the principal stakeholders that can potentially contribute to the TIP FLU approach? In what ways can they be involved?</p> <p>What professional HCWs associations exist in the country? What, if any, role have they played in SIV (and other vaccinations) of HCWs?</p> <p>Is SIV on the political agenda and what is the current view regarding SIV?</p>	<p>Document review</p> <p>Key informant interviews</p> <p>Participatory workshops</p>
<p><b>National health care system, structures and people</b></p>	<p>What categories of HCWs work directly with patients?</p> <p>What specialized health units or facilities exist (for people 65 years and older, pregnant women, children under 5 years, people with chronic conditions)?</p> <p>Is seasonal influenza and SIV part of HCWs' formative medical education and/or continuing education in the country?</p>	<p>Document review</p> <p>Key informant interviews</p> <p>Participatory workshops</p>
<p><b>Social and community patterns</b></p>	<p>What do people in the medical/health community generally think and say about influenza and SIV (positive and negative)?</p> <p>To what extent do HCWs recommend SIV to their patients?</p>	<p>Key informant interviews</p> <p>Participatory workshops</p> <p>Social media and other media reviews</p>

AREA OF INQUIRY	QUESTIONS	INFORMATION SOURCES
<b>Influence of media and communications</b>	<p>What types of communications channels do HCWs use to get up-to-date information?</p> <p>What opinions are held in the media and social media regarding seasonal influenza and SIV?</p> <p>What, if any, negative press exists?</p>	<p>Key informant interviews</p> <p>Participatory workshops</p> <p>Social media and other media reviews</p>
<b>Factors affecting HCWs' acceptance and participation</b>	<p>What influences HCWs' acceptance of and participation in SIV? What motivates HCWs to vaccinate? What keeps HCWs from vaccinating? Who influences their choices?</p>	<p>Key informant interviews</p> <p>Participatory workshops</p> <p>Secondary research review</p>

## **Step 2:** conduct a SWOT analysis and create a preliminary TIP FLU map

In the second step in the TIP FLU approach, a figure is created describing the SWOT of the SIV programme considering its ability to facilitate the vaccination of frontline HCWs against influenza.

Preliminary findings from the first two steps related to the behavioural determinants of SIV uptake among HCWs can also be presented in the form of a TIP FLU map.

To conduct a SWOT analysis, information collected during step 1 is analysed and filtered according to what is harmful or helpful for the SIV programme, and what is internal versus what is external to the programme (or can be found in the environment).

Four questions guide this analysis.

1. As to **strengths**, what does the SIV programme do well to facilitate SIV of HCWs?
2. As to **weaknesses**, what does the SIV programme need to improve upon in order to improve SIV coverage of HCWs?
3. As to **opportunities**, what are the opportunities for the SIV programme to facilitate SIV of HCWs?
4. As to **threats**, what obstacles or challenges does the SIV programme face?

**Fig. 5** represents a typical SWOT analysis. It includes the guiding questions for each of the four sections and provides examples from an application of the TIP FLU approach in Montenegro (16).

**Fig. 3.** TIP FLU map of determinants of HCW uptake of SIV



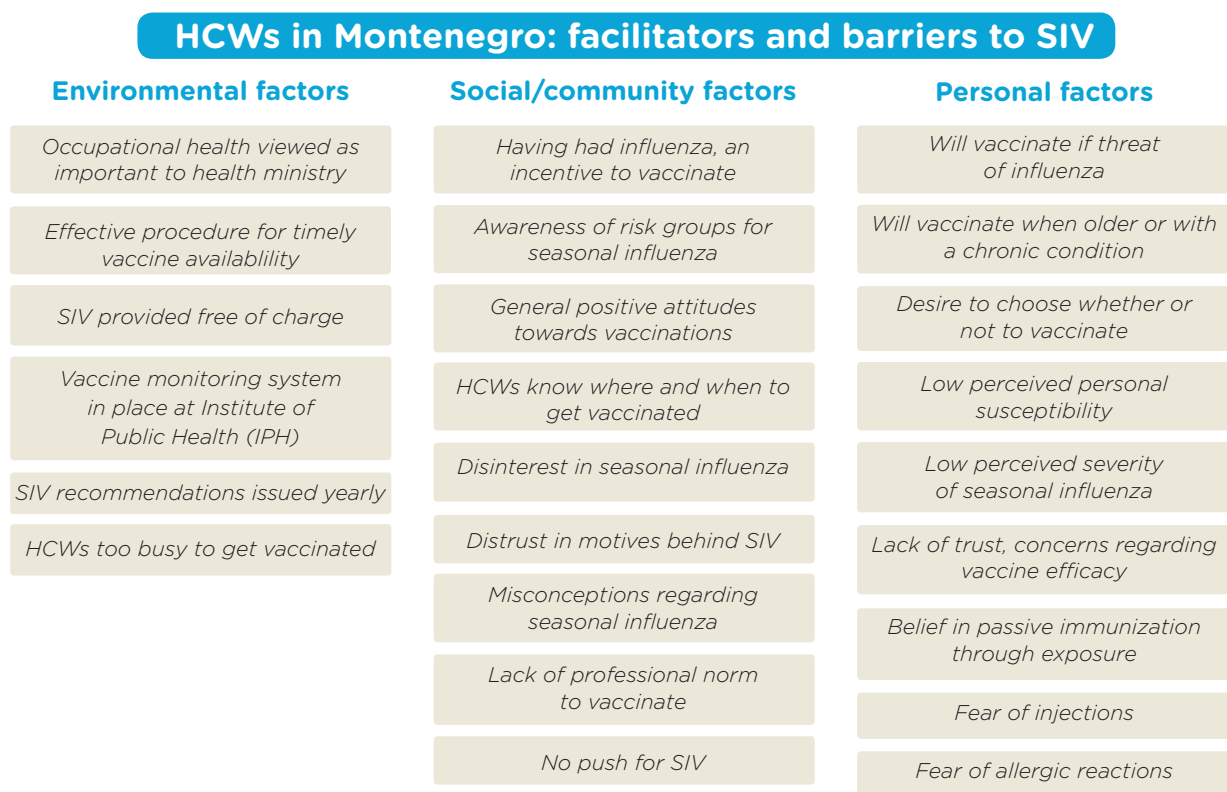
Source: adapted from TIP FLU. *Understanding HCWs' uptake of SIV in Montenegro: a case study for policy-makers and programme managers* (16)

During these initial steps, information on some of the determinants that influence HCWs' uptake of SIV will also be collected. It is helpful at this stage to organize and present these findings visually by creating a TIP FLU map. An example is presented in **Fig. 6** (16).

Both the SWOT analysis and the TIP FLU map are powerful tools for the programme manager to use when presenting initial findings. They are very effective in generating meaningful discussions among programmatic stakeholders. They are also useful for checking if any incorrect assumptions have been made and correcting them.



**Fig.4.** Facilitators and barriers to SIV among frontline HCWs in Podgorica, Montenegro



Source: adapted from TIP FLU. Understanding HCWs' uptake of SIV in Montenegro: a case study for policy-makers and programme managers (16).

### **Step 3: determine main issue(s) to address**

During step 3, information collected in step 1 and analysed using the SWOT methodology and TIP FLU map in step 2 is used to establish an initial or preliminary problem statement. The preliminary problem statement identifies an issue or the issues to be addressed and initiates an analysis of the possible causes behind this issue (or these issues). What is more, the problem statement draws attention to gaps in information and understanding and can, therefore, be used to guide new research.

There are four main questions that should be answered in the preliminary problem statement.

1. What is happening?
2. Where and when does SIV of HCWs usually take place?
3. What are the possible causes of low SIV rates among HCWs?
4. Who are the key stakeholders and potential influencers?

A final situation summary will be completed once new research has been analysed and discussed. This takes place in **step 6** of the TIP FLU formative phase.

**Table 3** offers an example of a problem statement regarding SIV uptake among HCWs in Montenegro. The main problem is stated in response to the question “What is happening?” This identifies low SIV coverage among HCWs and seasonal influenza outbreaks in an institutional setting as the main issues to address.

**Table 3.** TIP FLU preliminary problem statement for HCWs in Montenegro

QUESTION	FINDINGS
<b>What is happening?</b>	<ul style="list-style-type: none"> <li>The majority of frontline HCWs in Montenegro do not participate in annual SIV. Reported SIV coverage among HCWs in Montenegro was 18% in the 2008/2009 season and 25% in the 2009/2010 season (1).</li> <li>In March 2012, the media reported on an outbreak of influenza, including severe and fatal cases of influenza A(H3N2) in a long-term care facility (17).</li> </ul>
<b>Where and when does SIV usually take place?</b>	<ul style="list-style-type: none"> <li>SIV is available annually free of cost to HCWs at the start of influenza season. HCWs receive SIV at the clinics in which they work, from their chosen doctor or at the IPH (for clinics in close proximity).</li> </ul>
<b>What are the potential primary effects of seasonal influenza among HCWs?</b>	<ul style="list-style-type: none"> <li>Increased staff absenteeism and decreased quality of health care</li> <li>Contribution to institutional outbreaks of influenza</li> </ul>
<b>What are the possible causes of low SIV uptake among HCWs?</b>	<ul style="list-style-type: none"> <li>General disinterest in SIV by public health decision-makers and practitioners</li> <li>Low degree of personal motivation to get vaccinated against seasonal influenza, owing to low sense of susceptibility to influenza and its severity, and a high perception of one's own ability to not be affected by it</li> <li>Possibly a fear of needles, and a degree of mistrust vis-a-vis the efficacy and safety of the vaccine</li> <li>Very little social or professional support available to promote SIV, no norm or encouragement by peers or management</li> <li>Misconceptions regarding seasonal influenza, also fuelled by (or feeding into) a certain degree of mistrust in the motives behind influenza vaccination</li> </ul>

Source: adapted from TIP FLU. *Understanding HCWs' uptake of SIV in Montenegro: a case study for policy-makers and programme managers* (16)

## **Step 4:** conduct new research if needed

New research can be conducted during the formative phase of the TIP FLU approach for a number of reasons.

- Estimate the SIV coverage among HCWs in the country, health care institution or network of health care institutions in the last year or last two years. This may be necessary particularly in places where SIV coverage of HCWs is not monitored nationally or institutionally.
- Find out which HCWs are more or less likely to vaccinate against seasonal influenza, and the behavioural determinants that most significantly differentiate HCWs who vaccinate versus those who do not. This is helpful to segment HCWs into distinct target groups and identify the main variables upon which to act to increase uptake of SIV among them. This analysis constitutes a critical part of the TIP FLU approach.

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- Understand the reasons and reasoning behind HCWs' attitudes towards yearly SIV, as well as related perceptions, beliefs, emotions and potential dilemmas. HCWs' participation in research encourages a finer analysis of their arguments for or against SIV, and enables the programme manager to craft carefully tailored programmatic interventions. Uncovering HCWs' thoughts in their own words are particularly useful for the development of communications messages and products. Importantly, it also provides an opportunity for the HCW community to be engaged in the approach, which can result in greater acceptance of the SIV programme when it is implemented.

The TIP FLU map provides a comprehensive list of determinants to be explored through formative research (see **Fig. 3**). Using this map, the programme manager can identify what research questions to ask to better understand what motivates and what prevents HCW acceptance of and participation in SIV. As mentioned earlier, the analysis of the differences between HCWs who vaccinate against seasonal influenza and those who do not will help identify priority target groups, and will contribute to a better understanding of the key behavioural determinants that the programme should focus on.

Both qualitative and quantitative research methods can be used. The choice of methods will depend on which research questions need to be answered and what resources are available to do so. When the formative phase of TIP FLU was piloted in Montenegro, for example, both qualitative and quantitative research methods were used to identify the determinants that influenced uptake of SIV among HCWs at the Primary Health Care Centre (PHCC) Podgorica, Montenegro (Box 4).

**Qualitative methods**, such as in-depth interviews, focus group discussions and direct observations, explore the reasons why HCWs make certain choices and adopt specific behaviours. They allow HCWs who are interviewed to explain their thoughts, rationale and feelings related to seasonal influenza and being vaccinated against seasonal influenza *in their own words*. These methods are rich in information and effective in disclosing the motivators and barriers associated with behaviours. An analysis of the discourse related to HCWs' emotional and rational drivers behind SIV uptake (or not) enable researchers to describe and profile subsegments of HCWs who share similar conceptual and behavioural patterns. Qualitative research is essential to the process of targeting and the development of effective communications content.

**Quantitative methods** – administered through face-to-face, telephone or online surveys or self-administered – describe the prevalence of certain attitudes, knowledge and practices. Statistical analysis of HCWs who vaccinate versus those who do not helps to elucidate the main determinants that differentiate one segment from another, and to prioritize which ones to act upon. In the formative stages, it also offers a sound baseline to measure the effects of a TIP FLU programme.

It is recommended that formative research be conducted with both frontline HCWs (the primary recipients of the programme) and those who most influence their professional

and personal practice with regard to SIV (main influencers). The latter, which may constitute the secondary target groups of the SIV programme, can include key decision-makers for SIV of HCWs, as well as HCWs' supervisors, trusted managers or colleagues; highly respected medical doctors or professors from medical universities; and professional networks and associations.

The same research methods can be used to:

- pre-test communications materials and tools
- monitor the progress of the TIP FLU programme
- evaluate changes in HCWs' knowledge, attitudes, practices and behaviours.

#### Box 4. **New research conducted on SIV among HCWs at PHCC Podgorica, Montenegro**

**In Montenegro**, research was carried out in December 2013 and January 2014 among HCWs at PHCC Podgorica to assess annual SIV coverage among HCWs, and understand the drivers and barriers to HCWs' participation in SIV and the differences between HCWs who vaccinate and those who do not. Formative research was conducted using both quantitative and qualitative survey methods.

