D3.3 Report on the brand availability and usage of specific influenza vaccine brands - update

777363 – DRIVE

Development of Robust and Innovative Vaccine Effectiveness

WP3 – Evaluation of studies' quality and feasibility

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1. Document History

Version	Date	Description
V1.0	28 JUL 18	D3.3 Final version 1.0
V1.1	31 OCT 19	Identified sections to be updated – Anke Stuurman and Mendel Haag
V1.2	13 DEC 19	Updated procurement data – Anke Stuurman, Harshana Liyanage, Sara Ciampini
V1.3	11 OCT 21	Updated remaining sections
V2.0	19 OCT 21	Updated template. Sent to Steering Committee for review, no comments received. Final version for submission.

2. Publishable Summary

DRIVE aims to establish a sufficiently sized network to generate robust, high quality, brand-specific influenza vaccine effectiveness (IVE) estimates for influenza vaccines used in the EU. The availability of sufficient vaccine coverage by brand is a key element to allow a targeted approach to the study planning and site selection and to define the feasibility of measuring product-specific IVE.

Expected vaccine availability and use in a country, overall and for specific population groups, depends on the license status in a specific country, vaccine recommendations and programs, coverage and vaccine procurement and distribution. However, publicly accessible information that prospectively informs on vaccine procurement for the upcoming season is not readily available.

In this current deliverable, which is an update of the previous deliverable D3.3 dated July 2018, we thus aimed to assess the feasibility to determine overall influenza vaccine availability and type and brand diversity in Europe, to assess how these have evolved over time and whether vaccine availability in one season could be informative for vaccine procurement in a subsequent season. For this purpose, publicly accessible data on licensed vaccines, vaccine recommendations and vaccine procurement, or alternatively distributed volume, use or reimbursement, were used. The restriction to publicly accessible data was to avoid a breach of competition laws.

To facilitate the interpretation of this substantial data collection, the data was visually presented in tables as “heat maps.” Colours or colour intensity was used to reflect vaccine coverage level, counts, or changes in the different vaccine types or brands available from one season to another.

Data was collected and synthesized across 21 European member states and for the seasons from 2013-14 until 2019-20. To support the site-specific and pooled analyses at the type and brand level, this deliverable also provides an overview of the licensed influenza vaccines in Europe for the 2020-21 season, including their applicable brand names and the countries where the brand is licensed and vaccine recommendations for the 2020-21 season.

The groups for whom influenza vaccination is recommended have not changed substantially in Europe in recent seasons. Since 2014-15, vaccine recommendations have been issued to the health care worker and paediatric population more frequently. The overall vaccine coverage shows a slightly declining trend and is still low in many countries and lower than the target of 75% vaccine coverage among older adults. This represents a challenge to achieving sufficient numbers of vaccinated individuals to study IVE in all countries in Europe. It is also an important consideration for site selection.

Influenza vaccine type and brand diversity, as well as the changes over time, differed by country. Patterns were different depending on the procurement system concerning national, regional or purchasing by individual health care providers.

In countries with national procurement systems (Denmark, Finland, Netherlands, Norway, Slovenia) there is generally less diversity in terms of influenza vaccine type and brand availability, specifically where multiyear tenders are used. In these countries, for multiple seasons, primarily conventional (inactivated, egg-based non-adjuvanted) trivalent influenza vaccines were procured for the majority of the population. As a result, the vaccine availability in a season was informative for vaccine availability in a subsequent at least on the vaccine type level, although brand availability may still differ between tenders. However, the influenza vaccine landscape is changing, and a shift towards quadrivalent vaccines is observed, alongside the introduction of new vaccines (e.g. cell-based, high dose).

In a country with regional procurement (data from multiple seasons was only available for Spain) and countries with direct purchase (France, England, Belgium) consistent procurement of a specific vaccine type appears to be informative of the vaccine availability in a subsequent season as determined in the cumulative dataset across regions or clinics. This would also apply to brands where only one brand of a specific type is available. Availability of vaccine type and brand, however, may still vary between clinics and the likelihood of capturing specific brands will depend on the population and sample size captured in the surveillance. For vaccine types where multiple brands are available, projection of the vaccine brand availability based on previous vaccine availability is more challenging.

There is a good match between the expected availability of influenza vaccine brands, based on procurement data and recommendations, and the vaccines captured in the DRIVE data; however, in many instances, the timing of the knowledge is not sufficient to support a targeted site selection.

We also note that because the required data are largely unstructured and require manual extraction and translation, data collection is a time-consuming endeavour requiring substantial resources. Vaccine registries reporting coverage on a type or even brand level could highly facilitate the work, albeit that this would only be in retrospect. Overall vaccine type availability was stable in the earlier seasons, and vaccine type switches or additions were observed in the more recent seasons. The introduction of new vaccine types on the market makes projections more difficult. The timing of the knowledge of vaccine availability presents a hurdle for timely prospective site selection. This may stabilize again over time depending on the rate of innovation and licensure of influenza vaccines.

3. List of abbreviations

DRIVE	Development of robust and innovative vaccine effectiveness
ECDC	European Centre for Disease Prevention and Control
EU	European Union
FISABIO	Fundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunitat Valenciana
HCW	Health care workers
IFPMA	International Federation of Pharmaceutical Manufacturers and Associations
ISS	Istituto Superiore di Sanità
IVE	Influenza Vaccine effectiveness
LAIV	Live attenuated vaccine
MAH	Market Authorization Holder
TED	Tenders Electronic Daily
TIV	Trivalent influenza vaccine
QIV	Quadrivalent influenza vaccine

4. Background

DRIVE aims to establish a sufficiently sized network to generate robust, high quality, brand-specific influenza vaccine effectiveness (IVE) estimates for influenza vaccines used in the EU. The advanced knowledge on the availability and sufficient vaccine coverage by product is a key element to allow a targeted approach to the study planning and site selection and to define the feasibility of measuring product-specific IVE.

Expected vaccine availability and use in a country, overall and for specific population groups, depends on the license status in a specific country, vaccine recommendations and programs, coverage and vaccine procurement and distribution. The combined data from these sources could provide an indication of influenza vaccine availability, overall, by type and brand.

As described in the preceding DRIVE deliverable D3.1 *Report on the sources for usage of specific influenza vaccine brands and accessibility*, for most EU countries data on brand availability in an upcoming season is not publicly available - or not known sufficiently in advance of the season. Non-public data on brand availability in the upcoming season, which is held by the market authorisation holders and also other stakeholders, is subject to competition laws and cannot be readily shared and is likewise dependent on the timing of outcome of the general annual vaccine procurement.

In this current deliverable, which is an update to the D3.3 deliverable dated July 2018, we thus aimed to determine influenza vaccine type and brand availability in Europe, assess how this has evolved over time, and understand whether vaccine availability in one season could be informative for vaccine procurement in a subsequent season using only publicly accessible sources of information.

5. Objectives

The ultimate aim of WP3 Task 3.1 is to inform the feasibility of using a mechanism of prospective site selection based on vaccine brand availability to support the achievement of brand-specific vaccine effectiveness estimates for a wide range of brands. For this, it is necessary to know, in advance of the seasonal vaccination campaign, which vaccine brand(s) are expected to be available where to set up prospective studies accordingly.

The objectives for the deliverable are:

- To identify the currently licensed influenza vaccines in Europe and their applicable brand names, year and countries where the brand is licensed, age indication as per the label, and description of the vaccine type.

- To describe (changes in) influenza vaccine recommendations over seasons.

- Using solely the public sources of information to determine influenza vaccine availability per season: overall, by type and by brand based on 1) vaccine recommendations and programs, 2) coverage and 3) vaccine procurement outcomes.

- To facilitate the assessment of the type and brand availability trend across European member states and across seasons through visual presentation

- To qualitatively assess whether the availability in a given season could be informative for vaccine availability in a subsequent season

- Specifically for the current update, to add the information on:
    - vaccines licensed in the 2019-20 season
    - vaccine coverage for the 2018-19 and 2019-20 season
    - vaccine recommendations for countries participating in DRIVE for the 2020-21 season
    - availability of vaccine brands for the 2018-19 and 2019-20 seasons, including historical data for three additional countries not included in the previous version of D3.3 (Croatia, Lithuania, Portugal)

- a comparison between the vaccine brands expected to be available and the vaccines reported in DRIVE for the 2019-20 season

6. Methods

6.1 Scope

Period
The seasons 2010-2011 to 2019-2020 have been considered for the data on overall coverage. The data on vaccine type and brand focused on the period from 2013-14 onwards. The available data, however, differed per country and season. The description of the license status was limited to available vaccine brands in the 2019-20 season.

Countries
Table 1 lists the countries included for at least one objective (including vaccine coverage) in this deliverable, together with their applicable procurement system as characterized in D3.1 or the subsequent publication [1], i.e. national or regional procurement and direct purchase by health care providers.
Trends in vaccine coverage over time for the 65+y population are described for all countries listed in Table 1. Influenza vaccine recommendations are described for countries participating in DRIVE 2020-21. Data on vaccine brand availability (up to 2019-20) were collected for Belgium, Croatia, Denmark, England, Finland, France, Ireland, Italy, Lithuania, Netherlands, Norway, Portugal, Scotland, Slovenia, Spain, and Sweden. For countries with national tenders, data on the national level were collected. For countries with regional procurement, data on the regional level where collected (fully for Italy, for selected regions for Spain). For countries with direct purchase, the available data sources were assessed cumulatively across health care providers.

