



# Results of the HProImmune on-line survey

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# On-line HProImmune survey

<http://www.hproimmune.eu/index.php/hproimmune/survey>



- Basic aim : Identify barriers towards immunization for HCWs in Europe
- Participating countries outside partnership as well
- Designed by the partnership and consulted by the Advisory Board of the project

- Running from October 2012
- Translated in 10 languages (EN, EL, IT, ES, PO, RO, DE, SE, LT, FR)

# Contents of on-line survey

- Q1-Q14
- Q1-Q7: Demographics [gender, age, country of work, education, specialty, work setting, years of experience]
- Q8-Q14: Behavior towards vaccines
  - Risk perception of HCWs (diseases)
  - Which vaccines they have received in the past 10yr
    - Why have they being immunized
    - Why have they not being immunized
  - Attitude towards obligatory vaccination

## Diseases examined

*Influenza (flu)*

*Tuberculosis*

*Measles*

*Mumps*

*Rubella (German measles)*

*Meningitis*

*Varicella (chickenpox)*

*Hepatitis A*

*Hepatitis B*

*Pneumococcal disease*

*Tetanus*

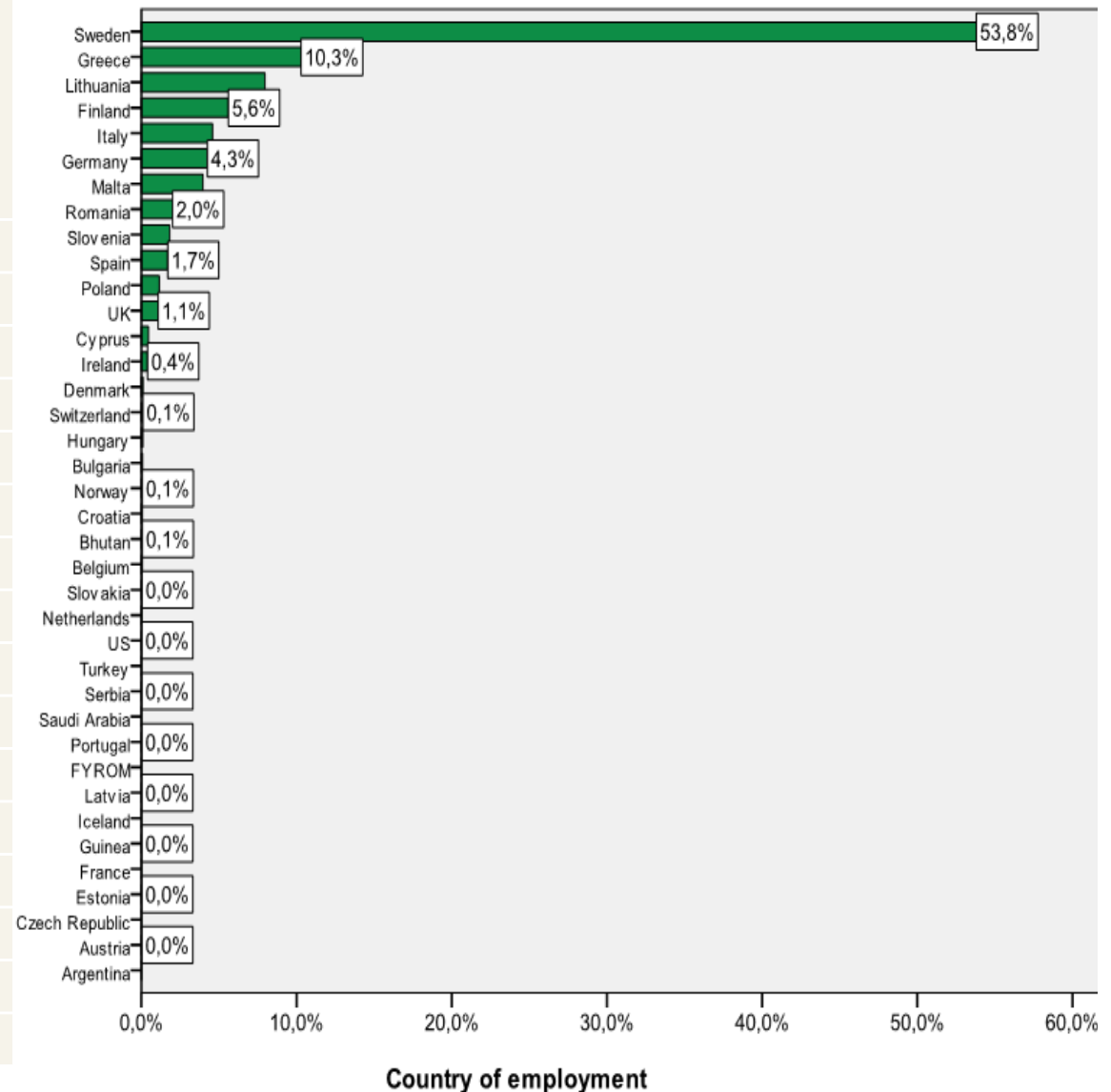
*Diphtheria*

*Pertussis (whooping cough)*

# Participants

Country	No. of questionnaires	%
Sweden	2945	53,03
Greece	563	10,14
Lithuania	436	7,85
Finland	307	5,53
Italy	251	4,52
Germany	233	4,20
Malta	217	3,91
Romania	110	1,98
Slovenia	100	1,80
Spain	93	1,67
Poland	63	1,13
UK	59	1,06
Cyprus	25	0,45
Ireland	22	0,40
Other countries	123	2,22
Total	5553	100

from 38 countries!

