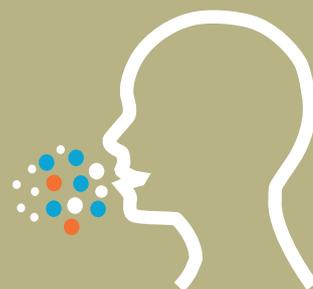
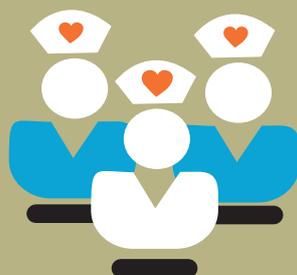


Tailoring Immunization Programmes for Seasonal Influenza (TIP FLU)

Understanding health care workers' uptake of seasonal influenza vaccination in Montenegro:

a case study for policy-makers and programme managers



World Health
Organization

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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 in most countries of the WHO European Region, vaccination uptake remains low. The WHO Regional Office for Europe tested a new 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 countries or health care institutions. This case study documents the application of TIP FLU in Montenegro, focusing on the formative phase. When accompanied by the TIP FLU guide, it can be used to apply the approach to conduct formative research, and design and evaluate SIV programmes targeting HCWs in a given context.

Keywords

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Acronyms

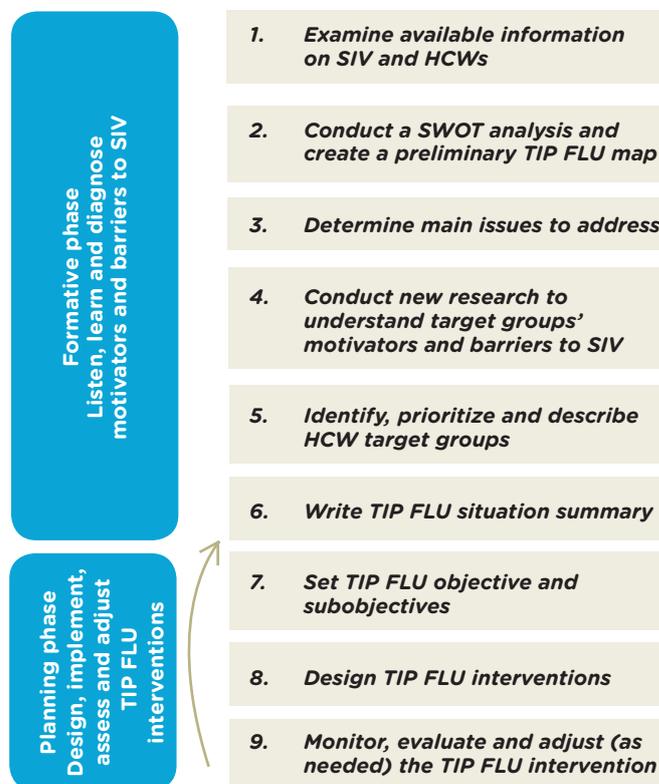
HCW	health care worker
HProImmune	Promotion of Immunization for Health Professionals in Europe
IPH	Institute of Public Health, Montenegro
PHCC	primary health care centre (Podgorica)
SWOT	strengths, weaknesses, opportunities and threats
TIP FLU	tailoring immunization programmes for seasonal influenza
SAGE	WHO Strategic Advisory Group of Experts on Immunization
SIV	seasonal influenza vaccination
Montefarm	Montenegro Pharmacy Institution

1. Introduction

This case study illustrates how an innovative approach was applied to understand the determinants of uptake of seasonal influenza vaccination (SIV) among frontline health care workers (HCWs) at the Primary Health Care Centre (PHCC) Podgorica in Montenegro. The WHO Regional Office for Europe developed this approach to increase frontline HCWs' uptake of SIV and documented it in *Tailoring immunization programmes to increase health care worker uptake of seasonal influenza vaccination (TIP FLU)*, the TIP FLU guide (1). A frontline HCW works in direct contact with patients.

Understanding the determinants of frontline HCWs' use of SIV is the first phase of the TIP FLU approach and constitutes the formative phase (Fig. 1). The formative phase focuses on **listening** and **learning**, and **diagnosing** the determinants of HCW uptake of SIV, in order to **tailor** SIV programmes and ultimately **improve SIV uptake among frontline HCWs**.

Fig. 1.
TIP FLU
step by step



Source: TIP FLU guide (1).

The pilot application of TIP FLU took place in Montenegro from September 2013 to June 2014. It included three visits to Podgorica, Montenegro by representatives of the Regional Office. The case study documents the pilot application step by step and shows how the TIP FLU approach was used. When used with the TIP FLU guide (1), it can help the vaccination programme implement the formative and planning phases of the approach in a given context.

The case study is intended for those responsible for designing and implementing SIV programmes/campaigns targeting frontline HCWs including:

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

Reasons to vaccinate frontline HCWs



Seasonal influenza is a contagious acute respiratory infection caused by influenza viruses. The virus is mainly transmitted between people by air, for example, through droplets when sneezing, coughing or talking. Most prevalent in autumn and winter in the northern hemisphere, seasonal influenza is usually a mild illness but can be severe and complicated by 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, 3).

Seasonal influenza vaccines have been used for more than 60 years. Their timely administration is the most effective way to prevent illness. However, vaccine effectiveness depends on the age and the presence of chronic medical conditions in the person vaccinated, and how well the viral antigens included in the vaccine match circulating viruses.

Box 1. HCWs are a priority group for SIV for several reasons

- HCWs have a higher risk of contracting seasonal influenza compared with adults working in non-health-care settings.
- Unvaccinated HCWs who have contracted seasonal influenza may infect their patients and colleagues. This is particularly important in settings with patients that are at increased risk of complications following influenza infection, including those that do not produce a sufficient immune response to influenza vaccination.
- Unvaccinated HCWs who have contracted seasonal influenza may be asymptomatic and still infect others.
- Patients of HCWs who have been vaccinated or believe that the vaccine works may be more likely to be vaccinated than patients of HCWs who are reluctant to be vaccinated.