Table 1. European countries in scope of the current deliverable and their applicable "procurement" system as characterized in D3.1 or the subsequent manuscript

Country	**Procurement system**			
	National	**Regional**	**Direct purchase**	**Not investigated**
Croatia	x			
Denmark	X			
Finland	X			
Ireland	x			
Lithuania	x			
Netherlands	X			
Norway	X			
Slovenia	X			
Italy		X		
Sweden		X		
Spain		X		
Belgium			X	
France			X	
Germany			X	
Greece			X	
UK / England			x	

Country	Procurement system			
UK / Scotland [2]	X (since 2016-17)		X (before 2016-17)	
UK / Wales			x	
Austria				x
Czech Republic				x
Iceland				x
Hungary				x
Portugal				x

6.2. General data considerations

Vaccine types were defined as follows for the purpose of this deliverable and 2019-20 update:

- Trivalent inactivated unadjuvanted egg-based vaccine (TIV)
- Trivalent inactivated unadjuvanted cell-based vaccine (TIVc)
- Trivalent inactivated adjuvanted egg-based vaccine (aTIV)
- Trivalent inactivated high dose egg-based vaccine (TIV-HD)
- Trivalent inactivated intradermal vaccine (iTIV)
- Quadrivalent inactivated unadjuvanted egg-based vaccine (QIVe)
- Quadrivalent inactivated unadjuvanted cell-based vaccine (QIVc)
- Quadrivalent live attenuated influenza vaccine (LAIV)

These categories were selected, as they reflect the categories that are also commonly used in vaccine procurement.

All data was collected in an Excel spreadsheet.

6.3. Data sources

6.3.1 Vaccine license status

The description of the license status was limited to available vaccine brands in the 2019-20 season.

Information on the license status of the currently available vaccines was obtained from the partner Market Authorisation Holders (MAHs) in DRIVE or from publicly accessible information, including those described in D3.1 (*Section 4.1 Vaccine license status*). Nationally manufactured influenza vaccines and influenza vaccines that are licensed but not currently available in Europe were not considered for this assessment. Of note, the license status as intended in this section does not concern the annual seasonal batch release; as this is not publicly available information, only the initial license is considered.

The licensed influenza vaccines were characterized by vaccine type, alternative brand names, the MAH, the season in which the vaccine was first licensed and could theoretically have been marketed, the countries where the vaccine is licensed, the production platform (i.e. subunit, split virion), the route of administration, and the initial and currently licensed age indication.

The information on the licensed and currently marketed vaccines will also be used for the pooled analysis, namely, to know which brand names refer to a single product or which vaccine type the brand concerns.

6.3.2 Vaccine recommendations

Vaccine recommendations from the countries (or regions) with sites participating in DRIVE in 2020-21 were extracted from national (or regional) websites, such as the ministry of health or other public health authorities. The websites are referenced below the tables summarizing the recommendations in the results section.

6.3.3 Vaccine availability and coverage

The influenza vaccine coverage, overall, by type and brand was determined using a combination of the following sources of information.

- Reported coverage

Publicly available information on overall *coverage* was extracted from the ECDC technical reports in which results from the survey conducted by the Vaccine European New Integrated Collaboration Effort (VENICE) are reported (up to 2014-15), national websites (public health and government sources), and peer-reviewed journal publications. Where data from national sources were available these prevailed over data from other sources.

- Doses distributed VENICE

Publicly available information on doses distributed in the 2013-14 and 2014-15 seasons was extracted from the ECDC technical reports in which results from the survey conducted by the Vaccine European New Integrated Collaboration Effort (VENICE) are reported [3].

- Doses purchased or size of tender

Information on the number of purchased doses or the (outcomes of the) tender was also a source of information that provided data on overall influenza vaccines and also on doses by type and specific brands. Information on vaccines procured at the national or regional level gives information on historical vaccine "availability." It is noted that although this is different from the number of vaccines truly administered, it can serve as a proxy for coverage where other data is lacking [4, 5]. Sources of information are specified below according to the procurement system.

- *Countries with national tenders*

For countries with national tenders, data on vaccines procured were obtained by contacting representatives from the national public health institutes (Table 2) and/or through online sources. All data obtained from the public health institutes were permitted to be shared by the applicable policies of the public institutions and is thus considered public information. Online resources included EU Tenders Electronic Daily (TED), the online version of the 'Supplement to the Official Journal' of the EU, dedicated to European public procurement [6], national public health and procurement websites.

Table 2. Contributors for information on vaccine availability and coverage from countries with national influenza tenders at the institutional level

Country	Contact*	Institution
Croatia	External expert	Croatian Institute of Public Health (Zagreb, Croatia)
Denmark	External expert	Statens Serum Institut (Copenhagen, Denmark)
Finland	DRIVE partner	Finnish National Institute for Health and Welfare - THL (Helsinki, Finland)
Ireland	External expert	HSE – National Immunisation Office (Dublin, Ireland)

Lithuania	External expert	National Health Insurance Fund
Netherlands	External expert	Dutch National Institute for Health and Environment - RIVM (Bilthoven, The Netherlands)
Slovenia	External expert	Slovenian National Institute of Public Health (Ljubljana, Slovenia)

* Specific names are not provided for reasons of privacy

- *Countries with regional tenders*

For countries with regional tenders (Italy, Spain, Sweden) several approaches were taken.

For Italy, all 21 regional health authorities were contacted by Istituto Superiore di Sanità (ISS) for the 2017-18 season. Only three did not reply to the request; the others reported the public link to access influenza vaccine procurement tenders and award decision. Documents were downloaded and data were extracted from the awarded tender documents. For the 2018-19 and 2019-20 season procurement web pages of the Regional Health Authorities were screened.

For Spain/Valencia region, data from the Fundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunitat Valenciana (FISABIO) vaccine registry were requested for the Valencia region for the 2013-14 to 2018-19 seasons. In addition, the regional vaccine recommendations for Valencia were consulted for the 2019-2020 season.

For Spain/framework agreement, online searches were performed resulting in the consultation of multiple online sources.

For Sweden, tenders are published on www.visma.com, which includes statistics from past seasons. However, a paid subscription is required to see the data and use the program, hence, it did not constitute publicly accessible data. Sweden has multiple regional organizations (Gävleborg, Halland, Kronoberg, Jönköping, Norrlandstingen, Skane, Stockholms läns, Västra Götalandsregionen), which were contacted, but no replies were received.

- *Countries with other procurement systems*

For countries without national or regional tenders, potential sources on historical “purchase” (i.e. vaccines dispensed or administered to patients) include pharmacy reimbursement databases and prescription databases. The inventory of drug consumption databases, compiled as part of the IMI-PROTECT project, was consulted [7]. Three databases of interest were identified: the Belgian Farmanet [8], the English NHS Prescription Cost Analysis Data [9], and the French Medic’AM[10].

The English NHS Prescription Cost Analysis Data [9] shows national prescription data dispensed in the community (primary care) in England at presentation level, by month. When filtering by “Influenza” in the column titled “BNF Chemical Name”, the number of influenza vaccine doses by brand is shown. This data is also available at the practice level. Only vaccines that represented at least 0.5% of all influenza vaccines in a particular season were considered. For the 2019-2020 season, the letter on the “national flu immunisation programme 2019-2020” was consulted.

The French Medic’AM database [10], provides information on the drugs reimbursed by the health insurance per year. When filtering the column “Classe EphMRA” on “Vaccins grippe,” the number of reimbursed influenza vaccine doses by brand is shown. Only vaccines that

represented at least 0.5% of all influenza vaccines in a particular season were considered. For the 2019-2020 season, vaccine availability was obtained from the ANSM website.

Calculation of coverage

To allow a comparison of coverage based on doses across countries, the total population as of January 1st, 2017 from the EuroStat Database [11] was used to calculate the coverage as doses per 1000 total population. Eurostat is the statistical office of the European Union. The total population was assumed to be constant over the 2010-2018 seasons. While calculated coverage using doses per 1000 total population may not provide an accurate estimate of the coverage, it is sufficient to determine relative influenza vaccine coverage between countries.

The reported coverage and doses per 1000 population were combined into a composite "score" using the categories in Table 3 below. The highest assigned category for any of the estimates on coverage or doses per 1000 population was reflected in the overall score, e.g. if the coverage reported in the elderly population for a country in a given season was 60% (score=1) and the doses distributed were 200 per 1000 (score=2). The composite score would yield a score of 1. For the current deliverable, these scores were used to generate the 'heat maps'.

Table 3. Applied cut-off points underlying the heat map scores of influenza vaccine coverage in elderly, overall and doses distributed per 1000 population

Coverage elderly:	Coverage overall:	Doses per 1000 population*:
1. >=50%	1.>=25%	1. >=250
2.>=30%, <50%	2.>=15%, <25%	2. >=150, <250
3. >=10%, 30%	3. >=5%, <15%	3. >=50, <100
4. <10%	4. <5%	4. <50

* highest dose volume estimate from VENICE or IFPMA reports, if both available

References

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[10] Eurostat database http://ec.europa.eu/eurostat/data/database

7. Results

7.1 Licensed vaccines in Europe

The characteristics of vaccines licensed in Europe in 2019-20 have been summarized in Table 4 and listed individually in Table 5.

QIV vaccines were first available in Europe in the 2013-14 season. The quadrivalent LAIV vaccine (Fluenz Tetra) has been licensed in Europe since 2014-15. Of note, a trivalent LAIV formulation (Fluenz) was available before that but is no longer available. The same applies to the trivalent cell culture vaccine, which is also no longer available.

Four brands had EU wide license status based on the Centralized procedure. In most cases, a single product (i.e. product manufactured through the same platform) had multiple alternative brand names, sometimes as many as 10.

Inactivated, unadjuvanted, standard-dose egg-based vaccines will be referred to as 'conventional.'

Except in 4.2.4, in the remainder of this deliverable, data has been presented by the current MAH or related MAH through other arrangements. As such, Abbott includes BGP and Mylan. Sanofi includes Sanofi Pasteur or Sanofi MSD. Seqirus licensed products include those of BioCSL, CSL, Novartis, Novartis Vaccines or Novartis Vaccines and Diagnostics.