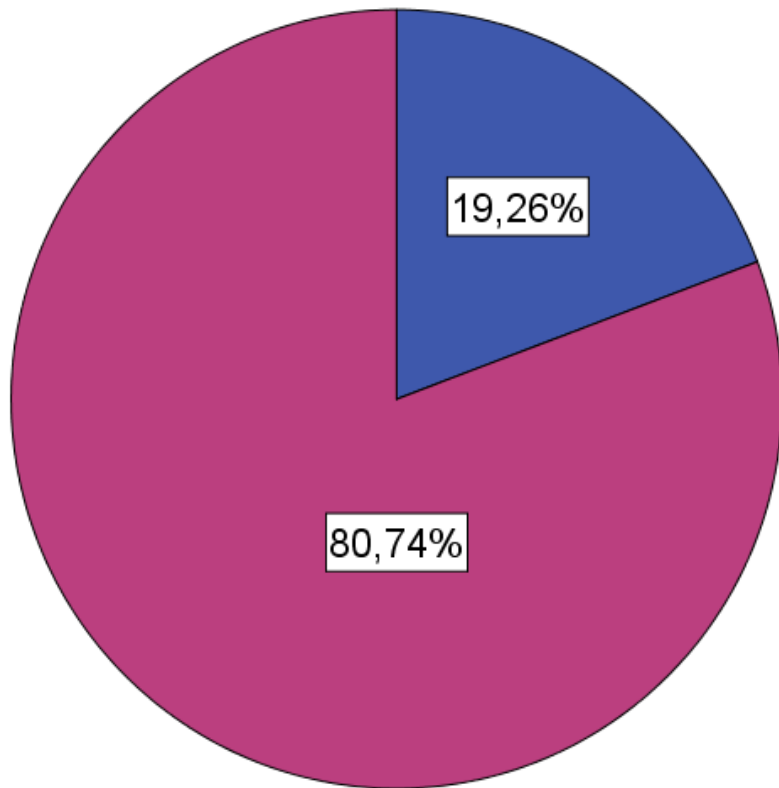


# Participants - II

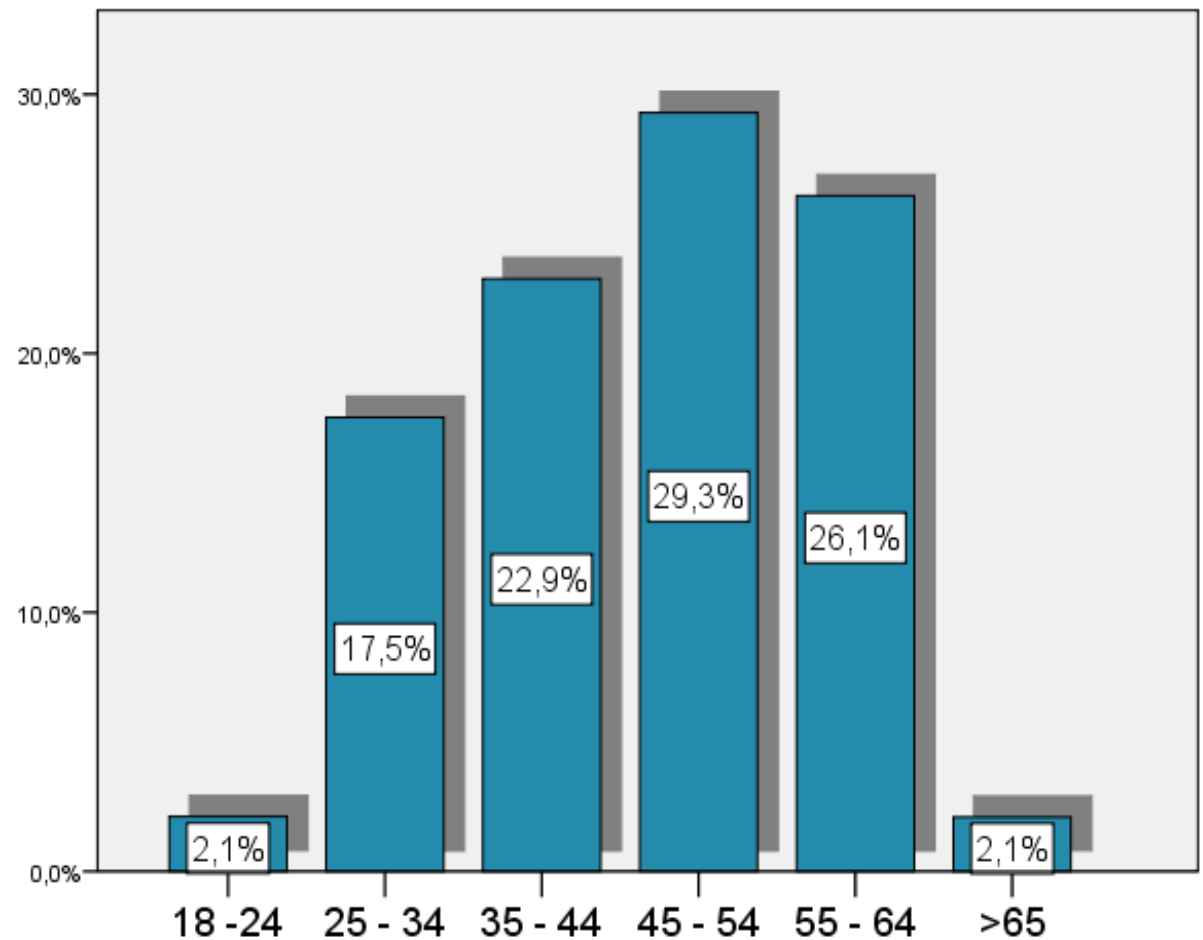
<b>Medical doctors</b> (of total)	<b>%</b> <b>24.6</b>	<b>Nurses</b> (of total)	<b>%</b> <b>42.7</b>	<b>Allied health professionals</b> (of total)	<b>%</b> <b>32.8</b>
General Practice, family medicine	42.0	Hospital nurse	28.0	Assistants / Aides (home health aides, orderlies)	33.5
Internal medicine specialty	19.4	Primary health care nurse	19.5	Administrative health care service personnel	20.9
Pediatric specialty	16.1	Nurse in other settings (home, outpatient clinic)	14.8	Physical, Occupational, Respiratory therapists	13.9
Surgical specialty	15.9	Public health nurse	13.3	Psychologists	5.6
Laboratory	6.6	Maternal health or school health nurse	8.4	Hospital epidemiologists	4.9
		Infection control nurse	6.1	Social workers	4.6
		Midwife or maternal health nurse	5.0	Laboratory Technicians	4.4
		Emergency department nurse	4.8	Support personnel (Food services, maintenance)	4.0
				Pharmacist	2.9
				Ambulance personnel	2.9
				Dental Hygienists	2.3

# Participants - III

## Gender



## Age distribution



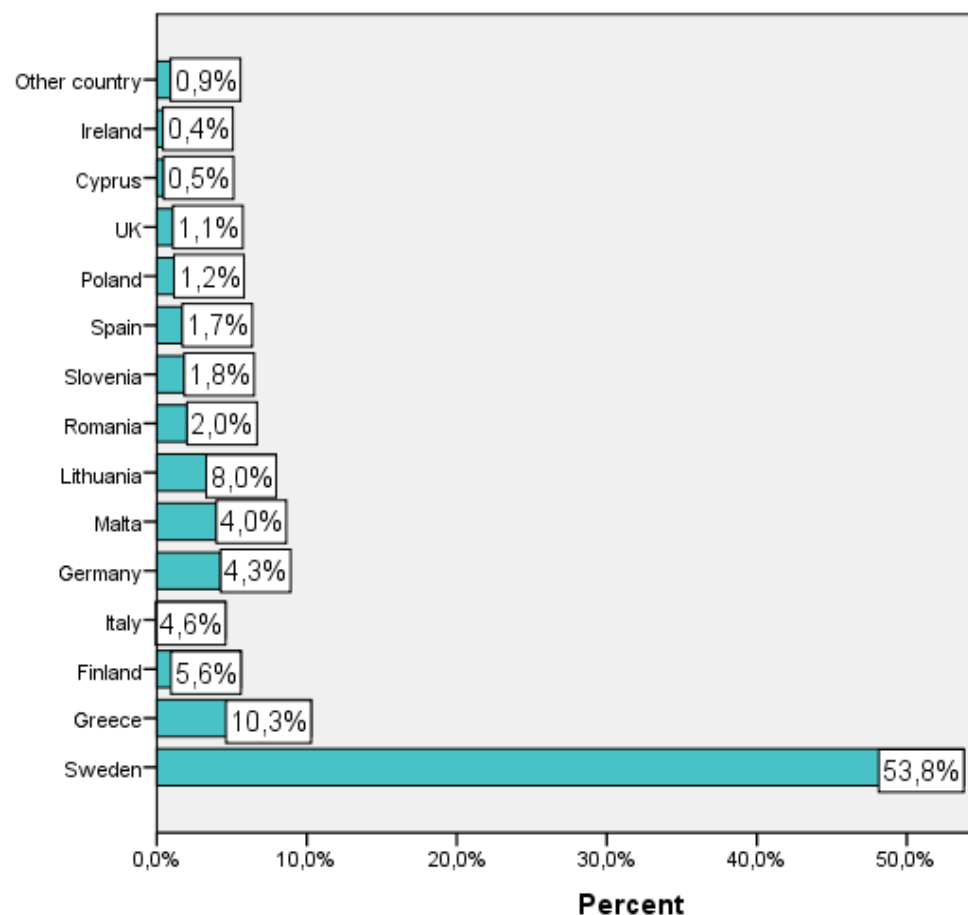
59% with postgraduate degree and 67% with 10 years or more experience

# Methodology

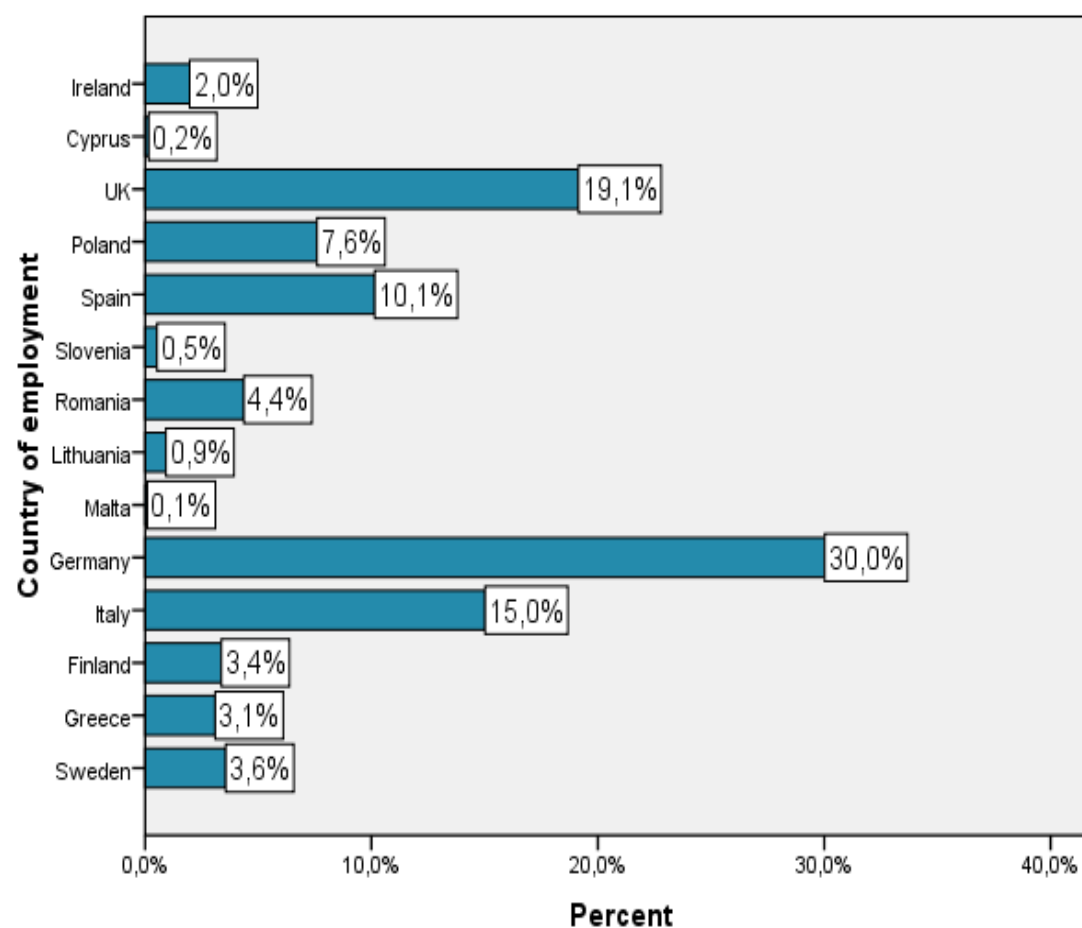
- large number of questionnaires from Sweden
- general asymmetry in the distribution among countries and profession categories
- Adjusted sample was obtained as follows:
  - WHO database of Health Care workers, by country and profession category (physicians, nurses, dentists, pharmacists)
  - Countries having less than 10 responses were omitted from the adjusted sample
- We then built the weights for each country and, within each country, by profession, so as for the observed frequencies with respect to these variables (country and profession), to correspond to those reported in the WHO database