For the **quantitative survey**, an online survey tool developed by the European Commission-funded Promotion of Immunization for Health Professionals in Europe (HProImmune) project was adapted for the purpose of the TIP FLU research (18). The HProImmune project focuses on the occupational safety and role of vaccination of HCWs and, therefore, centres its survey tool on a broad range of vaccinations recommended for HCWs of which one is SIV. This tool was adapted to emphasize the importance of SIV of HCWs within the broader context of their occupational safety. Self-administered survey questionnaires on risk perceptions of vaccine-preventable diseases and vaccination practices were distributed to 400 frontline HCWs working at PHCC Podgorica, including physicians, nurses, outreach workers and laboratory technicians. Analysis was conducted using data from 291 responses.

**For the qualitative component of the formative research**, new tools were designed and semi-structured interviews were conducted with vaccinating and non-vaccinating frontline HCWs and their supervisors. Twenty-three interviews were carried out to explore vaccine-preventable disease risk perceptions, as well as attitudes, perception, beliefs and practices related to influenza vaccination and strategies to increase uptake. Content was analysed thematically to understand general patterns in behaviour and to identify key determinants differentiating vaccinating and non-vaccinating HCWs.

Both research instruments are available in Annexes 2–3. It is strongly recommended that they be adapted to the local context in which the TIP FLU research will be conducted.

A research agency was commissioned to translate, pilot-test, modify and administer the research instruments, and do an initial analysis of the qualitative and quantitative findings. A sample terms of reference for a research agency is also provided in Annex 4.

*Source: TIP FLU. Understanding HCWs' uptake of SIV in Montenegro: a case study for policy-makers and programme managers (16).*

## **Step 5: identify, prioritize and describe HCW target groups**

Segmentation divides what is initially a large, heterogeneous population into smaller groups of individuals who are alike in specific ways. The process of segmentation encourages the SIV programme to consider frontline HCWs not as a homogeneous body of professionals, but as a large group of diverse individuals who may share a common role in health care and society but have different perceptions and practices, in this case regarding annual SIV. In this way, the process of segmentation introduces strategic, tailored thinking into the TIP FLU approach.

The process of segmentation involves certain steps.

- Start by distinguishing the characteristics of frontline HCWs based on whether they were vaccinated against seasonal influenza in the previous season. Statistical analysis using variables – professional, demographic, sociocultural, psychological, attitudinal, institutional, etc. – are used to identify what differentiates those who vaccinate from those who do not, and help to further refine this analysis by identifying segments within each of the two groups. Quantitative analysis can also help to estimate the size of various HCW target groups. Qualitative analysis uncovers patterns in reasoning and behaviours. It offers the needed detail to help programme managers understand who the HCWs are and what drives their SIV practices.
- Generate descriptive profiles of each HCW target group to help the programme manager consider each one and tailor programmatic interventions towards them.
- Prioritize HCW target groups to focus on, taking into consideration additional factors such as the type of health care institutions, degree of seasonal influenza risk, size of each target group, likelihood to adopt SIV, ability of the programme to reach them and availability of resources.

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- Identify how to use resources more efficiently. Programmes must thoughtfully consider the resources (human, financial and time) available and how to use them most effectively when prioritizing SIV programmes.

The process of segmentation and targeting also assists the programme manager to identify **secondary target groups** of stakeholders who influence HCWs attitudes and actions and must be taken into consideration. As mentioned previously, secondary target groups may include:

- national decision and policy-makers
- HCW leadership, managers, supervisors and peers within health care institutions
- respected medical doctors and professors outside health care institutions
- health care professional networks and associations.

Box 5 provides the basis on which HCWs were prioritized at PHCC Podgorica.

#### Box 5. **Prioritizing HCW target groups for SIV at PHCC Podgorica, Montenegro**

At PHCC Podgorica, **80% of frontline HCWs were not vaccinated against seasonal influenza during the 2012/2013 season.** The only statistically significant factor differentiating vaccinating HCWs from non-vaccinating HCWs was age. HCWs aged 55–65 years were vaccinated more frequently (36%) compared with younger HCWs (8% of HCWs aged 18–24 years).

The desire to protect oneself (over 40%) and the fear of contracting seasonal influenza (over 35%) were the two reasons stated most frequently by HCWs vaccinated against seasonal influenza. Qualitative research also indicated that the need for personal protection may be motivated by the HCWs' older age or presence of a chronic disease.

On the other hand, close to 70% of non-vaccinating HCWs stated that they did not because they *will never get influenza*. Qualitative findings confirm that most HCWs did not feel at risk of influenza and that they are able to overcome this virus thanks to their healthy habits. HCWs, in general, did not view themselves as part of a priority target group for SIV. Most HCWs agreed, however, that seasonal influenza constitutes a threat to people who are older or having a chronic disease. These findings were similar across all types of HCW professions.

Two groups of HCWs emerged from the analysis of this data. The research findings strongly suggest that programmatic interventions should address **all frontline**

**HCWs. This is the first target group.** More efforts are needed to emphasize the reasons why frontline HCWs are designated as a distinct target group for SIV and their role in nosocomial transmission of influenza to patients and colleagues. More information on the symptoms of seasonal influenza, the possible absence of symptoms despite infection and the safety of the vaccine are also necessary. **The second target group is younger HCWs.** The finding that younger age is strongly associated with the belief of being able to protect oneself from the virus and, thus, not being vaccinated supports the design of programmatic interventions that **target younger HCWs. Stakeholders proposed a strategy to reach HCWs during their formative education and early in their career to increase uptake of SIV among HCWs.**

*Source: TIP FLU. Understanding HCWs' uptake of SIV in Montenegro: a case study for policy-makers and programme managers (16).*

## **Step 6:** write TIP FLU situation summary

This is the last step of the formative phase of the TIP FLU approach. In step 6, all of the information gathered in the previous steps is used to develop a comprehensive review and analysis of HCW uptake of SIV. This lays the foundation from which to design the TIP FLU programme.

The situation summary builds on the initial problem statement and adds to it a thorough analysis of the challenges that prevent HCWs from participating in annual SIV, opportunities to motivate HCWs to participate in SIV, conditions under which opportunities can be acted upon and possible strategies to increase annual SIV uptake among targeted HCWs (19).<sup>11</sup>

The situation summary should answer some main questions.

- What is happening?
- Where, when and how does SIV usually take place?
- Whom does seasonal influenza affect?
- Who are the key stakeholders and influencers?
- What are the primary effects of low SIV uptake among HCWs?
- What are the possible causes of low SIV uptake among HCWs?

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<sup>11</sup> This process and associated worksheets, with some modifications, are from O'Sullivan et al (19).

- What challenges are preventing HCWs from participating in annual SIV?  
These can be challenges associated with:
  - knowledge, perceptions, beliefs and behaviours
  - effective communications with HCWs
  - environmental, social and professional circumstances and conditions of HCWs.
- What opportunities are there to motivate HCWs to vaccinate against seasonal influenza every year? These opportunities can be tied to:
  - knowledge, perceptions, beliefs and behaviours
  - effective communications with HCWs
  - environmental, social and professional circumstances and conditions of HCWs.

What conditions might limit the programme's effectiveness?
- What are the possible strategies to increase uptake of SIV among HCWs?

**Table 4.** gives an example of a situation summary documented at the time of the implementation of the TIP FLU formative phase at PHCC Podgorica in Montenegro (16).

QUESTION	FINDINGS
<b>PROBLEM STATEMENT</b>	
<b>What is happening?</b>	<ul style="list-style-type: none"> <li>• Participation in annual SIV in Montenegro and at PHCC Podgorica is low. PHCC Podgorica, the largest of 18 PHCCs in Montenegro, provides care to close to one third of Montenegro's population.</li> <li>• The majority of HCWs in Montenegro do not participate in annual SIV. Reported SIV coverage among HCWs in Montenegro was 18% in the 2008/2009 season and 25% in the 2009/2010 season (7). A total of 21 000 doses of seasonal influenza vaccine were ordered for the 2012/2013 season.</li> <li>• In March 2012, the media reported on an outbreak of influenza, including severe and fatal cases of influenza A(H3N2) in a long-term care facility (17).</li> <li>• Strong anti-vaccination sentiments exist in the Balkan region, fuelled via social media and personal advocacy. This has reached Montenegro and received national media coverage in April 2014, thus intensifying confusion and concerns regarding the rational and safety of vaccination of children and adults.</li> <li>• At PHCC Podgorica, 20% of frontline HCWs stated that they were vaccinated against seasonal influenza in the 2012/2013 season. This figure remained the same in the 2013/2014 season.</li> </ul>
<b>Where, when and how does SIV usually take place?</b>	<ul style="list-style-type: none"> <li>• SIV is available annually free of cost to HCWs at the start of influenza season. HCWs receive SIV at the clinics in which they work, from their chosen doctor or at the IPH (for clinics in close proximity).</li> </ul>
<b>Whom does it affect?</b>	<ul style="list-style-type: none"> <li>• Seasonal influenza affects everyone. People with chronic diseases, elderly patients, pregnant women and young children have a higher risk of developing more severe complications from influenza compared with healthy adults. Because of the nature of their work, frontline HCWs are at higher risk of being infected with influenza. No studies or estimates on the burden of influenza exist in Montenegro.</li> </ul>



QUESTION	FINDINGS
<p><b>What are the primary effects of low SIV uptake among HCWs?</b></p>	<ul style="list-style-type: none"> <li>• Increased staff absenteeism reduces the availability of health care services and quality in health care.</li> <li>• Risk of institutional/nosocomial outbreaks which can lead to severe complications among vulnerable patients.</li> <li>• There is a lack of a professional tradition/habit and sense of professional responsibility towards getting vaccinated against seasonal influenza</li> </ul>
<p><b>What are the possible causes of low SIV uptake among HCWs?</b></p>	<ul style="list-style-type: none"> <li>• Decision-makers, HCWs and the public, including younger generations, are generally disinterested in SIV. Seasonal influenza is perceived as most serious for groups like pregnant women, and elderly or chronic disease patients.</li> <li>• The majority of HCWs are not motivated to get vaccinated against seasonal influenza, owing to low perception of susceptibility to influenza and the severity of the disease, and a strong perception of their own ability to maintain/develop a strong immune system, which protects from the virus. As a result, some frontline HCWs believe that they are able to resist influenza and avoid complications.</li> <li>• Very little social or professional support is available to promote SIV: no norm or encouragement by HCWs' managers or peers.</li> <li>• Misconceptions regarding seasonal influenza exist, particularly its symptoms and how to protect oneself from the virus. Some HCWs shared the belief that they can become immune to influenza due to continued exposure to patients with respiratory illnesses.</li> <li>• Vaccine safety concerns, fear of needles and lack of time were also noted to a lesser extent.</li> </ul>

**CHALLENGES PREVENTING HCWS FROM PARTICIPATING IN SIV**

<p><b>What are the challenges associated with knowledge, perceptions, beliefs and behaviours?</b></p>	<ul style="list-style-type: none"> <li>• Most frontline HCWs feel exposed to the risk of respiratory infections. However many do not vaccinate because they do not feel at risk of contracting seasonal influenza because they: <ul style="list-style-type: none"> <li>- perceive themselves to be healthy and have strong immune systems</li> <li>- are young</li> <li>- do not suffer from chronic disease.</li> </ul> </li> <li>• Frontline HCWs perceive that seasonal influenza is a common occurrence, which is generally easy to cure.</li> <li>• Frontline HCWs lack a clear understanding of how immunity is developed against seasonal influenza, both naturally and through vaccination.</li> <li>• Frontline HCWs do not perceive themselves as a target group for SIV. Seasonal influenza is viewed as most dangerous for elderly or chronic disease patients whose conditions can worsen with influenza.</li> <li>• Some frontline HCWs are more concerned with the side effects of influenza vaccine than getting influenza disease (omission bias), and may also be influenced by anti-vaccine information and discussions.</li> <li>• Frontline HCWs have low awareness of their role in transmitting seasonal influenza to patients.</li> <li>• Almost all frontline HCWs state that they maintain good health/immunity through good nutrition and physical exercise, yet some also recognize that frontline HCWs generally do not take good care of themselves.</li> <li>• The term flu is commonly used to designate any type of cold or respiratory illness, including among frontline HCWs.</li> </ul>
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Table 4 *contd*

QUESTIONS	FINDINGS
<b>CHALLENGES PREVENTING HCWS FROM PARTICIPATING IN SIV</b> <i>contd</i>	
<b>What are the challenges related to effective communications?</b>	<ul style="list-style-type: none"> <li>• Frontline HCWs do not discuss seasonal influenza amongst themselves, unless it relates to a chronic disease patient.</li> <li>• Frontline HCWs tend to believe that they know best.</li> <li>• Current ways of communicating to frontline HCWs about SIV seem ineffective.</li> </ul>
<b>What are the challenges related to environmental and social/professional circumstances and conditions?</b>	<ul style="list-style-type: none"> <li>• Frontline HCWs are very busy.</li> <li>• Those who do not vaccinate against seasonal influenza lack personal experience with it.</li> <li>• There is a lack of institutional/workplace/professional support for SIV (neither mandatory nor actively recommended to HCWs).</li> <li>• A lack of clarity on workplace guidelines on infection prevention and control, and workplace safety was noted.</li> <li>• Among frontline HCWs, 29% cite their intention to vaccinate should there be an outbreak or a large number of seasonal influenza cases. However, influenza vaccination should be a preventive measure.</li> <li>• Frontline HCWs may not feel competent enough to respond to the high demand for information from patients who have questions or concerns regarding vaccination.</li> </ul>
<b>OPPORTUNITIES TO MOTIVATE HCWS TO PARTICIPATE IN SIV</b>	
<b>What are the opportunities associated with knowledge, perceptions, beliefs and behaviours?</b>	<ul style="list-style-type: none"> <li>• Most frontline HCWs have a positive attitude towards vaccinating patients, particularly children.</li> <li>• Frontline HCWs are aware that their profession places them at risk of infectious diseases; hepatitis B is cited as an example.</li> <li>• Some frontline HCWs are aware of and use infection prevention and control measures to minimize risk.</li> <li>• Seasonal influenza and respiratory diseases are reported as the diseases frontline HCWs are most at risk of contracting given the nature of their work (87% and 45%, respectively).</li> <li>• Frontline HCWs have high ethical standards and believe that providing the right care is an important part of their profession.</li> <li>• Frontline HCWs need more information regarding seasonal influenza infection, acquired immunity and the vaccine (safety, effectiveness).</li> </ul>
<b>What opportunities are there related to effective communications?</b>	<ul style="list-style-type: none"> <li>• Frontline HCWs may respond to a call to their professional responsibility to protect patients and colleagues from seasonal influenza. A decrease in HCW absenteeism due to illness benefits patients.</li> <li>• Frontline HCWs seek information to stay up to date; one of their most trusted sources of information is their colleagues.</li> <li>• Frontline HCWs constitute a defined community, which can be reached through the institutions in which they work.</li> <li>• Campaign/Reminder about influenza vaccination is required only once a year.</li> <li>• Frontline HCWs trust the IPH, which sends a yearly reminder letter announcing the availability of SIV.</li> <li>• Messages targeting frontline HCWs need to be clearly separated from messages targeting their patients.</li> <li>• Frontline HCWs cite personal stories as a way to motivate themselves to be vaccinated.</li> </ul>