Everyone may become infected with influenza viruses; however, certain individuals are at higher risk of developing severe illness or complications. Since 2012, the WHO Strategic Advisory Group of Experts on Immunization (SAGE) revised position recommends prioritizing annual SIV to pregnant women, children aged 6 to 59 months, individuals aged 65 years and older, individuals with chronic medical conditions and HCWs (Box 1) (4).

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. HCWs play an important role by recommending preventive health practices to their patients. Encouraging HCWs to get vaccinated against seasonal influenza and to act as champions for SIV can be a powerful intervention to improve uptake among other vaccination groups. Though vaccination of HCWs is highly recommended, SIV rates of HCWs remain low in many settings in the WHO European Region (5).

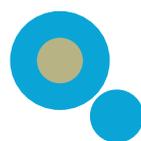
TIP FLU guide

The TIP FLU guide (1) for increasing HCWs' uptake of SIV was adapted from *The guide to tailoring immunization programmes* (6), developed by the Regional Office in 2013 to assist national immunization programmes to increase or maintain participation in infant and child vaccination programmes in the Region. The TIP FLU guide describes an approach and provides tools, grounded in behaviour change theories and health programme planning models, to design SIV programmes targeting frontline HCWs tailored to specific contexts and the needs of programmes. These programmes may be implemented at national level or focus on a single or network of health care institutions.

The TIP FLU guide helps in three main ways.



First, it helps to **identify and prioritize HCW target groups for SIV**. Frontline HCWs are a heterogeneous group, whose professions, seniority, health status, experiences, perceptions and preferences may influence their participation in annual SIV programmes. By understanding what determines their choices and behaviours through research, TIP FLU aims to reveal segments of frontline HCWs who share similar characteristics in order to tailor influenza vaccination programmes and communications campaigns towards them.



Second, it helps to **understand what motivates and prevents HCWs to get annual SIV**. Mapping the determinants of frontline HCWs' choices and behaviours makes it possible to break down the many factors that influence their participation in SIV. Mapping enables a greater understanding of the drivers and barriers to uptake, and what programmes should focus on to trigger higher vaccination uptake.



Third, it helps to **design evidence-informed responses to increase SIV coverage among targeted HCWs**. Drawing on lessons learnt from the implementation of global SIV programmes, TIP FLU uses evidence collected in the formative steps of the approach and participatory workshops with key stakeholders to guide the design, implementation, monitoring and evaluation of influenza vaccination programmes.

The TIP FLU approach is founded on a conceptual framework: the TIP pathway to vaccination acceptance and decision-making¹ and the TIP FLU map of behavioural determinants.² Both components are essential to guide the collection and interpretation of vaccination behaviour information, and the design of strategic solutions to maintain and/or increase participation in vaccination programmes. They are presented in detail in an accompanying publication, the TIP FLU guide (1).

¹ The TIP pathway to vaccination decision-making 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 that influence this decision-making process. These are environmental, social and community, and personal factors.

² The TIP FLU conceptual map describes the factors that influence HCWs' uptake of SIV based on a review of 36 peer-review articles identified through PubMed. These factors provide a comprehensive list of items to consider in the design and implementation of programmes to increase HCW participation in SIV. A detailed overview of the development of the TIP FLU conceptual map is in the TIP FLU guide (1).

2. Applying TIP FLU step by step in Montenegro

Background

Montenegro is a country in south-eastern Europe, bordered by Albania, Bosnia and Herzegovina, Croatia and Serbia (Fig. 2). According to the 2011 census, Montenegro has a population of 625 266, of which 187 085 live in the capital city of Podgorica (7).



Fig. 2.
Montenegro in the European Region

Montenegro's health care system is predominantly reliant on public sector provision of health care services. Public health institutions are organized through a network of 18 primary health care centres, seven general hospitals, three specialized hospitals, the Clinical Centre of Montenegro, the Institute for Emergency Medical Assistance, the Institute of Public Health (IPH), the Institute for Blood Transfusion and the Montenegro Pharmacy Institution (Montefarm), which consists of 42 pharmacies in all municipalities of Montenegro (8). A number of private health institutions perform specialized diagnostic activities and dental care in accordance with agreements signed with the Health Insurance Fund.

The recent health care reform, whose aim is to improve the provision of primary health care in Montenegro, has introduced the chosen doctor concept. Each patient is asked to choose a primary health care doctor, who provides preventive and curative primary care to the patient and is the gatekeeper to hospital care.

PHCC Podgorica is the largest primary health care facility in Montenegro, annually serving approximately 200 000 patients or close to one third of the population in: primary care medicine for adults and children, gynaecology and obstetrics, pulmonology and tuberculosis, psychology and psychiatry, ophthalmology and neurology (9). The facility also has departments for emergency medicine, physical therapy, x-ray and ultrasound diagnostics, a medical laboratory and a community outreach unit. PHCC Podgorica employs almost 500 HCWs.

The formative phase: listen, learn and diagnose

The formative phase of TIP FLU identifies key issues preventing frontline HCWs' participation in SIV and prioritizes actions targeting them in a systematic and thorough manner. Key issues are tied to the environmental, social and community, and personal determinants described in the TIP FLU conceptual map. This makes it possible to contextualize the TIP FLU response. It employs active listening and generates information by means of document review, key informant interviews, and new research to learn about the context and prevalent perceptions regarding SIV among frontline HCWs. Analysing the information enables the stakeholders involved in this approach to diagnose the main issues to act upon.

TIP FLU's formative phase strives to answer certain questions (Box 2).

- Who are the frontline HCWs working in health institutions? How are they categorized?
- What are the strengths, weaknesses, opportunities and threats (SWOT) of the current SIV programme targeting HCWs?
- What motivates or prevents frontline HCWs from getting annual SIV?
- Are there distinct HCW groups to target? How can they be described using behavioural determinants? Who influences frontline HCWs' choices and actions?