# Distribution by country

Unadjusted Sample



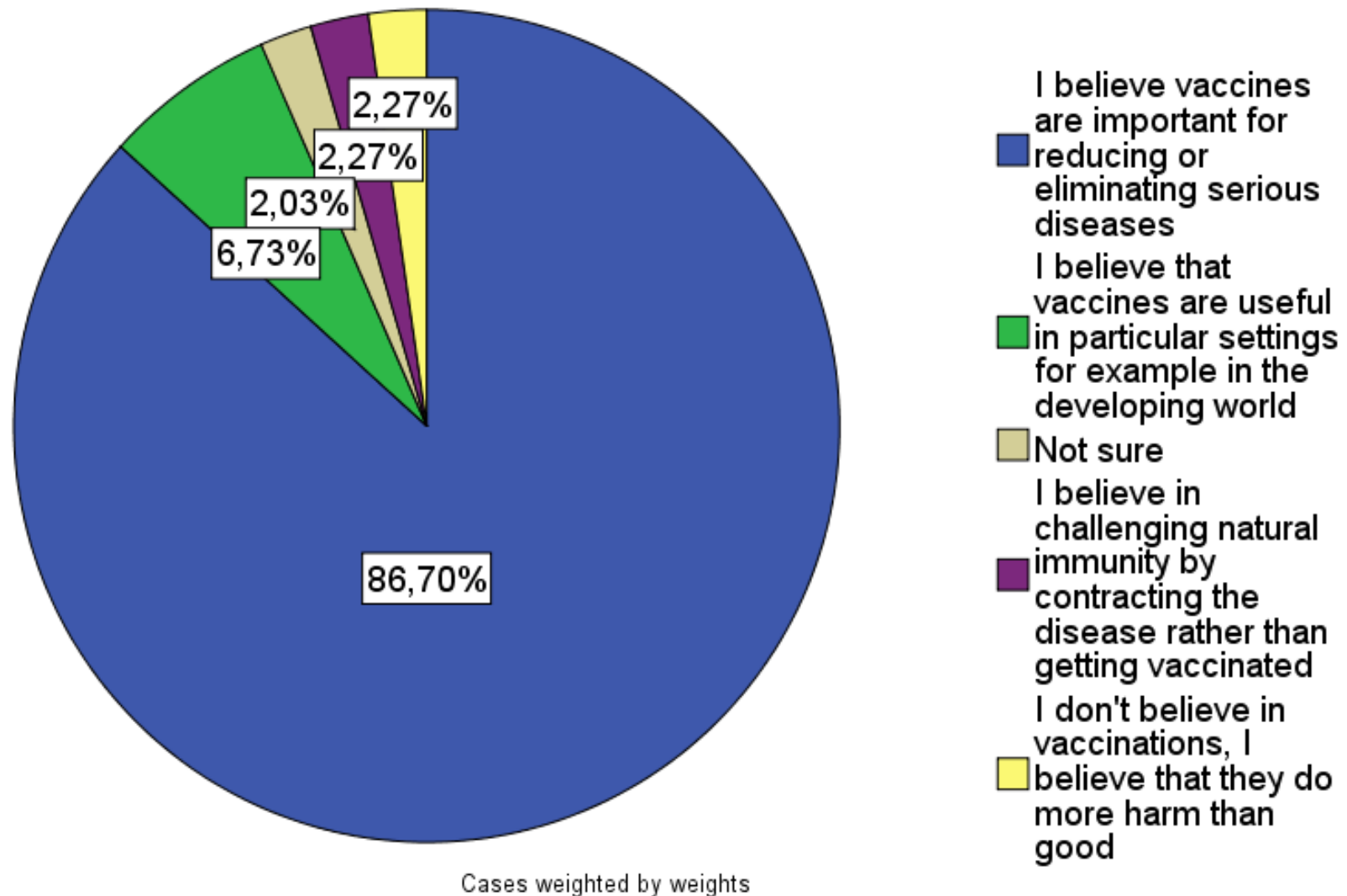
Adjusted Sample



Cases weighted by weights

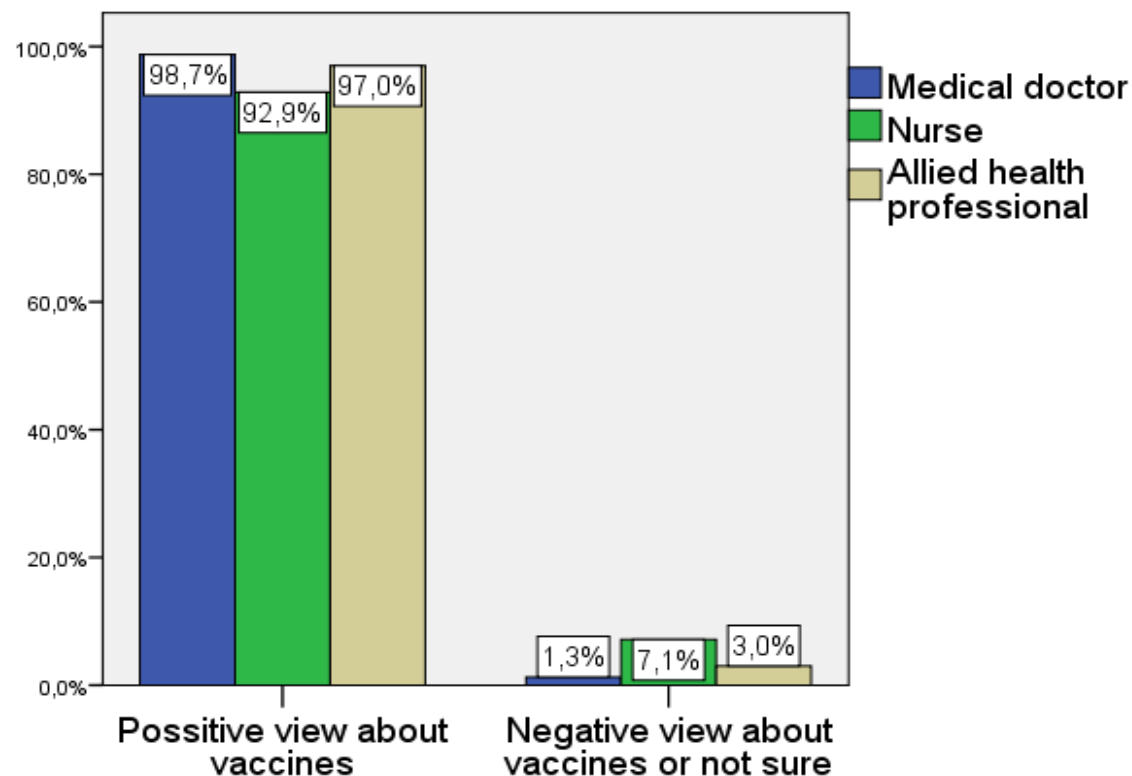


# Which of the following statements do you feel that best reflects your personal view about vaccines-I



# Which of the following statements do you feel that best reflects your personal view about vaccines-II

Country	Positive view about vaccines	Negative view about vaccines or not sure
Sweden	96.9%	3.1%
Greece	97.0%	3.0%
Finland	98.4%	1.6%
Italy	90.4%	9.6%
Germany	93.9%	6.1%
Malta	100.0%	0.0%
Lithuania	98.0%	2.0%
Romania	98.3%	1.7%
Slovenia	32.1%	67.9%
Spain	97.3%	2.7%
Poland	95.9%	4.1%
UK	100.0%	
Cyprus	100.0%	
Ireland	100.0%	
Total	95.5%	4.5%