QUESTIONS	FINDINGS
<b>OPPORTUNITIES TO MOTIVATE HCWS TO PARTICIPATE IN SIV <i>contd</i></b>	
<b>What opportunities are there related to environmental and social/professional circumstances?</b>	<ul style="list-style-type: none"> <li>• Because Montenegro is a society where hierarchy is important and guidance from authorities is highly respected, HCWs may respond better to a top-down approach whereby SIV is strongly recommended by managers and policy-makers at PHCC Podgorica.</li> <li>• Having experienced seasonal influenza in the past is a strong trigger for vaccination.</li> <li>• Frontline HCWs know where and when to be vaccinated.</li> <li>• Perceived high prevalence of respiratory infections may provide a platform from which to raise awareness about the risk of seasonal influenza.</li> <li>• Frontline HCWs place a high degree of trust in medical institutions and authorities (e.g. IPH).</li> <li>• Frontline HCWs are clearly stated as a priority group in the national SIV guidelines.</li> <li>• Frontline HCWs act as role models and others may follow their actions.</li> <li>• The quality assurance and patient safety policy and obligations can be helpful for promoting SIV.</li> </ul>
<b>CIRCUMSTANCES TO TAKE INTO ACCOUNT</b>	
<b>What circumstances (existing, and sometimes unchangeable factors that might limit effectiveness) must be taken into account?</b>	<ul style="list-style-type: none"> <li>• SIV will not prevent all influenza cases (vaccine effectiveness is not 100%).</li> <li>• SIV is only protective for one season; individuals must be vaccinated every season to be protected.</li> <li>• Involvement of the IPH with support from the Ministry of Health is crucial for this project to be expanded to and sustainable at national level.</li> </ul>
<b>POSSIBLE STRATEGIES TO INCREASE UPTAKE OF SIV AMONG HCWS</b>	
<b>What are the possible strategies to increase uptake of SIV among HCWs?</b>	<ul style="list-style-type: none"> <li>• Increase SIV uptake among frontline HCWs by emphasizing their duty and role in reducing risk of transmission of seasonal influenza to patients. Provide HCWs with more information about mild and asymptomatic influenza.</li> <li>• Target medical students, as well as nurses and doctors, early in their careers, regarding the need for frontline HCW vaccination, including SIV. Use social media as a channel to share these messages.</li> <li>• Involve communities through nongovernmental organizations that are very active in promoting maternal and child health so that SIV can be part of a broader framework for infection control.</li> <li>• Introduce a workplace vaccination programme for frontline HCWs as part of an occupational health and safety programme. Include vaccinations to protect against seasonal influenza, hepatitis B, measles, hepatitis A, diphtheria and tetanus, for example. Though many frontline HCWs state that they perceive the risk of contracting bloodborne and airborne infections, survey results show that few frontline HCWs currently take preventive action. <ul style="list-style-type: none"> <li>- Frontline HCWs are aware of hepatitis B risk; some believe the vaccination should be mandatory. Only 20% of frontline HCWs surveyed have been vaccinated against hepatitis B; among those who are not vaccinated, 46% believe that it is not necessary.</li> <li>- Tetanus vaccination is mainly driven by exposure to tetanus risk. Among the 31% of frontline HCWs vaccinated against tetanus, 66% were vaccinated after an injury.</li> </ul> </li> </ul>

Source: adapted from TIP FLU. *Understanding HCWs' uptake of SIV in Montenegro: a case study for policy-makers and programme managers* (16).

## The planning phase: design, implement, assess and adjust

The planning phase answers the question “now what?” During this phase, the findings from the formative phase are translated into strategy and practice. Using the analysis from the TIP FLU formative phase, the programme manager will perform the next three steps.

- Set the TIP FLU objective and specific subobjectives (step 7).
- Design the TIP FLU programme and generate custom solutions, which draw on lessons learnt in successful SIV programming globally. This step incorporates how SIV will be positioned to HCWs and the mix of programmatic interventions to put into place to meet the objectives (step 8).
- Monitor, evaluate and adjust the programme, using the programme’s logical framework. The logical framework provides the logical reasoning behind the SIV programme that is expected to lead the programme to its desired outcome. It includes the aim, objectives and subobjectives, the main indicators to monitor progress, means of verification and assumptions that are tied to each objective (step 9).

### Step 7: set TIP FLU objective and subobjectives

Setting the TIP FLU objective and subobjectives is a critical part of the TIP FLU approach. The TIP FLU objective expresses what will be done to move towards reaching the end goal – to reduce the incidence of seasonal influenza among HCWs and high-risk patient groups – and what the chosen strategies are intended to ultimately achieve (Box 6). It includes three main features:

- a clearly defined target audience (or target audiences)
- a detailed description of the behaviour to be promoted and its frequency
- a measure of the impact to be achieved over a particular period of time.

#### Box 6. Example of a TIP FLU objective

To increase SIV coverage among all doctors and nurses working directly with patients in the infectious diseases and chronic diseases wards, and intensive care units in Hospital X from 20% to 60% by 2018.

Make the TIP FLU objective and subobjectives SMART.

- S – Are they specific?
- M – Can they be measured?
- A – Can they be achieved?
- R – Are they relevant?
- T – Are they timebound?

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The TIP FLU subobjectives are those that TIP FLU stakeholders believe are most likely to contribute to achieving the TIP FLU objective. They should be revisited when required, particularly in light of new research or when monitoring data are collected.

To define TIP FLU subobjectives, the research and behavioural analysis conducted during the formative phase should be reviewed to identify which behavioural determinants to act upon. Identifying subobjectives involves both logical and creative thinking: determinants that differentiate HCWs who vaccinate against seasonal influenza from those who do not are carefully assessed in light of the programme manager's understanding of the target groups and their decision-making patterns, as well as their degree of influence and potential for change. Once the main determinants are identified, a related subobjective can be formulated. Formulating specific subobjectives helps in choosing the strategic mix of programmatic interventions that, combined, are expected to achieve the objective of the TIP FLU programme.



**Tables 5 and 6** – the behavioural analysis table and the programme strategy table – can assist the programme in steps 7 and 8, by analysing target group behaviours, and developing programmatic strategies and interventions and related subobjectives. It is particularly important to engage SIV programme stakeholders at the time of the development of TIP FLU strategies. It is recommended that a participatory workshop is organized with the main SIV programme stakeholders to share findings and generate objectives, and propose strategies and solutions collaboratively. These tables can be used to guide this process.<sup>12</sup>



**Intervention mapping**, a planning process developed to plan health promotion interventions, can also provide a useful model for translating formative phase into practical programmatic interventions. A key step in the process is defining the “*who, what and why*” related to the vaccination behaviour. At the individual level, desired vaccination behaviours are translated into performance objectives. At the environmental level, stakeholders who are responsible for creating the right environmental conditions for this behaviour are identified. The determinants or reasons behind the behaviours are described for each performance objective in a matrix, which assists the planner to set immediate targets or programme objectives for the SIV programme (20–21).

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<sup>12</sup> Though illustrative examples from Montenegro are provided in Tables 7-8, the implementation phase of the TIP FLU approach has not been carried out at the time of writing.

## Analysing behaviours

For each priority target group, first describe the current behaviour, the desired behaviour, as well as barriers (and other challenges) and facilitators (and opportunities) that emerged during the TIP FLU formative phase. Barriers and facilitators are the determinants that were shown to influence the target group's behaviour. In the TIP FLU map, they are presented according to whether they are environmental, social or community, or personal.

**Table 5.** *Frontline HCWs who do not vaccinate against seasonal influenza*

CURRENT BEHAVIOUR	DESIRED BEHAVIOUR	BARRIERS (and challenges)	FACILITATORS (and opportunities)
<p><b>This is the behaviour the target group currently adopts.</b></p> <p><i>Frontline HCWs did not vaccinate against seasonal influenza during the 2012/2013 influenza season.</i></p>	<p><b>This is the desired behaviour. The desired behaviour has direct impact on the health outcome.</b></p> <p><i>Frontline HCWs vaccinate against seasonal influenza every year.</i></p>	<p><b>These are the determinants that prevent the behaviour from happening or justify the current behaviour.</b></p> <p>Examples of personal and community factors</p> <p><i>Un-vaccinated frontline HCWs do not view themselves as a target group for SIV because they:</i></p> <ul style="list-style-type: none"> <li>believe they have strong immune systems that protect them from influenza;</li> <li>believe they have acquired immunity through their work;</li> <li>have low awareness of their possible role in transmitting seasonal influenza to their patients; and</li> <li>lack guidance and support for SIV at the time of their medical education and in the workplace.</li> </ul>	<p><b>These are the determinants that facilitate the desired behaviour. They may motivate a change in the current behaviour.</b></p> <p>Examples of personal and community factors</p> <p><i>Frontline HCWs:</i></p> <ul style="list-style-type: none"> <li>have a positive attitude towards vaccination;</li> <li>are aware that their workplaces place them at risk of infection;</li> <li>believe that providing the right care is an important part of their profession; and</li> <li>are aware of the need for infection prevention and control measures at the workplace.</li> </ul>

Sources: adapted from *Immunization Essentials. A Practical Field Guide (24)*; illustrative examples from Montenegro are provided in italics and are adapted from *TIP FLU. Understanding HCWs' uptake of SIV in Montenegro: a case study for policy-makers and programme managers (16)*.

## Developing a SIV programme strategy

Once table 5 is completed, the programme manager can use the behavioural analysis table for each priority target group to craft a strategy, and describe the subobjectives and related programmatic solutions they believe are most likely to contribute to achieving the TIP FLU objective.

**Table 6.** Frontline HCWs who do not vaccinate against seasonal influenza

PROGRAMME STRATEGY					
PROPOSED SOLUTION	COST	CONVENIENCE	COMMUNICATIONS	CAPACITY BUILDING	OTHER (POLICY)
<p>What SIV product or service delivery improvements are proposed?</p> <p>These can be related to:</p> <ul style="list-style-type: none"> <li>• how SIV is positioned, in terms of quality of care or HCW professionalism;</li> <li>• the characteristics of the vaccine;</li> <li>• the use of reminders and other supportive services; and</li> <li>• the brand and type of vaccine that is procured.</li> </ul> <p>Position SIV as an indicator of the quality of patient-centred care at PHCC Podgorica.</p> <p>Promote SIV as a professional norm for HCWs in direct contact with patients</p>	<p>What are the real and perceived costs of SIV? (It is possible to enhance the perceived value of a service through how it is delivered to the target group).</p> <p>These can be related to:</p> <ul style="list-style-type: none"> <li>• providing SIV free of cost (financial cost);</li> <li>• increasing convenient access SIV (cost in time);</li> <li>• positioning it as a best practice for HCWs to increase the inherent value of SIV; and</li> <li>• using rewards or gifts and other incentives.</li> </ul> <p>Increase the ease and convenience of SIV for HCWs to reduce perceived costs in terms of time and availability.</p>	<p>How does the programme ensure that SIV is available where and when the target group can engage in this behaviour in a positive manner?</p> <p>This is related to:</p> <ul style="list-style-type: none"> <li>• convenient times;</li> <li>• convenient places;</li> <li>• available supplies; and</li> <li>• simple steps to make it happen.</li> </ul> <p>Introduce mobile carts at multiple times of the day (for example, at the start and end of shifts) for SIV of HCWs just before the start of the influenza season.</p>	<p>How is seasonal influenza and SIV talked about? Who talks about it? Who needs to be convinced? What are the main messages for each audience?</p> <p>This is related to:</p> <ul style="list-style-type: none"> <li>• political advocacy;</li> <li>• social and community mobilization;</li> <li>• interpersonal communications and counselling; and</li> <li>• risk management and media relations.</li> </ul> <p>At an institutional level, frame SIV as an indicator of quality of patient-centred care for Montenegro health care institutions.</p> <p>For individual HCWs, frame SIV as a preventive measure for frontline HCWs, calling on their sense of duty to protect patients and colleagues.</p> <p>Communicate to HCWs that seasonal influenza can affect everyone, including HCWs; HCWs may not always be aware that they have influenza: they may be asymptomatic or have few symptoms and transmit it to patients without knowing it. SIV is the best protection against influenza and from transmitting it to their patients.</p>	<p>This is related to:</p> <ul style="list-style-type: none"> <li>• formative and continuing education;</li> <li>• supportive supervision; and</li> <li>• performance reviews and rewards.</li> </ul> <p>Introduce workshops and seminars with respected medical leaders to educate frontline HCWs about the need for SIV.</p> <p>Work with trusted peers to spread correct information about the risks of influenza and debunk misconceptions.</p>	<p>What are the other programmatic factors to be considered?</p> <p>This is related to:</p> <ul style="list-style-type: none"> <li>• policy changes;</li> <li>• partners and stakeholders involved; and</li> <li>• resources required.</li> </ul> <p>Advocate to decision- and policy-makers for SIV to be a requirement or recommendation as part of the Accreditation of Health Institutions in Montenegro.</p> <p>Create new policy and professional norms to support annual SIV of HCWs and ensure its sustainability.</p>

Sources: adapted with permission from the publisher of *Immunization Essentials. A Practical Field Guide* (24); illustrative examples from Montenegro are provided in italics and are adapted from *TIP FLU. Understanding HCWs' uptake of SIV in Montenegro: a case study for policy-makers and programme managers* (16).