Box 2. Carrying out the TIP FLU formative phase

The first two of three visits to Podgorica, Montenegro by TIP FLU facilitators focused on the formative phase of the TIP FLU pilot application. The first visit, conducted in September 2013, reviewed SIV among frontline HCWs, and the availability and motivation of key health institutions to participate in the pilot application. As a result of this visit, representatives of the Montenegrin Ministry of Health, IPH, PHCC Podgorica and WHO agreed on the selection of PHCC Podgorica as the pilot site for TIP FLU.

Given that TIP FLU was to be piloted in a single setting and no coverage data were available for HCWs, the Regional Office contracted an independent research and consulting agency to obtain an estimate of SIV uptake, and to better understand motivations and barriers of frontline HCWs. On the second visit, Regional Office representatives provided the research agency with background information on TIP FLU, and tested the formative research instruments before implementing the study at PHCC Podgorica. Research was carried out from December 2013 to January 2014, and data were analysed from February to March 2014.

The following subsections describe in detail the six steps that constitute the formative phase of the TIP FLU approach.

Step 1: examine available information on SIV and HCWs

The first step of the TIP FLU formative phase reviews available information on SIV among frontline HCWs. During their first visit to Podgorica, WHO representatives explored five main areas:

- HCW SIV coverage and trends at national level;
- government policy and recommendations regarding SIV of frontline HCWs;
- national programme implementation of SIV, the primary health care system and HCWs;
- social and community factors that affect frontline HCWs' uptake of SIV, including influence of the media and main channels of communication; and
- Personal factors affecting frontline HCWs' acceptance of and participation in annual SIV.

Key informant interviews and group meetings were conducted with representatives and frontline HCWs at the following institutions and health care facilities:

- Ministry of Health;
- IPH;
- PHCC Podgorica;
- Adult Infectious Disease, Paediatrics, and Gynaecologists and Obstetricians clinics at the Clinical Centre of Montenegro;
- HCWs' associations;
- Glosarij (a vaccine wholesaler);
- United Nations Children's Fund;
- Duga Long-term Care Facility for the Elderly.

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



The next step in the TIP FLU approach summarizes what is known of the situation. Information collected on SIV in step 1 was used to review the situation, conduct a SWOT analysis of the national SIV programme for frontline HCWs, and create a preliminary list of factors that influence uptake of SIV among frontline HCWs.

With regard to the SIV programme and coverage, the review revealed certain findings.

First, national recommendations for SIV in Montenegro follow those of SAGE in 2012 (4). SIV among HCWs is not mandatory but highly recommended. Each year, before the start of the influenza season, IPH distributes seasonal influenza vaccine recommendations to all health care facilities. HCWs are listed as one of the key target groups for SIV in Montenegro.

Second, Montenegro monitors SIV uptake in HCWs at a national level on an annual basis. Consistent with coverage data across Europe, it reports low SIV coverage in HCWs. The reported coverage for SIV of HCWs in Montenegro was 18% for the 2008/2009 season and 25% for the 2009/2010 season (5). At the time of the first mission, however, representatives of IPH estimated the rate to be lower. IPH also monitors influenza vaccination uptake in elderly patients, which was reported to be 31% during the 2008/2009 season (5).

Third, data provided by Glosarij on annual seasonal influenza vaccine procurement documented the purchase of 23 000 doses in 2012 and 21 000 doses in 2013. The number of doses available annually falls substantially short of the size of the population groups recommended for SIV. In comparison, according to 2011 census data, the population aged 60 years and older was 113 533, of which 57 000 were aged 70 and older (7).

After the review, a SWOT analysis was conducted (Fig. 3), and a preliminary list of factors that influence uptake of SIV among frontline HCWs developed (Fig.4).

Fig.3. TIP FLU SWOT
analysis of SIV programme
for frontline HCWs Podgorica,
Montenegro



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

HCWs in Montenegro: facilitators and barriers to SIV		
Environmental factors	Social/community factors	Personal factors
Occupational health viewed as important to health ministry	Having had influenza, an incentive to vaccinate	Will vaccinate if threat of influenza
Effective procedure for timely vaccine availability	Awareness of risk groups for seasonal influenza	Will vaccinate when older or with a chronic condition
SIV provided free of charge	General positive attitudes towards vaccinations	Desire to choose whether or not to vaccinate
Vaccine monitoring system in place at IPH	HCWs know where and when to get vaccinated	Low perceived personal susceptibility
SIV recommendations issued yearly	Disinterest in seasonal influenza	Low perceived severity of seasonal influenza
Low SIV uptake	Distrust in motives behind SIV	Lack of trust, concerns regarding vaccine efficacy
HCWs too busy to get vaccinated	Misconceptions regarding seasonal influenza	Belief in passive immunization through exposure
	Low uptake among HCWs	Fear of injections
	No push for SIV	Fear of allergic reactions

Step 3: determine main issues to address

In this step, a preliminary problem statement was drafted to document what was learnt regarding the Montenegrin SIV programme. Drafting a problem statement (Table 1) helps describe the SIV situation in a given country or health institution, and initiate an analysis of the possible causes behind low SIV uptake among frontline HCWs. In addition, the initial problem statement draws attention to gaps in information and understanding, and thus can be used to clarify research questions and guide new research.

The problem statement is completed in step 6 using additional information from new research (step 4) to provide the situation summary.

Table 1. TIP FLU preliminary problem statement for HCWs in Montenegro

QUESTION	FINDINGS
What is happening?	<ul style="list-style-type: none"> 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 (5). 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 (10).
Where and when does SIV usually take place?	<ul style="list-style-type: none"> 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).