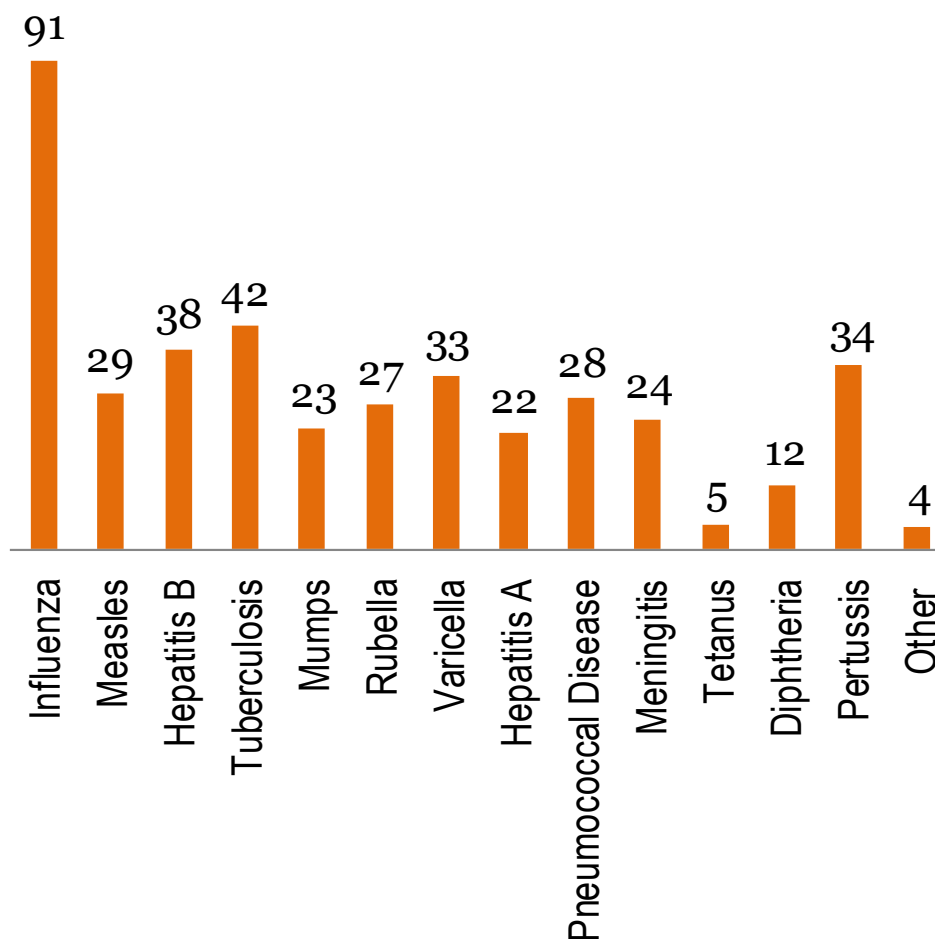
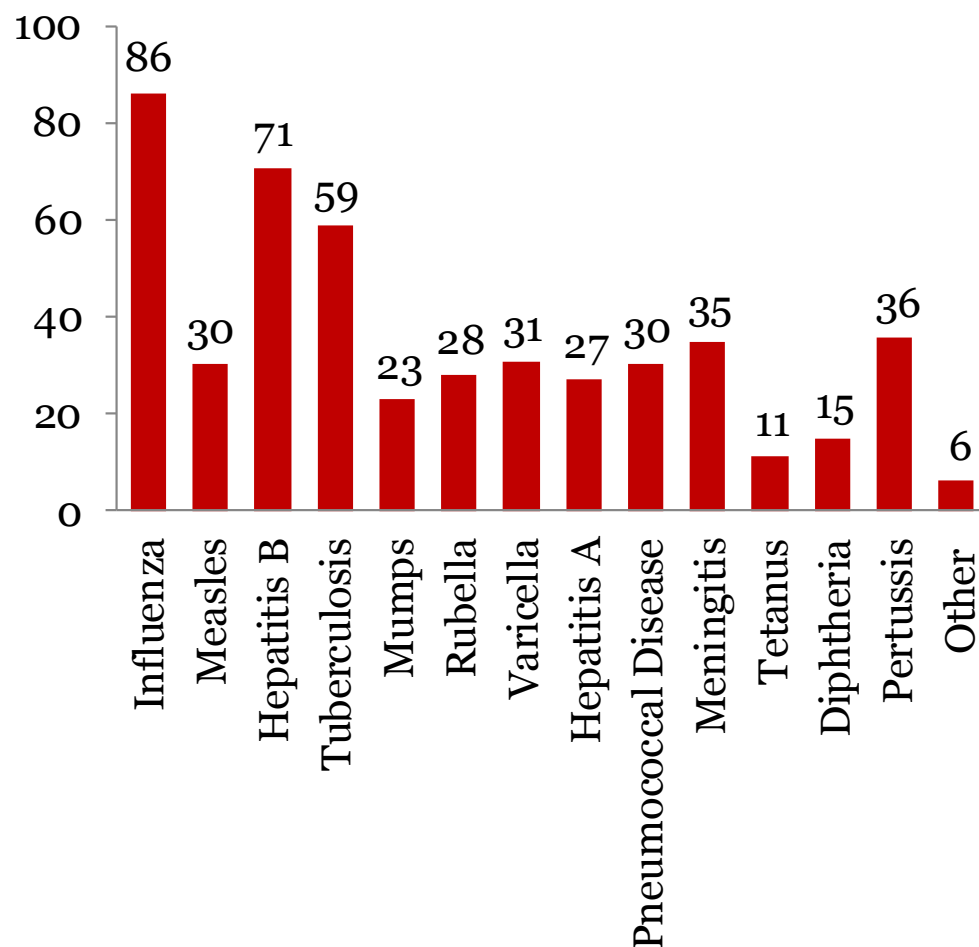