## Step 8: design TIP FLU programme

The design of the TIP FLU programme can consider two main questions.

- How will SIV be positioned to the target group(s)?
- What mix of programmatic interventions should be implemented to achieve the TIP FLU objective and subobjectives?

The positioning statement (question 1) offers a compelling picture of how the TIP FLU programme would like frontline HCWs to view this programme. It defines the value of SIV in relation to the many competing priorities that HCWs have in their everyday practice and places SIV as an important public health action for HCWs (Box 7).

### Box 7. **SIV - a value proposition**

In a context with a lack of attention and prioritization from decision-makers and funding agencies for SIV, what can be done to facilitate SIV uptake among HCWs in a given setting?

Something can always be done.

Targeting both leadership and frontline HCWs in this effort is critical.

Here are some ideas.

- Position HCW SIV as part of a broader public health mission: for example, hospital/health care quality and infection control, quality maternal and child care, elderly care, management of chronic diseases, etc.
- Integrate SIV into existing HCW programmes by:
  - creating a line item in the organizational budget of the health care institution;
  - creating a coordinating body within the institution with motivated members, realistic objectives and regular meetings; and
  - taking small steps: ensure that the vaccine is available, create convenient vaccination opportunities, communicate where and when HCWs can be vaccinated, create frequently asked questions to address information needs, concerns and misconceptions, track the number of vaccines used.
- Monitor what happens and adjust the programmes as needed.

Evidence from evaluative research shows that SIV programmes that include multiple components, acting on both demand for and supply of SIV, are most effective (Annex 5). This is also why this guide refers to a TIP FLU *programme* rather than an *intervention*. The term programme implies that several interventions are implemented together as part of a package in order to promote SIV uptake.



Traditionally centred on the four Ps of marketing (product, price, place and promotion) (22), integrated marketing and communications offers a framework through which to design this mix. This framework was adapted<sup>13</sup> to the TIP FLU approach (Table 7). Programmatic interventions that have shown to increase HCW uptake of SIV are described for each of the framework's components.<sup>14</sup>

The TIP FLU case study documents ideas that emerged from the participatory workshop with SIV stakeholders in Podgorica, Montenegro (16).

**Table 7.** Programmatic interventions to consider when designing a TIP FLU programme

FRAMEWORK COMPONENT	PROGRAMMATIC INTERVENTIONS
<p><b>The solution proposed:</b></p> <p><i>What solution is proposed to HCWs and why?</i></p>	<p>SIV uptake among HCWs has been found to increase thanks to programmatic interventions that <b>improve HCWs' attitudes towards SIV:</b></p> <ul style="list-style-type: none"> <li>organizational advocacy, communications and support that emphasize how SIV increases infection control, as well as <b>professionalism, safety and overall health care service quality</b> of the health care institution;</li> <li>communications to HCWs on vaccine efficacy and safety that emphasize <b>influenza vaccine quality;</b> and</li> <li>providing convenient opportunities to vaccinate, which may have a positive effect on the perception of <b>quality of the SIV programme.</b></li> </ul> <p>Supportive services such as the use of <b>reminders</b> for HCWs (phone calls, SMS, personalized letters) and <b>tracking and posting HCW vaccination coverage</b> to management and HCWs help increase social support for SIV and triggering action.</p> <p>SIV is available in <b>two modes of administration: intranasal and injectable.</b> More research is needed on how the mode of administration of SIV influences uptake. Intranasal administration may be an alternative way of offering influenza vaccination to HCWs in cases where the injectable form is refused.</p>
<p><b>The cost of SIV:</b></p> <p><i>What are the real and perceived costs associated with SIV? What is its perceived value?</i></p>	<p>Providing SIV <b>free of cost</b> facilitates uptake among HCWs.</p> <p>A number of successful programmes used monetary or in-kind <b>rewards</b> to motivate HCWs to vaccinate. These programmes have offered:</p> <ul style="list-style-type: none"> <li>money</li> <li>nominal gifts such as notepads or pens</li> <li>coupons for coffee or ice-cream</li> <li>special prizes, t-shirts or candy.</li> </ul> <p>Other programmes have motivated HCWs to vaccinate by appealing to their <b>sense of competition.</b> Competitions between health care facilities and rewards to the institution with the highest coverage rate have been introduced to increase vaccination coverage.</p> <p>Though these interventions may have a positive effect on motivation to vaccinate, it is unclear how they affect HCWs' perceived value of SIV in the long term. In addition, they increase the financial and management costs of SIV programmes and may not be sustainable.</p>

<sup>13</sup> The marketing terminology to categorize the mix was changed to solution, cost, convenience and communication to better suit the topic of SIV.

<sup>14</sup> Annex 3 presents a review conducted by the Regional Office on programme and programmatic interventions that have successfully increased SIV uptake among HCWs.

Table 7. contd

FRAMEWORK COMPONENT	PROGRAMMATIC INTERVENTIONS
<p><b>The convenience of SIV:</b></p> <p><i>Where, when and how is it most convenient (and least disruptive) to vaccinate HCWs?</i></p>	<p>All successful programmes ensured that SIV was convenient for busy HCWs. SIV was offered in a variety of ways:</p> <ul style="list-style-type: none"> <li>• through mobile vaccination carts or directly in wards;</li> <li>• in places and at times where HCWs meet: HCW conferences, staff meetings, vaccine days;</li> <li>• in clinics without appointments; and</li> <li>• at multiple dates and times, during weekends and night shifts, or after hours.</li> </ul>
<p><b>Communicating about SIV:</b></p> <p><i>How is seasonal influenza and SIV talked about?</i></p>	<p>Effective communications campaigns related to SIV were multifaceted and appealed to varied target audiences, with consistent and tailored messages delivered through multiple media channels. Campaigns involved advocacy among and within institutions and with senior leadership/management, mobilization of organizational and professional networks and associations, and information, education and communication (IEC) to increase HCWs' personal motivation to vaccinate and counter misconceptions.</p> <p>Advocacy, HCW mobilization and IEC efforts are described briefly below.</p> <ul style="list-style-type: none"> <li>• Advocacy efforts were employed to secure commitment and support from the top levels of the health care organizations and via partnerships with HCW networks and associations.</li> <li>• Mobilization of HCWs and their supervisors included official kick-off meetings, partnerships with HCW networks and associations, peer communications and advice, outreach visits and using community norm-setting techniques (declination forms, use of masks for non-vaccinated HCWs, public posting of vaccination coverage).</li> <li>• IEC can address questions and misconceptions regarding seasonal influenza among frontline HCWs and emphasize the benefits of SIV using multiple channels: continuing medical education, videos, lectures, posters, stickers, fact sheets, radio broadcasts, conferences and meetings, and electronic and social media.</li> <li>• Box 8 provides examples of campaigns and ready-to-use resources to promote SIV among HCWs.</li> </ul>

## Policy considerations

Lessons learnt from successful SIV programmes underline the importance of considering changes in existing policy guidance. National-level advocacy efforts may be employed to do this. Most programmes that were successful in increasing uptake of SIV were able to create a favourable environment for HCW participation in SIV. Decision-makers set new policies, regulations (or legislation) and systems to promote HCW SIV. Their efforts introduced a culture within which vaccination was encouraged (or expected) and positioned as a requirement of HCW professionalism, safety and overall health care service quality, including infection control.

At an institutional level, such programmes:

- ensured strong leadership support to the HCW SIV programme;
- created a coordinating body to support the programme;

- wrote and disseminated policy statements and procedures;
- advocated for local, regional and national policies through professional bodies, associations and networks;
- required unvaccinated HCWs to sign declination forms or wear masks;
- monitored each HCW's compliance with SIV and communicated it to supervisors and managers;
- posted publicly SIV rates at regular intervals or in real time; and
- made mandatory, in some cases, HCW participation in yearly SIV.

### Box 8. **Campaigns and ready-to-use resources to promote SIV of HCWs**

A number of resources are already available for programme managers to be inspired by, use and/or adapt. It is recommended to pre-test ready-to-use communications materials to ensure they are relevant, appropriate, easy to understand and appealing to targeted HCWs in their unique setting.

The Athens-based **HProImmune Project** (23), dedicated to **promoting immunization for health professionals in Europe**, has made available toolkits in English for physicians, nurses and other specialty professions and health care administrators. Each toolkit answers frequently asked questions regarding seasonal influenza and other vaccine-preventable diseases, and provides factual information to correct myths and misconceptions related to HCW vaccinations.

Their website documents reports and results from the three-year HProImmune project, funded by the Public Health Programme 2008–2013 of the European Commission's Directorate General for Health and Consumer Affairs. It also contains information on other European initiatives promoting SIV of HCWs, in the form of presentations, and other resources from HProImmune's Information Day held in July 2014 (25).

The **European Centre for Disease Prevention and Control** has developed a communications toolkit for SIV along with campaign materials for HCWs and other people belonging to seasonal influenza risk groups (26).

The **World Medical Association** is implementing an influenza immunization campaign targeted to HCWs. Information about the campaign, including campaign videos and related print materials targeted to HCWs, are available on their website (27).

The **United Kingdom's national influenza fighter campaign**, introduced by the NHS Employers organization in partnership with Public Health England, is an example of an effective national programme, which has increased NHS staff SIV coverage from 35% in 2010/2011 to 55% in 2013/2014 (28).

The **United States Centers for Disease Control and Prevention** website hosts a comprehensive set of resources on seasonal influenza and SIV (2).

## Step 9: monitor, evaluate and adjust (as needed) the TIP FLU programme interventions

Monitoring and evaluation are necessary parts of good programme design. Though presented as the final step of the TIP FLU approach, many of the components required for monitoring and evaluation will have been thought out at the start of the process, guided by the TIP FLU map, and at the time of planning the formative research and designing the TIP FLU programme.



The TIP FLU guide proposes to use a logical framework approach<sup>15</sup> to narrate the reasoning of the TIP FLU programme, and the key indicators to be used for monitoring and evaluating its performance. The logical framework combines TIP FLU's objective and subobjectives, and principal monitoring and evaluation indicators, and methods of measurement to track the programme's success. The logical framework can also include information on the frequency of measurement, as well as estimated costs. An example of a logical framework developed in the context of TIP FLU can be found in the TIP FLU case study (16).

When considering monitoring and evaluation of the programme, the programme manager needs to choose which indicators help most to assess whether the TIP FLU objective and subobjectives have been reached. To do this, the programme manager can consult the findings from the situation analysis, and formative research and behavioural analyses tables to select the most appropriate indicators. These indicators illustrate specifically what is expected to change under each subobjective.

Table 8<sup>16</sup> organizes potential main determinants and possible indicators for each determinant according to the categories and subcategories described in the TIP FLU map. These indicators should be evaluated by means of a survey questionnaire or through interviews to establish a baseline, as well as during the programme implementation. Respondents are asked questions and can choose their response from a pre-established list of possible answers. *Most questions presented below are formulated to ask the respondent to either agree or disagree with statements. For more precision, the respondent can answer on a scale from 1 to 4, with 1 indicating disagree completely and 4 agree completely.*

<sup>15</sup> Information on how to use this logical framework approach can be found in (29).

<sup>16</sup> The original table, documented in the *Guide to Tailoring Immunization Programmes* (3), was developed in collaboration with L. Shimp and V. Diwedi from John Snow Inc. (30) and M. Favin from The Manoff Group .