QUESTION	FINDINGS
What are the potential primary effects of seasonal influenza among HCWs?	<ul style="list-style-type: none"> • Increased staff absenteeism and decreased quality of health care • Contribution to institutional outbreaks of influenza
What are the possible causes of low SIV uptake among HCWs?	<ul style="list-style-type: none"> • General disinterest in SIV by public health decision-makers and practitioners • 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 • Possibly a fear of needles, and a degree of mistrust vis-a-vis the efficacy and safety of the vaccine • Very little social or professional support available to promote SIV, no norm or encouragement by peers or management • Misconceptions regarding seasonal influenza, also fuelled by (or feeding into) a certain degree of mistrust in the motives behind influenza vaccination

Step 4: conduct new research to understand target groups' motivators and barriers to SIV

In Montenegro, the SWOT analysis and initial problem statement led Regional Office representatives to commission new research to better understand the frequency of SIV among frontline HCWs at PHCC Podgorica, and the differences between frontline HCWs who vaccinate and those who do not. As this was the first time that TIP FLU research instruments were used, it provided an opportunity to test and adapt them. Statistical and qualitative analyses of the data helped to identify the most important determinants that differentiate frontline HCWs who vaccinate from those who do not, and to prioritize which determinants to act upon. Data from this research can also offer a sound baseline to measure the effects of a TIP FLU intervention.

Formative research was conducted using both quantitative and qualitative survey methods.

For the **quantitative** survey, TIP FLU facilitators adapted an online survey tool developed by the European-Commission-funded Promotion of Immunization for Health Professionals in Europe (HProlImmune) project (11). The HProImmune project focuses on promoting occupational safety and vaccination of HCWs against a number of infectious and vaccine-preventable diseases. The HProImmune survey tool is centred on a broad range of vaccinations³ recommended for HCWs, one of which is SIV (12). The Regional Office and Ministry of Health representatives chose to use this tool to highlight the importance of SIV of frontline HCWs as a means to ensure both the occupational safety of HCWs and the advancement of WHO and European Union public health goals (13, 14).

³ The HProImmune survey questionnaire assesses HCW vaccination coverage and reasons HCWs were for or against vaccination of the following diseases: hepatitis B, influenza (pandemic and seasonal), measles, mumps, tetanus, diphtheria and varicella.



The self-administered survey questionnaire on risk perceptions of vaccine-preventable diseases and vaccination practices were distributed to 400 frontline HCWs at PHCC Podgorica, including doctors, nurses, outreach workers and laboratory technicians. Analysis was conducted using data from 291 returned questionnaires.⁴

For the **qualitative** component of the formative research, new tools were designed to conduct semi-structured interviews with frontline doctors and nurses, and their supervisors. Twenty-three interviews were carried out with both vaccinating and non-vaccinating frontline HCWs to explore vaccine-preventable disease risk perceptions, as well as attitudes, perceptions, 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 the determinants differentiating vaccinating and non-vaccinating HCWs. The qualitative research enabled deeper insight into the rationale and emotions feeding HCWs' perceptions, which motivate or prevent SIV, thus enriching the quantitative data. An analysis of the most effective communication messages and channels was also done to serve as the basis of a promotional strategy supporting SIV among frontline HCWs at PHCC Podgorica.

An independent research agency was commissioned to translate, pilot-test, modify, administer and analyse the qualitative and quantitative research. Regional Office representatives conducted additional analyses of both the quantitative and qualitative data to further compare frontline HCWs who vaccinate against seasonal influenza with those who do not.

Step 5: identify, prioritize and describe HCW target groups

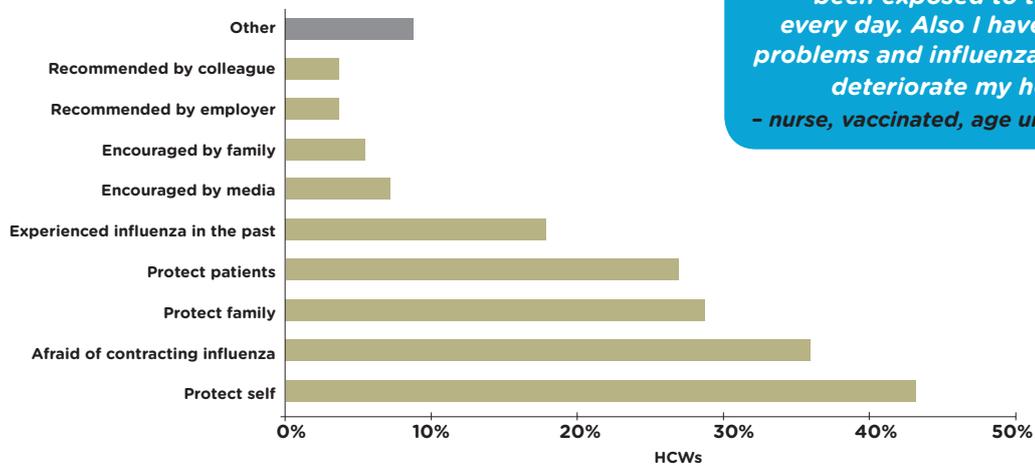
Step 5 of the formative phase aims to identify, prioritize and describe subsegments of frontline HCWs. Once prioritized, the vaccination programme can decide which subsegments of HCWs to tailor interventions towards. Findings from the quantitative and qualitative research were presented and discussed at a workshop organized with the Ministry of Health and PHCC Podgorica stakeholders.

At PHCC Podgorica, **20% of frontline HCWs** stated that they were **vaccinated against seasonal influenza in 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%) than younger HCWs (8% of HCWs aged 18-24 years). Findings from the qualitative research also indicated that the need for protection from seasonal influenza may be motivated by the HCWs' older age or presence of a chronic disease, and most HCWs do not perceive themselves to belong to a distinct target group for SIV. SIV is perceived as posing a threat to people who are older or with chronic disease.

The desire to protect oneself was the most frequently stated driver for SIV. Family protection and patient protection were also stated as reasons for vaccination by 30% of HCWs, followed by fear of influenza and having experienced seasonal influenza in the past (Fig. 5).

⁴ Of the 324 questionnaires returned (81% response), 33 were incomplete and excluded from analysis.