Table 4. Summary overview of licensed and available influenza vaccine brands for the 2019-20 season

Brands by:	**Count**
Vaccine type	
TIV (inactivated, unadjuvanted egg-based)	4
QIV (inactivated, unadjuvanted egg-based)	3
QIV LAIV	1
TIV Adjuvanted	1
TIV High Dose	1
QIV Cell-based	1
Current licensed age indication	
6 months and older	5
60 or 65 years and older	2
3 years and older	1
5 years and older	1
9 years and older	1
24 months through 17 years of age	1
Market Authorisation Holder (MAH)	
Abbot (Mylan, BGP[12])	2
GSK	1
Sanofi	3
Seqirus (formerly Novartis/BioCSL)	4

Brands by:	**Count**
Astra Zeneca	1
EU country availability	
All EU countries	4 (except in one case not in Croatia)
Specific countries	See Table 5
Virus component	
Inactivated – subunit	5
Inactivated – split virion	4
Inactivated – cell-based	1
Live attenuated virus	1
Route of administration	
Intramuscular/subcutaneous	10
Intranasal	1

Table 5. Overview of influenza vaccines licensed and currently available in Europe for the 2019-20 season

Valency	Specification (deviation from 'conventional' inactivated, non-adjuvanted, regular dose, egg-based)	Other specifics	Main brand name	Alternative brand name/ Generic name	MAH	Season of first licensure	Countries of licensure	Current age indication
TIV	-	Split virion	Vaxigrip	Mutagrip Inactivated Influenza vaccine (split virion) BP Istivac	Sanofi	<2010	All EU countries except Croatia	6 months and up
TIV	-	Subunit	Influvac	Influvac Sub-unit Influvac S Batrevac Influenza Vaccine Vacciflu Xanaflu Serinflu Influvac Junior Imuvac Grippe-Impfstoff STADA® N FluVaccinol Subunit Impfstoff	Netherlands: Abbott Rest of Europe: Mylan	<2010	Denmark Finland Netherlands Norway Slovenia Italy Sweden Spain UK Belgium France Germany Greece Czech Republic Portugal Croatia	6 months and up
TIV	-	Subunit	Agrippal	Begripal Chiroflu Sandovac® Agrippal S1 Influpozzi subunità	Seqirus (previously Novartis)	<2010	Via MRP: Belgium Cyprus Croatia Denmark Finland France Greece Hungary Ireland Luxembourg Netherlands	6 months and up

Valency	Specification (deviation from 'conventional' inactivated, non-adjuvanted, regular dose, egg-based)	Other specifics	Main brand name	Alternative brand name/ Generic name	MAH	Season of first licensure	Countries of licensure	Current age indication
							Sweden UK Italy Portugal Spain Germany Austria	
TIV	-	Split virion	Afluria	Enzira "Influenza Vaccine (split virion, inactivated)"	Seqirus (previously BioCSL)	<2010	<2010 Belgium Denmark Finland Germany Norway Sweden Netherlands UK Ireland 2014-15 Czech Republic Greece Spain France Italy Luxembourg Portugal Romania	6 months and up (previously) 5 years and up (current)
TIV	Adjuvanted	TIV MF59 adjuvanted subunit	Fluad	Innoflu Chiromas	Seqirus (previously Novartis)	<2010	Germany Italy Spain Sweden UK Austria Belgium Czech Republic Denmark	65 years and older

Valency	Specification (deviation from 'conventional' inactivated, non-adjuvanted, regular dose, egg-based)	Other specifics	Main brand name	Alternative brand name/ Generic name	MAH	Season of first licensure	Countries of licensure	Current age indication
							Greece Ireland Luxembourg Portugal	
TIV	High dose	Split virion	TIV High Dose	-	Sanofi	2019-20	UK	65 years and older
QIV	-	Split virion	Vaxigrip Tetra	Vaxigrip Tetra Quadrivalent influenza vaccine (split virion, inactivated)	Sanofi	2015-16	All countries	3 years and up (at licensure) 6 months and up (at present)
QIV	-	Subunit	Influvac Tetra	Influvac Sub-Tetra Influvac S Tetra FluVaccinol Subunit Tetra Xanaflu Tetra Batrevac Tetra Influvac Tetra MYL Инфлувак Тетра	Netherlands: Abbott Rest of Europe: Mylan	2018-2019 (licensed in 2014-15)	Netherlands Norway Slovenia Italy Sweden Spain UK Belgium France Germany Greece Czech Republic Portugal	18 years and up
QIV	-	Split virion	Fluarix tetra	Alpharix-Tetra INFLUSPLIT TETRA	GSK	2013-14	2013-14: UK Germany France 2014-2015 Belgium Germany Spain Czech Republic 2015-2016 Greece	

Valency	Specification (deviation from 'conventional' inactivated, non-adjuvanted, regular dose, egg-based)	Other specifics	Main brand name	Alternative brand name/ Generic name	MAH	Season of first licensure	Countries of licensure	Current age indication
QIV	Live attenuated	Intranasal	Fluenz Tetra	-	Medimmune-Astrazeneca	2014-2015	All EU countries – centralized procedure	24 months through 17 years of age
QIVc	Cell-based	Inactivated	Flucelvax Tetra	'-	Seqirus	2019-20	All EU countries – centralized procedure	2 years and older (per Oct 20) – before that, 9 years and older

7.2 Influenza vaccine recommendations

7.2.1 Vaccine recommendations by population groups

In Table 6, the vaccination recommendations are synthesised by country and population subgroups, for countries or regions with sites participating in DRIVE in 2020/21. There are some differences in terms of influenza vaccine recommendations between countries.

Older adults
All participating countries have a vaccination programme in place for older adults. In most countries, the recommendation to vaccinate the general adult population starts at age 65 years; however, in several regions of Spain, the recommendation stands for adults aged 60 years and above, and in England, in 2020/21, exceptionally, due to the COVID-19 pandemic, for adults 50 years and above.

At-risk population
All participating countries recommend vaccinating patients with chronic medical conditions; the recommendations include at least patients with pulmonary, cardiovascular, and renal diseases, hematologic/metabolic disorders and immunosuppression due to disease or treatment.

Healthy pediatric population
The general recommendation to vaccinate healthy children is not very common in the participating countries. The recommendation to vaccinate healthy children is in place in Finland (for children aged 6 months to 6 years), England (2 years to 11 years), Austria (6 months to 18 years, as the recommendation is to vaccinate everyone), and, exceptionally, due to the COVID-19 pandemic, in Italy.

Pregnant women, healthcare workers and residents of long-term care facilities
Healthy pregnant women, healthcare workers and residents of long-term care facilities are considered a priority group for vaccination in all participating countries, except in Iceland where vaccination is not specifically recommended for long-term care facility residents.

Table 6. Summary of influenza vaccination recommendations for specific population groups for countries with DRIVE sites 2020-21

	Older adults (≥65y)	Chronic medical conditions	Healthy pediatric population	General adult population (18-64y)	Healthy pregnant women	Healthcare workers	Residents of long-term care facilities
Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Finland	Yes	Yes	6 m to 6 y	No	Yes	Yes	Yes
France	Yes	Yes	No	No	Yes	Yes	Yes
Iceland	Yes	Yes	No	60-64	Yes	Yes	No
Italy	Yes	Yes	Yes	No	Yes	Yes	Yes
Romania	Yes	Yes	No	No	Yes	Yes	Yes
Spain – Catalonia / Madrid / Castilla y León	Yes	Yes	No	60-64	Yes	Yes	Yes
Spain – Valencia	Yes	Yes	No	No	Yes	Yes	Yes
UK- England	Yes	Yes	2 y to 11 y	50-64	Yes	Yes	Yes

Sources:
Austria: Empfehlung Influenza Impfung ("Grippeimpfung") Saison 2020/21 [cited March 4, 2021]. Available from: https://www.sozialministerium.at/Themen/Gesundheit/Impfen/Impfempfehlungen-Allgemein/Empfehlung-Influenza-Impfung-(-Grippeimpfung-)-Saison-2020-2021.html
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7.2.2 Recommendations by specific type of vaccine

The most frequently recommended vaccine type in 2020-21 is QIVe among children, QIVe or QIVc among adults, and aTIV among older adults. LAIV is recommended in countries with universal childhood influenza vaccination programs, England, and Finland.

Table 7. Influenza vaccination recommendations for specific influenza vaccine types for countries in the DRIVE network 2020-21

Age group	Preferred vaccine type (alternative vaccine type)										
	Austria	**Finland**	**France**	**Iceland**	**Italy**	**Romania**	**Spain – Catalonia**	**Spain – Madrid**	**Spain – Salamanca**	**Spain – Valencia**	**UK**
Children	6m-9y: QIVe 10-17y: QIVe or QIVc	6m-2y: QIVe 2-6y: LAIV or QIVe	QIVe or TIV	QIVe	6m-9y: QIVe (TIV) 10-17y: QIVe or QIVc (TIV)	Type not specified	QIVe	6m-14y: QIVe 15-18y: QIVc	QIVe	6m-14y: QIVe (TIV) 15-18y: QIVc (QIVe, TIV)	6m-2y: QIVe 2y-9y: LAIV (QIVe) 9y-17y: LAIV (QIVe or QIVc)
Adults	QIVe or QIVc	QIVe	QIVe or TIV	QIVe	QIVe or QIVc (TIV)	Type not specified	QIVe	QIVc	QIVe	QIVc (QIVe, TIV)	18-49y: QIVc (QIVe) 50y: QIVr
Older adults	aTIV or TIV-HD (QIVe or QIVc)*	QIVe	QIVe or TIV	QIVe	TIV or QIVe or QIVc or TIVa or TIV-HD	Type not specified	aTIV ≥75y institutionalized: QIV-HD	aTIV ≥65y institutionalized: QIV-HD	aTIV ≥75y institutionalized: QIV-HD	aTIV (QIVe/QIVc, TIV) ≥65y institutionalized: QIV-HD (aTIV)	aTIV (QIVc)

*QIV is recommended if there is a high probability of an intensive occurrence of the influenza B strain that is only covered by the quadrivalent vaccine.