**Table 8.** Examples of indicators related to SIV among HCWs

MAIN CATEGORY	SUB CATEGORY	POSSIBLE DETERMINANTS TO ADDRESS	POSSIBLE INDICATORS
<b>Environmental factors (Opportunity)</b>	Perception of access to and availability of SIV services	<ul style="list-style-type: none"> <li>• HCWs' perceptions of convenience of where to get vaccinated</li> <li>• HCWs' perceptions of convenience of the days and hours of service</li> <li>• HCWs' competing responsibilities during vaccination service hours</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who consider that the location of SIV services was convenient</li> <li>• % of HCWs who consider the days and hours of SIV services were convenient</li> <li>• % of HCWs who find it difficult or impossible to get vaccinated due to competing responsibilities</li> </ul>
	Perception of cost of SIV services	<ul style="list-style-type: none"> <li>• HCWs' concern with the cost of SIV services</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who were concerned with the cost of SIV services</li> </ul>
	Perception of regulations and institutional norms regarding SIV	<ul style="list-style-type: none"> <li>• Degree to which SIV regulations and/or recommendations are perceived to be actively implemented (or mandatory)</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who believe that SIV regulations and recommendations are actively implemented by their workplace</li> </ul>
<b>Social and community factors (Support)</b>	Influence of information on, shared knowledge of and community support for seasonal influenza and its vaccination	<ul style="list-style-type: none"> <li>• HCWs' exposure to information on SIV through vaccination education, promotion campaigns</li> <li>• HCWs' exposure to information on SIV shared by communities that influence HCWs' beliefs and behaviours</li> <li>• Extent to which people close to HCWs (e.g. family) encourage or discourage SIV</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who received information on SIV in the last 2 months through vaccination education, promotion campaigns</li> <li>• % of HCWs who received information on SIV in the last 2 months shared by communities that influence HCWs' beliefs and behaviours</li> <li>• % of people close to HCWs who encourage/discourage SIV</li> </ul>
	Media support for SIV	<ul style="list-style-type: none"> <li>• Extent to which people close to HCWs (e.g. family) encourage or discourage SIV</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who heard or read discouraging/encouraging information (by source of media) on SIV in the last month</li> </ul>
	Influence of professional networks and norms for SIV	<ul style="list-style-type: none"> <li>• HCWs' beliefs that getting vaccinated is the professional duty of medical providers</li> <li>• Extent to which peer medical professionals participate in and recommend SIV</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who consider SIV is part of their professional duty</li> <li>• % of HCWs who were encouraged to vaccinate against seasonal influenza by their colleagues in the last season</li> <li>• % of HCWs who know at least (insert number) colleagues who were vaccinated against seasonal influenza in the last season</li> </ul>
<b>Personal factors (Motivation)</b>	Knowledge of seasonal influenza and SIV: - factual - practical - experiential	<ul style="list-style-type: none"> <li>• HCWs' knowledge of the degree to which SIV reduces the risk of seasonal influenza disease</li> <li>• HCWs' knowledge of health regulations/guidelines/recommendations regarding SIV</li> <li>• HCWs' awareness that they are a priority target group for SIV</li> <li>• HCWs' knowledge that SIV is recommended for people with chronic illnesses, aged 65 years and older, etc.</li> <li>• HCWs' practical knowledge of when and where to get SIV</li> <li>• HCWs' personal experience of (or knowledge of someone) having suffered from seasonal influenza</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who know that SIV reduces the risk of contracting seasonal influenza</li> <li>• % of HCWs who know that current SIV recommendations are (insert recommendations)</li> <li>• % of HCWs who know that they are a priority target group for SIV</li> <li>• % of HCWs who know that SIV is recommended for people with chronic illnesses</li> <li>• % of HCWs who know that SIV is recommended for people aged 65 years and older</li> <li>• % of HCWs who know where to get vaccinated against seasonal influenza</li> </ul>

Table 8 contd

MAIN CATEGORY	SUB CATEGORY	POSSIBLE DETERMINANTS TO ADDRESS	POSSIBLE INDICATORS
<b>Personal factors (Motivation)</b> <i>contd</i>			<ul style="list-style-type: none"> <li>• % of HCWs who know when to get vaccinated against seasonal influenza</li> <li>• % of HCWs who were vaccinated against seasonal influenza in the last year</li> </ul>
	HCW risk perceptions of seasonal influenza	<ul style="list-style-type: none"> <li>• HCWs' perceptions of the personal risk of contracting seasonal influenza</li> <li>• HCWs' perceptions of the risk of them transmitting seasonal influenza to patients</li> <li>• HCWs' perceptions of the risk of them transmitting seasonal influenza to family members and/or friends</li> <li>• HCWs' perceptions of how serious or life threatening seasonal influenza is</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who believe that, without being vaccinated, they would be at risk of contracting seasonal influenza</li> <li>• % of HCWs who believe that, without being vaccinated, they would risk transmitting seasonal influenza to their patients</li> <li>• % of HCWs who believe that, without being vaccinated, they would risk transmitting seasonal influenza to their family members</li> <li>• % of HCWs who perceive seasonal influenza to be a serious or life threatening disease for at-risk groups</li> </ul>
	Perceptions of seasonal influenza vaccine safety	<ul style="list-style-type: none"> <li>• HCWs' perceptions regarding the safety of seasonal influenza vaccine</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who are concerned with the adverse effects of seasonal influenza vaccine</li> </ul>
	HCW perceived benefits of SIV	<ul style="list-style-type: none"> <li>• Strength of HCWs' belief that vaccination protects them (reduces the risk) from getting seasonal influenza</li> <li>• Strength of HCWs' belief that their vaccination protects patients from getting seasonal influenza</li> <li>• Strength of HCWs' belief that their vaccination protects family members from getting seasonal influenza</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who are convinced that vaccination is very effective in protecting them against seasonal influenza</li> <li>• % of HCWs who are convinced that being vaccinated against seasonal influenza indirectly protects their patients from seasonal influenza</li> <li>• % of HCWs who are convinced that being vaccinated against seasonal influenza indirectly protects their family members from seasonal influenza</li> </ul>
	HCW perceived benefits of SIV	<ul style="list-style-type: none"> <li>• Strength of HCWs' perceptions that getting vaccinated to prevent seasonal influenza is an essential practice of a good medical professional</li> <li>• HWCs agreement with SIV regulations and/or recommendations</li> <li>• HCWs' preference for, and use of, other types of preventive care (naturopathic, homeopathic, other)</li> <li>• HCWs fundamental beliefs regarding vaccination as a preventive measure</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who strongly believe that getting vaccinated against seasonal influenza is an essential practice of a good medical professional</li> <li>• % of HWCs who are in agreement with national SIV regulations and/or recommendations</li> <li>• % of HCWs who have used other types of preventive care (naturopathic, homeopathic, other) in the last 2 months</li> <li>• % of HCWs who state a preference for preventing seasonal influenza through other types of preventive care, such as naturopathy or homeopathy</li> <li>• % of HCWs who strongly believe in vaccination as a measure to prevent vaccine-preventable diseases</li> </ul>
	Risk-benefit analysis	<ul style="list-style-type: none"> <li>• Extent to which HCWs perceive that the benefits of SIV outweigh the risks of adverse effects of the vaccine</li> </ul>	<ul style="list-style-type: none"> <li>• % of HCWs who believe that the benefits of SIV outweigh the risks of the vaccine</li> </ul>

MAIN CATEGORY	SUB CATEGORY	POSSIBLE DETERMINANTS TO ADDRESS	POSSIBLE INDICATORS
	Risk-benefit analysis <i>contd</i>	<ul style="list-style-type: none"> <li>Degree of complacency regarding SIV (perception of importance)</li> </ul>	<ul style="list-style-type: none"> <li>% of HCWs who believe that vaccinating against seasonal influenza is important</li> </ul>

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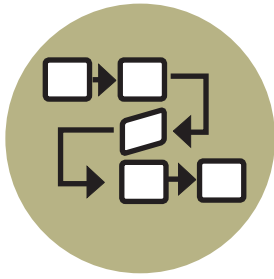
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## Annex 1. Methodology to create the TIP FLU conceptual map of behavioural determinants to SIV uptake among HCWs

*The Guide to Tailoring Immunization Programmes (TIP)*<sup>1</sup> published online in May 2013 focused on issues related to parental practices regarding the vaccination of their children in the WHO European Region. The first step the authors took to create the TIP FLU guide for increasing HCW uptake of SIV was to adapt TIP's conceptual framework to depict the behavioural determinants specific to SIV uptake among HCWs. The authors did this by conducting a review of published articles on the topic across the WHO European Region. The methodology employed to do this is described below.

A literature search for relevant published peer-reviewed articles was done using PubMed Central,<sup>2</sup> from the National Center for Biotechnology Information, in week 19 of 2013. The search comprised articles published in English between January 2000 and May 2013. The search targeted articles from the WHO European Region, and was expanded to other countries and regions where research on the behavioural determinants of SIV uptake was known to have been conducted, such as North America and Australia.<sup>3</sup>

Each search included a combination of the study population, the geographical location, the word “influenza” and the words “vaccination”, “vaccine” or “immunization”. This resulted in a total of 203 papers. An additional search was conducted using the same strategy but with “flu” instead of “influenza”, which resulted in an additional 21 papers. Articles were removed if they considered solely (1) pandemic influenza and (2) non-health care workers. Forty-five articles were removed, leaving a final 179 articles for full review. Given that the intention was to focus on guidelines for the WHO European Region countries, the authors prioritized articles focusing on this Region and multicountry reviews and those that analysed the reasons, determinants, facilitators and barriers to SIV.<sup>4</sup> This resulted in a final total of 36 articles.

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<sup>1</sup> Guide to Tailoring Immunization Programmes (TIP). Copenhagen: WHO Regional Office for Europe; 2013 (<http://www.euro.who.int/en/health-topics/communicable-diseases/poliomyelitis/publications/2013/guide-to-tailoring-immunization-programmes>, accessed 26 February 2015).

<sup>2</sup> PubMed [online database]. Bethesda (MD): United States National Library of Medicine and the National Institutes of Health; 2015 (<http://www.ncbi.nlm.nih.gov/pubmed>, accessed 27 February 2015).

<sup>3</sup> The following keywords guided the first search: influenza, immunization, vaccination, Europe, Australia, Canada, USA, health care workers, medical workers, medical personnel, nurses, general practitioners, family doctors, physicians, attitude, barrier, belief, intention, predictor, position, opinion, experiences, knowledge, perception, motivation, attitude, acceptance, behaviour, practices, refusal, coverage and willingness.

<sup>4</sup> The topic of all of the initially identified articles was described according to whether the articles focused on (1) reasons, determinants, facilitators and barriers; (2) interventions and (3) both. When articles pertained to none of the above, for example, a coverage survey, this was indicated in words.

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Content extraction from the 36 articles was performed by reading the Methods and Results sections of each article, and then listing the determinants in their exact wording in an excel spreadsheet, identifying each determinant as either a barrier or a motivator. Each determinant was also sorted according to whether it was interpreted to be an “environmental factor”, a “social or community factor” or a “personal factor”. The degree (and quality) of statistical analysis was also taken into account by indicating whether the determinant emerged from a (1) multivariate analysis, (2) bivariate analysis, (3) descriptive statistics or (4) no statistics. For studies that used multivariate and bivariate analyses, only the statistically significant determinants from the final step of the analyses were included. For studies that performed descriptive statistics or had no statistics, all listed determinants were included.

The TIP FLU conceptual map was subsequently created by carrying out a structured content analysis, first prioritizing determinants that emerged from multivariate statistical analyses in the WHO European Region countries, and subsequently through global literature reviews. Finally, any new determinants identified in the other studies (very few) was also included. The TIP FLU map (Fig. 3) and its associated table (Table 1) presented on pages 7, 8-10 are the outcomes of this process.

**The 36 articles and documents used to create the TIP FLU conceptual framework are listed below.**

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## Annex 2. Qualitative component - semi-structured interviews (SSIs)

### Sample research instruments (to be adapted)

The qualitative component of the formative research has certain aims.

- Assess the importance of seasonal influenza vaccination (SIV) in general perceptions of health care workers' (HCWs') risk, safety and health.
- Understand what motivates or prevents HCWs' participation in SIV. This is generated using HCWs' descriptions of their knowledge, personal views, including attitudes perceptions and heuristics, and practices regarding SIV, and the factors that influence them.
- Explore the most effective and appropriate ways to increase HCW uptake of SIV, taking into consideration both supply-side and demand-generation activities.

The SSI guides presented in Tables A2.1-A2.2 should be adapted according to the group to be interviewed. SSIs are expected to last 1 hour maximum.

#### 1. Introduction

- a. Respondent shares: name, title, qualifications, number of years in primary health care, number of years working in the profession, age, marital status, household composition (living with parents/children)
- b. Welcome and thanks
- c. Brief description of the purpose of the study
- d. Guidance on questions and how to respond to them: open dialogue, no judgment on what is said
- e. Reassurance on data management: anonymity/confidentiality, data analysis and reporting
- f. Consent (written or recorded)

#### 2. HCWs' role, responsibilities toward patients and risks at work

- a. Description of HCWs' typical workday during autumn/winter
- b. Perceptions of HCWs' role and most important responsibilities
- c. Perceptions of HCWs' risks at work: what are they?
- d. HCWs' strategies to stay healthy



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### 3. Vaccinations and vaccine-preventable diseases

- a. Views on the risks/dangers of vaccine-preventable diseases (in general and for HCWs in particular)
- b. Views on the infectious diseases to which patients are most exposed
- c. Focus on seasonal influenza: definition, risk level
- d. General views on vaccination

### 4. SIV: HCW participation, motivators and barriers to use

- a. Participation in SIV last season (2012/2013)
- b. Reasons why HCW did/did-not participate. PROBE and/or ASK for perceptions related to:
  - i. opportunity: regulatory guidelines (agreement); access to SIV (convenience and cost); availability of the vaccine (vaccine and vaccination service)
  - ii. ability: factual, practical and experiential knowledge of seasonal influenza (risk, where/when/how to get SIV, past experience); social and community support (role of media, institutional encouragement, family, friends); professional norms (sense of duty, peer views and participation, patients' perception)
  - iii. motivation: perceptions of personal risk, role in transmitting, severity of seasonal influenza, efficacy of the vaccine and benefits of SIV, beliefs related to being a HCW and vaccination
- c. Future intentions to participate in SIV and reasons why
- d. HCWs' recommendations on SIV to patients and reasons why

### 5. Motivating HCWs to participate in SIV

- a. Convincing HCWs and their colleagues to participate in SIV. PROBE/ASK about
  - i. supply-side interventions (regulations, convenience, value, incentives, competitions)
  - ii. demand-generation activities (communications, improving knowledge, overcoming misconceptions addressing concerns)
  - iii. Best communications channels and messages to share

### 6. Closing

- a. Comments, questions, concerns
- b. Thank you
- c. Repeat how data will be analyzed and used

Sample SSIs – one for HCWs and one for managers – used in Montenegro are in Tables A2.1–A2.2.

**Table A2.1** *SSI guide for frontline HCWs (medical doctors, nurses and outreach workers)*

## 1. INTRODUCTION (approximately 5 minutes)

- a. Introduce yourself and ask the respondent to introduce him/herself if s/he does not do so spontaneously. Ask for the following information: **name, title, name of unit, qualifications, number of years in primary health care, number of years working in the profession, age, marital status, household composition - living with parents/children.**
- b. Thank the respondent for participating in this interview.
- c. Inform the respondent that this interview is part of research the WHO Regional Office for Europe is conducting with at Primary Health Care Centre (PHC) Podgorica to understand how to increase uptake of vaccination, particularly among HCWs.
- d. Explain that this is intended to be an open conversation. The respondent should answer freely. There is no right or wrong answer.
- e. All information collected stays anonymous. The interviews are audio-taped and translated into English. All translated interviews are analyzed and discussed collectively - no names will appear.
- f. Ask respondent to sign the consent form to proceed.