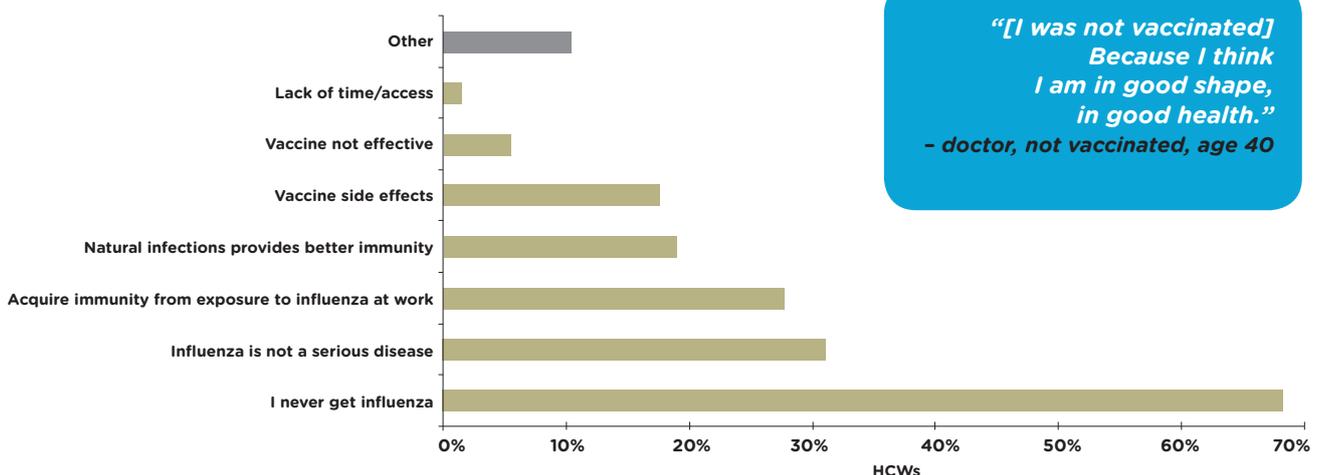
Fig. 5.
Reasons given by
HCWs at PHCC
Podgorica for
vaccination during
the 2012/2013
influenza season



“I suffered from seasonal influenza, that’s the first reason why I wanted the vaccination. I worked with infected patients and have been exposed to the risk every day. Also I have heart problems and influenza could deteriorate my health.”
- nurse, vaccinated, age unknown

HCWs’ reasons for not vaccinating revealed that more than half of frontline HCWs do not feel at risk (Fig. 6). Nearly 30% of HCWs stated that they acquire immunity from work, and close to 20% believe that acquiring natural immunity is better than vaccination. Qualitative findings also indicate the belief among some HCWs that maintaining good health through routine exercise and balanced nutrition protects them from contracting seasonal influenza. Overall, these findings are generally consistent with the findings that were documented in the Regional Office’s review on the determinants of SIV among HCWs, which served as the basis for the development of the TIP FLU conceptual map (1).

Fig. 6.
Reasons given by HCWs
at PHCC Podgorica for
not getting vaccinated
during the 2012/2013
influenza season



“There is no risk for me to catch the disease.”
- nurse, not vaccinated, age 60

“I have been working for almost 30 years. So far, I have not caught influenza. I think my immune system is good.”
- nurse, not vaccinated, age 44

“[I was not vaccinated] Because I think I am in good shape, in good health.”
- doctor, not vaccinated, age 40

This research conducted among frontline HCWs at PHCC Podgorica suggests that 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 and the possible absence of symptoms despite infection, as well as the safety of the vaccine are also required. The finding that younger age is a contributing factor to not getting vaccinated also supports the design of interventions targeting HCWs during their professional development and early in their career, in addition to interventions that address all frontline HCWs in workplace settings.

Step 6: write TIP FLU situation summary

Writing the situation summary constitutes the sixth step in the formative phase of TIP FLU. The situation summary incorporates what was learnt during both the situation analysis and the formative research. It aims to provide a thorough analysis and a comprehensive review of the situation regarding frontline HCWs' use of SIV, including challenges, opportunities, unchangeable realities and the strategic priority (priorities). In doing so, it provides the foundation from which to design a tailored intervention.

In Table 2, all findings were analysed and summarized to develop the situation summary of frontline HCWs and SIV at PHCC Podgorica, based on a template from *A field guide to designing a health communication strategy* (15).

Table 2. TIP FLU situation summary for HCWs at PHCC Podgorica

QUESTION	FINDINGS
Problem statement	
What is happening?	<ul style="list-style-type: none"> • 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. • 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 (5). A total of 21 000 doses of seasonal influenza vaccine were ordered for the 2012/2013 season. • 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 (10). • 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. • 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.
Where, when and how does SIV usually take place?	<ul style="list-style-type: none"> • 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).

Table 2. *contd*

QUESTION	FINDINGS
Whom does it affect?	<ul style="list-style-type: none"> 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.
What are the primary effects of low SIV uptake among HCWs?	<ul style="list-style-type: none"> Increased staff absenteeism reduces the availability of health care services and quality in health care. Risk of institutional/nosocomial outbreaks which can lead to severe complications among vulnerable patients. There is a lack of a professional tradition/habit and sense of professional responsibility towards getting vaccinated against seasonal influenza
What are the possible causes of low SIV uptake among HCWs?	<ul style="list-style-type: none"> 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. 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. Very little social or professional support is available to promote SIV: no norm or encouragement by HCWs' managers or peers. 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. Vaccine safety concerns, fear of needles and lack of time were also noted to a lesser extent.

Challenges preventing HCWs from participating in SIV

What are the challenges associated with knowledge, perceptions, beliefs and behaviours?	<ul style="list-style-type: none"> 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"> - perceive themselves to be healthy and have strong immune systems - are young - do not suffer from chronic disease. Frontline HCWs perceive that seasonal influenza is a common occurrence, which is generally easy to cure. Frontline HCWs lack a clear understanding of how immunity is developed against seasonal influenza, both naturally and through vaccination. 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. Some frontline HCWs are concerned with the side effects of influenza vaccine, and may also be influenced by anti-vaccine information and discussions.⁵ Frontline HCWs have low awareness of their role in transmitting seasonal influenza to patients.
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⁵ Omission bias — when vaccination is rejected because its risk of side effects is perceived as more likely than the risk of getting the vaccine-preventable disease — was also noted as a reason for non-vaccination by frontline HCWs.