## Logistic regression analyses:

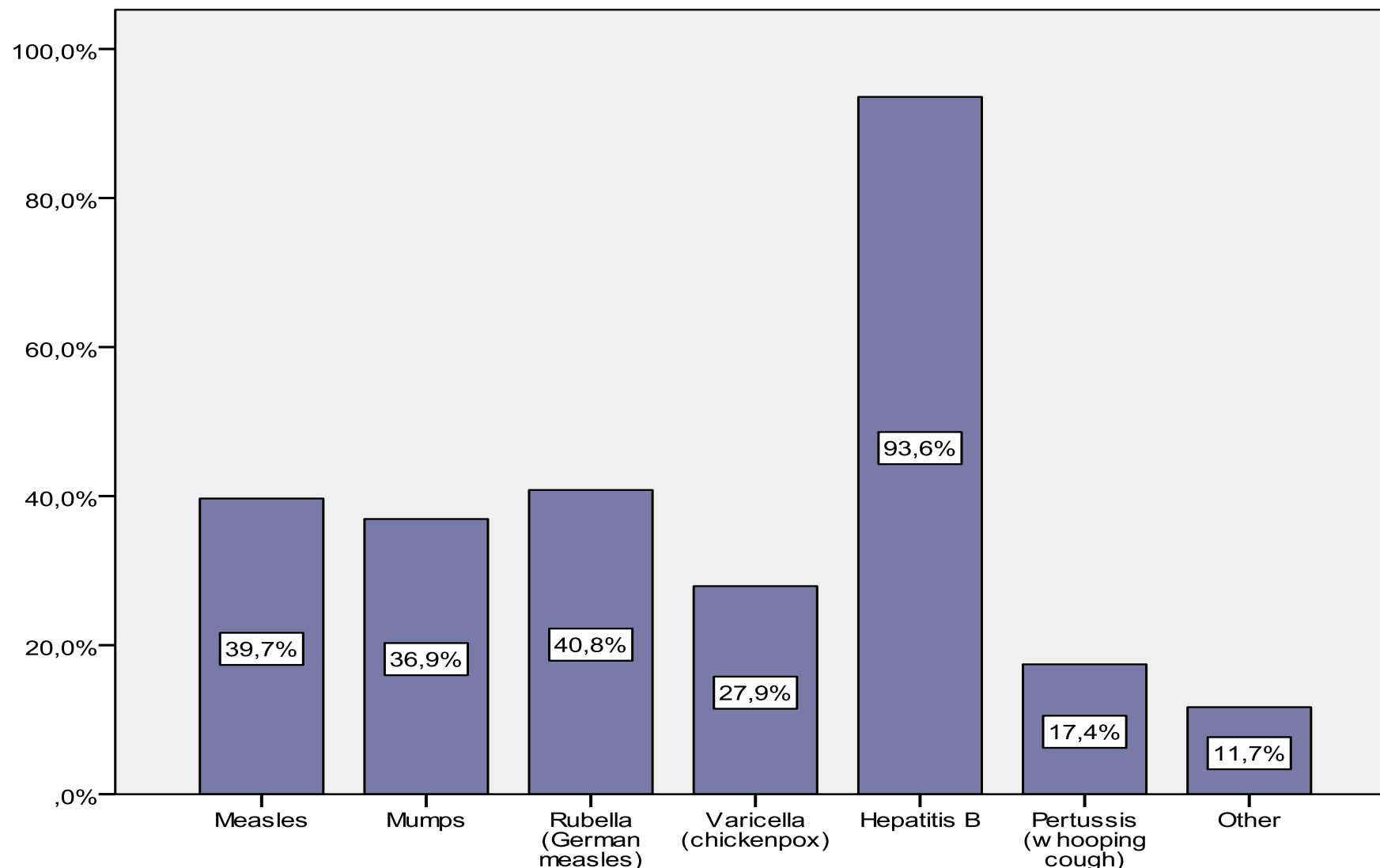
- The odds of not believing in vaccination for nurses are about 7 times the odds for medical doctors (OR=7.47, p-value<0.001).
- The odds of not believing in vaccination for allied health professionals are almost 3 times the corresponding odds for medical doctors (OR=2.93, p-value=0.003)

Which of the following diseases do you believe that HCWs are more at risk of contracting due to the nature of their work?

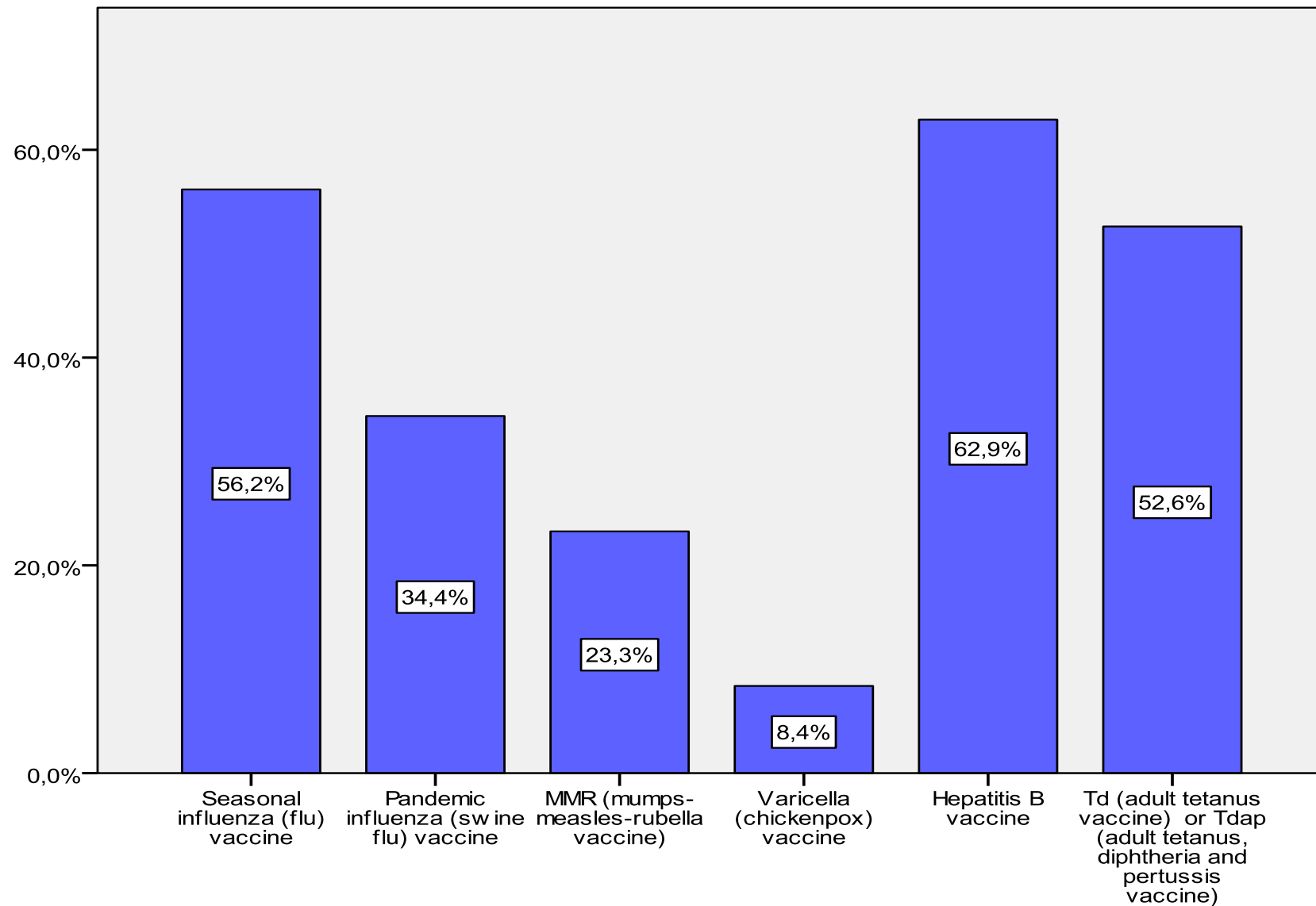
Which of the following diseases do you believe that HCWs are more at risk of transmitting to patients and family?



## Are you required by your hospital/organization to prove immunity against any of the following Vaccine Preventable Diseases (VPDs) before you begin to work?