## 2. HCWs' ROLE, RESPONSIBILITIES TOWARDS PATIENTS AND RISKS AT WORK (10 minutes)

- a. **Can you please describe a typical day at work for you during autumn/winter?**  
(Allow respondent to answer spontaneously)  
Ask questions.
  - What types of illnesses do you most frequently treat?
  - How many patients do you see?
  - What are the characteristics of the patients you see? (gender/age of children, adults, elderly)
- b. **What would you say are the most important responsibilities HCWs have towards their patients?**  
Example: to provide them with the right medication. Do not prompt.
- c. **What risks do HCWs face in their profession?**  
(All professions have risks; for example, a construction worker risks falling and breaking a bone.)  
Probe: **What are common illnesses that HCWs face themselves?**

(Please ask for specific diseases.)

Ask: **Do you feel at risk of acquiring these illnesses?**

**d. What do you typically do to stay healthy?**

### 3. HCWs' VACCINATIONS AND VACCINE-PREVENTABLE (10 minutes)

**a. What would you say are the infectious diseases HCWs are most exposed to at PHC Podgorica?**

- First, allow respondent to answer spontaneously.
- Then, prompt HCWs regarding the following diseases: tuberculosis, seasonal influenza, measles, mumps, rubella, varicella, hepatitis A, hepatitis B, pneumococcal disease, diphtheria, tetanus and pertussis.
- Cards, each with a vaccine-preventable disease name, can be used by HCWs to categorize the diseases by the level of danger (very dangerous, somewhat dangerous, not so dangerous) and to explain their categorization.

**b. What are the infectious diseases patients are most exposed to at PHC Podgorica?**

- Same as for HCWs? Why?
- Different? Why?

**c.** Comment on what the respondent says about the risk level of seasonal influenza and note whether it was pointed out or not as a likely disease.

Ask: **I see you mentioned (or did not mention) seasonal influenza as an infectious disease HCWs and/or patients are most exposed to. Can you tell me more about why you mentioned this?** Explore reasons why.

**d. How would you describe your views regarding vaccination in general?**

Probe: identify the general attitude towards vaccination (pro/con/hesitant). Why? Who should be vaccinated? What should they be vaccinated against?) Any concerns?

### 4. SIV: PARTICIPATION, MOTIVATORS AND BARRIERS TO USE (15 minutes)

**a. Were you vaccinated against seasonal influenza during the last influenza season (2012/2013)?**

**b. If yes,**

- At what point in time during the influenza season did you get vaccinated?
- What motivated you to get vaccinated? Allow the respondent to answer spontaneously, prompt for more information if the reasons are unclear.
- Probe for:
  - i. Opportunity factors

**How easy was it to get vaccinated? Where did you go?**

**Please describe the steps you took to get vaccinated.**

#### 4. SIV: PARTICIPATION, MOTIVATORS AND BARRIERS TO USE (15 minutes) *contd*

ii. Ability factors

**Did anything or anyone in your immediate environment influence you to get vaccinated against seasonal influenza?**

(policy/family/friends/colleagues/patients with respiratory diseases /manager/media)

**Have you ever suffered from influenza in the past?**

**Have you ever known someone who has suffered from influenza in the past? Please describe this experience.**

iii. Motivation factors

**What made you feel at risk of contracting seasonal influenza?**

**What, if any, concerns did you have about the vaccine? Were these answered?**

**c. If no,**

- For what reasons did you choose to not vaccinate? Allow the respondent to answer spontaneously, prompt for more information if the reasons are unclear.

- Probe for:

i. Opportunity factors

**Did you experience any difficulty in getting the vaccination if you wanted it?**

ii. Ability factors

**Did anything or anyone in your immediate environment influence you to not get vaccinated against seasonal influenza?**

(policy/family/friends/colleagues/manager/media)

**Have you ever suffered from influenza in the past?**

**Have you ever known someone who has suffered from influenza in the past? Please describe this experience.**

iii. Motivation factors

**Did/do you feel at risk of contracting seasonal influenza? Please explain.**

**What, if any, concerns do you have about the vaccine?**

**What would be the best way to alleviate these concerns?**

**d. Have you been vaccinated against seasonal influenza this season (2013/2014)?**

If yes, **for what reasons?**

If no, **do you intend to get vaccinated?**

If there is no intention to get vaccinated, **do your reasons differ this year?**

**If yes, how?**

**e. Do you recommend SIV to your patients?**

If yes, **explain what you do to recommend SIV to your patients? To which patients? How many of your patients usually get vaccinated against influenza in a season?**

If no, **explain why.**

**f. Do you ever talk about SIV with your colleagues?**

If yes, **explain what you talk about.**

If no, why not?

## 5. MOTIVATING HCWS TO PARTICIPATE IN SIV (15 minutes)

**a. This research also seeks to identify possible ways to motivate HCWs to participate in annual SIV. In your opinion, what can Podgorica PHC do to increase SIV uptake among HCWs?** (Explore opportunity, ability and motivational factors as above.)

- **What could convince you to vaccinate against seasonal influenza?**

**b. Information, education and communication are important tools to increase understanding of the benefits of SIV among HCWs.**

- **Through which channels do HCWs typically receive information related to their profession?**

- **What channels do they trust the most?** (Institute of public health experts, peers, media, medical universities)
- **Is there a spokesperson for medical providers inside or outside of the PHC whom they look to for new information?**  
(please write down names of people)

- **At what points in time during a typical work day are HCWs most receptive to new information?**

- **What types of information would need to be included to gain HCWs' confidence in SIV?**

## 6. CLOSING (5 minutes)

**a. Is there anything you would like to add regarding the topics we have just discussed?**

**b. Do you have any questions regarding this research?**

**6. CLOSING (5 minutes) *contd***

- c. I would like to thank you for your time and for sharing your point of view. As I mentioned at the start of the interview, your opinions will remain anonymous. All of the information from the interviews will be analyzed together and reported back in the form of a presentation and short report, with no names attached.

You may have access to the results of this research by contacting (insert contact information). Results are expected to be available (insert information).

**Table A2.2** *SSI guide for HCW supervisors/managers (includes personnel responsible for occupational health and/or infection prevention and control)*

**1. INTRODUCTION (approximately 5 minutes)**

- a. Introduce yourself and ask the respondent to introduce him/herself if s/he does not do so spontaneously. Ask for the following information: name, title, name of unit, qualifications, number of years in primary health care, number of years working in the profession, age, marital status, household composition – living with parents/children.
- b. Thank the respondent for participating in this interview.
- c. Inform the respondent that this interview is part of research the WHO Regional Office for Europe is conducting with at Primary Health Care Centre (PHC) Podgorica to understand how to increase uptake of vaccination, particularly among HCWs.
- d. Explain that this is intended to be an open conversation. The respondent should answer freely. There is no right or wrong answer.
- e. All information collected stays anonymous. The interviews are audio-taped and translated into English. All translated interviews are analyzed and discussed collectively – no names will appear.
- f. Ask respondent to sign the consent form to proceed.

**2. HCWS ROLE, RESPONSIBILITIES TOWARDS PATIENTS AND RISKS AT WORK (10 minutes)**

- a. **Can you please describe a typical day at work for the HCWs you supervise during autumn/winter?**  
Ask questions.

## 2. HCWS ROLE, RESPONSIBILITIES TOWARDS PATIENTS AND RISKS AT WORK (10 minutes) *contd*

- What types of illnesses do HCWs most frequently treat?
- How many patients do they see?
- What are the characteristics of the patients seen? (gender/age of children, adults, elderly)

### **b. What would you say are the most important responsibilities HCWs have towards their patients?**

Example: to provide them with the right medication.

### **c. What risks do HCWs face in their profession?**

(All professions have risks; for example, a construction worker risks falling and breaking a bone.)

Probe: **What are common illnesses that HCWs face themselves?**

(Please probe for specific diseases.)

Ask: **Do you feel at risk of acquiring these illnesses?**

### **d. What do HCWs typically do to stay healthy?**

- Do any guidelines exist regarding their wellness and/or safety? Please describe them.
- How are they implemented at PHC Podgorica?
- As supervisor, how would you define your role in promoting the health and safety of your staff?

## 3. VACCINATIONS AND VACCINE-PREVENTABLE DISEASES (10 minutes)

### **a. What would you say are the infectious diseases HCWs are most exposed to at PHC Podgorica?**

- First, allow respondent to answer spontaneously.
- Then, prompt HCWs regarding the following diseases: tuberculosis, seasonal influenza, measles, mumps, rubella, varicella, hepatitis A, hepatitis B, pneumococcal disease, diphtheria, tetanus and pertussis.
- Cards, each with a vaccine-preventable disease name, can be used by HCWs to categorize the diseases by the level of danger (very dangerous, somewhat dangerous, not so dangerous) and to **explain their categorization.**

### **b. What are the infectious diseases patients are most exposed to at PHC Podgorica?**

- Same as for HCWs? Why?
- Different? Why?

### 3. VACCINATIONS AND VACCINE-PREVENTABLE DISEASES (10 minutes) *contd*

- c. Comment on what the respondent says about the risk level of seasonal influenza and note whether it was pointed out or not as a likely disease. Ask: **I see you mentioned (or did not mention) seasonal influenza as an infectious disease HCWs and/or patients are most exposed to. Can you tell me more about why you mentioned this?** Explore reasons why.
- d. **How would you describe your views regarding vaccination in general?**  
Probe: identify the general attitude towards vaccination (pro/con/hesitant). Why? Who should be vaccinated? What should they be vaccinated against? Any concerns?

### 4. SIV: PARTICIPATION, MOTIVATORS AND BARRIERS TO USE (15 minutes)

- a. **Were you vaccinated against seasonal influenza during the last influenza season (2012/2013)?**
- b. **If yes,**
  - At what point in time during the influenza season did you get vaccinated?
  - What motivated you to get vaccinated? Allow the respondent to answer spontaneously, prompt for more information if the reasons are unclear.
  - Probe for:
    - i. Opportunity factors  
**How easy was it to get vaccinated? Where did you go?  
Please describe the steps you took to get vaccinated.**
    - ii. Ability factors  
**Did anything or anyone in your immediate environment influence you to get vaccinated against seasonal influenza?** (policy/family/friends/colleagues/patients with respiratory diseases/manager/media)  
**Have you ever suffered from influenza in the past?  
Have you ever known someone who has suffered from influenza in the past? Please describe this experience.**
    - iii. Motivation factors  
**What made you feel at risk of contracting seasonal influenza?  
What, if any, concerns did you have about the vaccine?  
Were these answered?**
- c. **If no,**
  - For what reasons did you choose to not vaccinate? Allow the respondent to answer spontaneously, prompt for more information if the reasons are unclear.



Probe for:

- i. Opportunity factors

**Did you experience any difficulty in getting the vaccination if you wanted it?**

- ii. Ability factors

**Did anything or anyone in your immediate environment influence you to not get vaccinated against seasonal influenza?**

(policy/family/friends/colleagues/manager/media)

**Have you ever suffered from influenza in the past?**

**Have you ever known someone who has suffered from influenza in the past? Please describe this experience.**

- iii. Motivation factors

**Did/do you feel at risk of contracting seasonal influenza?**

**Please explain.**

**What, if any, concerns do you have about the vaccine?**

**What would be the best way to alleviate these concerns?**

- d. Have you been vaccinated against seasonal influenza this season (2013/2014)?**

If yes, **for what reasons?**

If no, **do you intend to get vaccinated?**

If there is no intention to get vaccinated, **do your reasons differ this year?**

**If yes, how?**

- e. Do you recommend SIV to your patients?**

If yes, **explain what you do to recommend SIV to your patients?**

**To which patients? How many of your patients usually get vaccinated against influenza in a season?**

If no, **explain why.**

- f. Do you recommend SIV to the HCWs you supervise?**

If yes, **explain what you do to recommend SIV to your staff?**

**To which staff? How many of your staff usually get vaccinated against influenza in a season?**

If no, **explain why.**

## 5. MOTIVATING HCWS TO PARTICIPATE IN SIV (15 minutes)

- a. This research also seeks to identify possible ways to motivate HCWs to participate in annual SIV. In your opinion, what can PHC Podgorica do to increase SIV uptake among HCWs?**

(Explore opportunity, ability and motivational factors as above.)

- **What are the important messages to convey to HCWs about seasonal influenza? And SIV?**
- **What could convince you to vaccinate against seasonal influenza?**
- **What role do you think supervisors/managers should play in such a programme?**

- b. Information, education and communication are important tools to increasing understanding of the benefits of SIV among HCWs.**

- **Through which channels do HCWs typically receive information related to their profession?**
  - **What channels do they trust the most?** (Institute of public health experts, peers, media, medical universities)
  - **Is there a spokesperson for medical providers in Montenegro whom they look to for new information?** (please get names if possible)
- **At what points in time during a typical work day are HCWs most receptive to new information?**
- **What types of information would need to be included to gain HCWs' confidence in SIV?**

## 6. CLOSING (5 minutes)

- a. Is there anything you would like to add regarding the topics we have just discussed?**

- b. Do you have any questions regarding this research?**

**c.** I would like to thank you for your time and for sharing your point of view.

**d.** As I mentioned at the start of the interview, your opinions will remain anonymous. All of the information from the interviews will be analyzed together and reported back in the form of a presentation and short report, with no names attached.

You may have access to the results of this research by contacting (insert contact information).

Results are expected to be available (insert information).