Table 2. *contd*

QUESTIONS	FINDINGS
Challenges preventing HCWs from participating in SIV <i>contd</i>	
<p>What are the challenges associated with knowledge, perceptions, beliefs and behaviours? <i>contd</i></p>	<ul style="list-style-type: none"> • 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. • The term flu is commonly used to designate any type of cold or respiratory illness, including among frontline HCWs.
<p>What are the challenges related to effective communications?</p>	<ul style="list-style-type: none"> • Frontline HCWs do not discuss seasonal influenza amongst themselves, unless it relates to a chronic disease patient. • Frontline HCWs tend to believe that they know best. • Current ways of communicating to frontline HCWs about SIV seem ineffective.
<p>What are the challenges related to environmental and social/professional circumstances and conditions?</p>	<ul style="list-style-type: none"> • Frontline HCWs are very busy. • Those who do not vaccinate against seasonal influenza lack personal experience with it. • There is a lack of institutional/workplace/professional support for SIV (neither mandatory nor actively recommended to HCWs). • A lack of clarity on workplace guidelines on infection prevention and control, and workplace safety was noted. • 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. • Frontline HCWs may not feel competent enough to respond to the high demand for information from patients who have questions or concerns regarding vaccination.
Opportunities to motivate HCWs to participate in SIV	
<p>What are the opportunities associated with knowledge, perceptions, beliefs and behaviours?</p>	<ul style="list-style-type: none"> • Most frontline HCWs have a positive attitude towards vaccinating patients, particularly children. • Frontline HCWs are aware that their profession places them at risk of infectious diseases; hepatitis B is cited as an example. • Some frontline HCWs are aware of and use infection prevention and control measures to minimize risk. • 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). • Frontline HCWs have high ethical standards and believe that providing the right care is an important part of their profession. • Frontline HCWs need more information regarding seasonal influenza infection, acquired immunity and the vaccine (safety, effectiveness).
<p>What opportunities are there related to effective communications?</p>	<ul style="list-style-type: none"> • 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. • Frontline HCWs seek information to stay up to date; one of their most trusted sources of information is their colleagues. • Frontline HCWs constitute a defined community, which can be reached through the institutions in which they work. • Campaign/Reminder about influenza vaccination is required only once a year. • Frontline HCWs trust the IPH, which sends a yearly reminder letter announcing the availability of SIV.

QUESTIONS

FINDINGS

Opportunities to motivate HCWs to participate in SIV *cont.*

What opportunities are there related to effective communications?

contd

- Messages targeting frontline HCWs need to be clearly separated from messages targeting their patients.
- Frontline HCWs cite personal stories as a way to motivate themselves to be vaccinated.

What opportunities are there related to environmental and social/professional circumstances?

- 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.
- Having experienced seasonal influenza in the past is a strong trigger for vaccination.
- Frontline HCWs know where and when to be vaccinated.
- Perceived high prevalence of respiratory infections may provide a platform from which to raise awareness about the risk of seasonal influenza.
- Frontline HCWs place a high degree of trust in medical institutions and authorities (e.g. IPH).
- Frontline HCWs are clearly stated as a priority group in the national SIV guidelines.
- Frontline HCWs act as role models and others may follow their actions.
- The quality assurance and patient safety policy and obligations can be helpful for promoting SIV.

Circumstances to take into account

What circumstances (existing, and sometimes unchangeable factors that might limit effectiveness) must be taken into account?

- SIV will not prevent all influenza cases (vaccine effectiveness is not 100%).
- SIV is only protective for one season; individuals must be vaccinated every season to be protected.
- 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.

Possible strategies to increase uptake of SIV among HCWs

What are the possible strategies to increase uptake of SIV among HCWs?

- 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.
- 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.
- 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.
- 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.
 - 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.
 - 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.

The planning phase: design, implement, assess and adjust

The planning phase consists of steps 7–9 and answers the question “now what?” (Box 3). Using the analysis from the formative phase, it aims to:

- set the TIP FLU objective and specific subobjectives, and create a logical framework for the intervention;
- describe how SIV will be positioned to frontline HCWs and the mix of solutions that can be put into place to meet the objectives; and
- generate custom solutions, which draw on lessons learnt from global SIV programmes.

This section of the case study describes what was accomplished together with representatives of the Ministry of Health and PHCC Podgorica.

Box 3. Conducting the TIP FLU planning phase in Montenegro

Regional Office representatives carried out a third and final visit to Podgorica in April 2014 to:

- present and discuss the results from the quantitative and qualitative research; and
- develop the objectives and possible interventions to increase frontline HCWs’ uptake of SIV at PHCC Podgorica.

As a result, a number of guiding materials (TIP FLU objective, proposed interventions and logical framework) were developed in preparation for the implementation phase of the project.

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 (Box 4) 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. 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; and
- a measure of the impact to be achieved over a particular period of time.

Box 4. The TIP FLU objective

The TIP FLU objective, developed in partnership with PHCC Podgorica representatives, is to increase SIV coverage among frontline HCWs at PHCC Podgorica from 20% to 40% by 2018.

PHCC Podgorica accounts for approximately 30% of all frontline HCWs and treats close to one third of the population in Montenegro. The current mandate for the management team at PHCC Podgorica ends in 2018.

The TIP FLU subobjectives are those that PHCC Podgorica and 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 influence. Choosing subobjectives involves both rational and creative thinking, whereby determinants that differentiate SIV adopters from non-adopters are carefully assessed in light of understanding the target groups and their decision-making patterns, and their degree of influence and potential for change. Formulating specific subobjectives helps in choosing the strategic mix of programmatic interventions to be implemented.

A **logical framework**, described in step 9, narrates the logic of the TIP FLU intervention, combining TIP FLU’s objective and subobjectives, the custom solutions, and the monitoring and evaluation indicators chosen to track their success.

Step 8: design TIP FLU interventions

The design of the TIP FLU programme considers two questions.