Sources:
Austria: Empfehlung Influenza Impfung ("Grippeimpfung") Saison 2020/21 [cited March 4, 2021]. Available from: https://www.sozialministerium.at/Themen/Gesundheit/Impfen/Impfempfehlungen-Allgemein/Empfehlung-Influenza-Impfung-(-Grippeimpfung-)-Saison-2020-2021.html
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Romania: http://www.ms.ro/2019/09/23/campania-de-vaccinare-antigripala-gratuita/
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Spain Madrid: VACUNACIÓN FRENTE A LA GRIPE ESTACIONAL: TEMPORADA 2020-2021 [March 5, 2021]. Documento Técnico. Comunidad de Madrid. Available from https://www.comunidad.madrid/sites/default/files/doc/sanidad/spub/252620_documento_tecnico_gripe_2020_2021.pdf
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UK England: The national flu immunisation programme 2020/21 [March 4, 2021]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/885281/The_national_flu_immunisation_programme_2020_to_2021.pdf
The national flu immunisation programme 2020/21 - update [March 4, 2021]. Available from: https://www.england.nhs.uk/wp-content/uploads/2020/05/Letter_AnnualFlu_2020-21_20200805.pdf ; Implementing the Joint Committee on Vaccination and Immunisation advice on vaccines in the NHS annual seasonal flu vaccination programme and reimbursement guidance for 2020/21 [cited March 4, 2021]. Available from: https://www.england.nhs.uk/wp-content/uploads/2019/12/NHS-England-JCVI-advce-and-NHS-reimbursement-flu-vaccine-2020-21.pdf

7.2.3 Influenza vaccine coverage 2013-2014 to 2019-20

Figure 1 below shows the heat-map of the overall coverage of influenza vaccines in European countries by season, as estimated from the combined data from the coverage in older adults (≥50, 60 or 65 years of age), the overall coverage and doses distributed and based on the scoring described in Table 3 of this deliverable. Table 8 presents age-specific vaccine coverage (if available) for countries or regions participating in DRIVE in 2019-20. Major shifts in the vaccination coverages in more recent seasons are not observed within a country from season to season. Between countries, vaccine coverage can substantially differ.

	Centralized procurement							Regional procurement		
Season	Croatia	Denmark	Finland	Ireland	Nether-lands	Norway	Slovenia	Italy	Sweden	Spain
2019-20	3	1			1	2		1	1	
2018-19	3	1	2		1	2	3	1	1	
2017-18	3	1	1		1	2	3	1	1	
2016-17	3	2	1		1	3	3	1	2	
2015-16	3	2	2		1	3	3	2	2	
2014-15	3	2	2	1	1	3	3	2	2	
2013-14	3	2	2	1	1	3	3	1	2	
2012-13	2	2	1	1	1	2	3	1	2	

	Direct purchase								Procurement system to be confirmed		
Season	Austria	UK-England	UK Wales	Belgium	France	Germany	Greece	Scotland	Czech Rep	Hungary	Portugal
2019-20		1	1		1	9	1	1			1
2018-19		1	1		1	2	1	1			1
2017-18		1	1	1	2	2	1			3	1
2016-17		1	1		1	2		1			1
2015-16		1	1			2		1		3	1
2014-15		1	1		2	2		1		3	1
2013-14	3	1	1	1	1	2	2	1		3	1
2012-13		1	1		1	2		1		2	1

Table legend

1	Highest coverage reported for elderly >=50% or overall >=25% or >=250 doses per 1000 population
2	Highest coverage reported for elderly >=30% to <50% or overall >=15%, <25%, or >=150 to <250 doses per 1000 population
3	Highest coverage reported for elderly >=10% to <30%, or overall >=5%, <15%, or >=50 to <100 doses per 1000 population
4	Highest coverage reported for elderly <10%, or overall <5%, or <50 doses per 1000 population
	Influenza vaccine recommendations in place but no data on coverage available
	No data

Figure 1. Heat map of influenza vaccine coverage in the elderly population from 2012-13 to 2019-2020 in European countries

Table 8. Vaccination coverage rates in countries contributing data to the DRIVE network in 2019-20

Area	Overall vaccine coverage	Children	Adults	Elderly	Comment	Reference (websites accessed March 12, 2020)
Austria	NA	NA	NA	NA	NA	
England		2-3 years: 43.8% (vaccinated at GPs) Primary school: 60.4% (vaccinated at schools)		72.4% (vaccinated at GPs)		https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/912099/Annual-Report_SeasonalFlu-Vaccine_GPs_2019-20_FINAL_amended.pdf (vaccinated at GPs) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/894772/Childhood_flu_annual_report_2019_20.pdf (school-based programs) https://www.nuffieldtrust.org.uk/resource/adult-flu-vaccination-coverage#background
		6m-64y in clinical risk group: 48.1% (vaccinated at GPs)				
Finland	NA	6m-6 years: NA	NA	NA		https://www.thl.fi/roko/rokotusrekisteri/atlas/atlas-en.html?show=influenza
France	47.8%	<65y risk groups: 31.0%		52.0%		https://www.santepubliquefrance.fr/determinants-de-sante/vaccination/articles/donnees-regionales-de-couverture-vaccinale-grippe-par-saison-et-dans-chaque-groupe-d-age
Italy	16.8	NA	NA	54.6%		http://www.salute.gov.it/portale/influenza/dettaglioContenutiInfluenza.jsp?lingua=italiano&id=679&area=influenza&menu=vuoto
Romania	7.9%	NA	NA	23.5%	Based on doses distributed to risk groups by MoH, excluding privately bought vaccine	https://cnscbt.ro/index.php/analiza-date-supraveghere/gripa-si-infectii-respiratorii-acute/2081-analiza-sezon-gripal-2019-2020/file
Spain-Catalonia	NA	NA	60-64y: 19.6%	≥65y: 49.5% ≥75y: 59.5%		https://www.mscbs.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/calendario-y-coberturas/coberturas/docs/Tabla13.pdf
Spain - Valencia	NA	NA	NA	≥65y: 53.0% ≥75y: 60.3%		

NA: not available

7.3 Vaccine availability by type and brand per country 2013-2014 to 2019-2020

As described in D3.1 countries can be divided into those with national or regional tenders and those with direct purchase mechanisms via general practitioners or pharmacies.

In terms of accessibility of the data, outcomes of national tenders generally concerned public information, which could be accessed through tender websites or public health institutes. However, for a number of these countries, the information relied on input from local experts where policy permitted. The outcomes of regional tenders were more scattered and notoriously more difficult to find. In both cases, extracting information from these sources was cumbersome, as they were generally available only in local language and format, and the reported data varied between contracts. For countries with direct purchase mechanisms, the lack of a centralized influenza vaccine procurement system made finding data even less straightforward.

The sections below summarize the publicly available data found per country. Sources are mentioned in the table, space permitting. Of note, embedded links are also included in the table footnotes to avoid potential loss of the hyperlinks.

7.3.1 Countries with national tenders

Croatia (not in DRIVE)

One brand of TIV has been consistently available until the switch to one brand of QIV in 2019/20.

Table 9. Influenza vaccine brand availability, 2013-14 to 2019-20, Croatia (not in DRIVE)

Season	Vaccine type	Vaccine manufacturer awarded tender	Vaccine brand name	Nr of doses	Source
2019-2020	Quadrivalent inactivated	Sanofi Pasteur	Vaxigrip Tetra	360 000*	HZJZ
2018-2019	Trivalent inactivated vaccine	Abbott	Influvac	320 000*	
2017-2018	Trivalent inactivated vaccine	Abbott	Influvac	280 000*	
2016-2017	Trivalent inactivated vaccine	Abbott	Influvac	278 749**	
2015-2016	Trivalent inactivated vaccine	Abbott	Influvac	261 840**	
2014-2015	Trivalent inactivated vaccine	Abbott	Influvac	258 520**	
2013-2014	Trivalent inactivated vaccine	Abbott	Influvac	292 350**	

* Procured doses
**Distributed doses

Source:
2019-2020: https://emedjimurje.rtl.hr/vijesti/drustvo/3592489/obavijest-o-cijepljenju-hzjz-je-osigurao-360-000-doza-sezonskog-cjepiva-protiv-gripe/
2018-2019: https://www.hzjz.hr/en/news/seasonal-flu-vaccination-2/
2017-2018: https://www.hzjz.hr/en/division-of-communicable-diseases-epidemiology/flu-vaccination-2017-2018/

Denmark (not in DRIVE)

In Denmark, historically, only conventional (inactivated, non-adjuvanted) TIV vaccines have been procured, with the exception of a single season in 2012-13 in which the LAIV vaccine was available. Two or three brands of TIV were available in any season up to 2017/18. Two TIV vaccines (Influac and Vaxigrip) and one QIV vaccine was used during the 2018/19 season. For the 2019/20 season, two QIV vaccines will only be used (Influac Tetra and Vaxigrip Tetra). In the past years, brands from Mylan and Sanofi MSD have been available (Table 9a).