## Percentage of HCWs who have received vaccination against VPDs in the last 10 years (by disease)



## Percentage of HCWs who have not received vaccination against VPDs in the last 10 years (by country and disease)

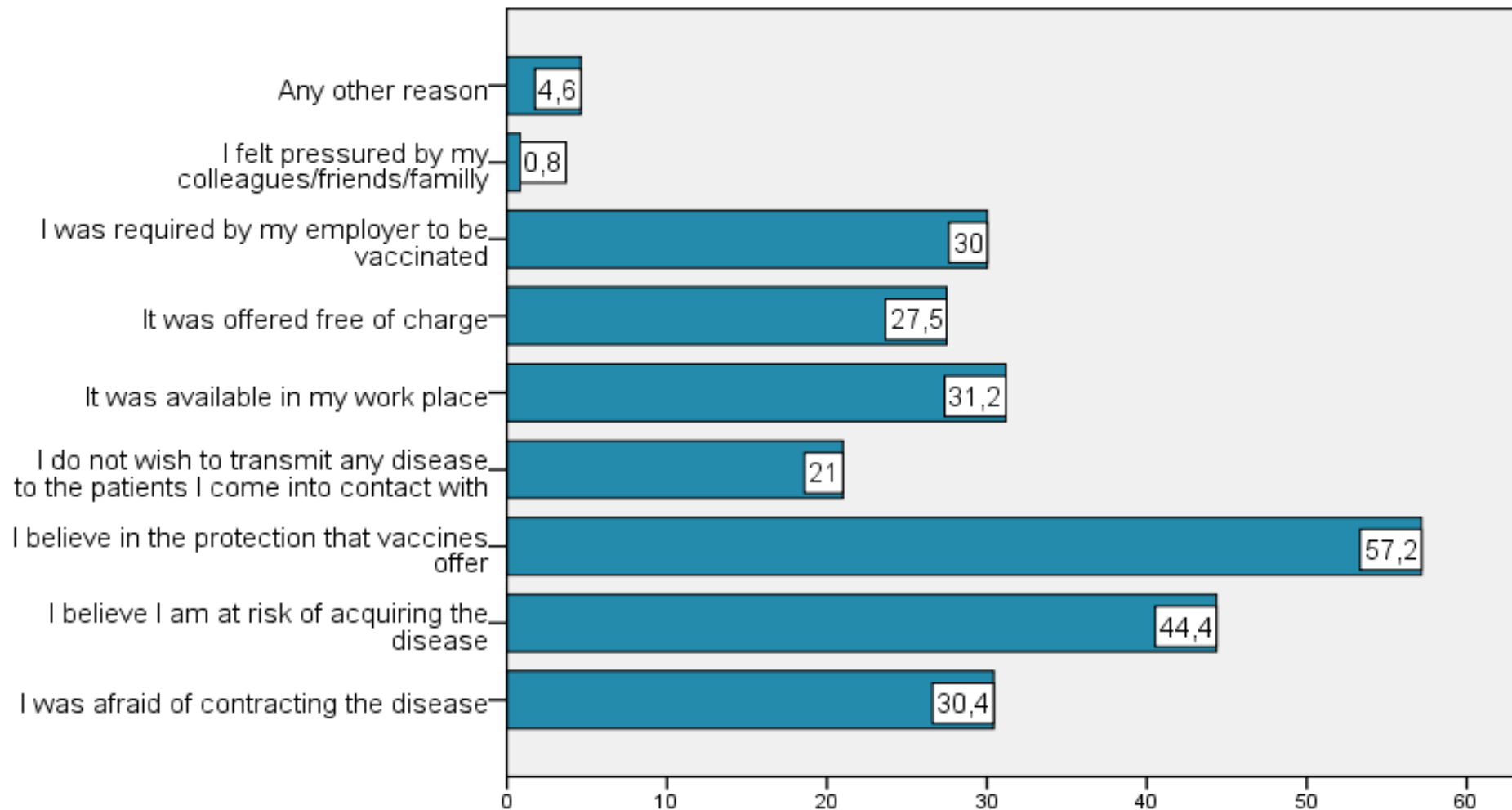
Country	Seasonal influenza (flu) vaccine	Pandemic influenza (swine flu) vaccine	MMR (mumps-measles-rubella vaccine)	Varicella (chickenpox) vaccine	Hepatitis B vaccine	Td or Tdap (adult tetanus, diphtheria and pertussis vaccine)
Sweden	63.9%	34.9%	84.4%	96.4%	48.4%	61.5%
Greece	57.5%	73.7%	82.6%	87.4%	48.5%	59.9%
Finland	34.1%	31.9%	69.2%	92.9%	37.4%	20.9%
Italy	53.3%	76.6%	90.6%	92.5%	50.8%	55.9%
Germany	45.2%	70.1%	60.9%	82.8%	24.2%	21.0%
Malta	40.0%	50.0%	80.0%	100.0%	50.0%	66.7%
Lithuania	52.0%	89.8%	94.0%	98.0%	70.0%	71.4%
Romania	43.0%	54.5%	95.3%	98.3%	48.5%	89.4%
Slovenia	79.3%	85.7%	96.6%	100.0%	64.3%	82.8%
Spain	49.5%	79.1%	76.6%	91.0%	47.3%	46.5%
Poland	35.0%	82.4%	93.9%	98.8%	25.4%	74.6%
UK	29.5%	51.6%	77.1%	99.0%	35.8%	56.8%
Cyprus	75.0%	87.5%	77.8%	88.9%	62.5%	50.0%
Ireland	40.6%	24.5%	77.4%	100.0%	43.4%	78.3%
Total	43.8%	65.6%	76.7%	91.6%	37.1%	47.4%

## Percentage of HCWs who have not received vaccination against VPDs in the last 10 years (by profession and disease)

Profession category / Disease	Medical doctor	Nurse	Allied health professional
Seasonal influenza (flu) vaccine	34.8%	46.3%	53.5%
Pandemic influenza (swine flu) vaccine	56.9%	69.3%	67.6%
MMR (mumps-measles-rubella vaccine)	76.3%	75.3%	78.1%
Varicella (chickenpox) vaccine	92.5%	90.6%	91.5%
Hepatitis B vaccine	34.5%	35.1%	44.6%
Td or Tdap (adult tetanus, diphtheria and pertussis vaccine)	46.3%	46.8%	48.4%

# Recommended Vaccine 1: Hepatitis B

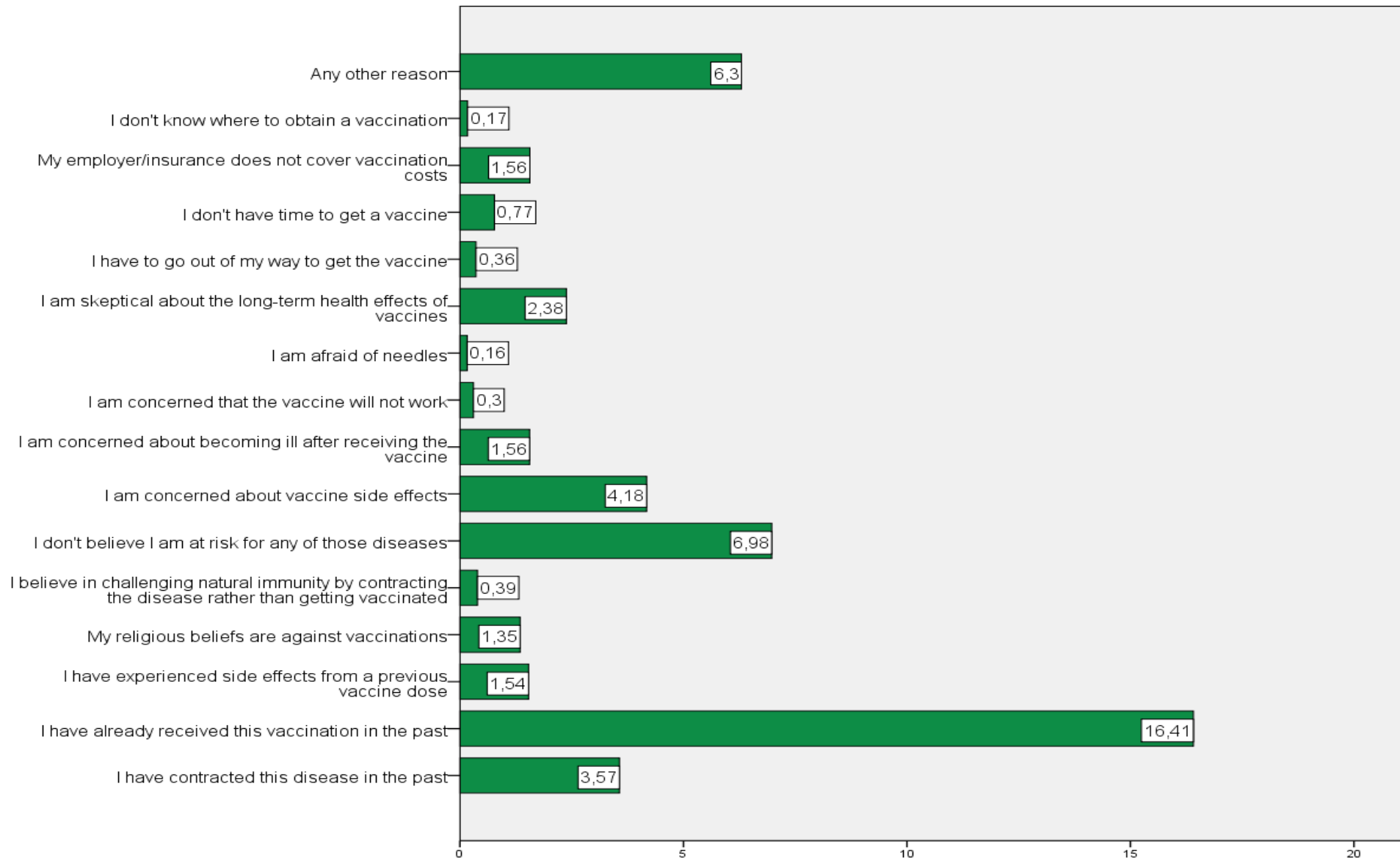
## Reasons for receiving Hepatitis B during the last 10 years