## Annex 3. Quantitative component - survey questionnaire

### Sample research instruments to be adapted

The quantitative component of the formative research serves to:

- generate a broader (general) understanding of the prevalence HCWs' views and behaviours related to SIV;
- identify factors positively associated with seasonal influenza vaccination; and
- collect information on HCWs perceptions and practices beyond SIV including measles, mumps, rubella, varicella, hepatitis A and B, pneumococcal disease, tetanus, diphtheria and pertussis

The questionnaire presented below was adapted from the HProimmune project.<sup>5</sup> It is strongly recommended that the questionnaire be adapted to the context and setting in which the TIP FLU approach will be implemented, including adding vaccinations that are relevant in the specific context, e.g. measles, and deleting questions that are not relevant, adapted according to setting (hospital, outpatient, long-term care facility, etc.).

The survey results should be representative of the staff at the clinic or hospital where the TIP FLU programme is being implemented.

### Sample questionnaire on the views and use of vaccination among frontline HCWs (medical doctors, nurses)

#### Part 1: demographics

**1. What is your gender?**

1. Male
2. Female

**2. What is your age?**

1. 18 to 24 years
2. 25 to 34 years
3. 35 to 44 years
4. 45 to 54 years
5. 55 to 64 years
6. 65 years and over

Questionnaire  
identification no.:

\_\_\_\_\_

<sup>5</sup> HProimmune [website]. Athens: Promotion of Immunization for Health Professionals in Europe (HProImmune) Project, co-funded under the Second Programme of Community Action in the Field of Health 2008-2013 by the European Union; 2015 (<http://www.hproimmune.eu/>, accessed 27 February 2015).

**3. What is the highest degree or level of school you have completed?**

- 1. Secondary school
- 2. Vocational training (*technical schools, apprenticeship or other equivalent*)
- 3. Academic degree
- 4. Postgraduate degree

**4. What is your current profession?**

**Medical doctor**

- 1. Paediatric specialty or subspecialty
- 2. Surgical specialty or subspecialty
- 3. Internal medicine specialty or subspecialty
- 4. Family medicine or equivalent
- 5. Laboratory
- 6. Other, please describe \_\_\_\_\_

**Nurse**

- 1. Hospital nurse
- 2. Emergency department nurse
- 3. Infection control nurse
- 4. Public health nurse
- 5. Midwife or maternal health nurse
- 6. Maternal health/child health or school health nurse
- 7. Primary health care nurse
- 8. Other, please describe \_\_\_\_\_

**5. What is your current profession?**

- 1. \_\_\_\_\_ (please specify)

**6. Years of experience in health care in general?**

- 1. Less than 2
- 2. 2 to 5
- 3. 6 to 10
- 4. 11 to 20
- 5. More than 20

**7. Years of experience in current profession**

- 1. Less than 2
- 2. 2 to 5
- 3. 6 to 10
- 4. 11 to 20
- 5. More than 20

**8. Are you currently or have you ever been treated for one or more of the following diseases/conditions**

1. Diabetes
2. Asthma, chronic obstructive pulmonary disease (COPD), or bronchitis
3. Heart diseases
4. Liver or kidney diseases
5. Immunodeficiency disorders

**Part 2: your views and use of vaccination**

**9. Which of the following statements do you feel best reflects your personal view about vaccines? (Maximum two answers possible)**

1. I believe vaccines will protect me from the diseases they prevent
2. I believe vaccines are important for reducing or eliminating serious diseases in our country
3. Not sure
4. I believe that acquiring immunity by contracting the disease is better than getting vaccinated
5. I believe vaccinations do more harm than good

**10. Which of the following diseases do you believe health care workers are more at risk of contracting due to the nature of their work in the organizational unit/ward/centre/ you work in? (Multiple answers possible)**

1. Seasonal influenza (influenza)
2. Tuberculosis
3. Measles
4. Mumps
5. Rubella (German measles)
6. Meningitis
7. Chickenpox (Varicella)
8. Hepatitis A
9. Hepatitis B
10. Respiratory diseases
11. Pneumococcal disease
12. Tetanus
13. Diphtheria
14. Pertussis (whooping cough)
15. Norovirus
16. Other, please describe \_\_\_\_\_

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**11. Which of the following diseases do you believe health care workers are most likely to transmit to patients in the organizational unit/ward/centre/you work in? (Multiple answers possible)**

1. Seasonal influenza (influenza)
2. Tuberculosis
3. Measles
4. Mumps
5. Rubella (German measles)
6. Meningitis
7. Chickenpox (Varicella)
8. Hepatitis A
9. Hepatitis B
10. Respiratory diseases
11. Pneumococcal disease
12. Tetanus
13. Diphtheria
14. Pertussis (whooping cough)
15. Norovirus (stomach virus)
16. Other, please describe \_\_\_\_\_

**12. Which of the following diseases do you believe health care workers are most likely to transmit to their family? (Multiple answers possible)**

1. Seasonal influenza (influenza)
2. Tuberculosis
3. Measles
4. Mumps
5. Rubella (German measles)
6. Meningitis
7. Chickenpox (Varicella)
8. Hepatitis A
9. Hepatitis B
10. Respiratory diseases
11. Pneumococcal disease
12. Tetanus
13. Diphtheria
14. Pertussis (whooping cough)
15. Norovirus (stomach virus)
16. Other, please describe \_\_\_\_\_

**13. Does your employer or supervisor recommend you to receive the seasonal influenza vaccine every year?**

1. Yes
2. No

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**14. Were you vaccinated against seasonal influenza (influenza) in the last season (2012/2013)?**

1. **Yes**, I received the seasonal influenza vaccination in the last season.   
(Please specify why below, multiple answers possible):
- 1. I was afraid of contracting the disease
  - 2. I have suffered from this disease in the past
  - 3. I believe it is a serious disease
  - 4. I believe the vaccine will protect me from the disease
  - 5. I do not wish to transmit this disease to the patients I come into contact with
  - 6. I do not wish to transmit this disease to my family
  - 7. It was recommended by my employer to be vaccinated
  - 8. It was encouraged by my colleagues
  - 9. It was encouraged by my family
  - 10. It was encouraged by the media
  - 11. Any other reason (please specify): \_\_\_\_\_
2. **No**, I did **not** receive the seasonal influenza vaccination in the last season (2012/2013). (Please specify below, multiple answers possible):
- 1. I have never had seasonal influenza before
  - 2. I believe that seasonal influenza is not a serious disease
  - 3. My religious beliefs are against vaccinations
  - 4. I believe that acquiring immunity by contracting the disease is better than getting vaccinated
  - 5. I don't believe I am at risk for seasonal influenza
  - 6. I am concerned about vaccine side effects
  - 7. I am concerned about becoming ill with influenza from the vaccine
  - 8. I am concerned about becoming ill with influenza after receiving the vaccine
  - 9. I am concerned that the vaccine will not protect me from this disease
  - 10. I believe I have acquired immunity due to the nature of my work
  - 11. I am afraid of needles
  - 12. I am sceptical about the long-term health effects of vaccines
  - 13. I have to make special efforts to get the vaccine
  - 14. I don't have time to get a vaccine
  - 15. I don't know where to obtain a vaccination
  - 16. Any other reason (please specify): \_\_\_\_\_
3. *I don't remember*

**15. Did you get vaccinated against seasonal influenza this season (2013/2014)?**

- 1. **Yes**, I received the seasonal influenza vaccination in this season.   
(Please specify why below, multiple answers possible):
  - 1. I was afraid of contracting the disease
  - 2. I have suffered from this disease in the past
  - 3. I believe it is a serious disease
  - 4. I believe the vaccine will protect me from the disease
  - 5. I do not wish to transmit this disease to the patients I come into contact with
  - 6. I do not wish to transmit this disease to my family
  - 7. It was recommended by my employer to be vaccinated
  - 8. It was encouraged by my colleagues
  - 9. It was encouraged by my family
  - 10. It was encouraged by the media
  - 11. Any other reason (please specify): \_\_\_\_\_

***If Yes, please skip to Question 18***

- 2. **No**, I did **not** receive the seasonal influenza vaccination in this season (2013/2014).

**16. Do you intend to get vaccinated against seasonal influenza this season (2013/2014)?**

- 1. Yes (skip to question 18)
- 2. No (go to Question 17)
- 3. Not sure (go to Question 17)

**17. If you answered “no” or “not sure” in Question 16, what might convince you to get vaccinated against seasonal influenza this year (2013/2014)?**

- 1. My colleagues also get vaccinated
- 2. My supervisor recommends seasonal influenza vaccination
- 3. My questions regarding seasonal influenza vaccination are answered
- 4. Vaccination is made available at a time and place that do not disrupt my busy work schedule
- 5. Patients I care for become sick with seasonal influenza or influenza-like illnesses
- 6. My family members become sick with seasonal influenza or influenza-like illnesses
- 7. There is an outbreak of seasonal influenza or influenza-like illnesses in the facility I work in
- 8. The facility I work in organizes a campaign promoting seasonal influenza vaccination



- 
9. Seasonal influenza vaccination for health care workers becomes mandatory for health care workers

**18. Were you vaccinated against pandemic A(H1N1) influenza during the 2009/2010 season?**

1. **Yes**, I received the **pandemic A(H1N1) influenza vaccination** (please specify why below, multiple answers possible):

- 1. I was afraid of contracting the disease
- 2. I have suffered from this disease in the past
- 3. I believe it is a serious disease
- 4. I believe the vaccine will protect me from the disease
- 5. I do not wish to transmit this disease to the patients I come into contact with
- 6. I do not wish to transmit this disease to my family
- 7. It was recommended by my employer to be vaccinated
- 8. It was encouraged by my colleagues
- 9. It was encouraged by my family
- 10. It was encouraged by the media
- 11. Any other reason (please specify): \_\_\_\_\_

2. **No**, I did **not** receive the **pandemic A(H1N1) influenza vaccination** (please specify below, multiple answers possible):

- 1. I have never had influenza before
- 2. I believe that influenza is not a serious disease
- 3. My religious beliefs are against vaccinations
- 4. I believe that acquiring immunity by contracting the disease is better than getting vaccinated
- 5. I don't believe I am at risk for influenza
- 6. I am concerned about vaccine side effects
- 7. I am concerned about becoming ill with influenza from the vaccine
- 8. I am concerned about becoming ill with influenza after receiving the vaccine
- 9. I am concerned that the vaccine will not protect me from this disease
- 10. I believe I have acquired immunity due to the nature of my work
- 11. I am afraid of needles
- 12. I am sceptical about the long-term health effects of vaccines
- 13. I have to make special efforts to get the vaccine
- 14. I don't have time to get a vaccine
- 15. I don't know where to obtain a vaccination
- 16. Any other reason (please specify): \_\_\_\_\_

3. *I don't remember*

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**19. Have you been vaccinated against hepatitis A in the last 10 years?**

1. **Yes**, I received the hepatitis A vaccination in the last 10 years   
(please specify why below, multiple answers possible):
- 1. I was afraid of contracting the disease
  - 2. I have suffered from this disease in the past
  - 3. I believe it is a serious disease
  - 4. I believe the vaccine will protect me from the disease
  - 5. I do not wish to transmit this disease to the patients I come into contact with
  - 6. I do not wish to transmit this disease to my family
  - 7. It was recommended by my employer to be vaccinated
  - 8. It was encouraged by my colleagues
  - 9. It was encouraged by my family
  - 10. It was encouraged by the media
  - 11. Any other reason (please specify): \_\_\_\_\_
2. **No**, I did not receive the hepatitis A vaccination in the last 10 years.   
(Please specify below, multiple answers possible):
- 1. I have never had hepatitis A before
  - 2. I believe that hepatitis A is not a serious disease
  - 3. My religious beliefs are against vaccinations
  - 4. I believe that acquiring immunity by contracting the disease is better than getting vaccinated
  - 5. I don't believe I am at risk for hepatitis A
  - 6. I am concerned about vaccine side effects
  - 7. I am concerned about becoming ill with hepatitis A from the vaccine
  - 8. I am concerned about becoming ill with hepatitis A after receiving the vaccine
  - 9. I am concerned that the vaccine will not protect me from this disease
  - 10. I believe I have acquired immunity due to the nature of my work
  - 11. I am afraid of needles
  - 12. I am sceptical about the long-term health effects of vaccines
  - 13. I have to make special efforts to get the vaccine
  - 14. I don't have time to get a vaccine
  - 15. I don't know where to obtain a vaccination
  - 16. Any other reason (please specify): \_\_\_\_\_
3. *I don't remember*

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## 20. Have you been vaccinated against hepatitis B in the last 10 years?