Table 10. Influenza vaccine brand availability, 2012-13 to 2019-20, Denmark (not in DRIVE)

Season(s)	Vaccine type	MAH	Vaccine brand name	% of market	Nr of doses in tender	Source
2019-2020	QIV	Mylan	Influvac Tetra	50%		Ted
		Sanofi MSD	Vaxigrip Tetra	50%		
2018-2019	TIV	Mylan	Influvac			SSI
		Sanofi MSD	Vaxigrip			
	QIV	Sanofi MSD	Vaxigrip Tetra			
2017-2018	TIV	Mylan	Influvac,	60%	450,000-750,000	Ted
		Sanofi MSD	Vaxigrip	40%		
2016-2017	TIV	Mylan	Influvac	-	-	SSI
		Sanofi MSD	Vaxigrip			
2015-2016	TIV	GSK	Fluarix	-	-	SSI
		Sanofi MSD	Vaxigrip			
2014-2015	TIV	GSK	Fluarix	-	-	SSI
		Sanofi MSD	Vaxigrip			
2013-2014	TIV	GSK	Fluarix	-	-	SSI
		Berna-Janssen	Inflexal			
		Sanofi MSD	Vaxigrip			
2012-2013	TIV	-	Unspecified	-	-	SSI
		Astrazeneca	Fluenz			

Source:
TED 2019/2020: https://ted.europa.eu/udl?uri=TED:NOTICE:251875-2019:TEXT:EN:HTML&src=0
SSI 2018/2019: https://en.ssi.dk/news/epi-news/2018/no-39---2018
TED 2017/18: http://ted.europa.eu/udl?uri=TED:NOTICE:366703-2016:TEXT:EN:HTML&src=0
SSI 2016/2017: https://www.ssi.dk/English/News/EPI-NEWS/2016/No%2039%20-%202016.aspx

SSI 2015/2016: https://www.ssi.dk/English/News/EPI-NEWS/2015/No%2039%20-%202015.aspx
SSI 2014/2015: https://www.ssi.dk/English/News/EPI-NEWS/2014/No%2039%20-%202014.aspx
SSI 2013/2014: https://www.ssi.dk/English/News/EPI-NEWS/2013/No%2039%20-%202013.aspx
SSI 2012/2013: https://www.ssi.dk/English/News/EPI-NEWS/2012/No%2039a%20-%202012.aspx

Finland (in DRIVE)

In Finland, one brand of TIV was procured annually, until switching to one brand of QIV as of 2018/19. The brand changed between tenders (Table 9b). Additionally, LAIV vaccine was procured for children since 2015/2016 (Table 9c).

Table 11. Influenza vaccine brand availability, 2013-14 to 2019-20, Finland (in DRIVE)

Tendered season(s)	Vaccine type	MAH awarded tender	Vaccine brand name	Nr of doses procured (approximate)**	Source
2019-2020	QIV	Sanofi Oy	Vaxigrip Tetra	1 700 000	Ted
2018-2019	QIV	Sanofi Oy	Vaxigrip Tetra		THL
2017-2018*	TIV	Seqirus	Agrippal	260 000	Ted and THL (per Table 3)
2017-2018 2016-2017	TIV	BGP Products Oy	Influvac	1 440 000 (2017-18) 1 620 000 (2016-17)	
2015-2016 2014-2015 2013-2014	TIV	GlaxoSmithKline	Fluarix	600 000 (2015-16) 600 000 (2014-15) 594 000 (2013-14)	THL (per Table 3)
	TIV	Sanofi Pasteur MSD	Vaxigrip	680 000 (2015-16) 600 000 (2014-15) 560 000 (2013-14)	

Source: THL and TED http://ted.europa.eu/udl?uri=TED:NOTICE:293686-2016:TEXT:EN:HTML&src=0
*Additional order due to change in vaccine recommendations

Table 12. Pediatric Influenza vaccine brand availability, 2013-14 to 2019-20, Finland (LAIV) (in DRIVE)

Season	Vaccine type	MAH awarded tender	Vaccine brand name	Nr of doses procured (approximate)	Source
2020-2021 2019-2020	LAIV	AstraZeneca	Fluenz Tetra		TED
2018-2019	LAIV	AstraZeneca	Fluenz Tetra		THL
2017-2018	LAIV	AstraZeneca	Fluenz Tetra	27 500	THL (as per Table 3)
2016-2017	LAIV	AstraZeneca	Fluenz Tetra	27 500	THL (as per Table 3)
2015-2016	LAIV	AstraZeneca	Fluenz Tetra	22 500	X
2014-2015	-	-	-	-	
2013-2014	-	-	-	-	

Source: THL as per Table 3

In the 2018/19 season the national vaccination program was extended to up to 6-year-olds with the option for parents to choose between QIV (injectable), or LAIV for those >2 years of age.

Ireland (not in DRIVE)

In Ireland, one brand of inactivated vaccine has been procured annually. In 2019-20, Ireland switched to QIV vaccine (Vaxigrip Tetra) from TIV. For four of the six TIV years, a TIV manufactured by Sanofi (Table 9d) was used, but without specification of the brand. For the 2017-18 season. Sanofi had two TIV vaccines licensed in all EU countries, Intanza and Vaxigrip, so the exact brand for Ireland cannot be inferred from the available data.

Table 13. Influenza vaccine brand availability, 2013-14 to 2019-20, Ireland (not in DRIVE)

Tendered season(s)	Vaccine type	MAH award tender	Vaccine brand name	Nr of doses procured	Source
2019-2020	QIV	Sanofi Aventis	Vaxigrip Tetra		HSE (as per Table 3)
2018-2019	TIV	Mylan	Influvac	1,000,000	
2017-2018	TIV	Sanofi MSD		1,000,000	
2016-2017	TIV	Sanofi MSD		850,000	
2015-2016	TIV	Sanofi MSD		790,000	
2014-2015	TIV	Abbott	Influvac	790,000	
2013-2014	TIV	Sanofi MSD		850,000	

Source: HSE

Lithuania (not in DRIVE)

In Lithuania one brand of trivalent vaccine has been available, before switching to QIV in 2019/20.

Table 14. Influenza vaccine brand availability, 2013-14 to 2019-20, Lithuania (not in DRIVE)

Season	Vaccine type	Vaccine manufacturer awarded tender	Vaccine brand name	Nr of doses	Source
2019-2020	Quadrivalent vaccine	Sanofi	Vaxigrip Tetra	144 456	National Health Insurance Fund (VLK)
2018-2019	Trivalent vaccine	Abbot	Influvac	131 738	
2017-2018	Trivalent vaccine	Abbot	Influvac	123 470	
2016-2017	Trivalent vaccine	Abbot	Influvac	110 000	
2015-2016	Trivalent vaccine	Abbot	Influvac	95 280	
2014-2015	Trivalent vaccine	Sanofi	Vaxigrip	105 000	
2013-2014	Trivalent vaccine	GSK	Fluarix	100 000	

Netherlands (not in DRIVE)

In the Netherlands, two brands of TIV have been procured annually, but in 2019-20 a switch to QIV was made. The past three tenders have been awarded to Mylan and Sanofi (Table 9e).

Table 15. Influenza vaccine brand availability, 2013-14 to 2019-20, The Netherlands (not in DRIVE)

Season	Vaccine type	MAH awarded tender	Vaccine brand name	Nr of doses procured (approximate)	Source
2019-2020	QIV	Mylan -BGP Products BV	Influvac Tetra	1.15 million	TED
		Sanofi Aventis Netherlands BV	Vaxigrip Tetra	1.15 million	
2018-2019 2017-2018 2016-2017	TIV	Mylan -BGP Products BV	Influvac	1.9 million	TenderNed and RIVM
		Sanofi Pasteur MSD	Vaxigrip	1.2 million	
2015-2016 2014-2015 2013-2014	TIV	Mylan (Solvay/Abbott)	Influvac	1.2 million	RIVM
		Sanofi	Vaxigrip	2.4 million	

Source:
TED 2019/2020: TED 2019/2020: https://ted.europa.eu/TED/notice/udl?uri=TED:NOTICE:49957-2019:TEXT:EN:HTML&src=0
Dutch PHI, https://www.tenderned.nl/tenderned-web/aankondiging/detail/documenten/document/f32379a5b9353e65cbd9e6e34086ffb9/pageId/D909C/huidigemenu/aankondigingen/map/a07276e21d21f0aa1f17d8c8878733d0/akid/43f5a5050b95fe0b2c031a1dfdc898d6/da/false/actie/aa274b487977199c90ed89bf7fb5b3adf319e66f5d0d86ee89d634f7ec8ea825b560366cc6cb9e9ed68ee310df42c04f1cc1862341c2128997415317b39e2617b100d520d07b4e25519806451311da19/cid/740661;jsessionid=33D4B2E2E1CA821862CAEAF10D9F31CE.node6

Norway (not in DRIVE)

In Norway, typically two brands of inactivated vaccines have been procured for the national vaccination program (Table 9f) in addition to LAIV vaccine. QIV was introduced in the 2018/19 season in addition to TIV and LAIV. In 2019/20, TIV will no longer be available.

Table 16. Influenza vaccine brand availability, 2013-14 to 2019-20, Norway (not in DRIVE)

Season	Vaccine type	MAH	Vaccine brand name	Nr of doses procured (approximate)*	Source
2019-2020 2020-2021	QIV	Sanofi Aventis		60%	TED
	QIV	BGP Products		40%	
2019-2020	LAIV	AstraZeneca	Flunez Tetra		Norwegian PHI website
2018-2019	QIV	Sanofi Pasteur	Vaxigrip Tetra		Statens Legemiddelverk
	TIV	BGP Products Sanofi Pasteur	Influvac Vaxigrip		
	LAIV	Astra Zeneca	Fluenz Tetra		
2017-2018 2016-2017	TIV	Sanofi Pasteur	Vaxigrip	240 000 (2017-2018) 200 000 (2016-2017)	Norwegian PHI (as per Table 3)
	TIV	BGP Products	Influvac	335 000 (2017-2018) 300 000 (2016-2017)	
2015-2016 2014-2015	TIV	Sanofi Pasteur	Vaxigrip	250 000 (2015-2016) 250 000 (2014-2015)	
		GSK	Fluarix	250 000 (2015-2016) 250 000 (2014-2015)	
2013-2014	TIV	Sanofi Pasteur	Vaxigrip	400 000	

Season	Vaccine type	MAH	Vaccine brand name	Nr of doses procured (approximate)*	Source
		GSK	Fluarix	190 000	

Source:
2019-20/21: https://ted.europa.eu/udl?uri=TED:NOTICE:120737-2019:TEXT:EN:HTML&src=0; https://www.fhi.no/nettpub/vaksinasjonsveilederen-for-helsepersonell/vaksiner-mot-de-enkelte-sykdommene/influensavaksinasjon---veileder-for/
2018-19: https://legemiddelverket.no/nyheter/sesonginfluensavaksiner-20182019
Norwegian PHI

Scotland (not in DRIVE)

Various vaccine types have been procured in Scotland since 2013 (Table 9k). Only the MAH was specified to which the tender was awarded, which allowed in some cases to infer the brand. In 2016-17 Scotland switched from direct purchase to a centrally organized procurement [2].