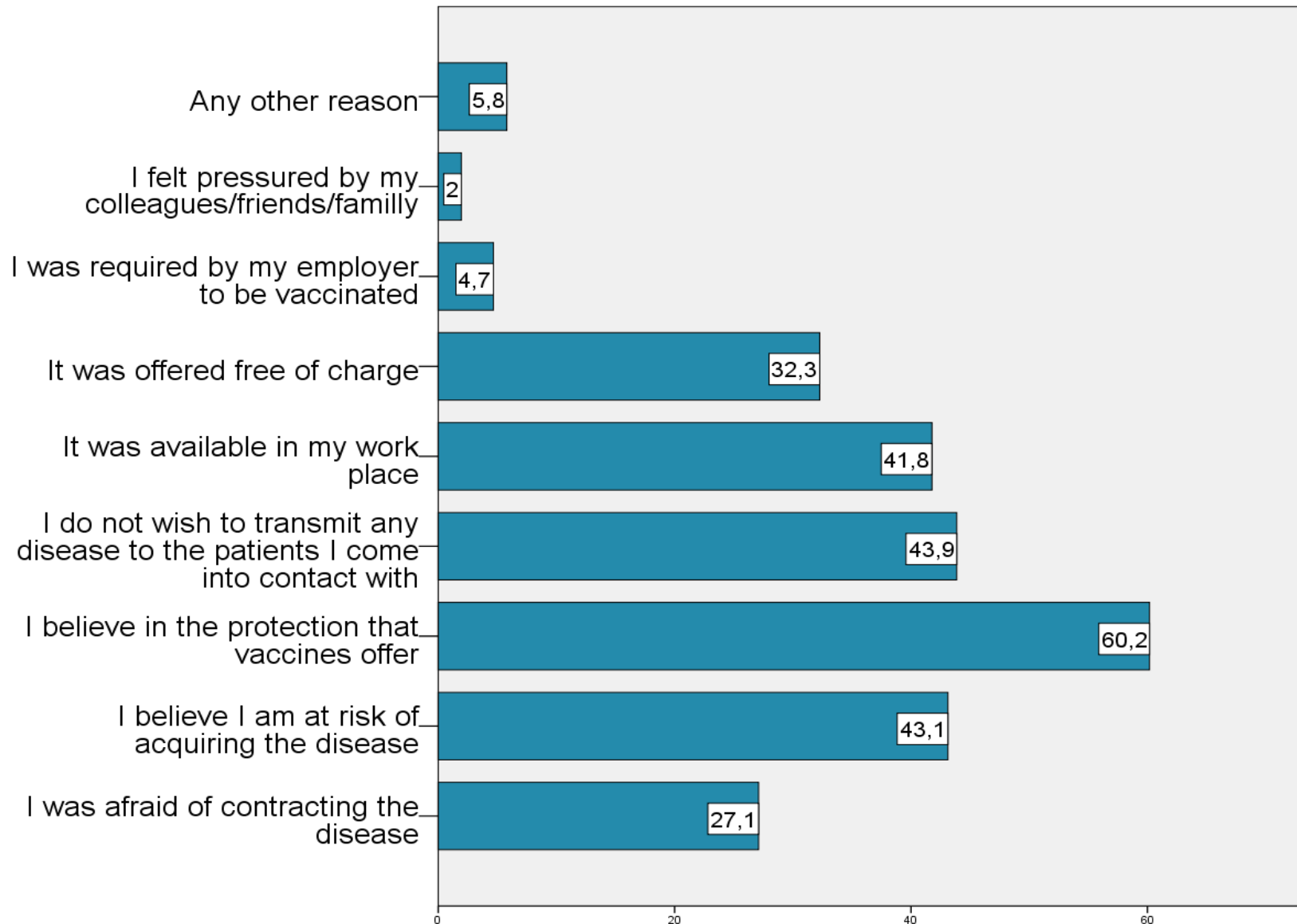
# Recommended Vaccine 1: Hepatitis B

## Reasons for not receiving Hepatitis B during the last 10 years



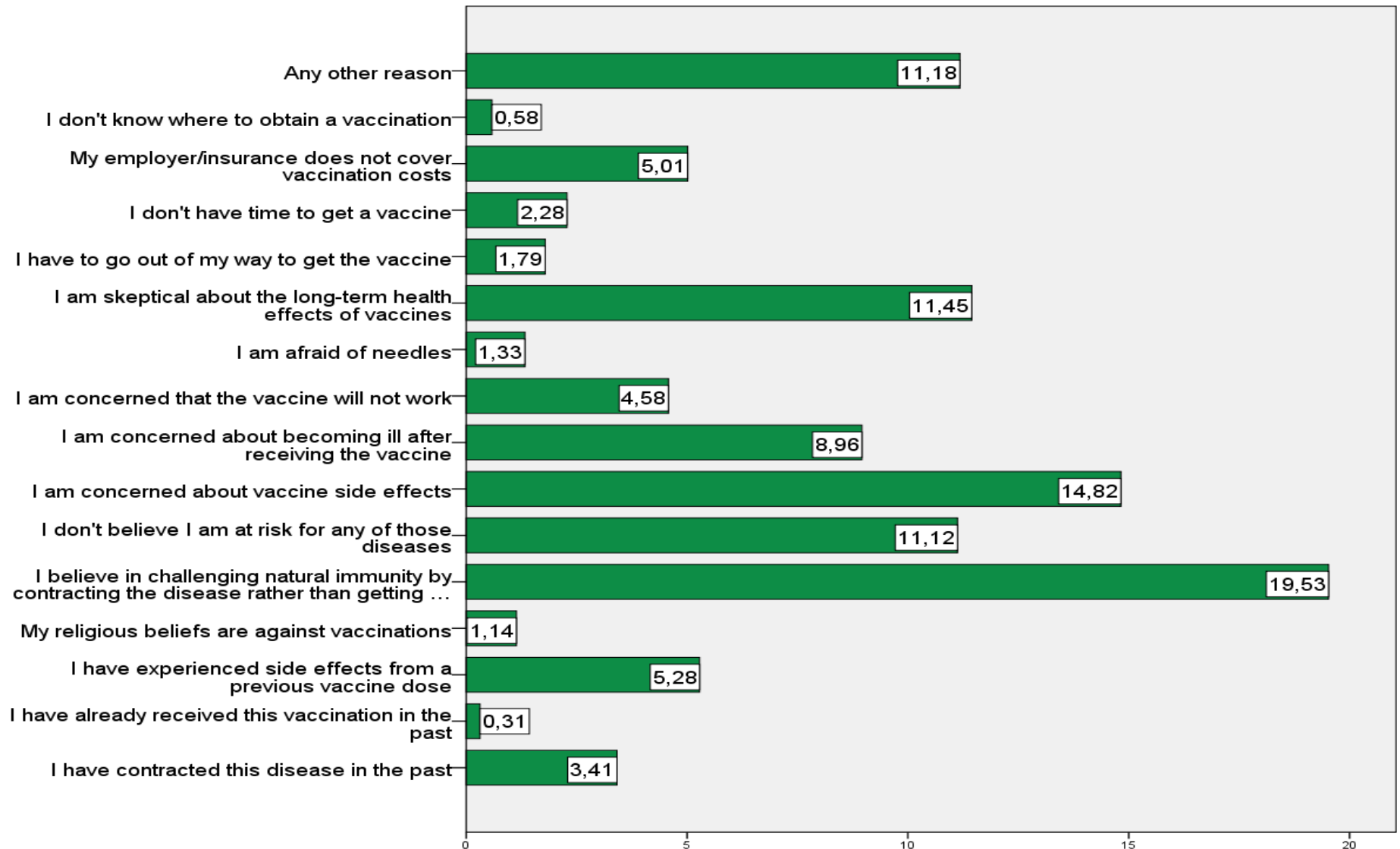
# Recommended Vaccine 2: Seasonal Influenza