1. **Yes**, I received the hepatitis B vaccination in the last 10 years   
(please specify why below, multiple answers possible):
  1. I was afraid of contracting the disease
  2. I have suffered from this disease in the past
  3. I believe it is a serious disease
  4. I believe the vaccine will protect me from the disease
  5. I do not wish to transmit this disease to the patients I come into contact with
  6. I do not wish to transmit this disease to my family
  7. It was recommended by my employer to be vaccinated
  8. It was encouraged by my colleagues
  9. It was encouraged by my family
  10. It was encouraged by the media
  11. Any other reason (please specify): \_\_\_\_\_
  
2. **No**, I did not receive the hepatitis B vaccination in the last 10 years.   
(Please specify below, multiple answers possible):
  1. I have never had hepatitis B before
  2. I believe that hepatitis B is not a serious disease
  3. My religious beliefs are against vaccinations
  4. I believe that acquiring immunity by contracting the disease is better than getting vaccinated
  5. I don't believe I am at risk for hepatitis B
  6. I am concerned about vaccine side effects
  7. I am concerned about becoming ill with hepatitis B from the vaccine
  8. I am concerned about becoming ill with hepatitis B after receiving the vaccine
  9. I am concerned that the vaccine will not protect me from this disease
  10. I believe I have acquired immunity due to the nature of my work
  11. I am afraid of needles
  12. I am sceptical about the long-term health effects of vaccines
  13. I have to make special efforts to get the vaccine
  14. I don't have time to get a vaccine
  15. I don't know where to obtain a vaccination
  16. Any other reason (please specify): \_\_\_\_\_
  
3. *I don't remember*

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**21. Have you been vaccinated against tetanus and diphtheria (TD) or tetanus, diphtheria and pertussis (TDaP) in the last 10 years?**

1. **Yes**, I received the TD or TDaP vaccination in the last 10 years   
(Please specify why below, multiple answers possible):
- 1. I have received the vaccine after an injury
  - 2. I was afraid of contracting the disease
  - 3. I have suffered from this disease in the past
  - 4. I believe it is a serious disease
  - 5. I believe the vaccine will protect me from the disease
  - 6. I do not wish to transmit this disease to the patients I come into contact with
  - 7. I do not wish to transmit this disease to my family
  - 8. It was recommended by my employer to be vaccinated
  - 9. It was encouraged by my colleagues
  - 10. It was encouraged by my family
  - 11. It was encouraged by the media
  - 12. Any other reason (please specify): \_\_\_\_\_
2. **No**, I did not receive the TD or TDaP vaccinations in the last 10 years   
(Please specify below, multiple answers possible):
- 1. I have never had an injury that required the vaccine
  - 2. I have never had tetanus before
  - 3. I believe that tetanus is not a serious disease
  - 4. My religious beliefs are against vaccinations
  - 5. I believe that acquiring immunity by contracting the disease is better than getting vaccinated
  - 6. I don't believe I am at risk for tetanus
  - 7. I am concerned about vaccine side effects
  - 8. I am concerned about becoming ill with tetanus from the vaccine
  - 9. I am concerned about becoming ill with tetanus after receiving the vaccine
  - 10. I am concerned that the vaccine will not protect me from this disease
  - 11. I believe I have acquired immunity due to the nature of my work
  - 12. I am afraid of needles
  - 13. I am sceptical about the long-term health effects of vaccines
  - 14. I have to make special efforts to get the vaccine
  - 15. I don't have time to get a vaccine
  - 16. I don't know where to obtain a vaccination
  - 17. Any other reason (please specify): \_\_\_\_\_
3. *I don't remember*

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**22. Would you like to participate in Semi-structured in-depth interview?**

1. If Yes, please leave your contact information:

2. No

**23. Do you have any other comments or questions to share regarding vaccinations for health care workers?**

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**Thank you for completing this questionnaire!**



## Annex 4. Sample terms of reference template for research agency commissioned to assist in carrying out the formative research

**Contract with: (Insert name of organization)**

**Registration no.: (insert number)**

**Period: (insert dates of contract)**

**Budget: (insert amount) (for a detailed breakdown, see p. XX)**

### I. Background

Increasing influenza vaccination in priority target groups across the WHO European Region is a key strategy for the WHO Regional Office for Europe, where current influenza vaccination coverage rates remain low. In 2012, the WHO Regional Office for Europe initiated a project to adapt the Tailoring Immunization Guide (TIP)<sup>6</sup> approach, originally implemented to tailor child vaccination programmes, to address low uptake of seasonal influenza vaccination (SIV) in the Region.

Health care workers (HCWs) are the focus of attention for the Regional Office's pilot application of the TIP seasonal influenza vaccination (TIP FLU) approach. Because HCWs are in direct contact with high-risk patients, they have a higher likelihood of being exposed to the virus themselves and can expose patients to influenza. What is more, HCWs play an important role in recommending SIV to their patients.

This step in the TIP FLU process involves gathering new information regarding HCWs' perceptions and practices by means of semi-structured interviews (SSIs) and a survey questionnaire. SSIs, the **qualitative** component, will be conducted with HCWs who have received SIV in the past, HCWs who have not received SIV and HCW supervisors/managers. This qualitative component of the research will enable a deeper insight into the rationale and emotions feeding HCWs' perceptions, and which motivate or prevent SIV, thus enriching the quantitative data. An analysis of the most effective communications messages and channels will be conducted to prepare for the creation of a promotional strategy supporting SIV among HCWs at the facility level. The **quantitative survey**, on influenza vaccination uptake and attitudes towards SIV, will be administered to medical staff in direct contact with patients and will serve a baseline against which to measure progress.

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<sup>6</sup> Guide to Tailoring Immunization Programmes (TIP). Copenhagen: WHO Regional Office for Europe; 2013 (<http://www.euro.who.int/en/health-topics/communicable-diseases/poliomyelitis/publications/2013/guide-to-tailoring-immunization-programmes>, accessed 27 February 2015).

## II. Aim

This project has two main components: *qualitative* and *quantitative*. The objectives, activities and budget for the two components are described separately below.

## III. Qualitative component

### a. Purpose of the qualitative research

- Assess the importance of SIV in general perceptions of HCWs' risk, safety and health.
- Understand what motivates or prevents HCWs' participation in SIV. This is generated using HCWs' descriptions of their knowledge, personal views, including attitudes perceptions and heuristics, and practices regarding SIV, and the factors that influence them.
- Explore the most effective and appropriate ways to increase HCW uptake of SIV, taking into consideration both supply-side and demand-generation activities.

### b. Interviews, respondent groups and sample

A guide was developed for the SSIs (Annex 2). SSIs will be conducted with representatives of the two groups within the selected site(s): (1) HCWs who provide care directly to patients and (2) managers/supervisors of frontline HCWs and infection control personnel.

1. **HCWs who provide care directly to patients:** medical doctors, nurses and outreach workers.

Staff working with working with patients most at risk for seasonal influenza should be prioritized (total: 18-24).

HCW TYPE	NO. OF INTERVIEWS TO CONDUCT	
	VACCINATED AGAINST SEASONAL INFLUENZA LAST SEASON (2012/2013)	NOT VACCINATED AGAINST SEASONAL INFLUENZA LAST SEASON (2012/2013)
Medical doctors	3-4	3-4
Nurses	3-4	3-4
Outreach workers	3-4	3-4

2. **Managers/supervisors of front-line HCWs and infection control personnel.** Plan for around 10 SSIs.

The interview tool should be piloted and adapted, if necessary, before the interviews take place.

### c. Specific activities under the Agreement for Performance of Work

#### Role and responsibilities of the research agency

The table below provides the responsibilities of the research agency, along with an estimated level of effort.

QUALITATIVE RESEARCH		
RESPONSIBILITIES OF RESEARCH AGENCY - QUALITATIVE	ESTIMATED LEVEL OF EFFECT	COSTS
1. Translate the interview guides into local language.	by characters	xxxx
2. Back-translate interview guides into English.	by characters	xxxx
3. Pilot-test 2 interview guides and modify based on observations.	1 day	xxxx
4. Assist in recruitment of respondents (prepare letter to all HCWs in selected departments).	1 day	xxxx
5. Conduct 20 interviews with HCWs.	5 days	xxxx
6. Conduct 10 interviews with HCW supervisors/managers.	3 days	xxxx
7. Translate taped interviews into English and control quality.	5 days	xxxx
8. Write topline report on final results, main observations and limitations of SSIs with HCWs.	3 days	xxxx
<b>Total</b>	<b>18 days</b>	<b>xxxx</b>

## IV. Quantitative component

This part of the project aims to conduct a survey among medical doctors, nurses and outreach workers on influenza vaccination uptake and attitudes towards SIV. The questionnaire will be administered to medical staff in direct contact with patients and will serve as a baseline against which to measure progress.

#### a. Purpose of the quantitative research

- Generate a broader (general) understanding of HCWs' general views and use of SIV.
- Collect information on HCWs perceptions and practices beyond SIV including measles, mumps, rubella, varicella, hepatitis A and B, pneumococcal disease, tetanus, diphtheria and pertussis.

The information collected in this survey will complement and help consolidate data collected in the qualitative research component. It is also envisaged that the results of this survey will allow the health ministry and the health care institution to gain a deeper understanding of immunizations recommended for HCWs, and integration of this into the existing occupational health strategy.



A questionnaire, adapted from survey tool developed by HProImmune, a three-year project funded by the European Commission’s Directorate General for Health and Consumer Affairs Public Health Programme 2008–2013, has been prepared for this part of the project (see Annex 2, Quantitative component – survey questionnaire).

### **b. Respondent groups and sample**

After calculating a sample size, the survey should be administered to all or randomly selected staff (medical doctors, nurses and outreach workers) working in the relevant medical units.

To achieve a high response, the mode of administering the questionnaire is important. Discussions should be held with the management of the health care institution on the best ways for distributing the questionnaire.

The questionnaire should be piloted and, if necessary, adapted prior to the implementation.

### **c. Specific activities under the Agreement for Performance of Work**

#### **Role and responsibilities of the research agency**

The table below provides the role and responsibilities of the research agency, along with an estimated level of effort.

<b>QUANTATIVE RESEARCH</b>		
<b>RESPONSIBILITIES OF RESEARCH AGENCY - QUANTATIVE</b>	<b>ESTIMATED LEVEL OF EFFECT</b>	<b>COSTS</b>
1. Translate questionnaire into local language.	by characters	xxxx
2. Back-translate questionnaire into English.	by characters	xxxx
3. Pilot-test questionnaire with 5–6 medical doctors/nurses and modify based on observations.	1 day	xxxx
4. Assist the health care institution in administration of questionnaire to all HCW in selected departments.	2 days	xxxx
5. Coordinate with focal point at the health care institution to follow up on questionnaire and remind respondents to complete it.	2 days	xxxx
6. Develop database.	1 day	xxxx
7. Collect completed questionnaires and perform double data entry by 2 different persons. Compare both data sets and validate.	14 days	xxxx
8. Analyze data and write final results, conclusions and limitations of survey (including graphs).	6 days	xxxx
<b>Total</b>	<b>26 days</b>	<b>xxxx</b>

**Total budget (in US\$) : XXX**



## Annex 5. Review of successful interventions to increase SIV rates among HCWs

Annual SIV remains the most effective way to prevent seasonal influenza among HCWs. Despite favourable policy, SIV coverage among HCWs in most WHO European Region countries remains low. Several interventions have been developed and used in order to address this issue (1-4). A rapid review of interventions with positive evaluation outcomes was conducted by the WHO Regional Office for Europe, in order to provide countries with examples of successful and replicable interventions for increasing SIV uptake among HCWs. A total of 35 articles evaluating SIV interventions was reviewed.

Evidence had demonstrated that the most successful SIV programmes include multiple interventions. A greater number of programmatic components in a SIV programme was associated with higher SIV uptake in non-hospital settings (5-8). Single component interventions often lead to insignificant improvements in SIV uptake. The authors note however that it was difficult to assess the effectiveness of single interventions, given that multiple strategies to increase SIV rates were often applied simultaneously (9-11).

In order to achieve higher SIV rates among HCWs, a programme should cover interventions that increase demand of, facilitate access of and reduce provider-led barriers.<sup>7</sup>

Demand for SIV can be increased by changes in policy, legislation and regulations, as well as increased efforts to educate HCWs about the burden of influenza, and vaccine efficacy and safety (12-17). Education about SIV supported by the promotion of SIV by means of reminders, e-mails, newsletters, posters, screensavers, phone calls, staff meetings, feedback, brochures, messages and stickers resulted in increased SIV rates among HCWs in several cases (7,11,18-21).

Studies have also shown that demand for and access to SIV for HCWs can be positively affected when there is strong leadership support and role models are used. Strong leadership support can ensure, for example, that legislation is in place, and cost and other systemic barriers to access are minimized or eliminated. Role-modelling introduces a culture whereby SIV is not only encouraged but expected as an important component of HCW safety (5,21-23). Both help to ensure the sustainability of a SIV programme.

Studies have also identified that easy or convenient access to SIV is likely to improve

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<sup>7</sup> Influenza (Flu). In: Centers for Disease Control and Prevention [website]. Atlanta (GA): Centers for Disease Control and Prevention; 2015 ([www.cdc.gov/FLU/](http://www.cdc.gov/FLU/), accessed 27 February 2015). This reference is a footnote to distinguish it from the references in the literature review.

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vaccination coverage among HCWs. This includes when vaccine is provided free of charge, during weekend/night shifts, at convenient locations, and when adequate staff and resources are allocated to the campaign (7,11-12,23-27). Using innovative delivery methods, such as the use of mobile carts, vaccine days, peer vaccination programmes, gift incentives (nominal gifts, such as notepads or pens; coupons for coffee or ice cream, drawing for prizes, candy, T-shirts) and standing orders, has shown to increase HCW vaccination rates to as high as 80% (25-26,28-32). Simply having the seasonal influenza vaccine available is usually not sufficient to get a desired increase in vaccination rates (21).

The above interventions promote voluntary SIV among HCWs. There is also some evidence that mandatory SIV might be effective in achieving higher vaccination coverage (8,18,28,33). However, mandatory SIV can be associated with penalties and is often controversial (28). Where the implementation of mandatory SIV is not feasible, some health care institutions have opted for the use of declination forms, which state when HCWs have declined being vaccinated against seasonal influenza and the reasons why. Active declination may be effective, regardless of whether accompanied or not by penalties, as demonstrated in some studies where their use was associated with the improvement of HCW SIV coverage (5,7,16,18,22,24). Written declination can be employed when planning new or revisiting existing SIV programmes. In other programmes, where active declination was not implemented, HCWs were requested to wear masks to protect patients when they were not vaccinated against seasonal influenza (7,34).

Based on the literature reviewed, no one SIV intervention is able to address increasing SIV coverage in all settings. That said, targeted programmes, which include formative surveys to capture information about HCW attitudes, beliefs and motivations related to SIV, or those that build on the results of the previous programmes have proven to achieve higher coverage rates among HCWs (10,23,35).

It should be noted that the above-mentioned programmes may lead to only an immediate increases in SIV rates, as long-term effects have yet to be demonstrated.

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## The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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