Table 17. Influenza vaccine brand availability, 2013-14 to 2019-20, Scotland (not in DRIVE)

Season	Vaccine type	MAH	Vaccine brand name	Doses tendered	Source
2019-2020	aTIV	Seqirus UK Limited	Fluad		Public Contracts Scotland
	QIV cell-based	Seqirus UK Limited	Flucelvax		
	QIV egg-based	Sanofi			
		GSK	Fluarix Tetra		NHS
		Mylan	Influvac sub-unit Tetra / Tetra MYL		
2018-2019	aTIV	Seqirus UK Limited	Fluad		Public Contracts Scotland
	TIV	Mylan (BGP Products)	Influvac		Public Contracts Scotland
		Pfizer			
		Seqirus			
	QIV	Mylan (BGP Products)	Inactivated Influenza Vaccine Mylan Tetra		Public Contracts Scotland
		Sanofi Pasteur			

Season	Vaccine type	MAH	Vaccine brand name	Doses tendered	Source
	LAIV	AstraZeneca UK Ltd	Fluenz Tetra		
2017-2018	TIV	BGP PRODUCTS	Not specified	30%	Public Contracts Scotland
	TIV	Sanofi Pasteur MSD	Not specified	30%	
	TIV	Pfizer	Not specified	30%	
	QIV	Sanofi Pasteur MSD	Vaxigrip tetra*		Public Contracts Scotland
2016-2017	TIV	Pfizer	Not specified	479333	
	TIV	Sanofi Pasteur MSD	Not specified	479333	
	QIV	GlaxoSmithKline	Fluarix tetra*	25000	
	TIV	Seqirus Vaccines	Not specified	479333	
	Egg-free IV	No award published		10000	
2015-2016	IV	Bgp Products	Not specified		Public Contracts Scotland
	TIV	Sanofi Pasteur Msd	Not specified		
	QIV	GlaxoSmithKline	Fluarix tetra*		
	Egg-Free Vaccine	Novartis Vaccines And Diagnostics Limited	Optaflu*		
2014-2015	IV	Sanofi Pasteur Msd	Not specified		Public Contracts Scotland
	TIV	Sanofi Pasteur Msd	Not specified		
	QIV	GlaxoSmithKline	Fluarix tetra*		
	Egg-Free Vaccine	Not reported	Optaflu*		
2013-2014	IV	Sanofi Pasteur Msd	Not specified		Public Contracts Scotland
	IV	GlaxoSmithKline	Not specified		
	Egg-Free Vaccine	Novartis Vaccines And Diagnostics Limited	Optaflu*		

Source: Public Contracts Scotland
2019-20: Public Contracts Scotland https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=MAR348254
https://www.nhsggc.org.uk/media/255400/pgd-inactivated-flu-vaccine-pgd-2019-20.pdf
2018-19: https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=JAN307218
https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=MAY318946
https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=JAN268374
https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=JAN230956
https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=JUN211545
https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=JUN177214
https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=APR143598

*inferred brand

Other references

[20] http://www.nhsscotlandprocurement.scot.nhs.uk/media/11733/nss_national_proc-_flu_vaccine_distribution.pdf

Slovenia (not in DRIVE)

Over the past seasons, Sanofi Pasteur's inactivated vaccines have been procured in Slovenia. This consisted of TIV up to 2016-2017, before switching to QIV (Vaxigrip tetra) in 2017-2018 (Table 9g). For children <3 years, Vaxigrip pediatric was procured until 2017-2018 (Table 9h). As of 2018-2019 no separate pediatric vaccine was procured following a change in the Summary Product Characteristics allowing the use of Vaxigrip Tetra also in children <3 years.

Table 18. Influenza vaccine brand availability, 2013-14 to 2019-20, Slovenia (not in DRIVE)

Tendered season	Vaccine type	MAH	Vaccine brand name	Nr of doses procured (approximate)	Source
2019-2020	QIV	Sanofi Pasteur	Vaxigrip tetra		Slovenian PHI (as per Table 3)
2018-2019	QIV	Sanofi Pasteur	Vaxigrip tetra		
2017-2018	QIV	Sanofi Pasteur	Vaxigrip tetra	107.000	
	TIV	Sanofi Pasteur	Vaxigrip pediatric	700	
2016-2017	TIV	Sanofi Pasteur	Vaxigrip	90.500	
	TIV	Sanofi Pasteur	Vaxigrip pediatric	500	
2015-2016	TIV	Sanofi Pasteur	Vaxigrip	115.600	
	TIV	Sanofi Pasteur	Vaxigrip pediatric	600	
2014-2015	TIV	Sanofi Pasteur	Vaxigrip	115.000	
	TIV	Sanofi Pasteur	Vaxigrip pediatric	600	
2013-2014	TIV	Sanofi Pasteur	Vaxigrip	115.000	
	TIV	Sanofi Pasteur	Vaxigrip pediatric	600	

Source: Slovenian PHI https://www.enarocanje.si/

7.3.2 Countries with regional tenders

Italy (in DRIVE)

For Italy, regional data was collected for the season 2017-2018, 2018-19 and 2019-2020 in line with the DRIVE seasonal studies.

Table 19. Influenza vaccine brand availability, 2017-18 to 2019-20, Italian regions (in DRIVE)

Region	Season	Vaccine type	MAH awarded tender	Vaccine brand name	Nr. of doses procured
Abruzzo	2019-2020	QIV	Sanofi	Vaxigrip Tetra	133.000
		QIVc (cell-culture	Sequirus	Flucelvax Tetra	4.000
		aTIV(MF59 adjuvant)	Seqirus	Fluad	115.000
Basilicata	2019-2020	QIV	Sanofi	Vaxigrip Tetra	78.080
		aTIV (MF59 adjuvant)	Sequirus	Fluad	37.050
Bolzano°	2019-2020	QIV	GSK	Fluarix Tetra	56.700
Calabria	2019-2020	QIV	GSK	Fluarix Tetra	152.000
		aTIV (MF59 adjuvant)	Seqirus	Fluad	153.010
Campania	2019-2020	QIV	GSK	Fluarix Tetra	711.110
		aTIV	Seqirus	Fluad	492.840
Emilia Romagna	2019-2020	QIV	GSK	Fluarix Tetra	570.000
		aTIV (MF59 adjuvant)	Seqirus	Fluad	423.000
Friuli Venezia Giulia	2019-2020	QIV	Sanofi	Vaxigrip Tetra	220.800
		QIVc (cell-culture	Seqirus	Flucelvax Tetra	1.000
		aTIV (MF59 adjuvant)	Seqirus	Fluad	36.700
Lazio	2019-2020	QIV	Sanofi	Vaxigrip Tetra	486.460
		QIVc (cell-culture)	Seqirus	Flucelvax	229.795
		aTIV (MF59 adjuvant)	Seqirus	Fluad	415.960
Liguria	2019-2020	QIV	GSK	Fluarix Tetra	273.685
		QIVc (cell-culture	Seqirus	Flucelvax	28.800
		aTIV (MF59 adjuvant)	Seqirus	Fluad	75.355
Lombardia	2019-2020	QIV	Sanofi	Vaxigrip Tetra	1.533.500
		aTIV (MF59 adjuvant)	Seqirus	Fluad	100.000
Marche	2019-2020	QIV	GSK	Fluarix Tetra	180.000

Region	Season	Vaccine type	MAH awarded tender	Vaccine brand name	Nr. of doses procured
		aTIV (MF59 adjuvant)	Seqirus	Fluad	120.000
Molise	2019-2020	QIV	Sanofi	Vaxigrip Tetra	44.000
		QIVc (cell-culture	Seqirus	Flucelvax Tetra	1.000
		aTIV (MF59 adjuvant)	Seqirus	Fluad	15.000
Piemonte	2019-2020	QIV	Sanofi	Vaxigrip Tetra	750.000
Puglia	2019-2020	QIV	Sanofi	Vaxigrip Tetra	426.800
		QIVc (cell-culture	Seqirus	Flucelvax Tetra	7.000
		aTIV (MF59 adjuvant)	Seqirus	Fluad	431.700
Sardegna	2019-2020	QIV (2 batch)	QIV >3 years: Mylan	Influvac S Tetra	293.580
			QIV<3 YEARS: Sanofi	Vaxigrip Tetra	5.000
		QIVc (cell-culture	Seqirus	Flucelvax Tetra	10.000
Sicilia	2019-2020, 2020-2021	QIV	Sanofi	Vaxigrip Tetra	807.000
		QIVc (cell-culture	Seqirus	Flucelvax	10.000
		aTIV (MF59 adjuvant)	Seqirus	Fluad	351.000
Toscana	2019-2020	QIV	GSK	Fluarix Tetra	530.114
		aTIV (MF59 adjuvant)	Seqirus	Fluad	128.350
Trento°	2019-2020	aTIV (MF59 adjuvant)	Seqirus	Fluad	45.000
		QIV (2 batch)	QIV>3 years: Mylan	Influvac S Tetra	40.000
			QI<3 years: Sanofi	Vaxigrip Tetra	5.000
Umbria	2019-2020, 2020-2021	QIV	Mylan	Influvac S Tetra	49.730
		aTIV	Seqirus	Fluad	146.180
Valle d'Aosta	2019-2020	QIV	Sanofi	Vaxigrip Tetra	13.000
		aTIV (MF59 adjuvant)	Seqirus	Fluad	5.000
Veneto	2019-2020	QIV (2 batch)	QIV>9 years: Mylan	Influvac S Tetra	511.360
			QIV<9 years: Sanofi	Vaxigrip Tetra	10.260
		QIVc (cell-culture	Sequirus	Flucelvax Tetra	6.830
Abruzzo	2018-2019	aTIV (MF59 adjuvant)	Seqirus	Fluad	336.290
		QIV	Sanofi	Vaxigrip Tetra	198.000
Bolzano	2018-2019	TIV	Mylan	Influvac	5,000
		TIVid	Sanofi	Intanza	6,000
		QIV	GSK	Fluarix Tetra	42,000
Basilicata	2018-2019	aTIV	Seqirus	Fluad	31,030