1. **How will SIV be positioned to the target group(s)?**
2. **What strategic 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 implementers would like targeted frontline HCWs to view this service. It defines the value of SIV in relation to the many competing priorities that HCWs have in their everyday practice.

Table 3 shows the ideas that emerged from a participatory workshop with representatives of PHCC Podgorica, including frontline HCWs.

Table 3. *Proposed interventions to increase seasonal influenza uptake among frontline HCWs at PHCC Podgorica*

AREA	INTERVENTIONS
Overall positioning	<ul style="list-style-type: none"> • Position SIV as a national objective and an indicator of quality of care in the future Commission for Accreditation of Health Institutions.
Political advocacy and policy change	<ul style="list-style-type: none"> • Introduce a comprehensive, holistic approach to create new policy and professional norms, which support annual HCW vaccination against seasonal influenza and ensure its sustainability. • Involve all stakeholders in the health care system to ensure patient safety, infection prevention and control, and overall quality of care. • Include HCW vaccination as a necessity and an indicator of quality of care in the future Commission for Accreditation of Health Institutions.

Table 3. *contd*

AREA	INTERVENTIONS
Institutional and professional support and norm-setting	<ul style="list-style-type: none"> Promote SIV and vaccination against other vaccine-preventable diseases as a professional norm early in HCWs' professional development and career. This can be done, for example, by integrating information, education and access to vaccination to HCWs when they are students, and ensuring that students are vaccinated against seasonal influenza while on placements. Involve professional HCWs' associations and organizations to set the norms for new and established HCWs and to communicate them. Drive SIV of HCWs within institutions. Work with the existing hierarchical and management structures to recommend and motivate HCWs to be vaccinated against seasonal influenza. Supervisors can become effective role models to encourage SIV. Make SIV competitive and fun. Within and/or across institutions, involve units/departments and facilities in a competition to reach the highest SIV coverage. Publish results on a regular basis to encourage healthy competition and increase uptake. Involve patients in the process. Include patients and patients' organizations in advocating for SIV of frontline HCWs by communicating the role vaccination plays in ensuring the safety of all patients and their families in health care settings.
Vaccine delivery	<ul style="list-style-type: none"> Employ a mobile vaccination service to increase availability and ease of vaccination. Consider use of active declination forms to send strong messages encouraging SIV.
Communications, using a variety of media channels	<ul style="list-style-type: none"> Frame SIV as a preventive measure for frontline HCWs, calling on their sense of professional responsibility to protect patients and colleagues, and do no harm. A broad, institution-wide communications campaign can be implemented to raise awareness of the importance of this issue among both HCWs and patients. Target all stakeholders in SIV. While the primary target should remain frontline HCWs, key stakeholders in SIV should also be targeted, including health care policy- and decision-makers, managers, patients and the public. Messages should be tailored to each target audience to ensure the highest level of acceptance and adoption. Institutional communications from IPH could place HCWs top on the list of target groups in its annual letter announcing the availability of SIV, emphasizing the importance of SIV among frontline HCWs. PHCC Podgorica's internal information system can be used to issue both information and reminders. Digital communications and social media could counter misinformation and rumours regarding vaccination, and increase the availability and communication of official, evidence-based information on vaccination to patients. PHCC Podgorica has a website (16) and Facebook page (17). Educational communications can employ a variety of formats to educate HCWs with updated knowledge regarding SIV, including workshops, roundtables, webinars and frequently asked questions. Interpersonal communications can implement intergenerational, peer-to-peer information and advice for SIV whereby senior HCWs advise younger HCWs to vaccinate. Use storytelling techniques and appeal to HCWs on an emotional level by sharing personal experiences and stories that emphasize the potential effects of seasonal influenza and the importance of vaccinating against it.
Monitoring and evaluation	<ul style="list-style-type: none"> Set the measures and mechanisms to monitor/evaluate success in terms of behaviour change and uptake. A logical framework approach can be used. Current research can be used as a baseline for this pilot.

Step 9: monitor, evaluate and adjust (as needed) the TIP FLU intervention

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 conceptual map, particularly at the time of planning and designing the formative research and the TIP FLU programme.

The TIP FLU programme's logical framework lays out the backbone of the monitoring and evaluation framework, by designating the main objectives, principal indicators and methods of measurement based on the programme's unique design. The logical framework also adds information on the frequency of measurement, as well as estimated costs.

A sample logical framework for PHCC Podgorica, based on a consultation with its representatives in Table 4.

Table 4. Sample logical framework for PHCC Podgorica

LOGIC	INDICATORS	MEANS & VERIFICATION	ASSUMPTIONS
<p>Goal (Aim)</p> <p>Reduce incidence of seasonal influenza among frontline HCWs and high-risk patient groups in Podgorica, Montenegro</p>	<p>Decrease in burden of seasonal influenza in health care settings</p>	<p>Very difficult to measure the incidence of health-care-acquired influenza among HCWs and patients at PHCC Podgorica.</p> <p>Administrative records on staff absenteeism due to influenza-like illness as an indirect measure of influenza among frontline HCWs.</p>	<p>Data are reliable and adequately capture institutional burden</p>
<p>Objective</p> <p>Increase SIV coverage among frontline HCWs at PHCC Podgorica from 20% to 40% by 2018</p>	<p>Increase SIV coverage among frontline HCWs at PHCC Podgorica from 20% (2012/2013) to 40% (2017/2018)</p>	<p>Administrative data: number of doses administered to frontline HCWs/number of frontline HCWs at PHCC Podgorica (preferred)</p> <p>or</p> <p>Questionnaire given to a representative sample of HCWs</p>	<p>Records of doses administered are maintained.</p> <p>HCWs are available and willing to respond to the questionnaire</p>
<p>Subobjective 1</p> <p>Create a favourable national policy environment that lays the foundation for SIV of HCWs as a positive institutional and professional practice in Montenegro</p>	<p>SIV of frontline HCWs is included as criterion for the future Commission for Accreditation of Health Institutions. SIV of HCWs is included in infection prevention and control and/or patient safety and care guidelines</p>	<p>Documentation of HCW SIV in policy paper for accreditation</p> <p>Documentation of HCW SIV in guidelines</p>	<p>Policy decisions are documented and implemented by the Ministry of Health</p>