## Reasons for receiving flu vaccine during the last 10 years

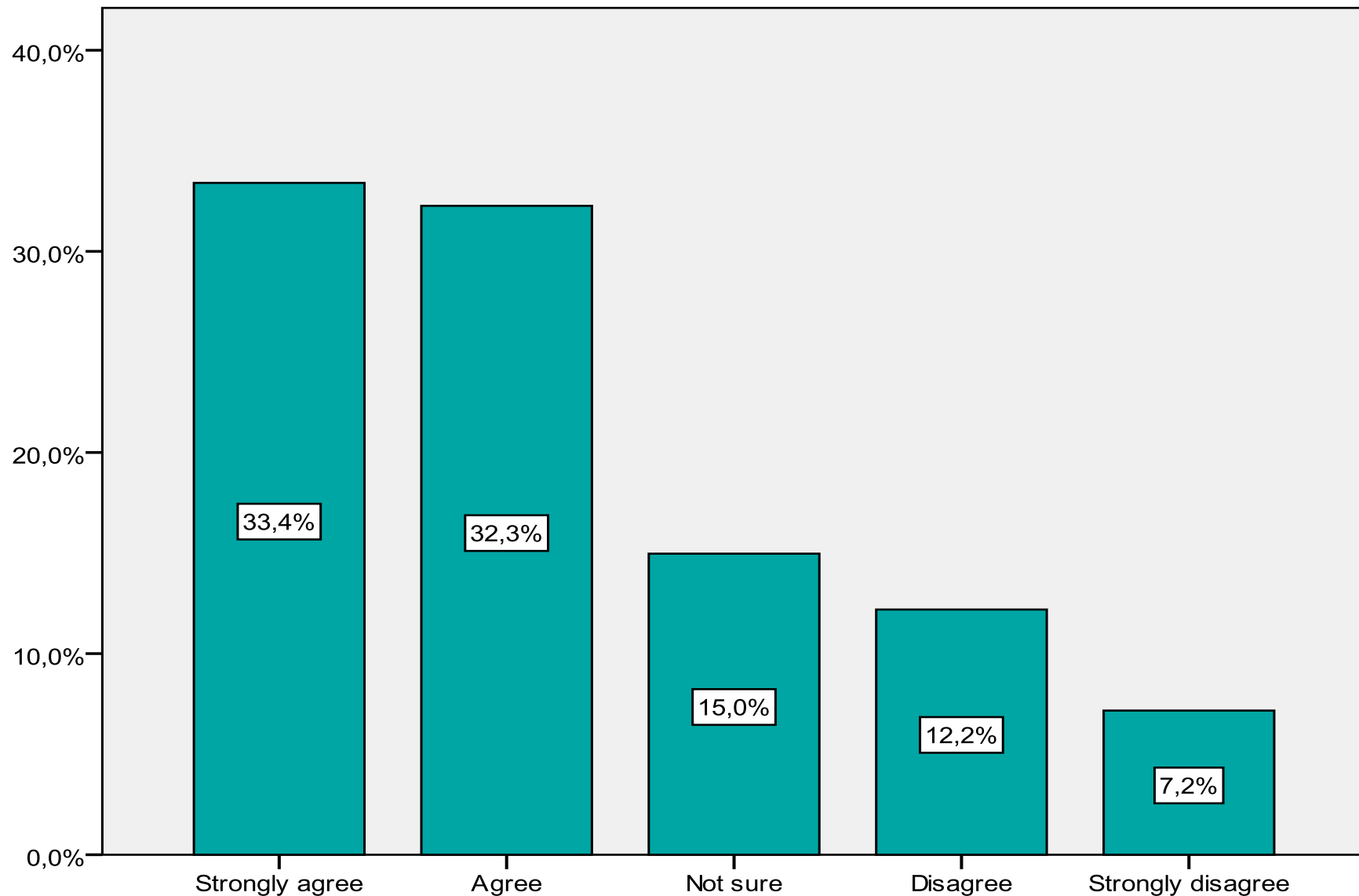


# Recommended Vaccine 2: Seasonal Influenza

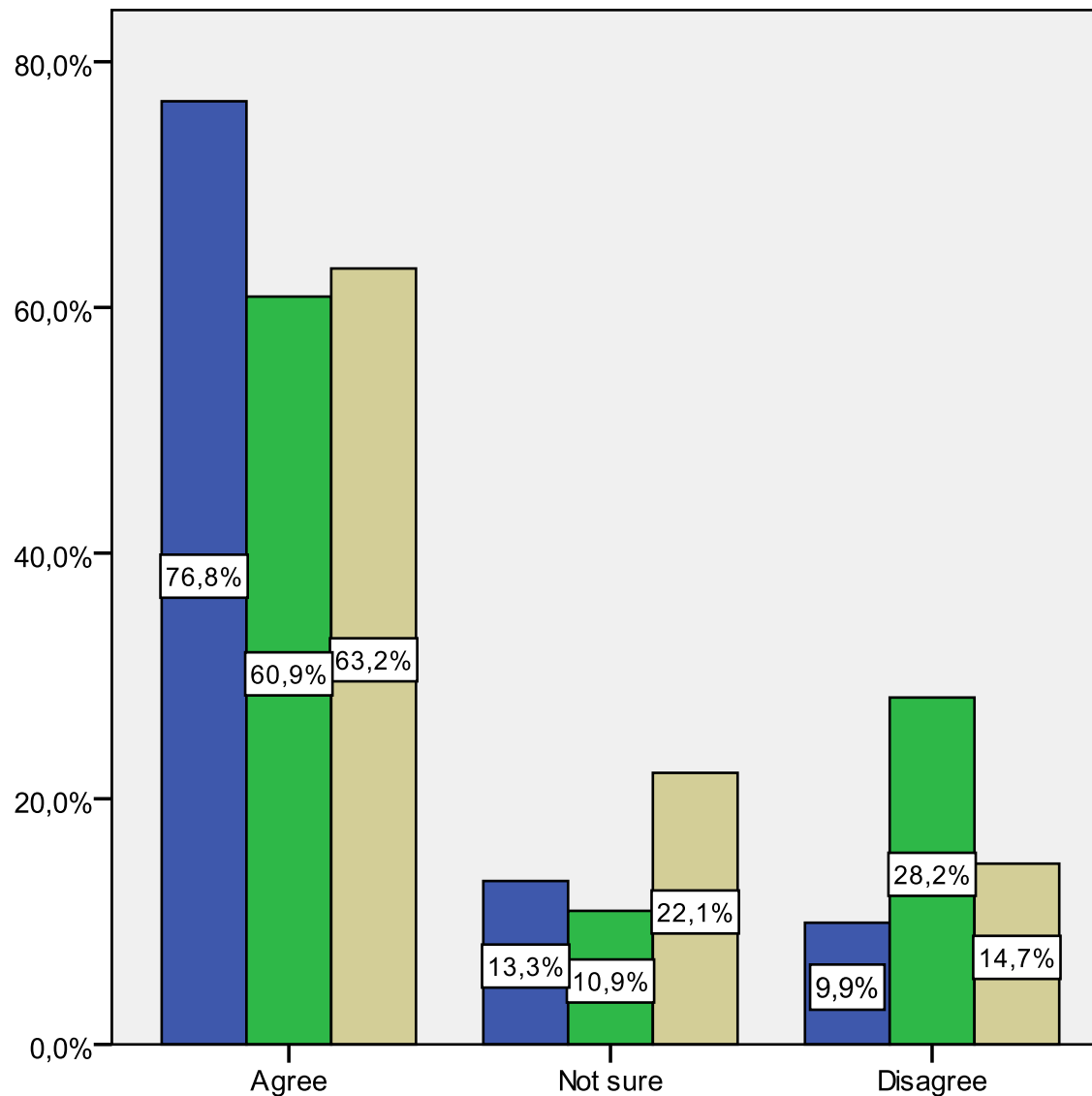
## Reasons for not receiving flu vaccine during the last 10 years



Do you think that it should be mandatory for HCWs who come in regular contact with patients to be vaccinated against VPDs?



# Do you think that it should be mandatory for HCWs who come in regular contact with patients to be vaccinated against VPDs?



Current profession

- Medical doctor
- Nurse
- Allied health professional

Country	Agree	Not sure	Disagree
Sweden	47.1%	31.2%	21.7%
Greece	77.8%	15.6%	6.6%
Finland	54.0%	36.2%	9.8%
Italy	66.9%	18.9%	14.2%
Germany	62.1%	10.5%	27.5%
Malta	80.0%	20.0%	.0%
Lithuania	77.6%	10.2%	12.2%
Romania	79.1%	5.1%	15.7%
Slovenia	27.6%	13.8%	58.6%
Spain	64.2%	13.7%	22.1%
Poland	89.2%	3.2%	7.6%
UK	59.1%	21.5%	19.4%
Cyprus	77.8%	11.1%	11.1%
Ireland	95.3%	2.8%	1.9%
<b>Total</b>	<b>65.6%</b>	<b>15.0%</b>	<b>19.4%</b>

# Conclusions

- The majority of health care workers believe vaccines are important for reducing or eliminating serious diseases (86.7%)
- Physicians believe in higher percentages that vaccines are important for reducing or eliminating serious diseases (96.1% versus 82.0% for nurses and 83.3% for allied health professionals)
- More than half of HCWs (51.9%) did not need to prove immunity against vaccine preventable diseases.
- The majority of HCWs did not receive vaccination against MMR, varicella or pandemic flu during the last 10 years. The percentages for tetanus and seasonal flu were 52-56%, and for Hepatitis B 63%.

# Conclusions

- The majority of medical doctors (76.8%) believe that vaccination should be mandatory, whereas, the corresponding percentages are lower for nurses and other allied categories (60.9% and 63.2%)
- There are considerable differences among countries, professions and work settings.
- The survey report has much more detailed results concerning specific sub-categories of HCWs, work settings and analysis on basis of demographic and occupational characteristics.
- We have much to learn based on this unique database.



**Thank you for your attention**

**Questions?**

**[www.hproimmune.eu](http://www.hproimmune.eu)**