Region	Season	Vaccine type	MAH awarded tender	Vaccine brand name	Nr. of doses procured
		QIV	Sanofi	Vaxigrip Tetra	84,000
Calabria	2018-2019	aTIV (MF59 adjuvant)	Seqirus	Fluad	153,010
		QIV (split)	GSK	Fluarix Tetra	152,020
Campania	2018-2019	aTIV (MF59 adjuvant)	Seqirus	Fluad	450,000
		QIV	GSK	Fluarix Tetra	650,000
Emilia-Romagna	2018-2019	aTIV	Seqirus	Fluad	375,000
		QIV	GSK	Fluarix Tetra	450,000
Friuli-Venezia-Giulia	2018-2019	aTIV	Seqirus	Fluad	33,500
		QIV	Sanofi	Vaxigrip Tetra	204,000
Lazio	2018-2019	aTIV	Seqirus	Fluad	412,764
		QIV	GSK	Fluarix Tetra	642,501
Liguria	2018-2019	aTIV	Seqirus	Fluad	75,000
		QIV	GSK	Fluarix Tetra	328,422
Lombardia	2018-2019	QIV	Sanofi	Vaxigrip Tetra	1,369,355
Marche	2018-2019	aTIV	Seqirus	Fluad	121,800
		QIV	GSK	Fluarix Tetra	38410
Piemonte and Valle D'Aosta	2018-2019	aTIV	Seqirus	Fluad	5000
		QIV	Sanofi	Vaxigrip Tetra	713,000
Puglia	2018-2019	aTIV	Seqirus	Fluad	431,700
		QIV	Sanofi	Vaxigrip Tetra	426,800
Sardegna	2018-2019	QIV	GSK	Fluarix Tetra	266,080
Sicilia	2018-2019	aTIV (MF59)	Seqirus	Fluad	353,000
		QIV	Sanofi	Vaxigrip Tetra	807,000
Toscana	2018-2019	aTIV	Seqirus	Fluad	114,050
		QIV	GSK	Fluarix Tetra	663,260
P.A. Trento	2018-2019	aTIV	Seqirus	Fluad	35,000
		QIV	Sanofi	Vaxigrip Tetra	45,000
Umbria	2018-2019	aTIV (MF59 adjuvant)	Seqirus	Fluad	135,000
		QIV	GSK	Fluarix Tetra	40,000
Veneto	2018-2019	aTIV (MF59)	Seqirus	Fluad	135,700
		QIV	Sanofi	Vaxigrip Tetra	722,000
	2017-2018	TIV (split/sub-unit)	Not reported	Not reported	4000

Region	Season	Vaccine type	MAH awarded tender	Vaccine brand name	Nr. of doses procured
Abruzzo			(Mylan or Seqirus)	(Influvac or Agrippal)	
		aTIV (MF59 adjuvant)	Seqirus		137,700
		Intradermal TIV	Sanofi	Intanza 15	35,600
		QIV (split)	Sanofi	Vaxigrip Tetra	65,300
Basilicata	2017-2018	Pediatric IV	Mylan	Influvac S	800
		aTIV (MF59 adjuvant)	Seqirus	Fluad	32,000
		Intradermal TIV	Sanofi	Intanza	34,000
		QIV (split)	Sanofi	Vaxigrip Tetra	36,000
P.A. Bolzano	2017-2018, 2018-2019, 2019-2020	TIV (split)			
		QIV (split)			
		Intradermal TIV			
Calabria	2017-2018	Not available			
Campania	2017-2018	TIV (split/sub-unit)	Seqirus		
		TIV (split/sub-unit)	Seqirus		
		aTIV (MF59C1 adjuvant)	Seqirus		
		Intradermal TIV	Sanofi		
		QIV	GSK		
Emilia-Romagna	2017-2018	QIV	GSK	Fluarix Tetra	
		Intradermal TIV	Sanofi	Intanza	
		aTIV	Seqirus	Fluad	
		TIV	Seqirus	Agrippal S1	
Friuli- Venezia-Giulia	2017-2018	TIV (split/sub-unit)	Mylan	Influvac	76,150
		aTIV (MF59 adjuvant)	Seqirus	Fluad	12,000
		Intradermal TIV	Sanofi	Intanza	20,500
		QIV (split)	Sanofi	Vaxigrip Tetra	113,904
Lombardia	2017-2018	TIV (split or subunit)			
		aTIV (MF59 adjuvant)			
		Intradermal TIV			
		QIV			
Lazio	2017-2018	TIV (split/sub-unit)	Mylan	Influvac S	322,180
		aTIV (MF59 adjuvant)	Seqirus	Fluad	192,672
		QIV (split)	GSK	Fluarix Tetra	358,573
		Intradermal TIV	Sanofi	Intanza	78,512
Liguria	2017-2018	TIV (split/sub-unit)	Mylan	Influvac S	

Region	Season	Vaccine type	MAH awarded tender	Vaccine brand name	Nr. of doses procured
		QIV (split)	Sanofi	Vaxigrip Tetra	
Marche	2017-2018	TIV	Seqirus	Agrippal	110,670
		aTIV	Seqirus	Fluad	121,800
		Intradermal TIV	Sanofi	Intanza 15	1,150
		QIV	GSK	Fluarix Tetra	38,410
Molise	2017-2018	Not available			
Piemonte and Valle D'Aosta	2017-2018	TIV (split or subunit)	Seqirus		
		Intradermal IV	Sanofi		
		QIV (split)	Sanofi		
Puglia	2017-2018	QIV	Sanofi		
		aTIV (MF59 adjuvant)	Seqirus		
		TIV (sub-unit/split)	Mylan		
		Intradermal TIV	Sanofi		
Toscana	2017-2018	TIV (split)	Mylan	Influvac S	8,700
		Intradermal TIV	Sanofi	Intanza	36,000
		aTIV	Seqirus	Fluad F/S	440,000
		QIV (split)	Sanofi	Vaxigrip Tetra	426,450
P.A. Trento	2017-2018	QIV	GSK		7,000
Sardegna	2017-2018	QIV	Sanofi		
		TIV (sub-unit/split)	Mylan		
		aTIV (MF59 adjuvant)	Seqirus		
		Intradermal TIV	Sanofi		
		Pediatric TIV (split/sub-unit)	Mylan		
Sicilia	2017-2018	Lot 1: Not specified	Mylan		
		Lot 2: Not specified			
		Lot 3: Not specified	GSK		
Umbria	2017-2018	aTIV (MF59 adjuvant)	Seqirus		
		Intradermal TIV	Sanofi		
		QIV (split)	GSK		

Region	Season	Vaccine type	MAH awarded tender	Vaccine brand name	Nr. of doses procured
		TIV (split/sub-unit)	Mylan		
Veneto	2017-2018	TIV (split or subunit)	Mylan	Influvac S	537,410
		aTIV (MF59 adjuvant)	Seqirus	Fluad	125,245
		QIV (split/sub-unit)	GSK	Fluarix Tetra	183,170