Table 4. contd

LOGIC	INDICATORS	MEANS & VERIFICATION	ASSUMPTIONS
<p>Subobjective 2 Create a strategic communications campaign, using evidence from formative research.</p> <ul style="list-style-type: none"> • Frame messages to appeal to the sense of professional responsibility of frontline HCWs towards their patients. • Establish clear target audiences. • Develop fact-based messages. <p>Include digital (web and social media), face-to-face (interpersonal, peer and group-based) and other media to relay information</p>	<p>Message framework to guide the communications campaign developed in partnership with stakeholders (management, HCWs and patients)</p> <p>Number of posts, pages, blogs, tweets on SIV for HCWs on Facebook, websites, Twitter, etc.</p> <p>Number of educational workshops, roundtables and seminars led by respected medical leaders on SIV for HCWs</p> <p>Number of frontline HCWs, supervisors and managers advising and referring colleagues to be vaccinated against seasonal influenza</p> <p>Number of posters, print and/or audio-visual materials distributed and/or aired</p>	<p>Message framework</p> <p>Digital media reports</p> <p>Educational interventions reports</p> <p>Reports from HCWs peer-leaders</p> <p>Print and other media reports</p>	<p>PHCC Podgorica commits to tracking communications activities on a consistent and ongoing basis</p>
<p>Subobjective 3 Improve ease of access to SIV at PHCC Podgorica</p>	<p>Number of mobile cart visits to each unit during the vaccination season</p> <p>Personalized vaccination reminder system in place</p> <p>Number of declination forms received</p>	<p>Institutional reports</p> <p>Number of postings on Intranet</p> <p>Institutional reports</p>	<p>PHCC Podgorica commits to tracking vaccination activities on a consistent and ongoing basis</p>
<p>Subobjective 4 Create a shared professional culture that encourages SIV as a norm rather than an exception:</p> <ul style="list-style-type: none"> • use role models/spokespeople; • make it fun/competitive; • start early, during medical education and career; and • involve managers and patient groups 	<p>SIV education and vaccination introduced as part of medical school training</p> <p>Professional associations and organizations included as partners in annual SIV campaigns (decision-making, implementing and monitoring)</p> <p>HCW managers and supervisors are vaccinated and serve as role models/champions for SIV</p> <p>Competitions for best HCW SIV coverage between units/institutions introduced to trigger action (annual SIV vaccination)</p> <p>Patient groups are informed of SIV uptake among HCWs in a transparent way</p>	<p>Institutional reports</p> <p>Number of HCW managers and supervisors vaccinated against seasonal influenza</p> <p>Reports of coverage rates</p> <p>Coverage rates for each unit posted for patients to see</p>	<p>PHCC Podgorica commits to tracking vaccination activities on a consistent and ongoing basis</p>

3. Lessons learnt from the TIP FLU pilot application in Montenegro

The pilot application of the TIP FLU guide (1) at PHCC Podgorica yielded lessons learnt that helped the Regional Office modify the templates, tools and instruments used in the TIP FLU approach. It also generated important observations to keep in mind when applying the TIP FLU approach in other countries or health care settings.



Ensure commitment to the TIP FLU approach among key stakeholders within the country or health care institution before starting. While the approach can be used to build commitment among decision-makers, ensuring that there is a genuine desire to implement a SIV programme in country before initiating the formative phase of TIP FLU is important.



Advocate SIV among decision- and policy-makers, particularly when there is insufficient commitment. Emphasize the importance and added value that SIV brings to HCW vaccination and occupational health, infection prevention and control, patient safety and overall quality of care within national health care institutions. Work closely with HCWs to encourage them to act as champions for SIV among their peers, patients and families.



Decide how to implement the TIP FLU approach, that is, with or without an external facilitator. This may depend on the availability of internal resources within the health care institution or network, and may vary depending on the level of consensus that exists regarding the introduction of a SIV programme.



Establish a working group of all important stakeholders in the process, including frontline HCWs. This working group helps to set clear objectives for the implementation of strategies identified by the TIP FLU approach, and serves as a platform through which to determine, analyse and discuss research and eventually design programmatic objectives and solutions. A well-functioning working group contributes to building both consensus and ownership of the programme to be implemented.



Apply the formative phase thoughtfully to determine what information needs to be collected and why. Implementing a quantitative survey may not be necessary in all situations, yet can be very useful when there is a need:

- to measure SIV coverage within a health care institution, and describe the frequency of specific determinants of uptake; and
- to convince certain decision-makers and programme managers of the importance of designing a tailored programme to increase SIV uptake within the country or institution(s).



Visualize findings and progress in implementing the TIP FLU approach by using the templates and tools provided in the TIP FLU guide. Visualization of findings using the SWOT analysis and the TIP FLU map of behavioural determinants, for example, were powerful tools to inform stakeholders regarding the drivers and barriers to SIV among frontline HCWs in Montenegro.



Co-create solutions with working group members by first discussing and digesting findings, and then using TIP FLU to tailor the SIV programme. Invite important partners who should be involved in the implementation of the SIV programme.



Pay attention to message framing. Low uptake of SIV among HCWs indicates that SIV is not perceived as an essential part of their medical practice. When creating communications tools, take care to frame and craft messages that resonate with frontline HCWs. Tailoring a SIV programme using the TIP FLU approach helps to understand the target audiences. Additional research to test messages and communication products may be necessary before producing and placing them. This can be done relatively quickly and with a limited budget.



Address funding. The SIV programme can be implemented at relatively low additional costs, however, commitment within the management structure and human resources are required. One strategy to justify costs is to integrate SIV into another existing programme, such as occupational safety or infection prevention and control. Consider making SIV campaigns a routine part of an institution so that budgets can be planned within the yearly budget cycle.



Monitor and modify the programme as needed. When an activity does not yield the expected results, consider what worked and what did not, and use this information to modify the programme. An active working group can be very helpful in assisting this process.

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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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