2019-2020:
Lazio: https://intercenter.regione.emilia-romagna.it/servizi-imprese/bandi-altri-enti/bandi-altri-enti-in-corso/BANDO_GARA_PORTALE@1701072
Toscana:
https://webs.rete.toscana.it/PubbBandi/VisualizzaAllegatoEsito.do?codGara=1966093&codLott=4&numAppa=1
Marche:
https://appaltisuam.regione.marche.it/PortaleAppalti/it/homepage.wp?actionPath=/ExtStr2/do/FrontEnd/Bandi/view.action&currentFrame=7&codice=G03869
Abruzzo: http://www.aric.it/index.php/2019/08/13/appalto-specifico-per-laffidamento-della-fornitura-di-vaccini-antinfluenzali-e-profilassi-occorrenti-alle-aziende-del-servizio-sanitario-della-regione-abruzzo-e-della-regione-molise/
Molise: http://www.aric.it/index.php/2019/08/13/appalto-specifico-per-laffidamento-della-fornitura-di-vaccini-antinfluenzali-e-profilassi-occorrenti-alle-aziende-del-servizio-sanitario-della-regione-abruzzo-e-della-regione-molise/
Umbria: https://umbriasalute.com/bandi/appalto-specifico-nellambito-del-sistema-dinamico-di-acquisizione-della-pubblica-amministrazione-sdapa-di-consip-relativo-alla-fornitura-di-vaccini-alle-aziende-sanitarie-ed-ospedaliere-dellumbria-suddivisa-in-n-24-lotti
Piemonte: http://www.scr.piemonte.it/cms/media/files/acquisti/convenzioni/2019/032_VACCINI%20ANTINFLUENZALI/Capitolato%20tecnico.pdf
Valle d'Aosta: http://www.scr.piemonte.it/cms/media/files/acquisti/convenzioni/2019/032_VACCINI%20ANTINFLUENZALI/Capitolato%20tecnico.pdf
Liguria: http://www.acquistiliguria.it/index.php?option=com_bandiegare&view=bandiegare&Itemid=59&id_gara=369
Bolzano: https://www.bandi-altoadige.it/sourcing/lots/resume/id/429544/idl/3
Trento:
https://salute.regione.veneto.it/web/aziendazero/gare?p_p_id=110_INSTANCE_33uS&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-3&p_p_col_pos=1&p_p_col_count=2&_110_INSTANCE_33uS_struts_action=%2Fdocument_library_display%2Fview&_110_INSTANCE_33uS_tabs1=folders&_110_INSTANCE_33uS_folderId=1590059&_110_INSTANCE_33uS_cur1=1&_110_INSTANCE_33uS_keywords=&_110_INSTANCE_33uS_advancedSearch=false&_110_INSTANCE_33uS_andOperator=true&_110_INSTANCE_33uS_delta=50
Calabria: https://www.regione.calabria.it/website/portaltemplates/view/view.cfm?8187
Puglia:https://www.innova.puglia.it/allnews/-/asset_publisher/s92Rnms1OaMO/content/avviso-gara-vaccini-07-09-2018;jsessionid=1693FEC7EBC0B0519280289CB772F604
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http://pti.regione.sicilia.it/portal/page/portal/PIR_PORTALE/PIR_LaStrutturaRegionale/PIR_AssessoratoEconomia/PIR_DipBilancioTesoro/PIR_Infoedocumenti/PIR_Amministrazionetrasparente/PIR_CentraleUnicadiCommittenza/PIR_AvvisieBandidiGara2016/PIR_EsercizioFinanziario2018/PIR_Gara_FornituratriennameVaccini
Campania:
https://www.soresa.it/societatrasparente/AmministrazioneTrasparente/Provvedimenti/Provvedimenti%20dirigenti/Determinazioni/2019/Determina%20n.%2094%20del%2028%20Maggio%202019.pdf
Sardegna: http://www.regione.sardegna.it/documenti/1_850_20190716111224.pdf
Friuli Venezia Giulia:
https://www.acquistinretepa.it/aggregatori/elencoIniziativePubbliche.do?method=dettaglioIniziativa&idIniziativa=IS4PqHO2K5wgAiBQJWAv7A%3D%3D
Veneto:
https://salute.regione.veneto.it/web/aziendazero/gare?p_p_id=110_INSTANCE_33uS&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-3&p_p_col_pos=1&p_p_col_count=2&_110_INSTANCE_33uS_struts_action=%2Fdocument_library_display%2Fview&_110_INSTANCE_33uS_tabs1=folders&_110_INSTANCE_33uS_folderId=1590059&_110_INSTANCE_33uS_cur1=1&_110_INSTANCE_33uS_keywords=&_110_INSTANCE_33uS_advancedSearch=false&_110_INSTANCE_33uS_andOperator=true&_110_INSTANCE_33uS_delta=50

Basilicata: https://www.sua-rb.it/PortaleAppalti/it/homepage.wp?actionPath=/ExtStr2/do/FrontEnd/Bandi/view.action&currentFrame=7&codice=G00227
Emilia Romagna: https://intercenter.regione.emilia-romagna.it/servizi-imprese/bandi-e-avvisi_new/bandi-in-corso/BANDO_GARA_PORTALE@1666999
Lombardia: http://www.sintel.regione.lombardia.it/eprocdata/auctionDetail.xhtml?id=112431164
2018-2019:
Abruzzo: https://www.regione.abruzzo.it/content/fornitura-di-vaccini-antinfluenzali-e-profilassi-ad-uso-umano-e-servizi-connessi
Basilicata: http://www.crob.it/crob/files/13/58/56/DOCUMENT_FILE_135856.pdf
Emilia-Romagna: https://intercenter.regione.emilia-romagna.it/servizi-pa/convenzioni/convenzioni-attive/2018/vaccini-antinfluenzali-2018-2019
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Lazio: https://ted.europa.eu/udl?uri=TED:NOTICE:517000-2018:TEXT:EN:HTML&src=0
Lombardia: http://www.sintel.regione.lombardia.it/eprocdata/auctionDetail.xhtml?id=99150946
Piemonte and Valle d'Aosta: http://www.scr.piemonte.it/cms/acquisti-forniture-e-servizi/convenzioni/convenzioni-attive/2094-fornitura-di-vaccino-antinfluenzale-gara-122-2018.html
Sardegna: https://www.atssardegna.it/documenti/12_111_20181024150233.pdf
2017-2018:
Piemonte and Valle D'Aosta: http://www.scr.piemonte.it/cms/acquisti-forniture-e-servizi/esiti-di-gara/1815-fornitura-di-vaccini-antinfluenzali-per-la-campagna-di-vaccinazione-stagione-20172018-gara-88-2017-esito-di-gara.html
Lombardia: http://www.sintel.regione.lombardia.it/eprocdata/auctionDetail.xhtml?id=87470686
P.A. Bolzano: https://www.bandi-altoadige.it/sourcing/lots/resume/id/429544/idl/3
P.A. Trento:
https://servizi.apss.tn.it/trasparenza/acquisti//CONCLUSE/2017/CIG7164788A17_Fornitura_vaccino_antinfluenzale_durata_ottore2017_novembre2018/CIG7164788A17_05_Determina%20aggiudicazione.pdf
Veneto: https://bandi.regione.veneto.it/Public/Download?idAllegato=6803
Friuli- Venezia-Giulia:
http://bandigara.regione.fvg.it/BandiDiGaraEContratti/sv/DettaglioSingolaProcedura?title=Informazioni+sulle+singole+procedure&cig=7122771891&nPag=49&oggettoBando=&strutturaProponemte=&cigForm=&anno=2017&sceltaContraente=&startsearch=&action=
Liguria: http://www.acquistiliguria.it/index.php?option=com_bandiegare&view=bandiegare&Itemid=53&id_gara=251
Emilia-Romagna: http://intercenter.regione.emilia-romagna.it/servizi-pa/convenzioni/convenzioni-attive/2017/vaccini-antinfluenzali-2017-2018
Toscana: http://www.estar.toscana.it/ns-fornitori/ns-startsda/sda-sistemi-dinamici-di-acquisizione/2072-estarfa01-sda-farmaci-2
Umbria: http://www.gazzettaufficiale.it/eli/id/2018/01/17/TX18BGA919/s5;jsessionid=PrXzNXziZBSqsnxU7zt7yw__.ntc-as3-guri2b
Lazio: http://www.regione.lazio.it/binary/rl_amministrazione_trasparente/tbl_contenuti/Estrazione_provvedimenti_luglio_2017_01092017.pdf
Abruzzo: http://www.regione.abruzzo.it/osservatorioappalti/docs/soggettoAggregatore/all_1_det_171.pdf
Campania: http://www.gazzettaufficiale.it/eli/gu/2017/11/15/132/s5/pdf
Puglia: http://www.empulia.it/tno-a/empulia/Lists/NEWS/DispForm.aspx?ID=1011
Basilicata: http://siab.regione.basilicata.it/PubbBandi/VisualizzaAllegatoEsito.do?codGara=16455&codLott=3&numAppa=1
Sicilia:http://pti.regione.sicilia.it/portal/page/portal/PIR_PORTALE/PIR_LaStrutturaRegionale/PIR_AssessoratoEconomia/PIR_DipBilancioTesoro/PIR_CentraleUnicadiCommittenza/PIR_AvvisieBandidiGara2016/PIR_EsercizioFinanziario2017/PIR_GaraSDAPA_VacciniAntiinfluenza/Decreto%20n.%201811%20del%2028.09.2017.pdf
Sardegna: https://www.sardegnacat.it/esop/ita-ras-host/public/web/servizi_pa/convenzioni_quadro_attive/convenzioni_vaccini.jst

Spain/ framework agreement (in DRIVE)

In Spain, regions have the option to procure a selection of vaccines through the framework agreement ("acuerdo marco") negotiated by the government or to start an independent procurement process. The vaccines available through the framework agreement between 2013-2014 and 2017-2018 are listed in Table 9i. At least two vaccines were procured, conventional TIV together with at least one vaccine from the combined category of adjuvanted, cell, virosomal and intradermal TIV. For this category, it is inferred that where Sanofi is listed for this category it concerns the intradermal vaccine Intanza of Sanofi. Seqirus (formerly Novartis or BioCSL) is the MAH of the adjuvanted TIV Fluad and hence where Novartis is listed for this category it is assumed to concern Fluad. Hence, with the exception where a MAH has just one TIV in the 2017-18 season, for the other TIV products the brand could not be inferred with certainty because the TIV products available on the EU market have evolved over time and MAHs have multiple TIVs in their portfolio. For the category of cell-based vaccines, the trivalent vaccine Optaflu has been replaced with the quadrivalent cell-based vaccine Flucelvax Tetra.

Table 20. Influenza vaccine brand availability through the national framework agreement, 2013-14 to 2019-20, Spain

Season	Vaccine type	MAH	Vaccine brand name	Source
2019-2020	TIV (egg-based)	Seqirus		Diario Farma
	QIV (egg-based)	Mylan Sanofi	Influvac Tetra* Vaxigrip Tetra*	
	Adjuvanted IV	Seqirus	Fluad*	
	QIV (cell-based)	Seqirus	Flucelvax	
2018-2019 2017-2018	TIV (egg-based)	Seqirus		Boletín Oficial del Estado Porta de la transparencia
		Mylan	Influvac *	
	adjuvanted/virosomol/intradermal IV	Sanofi-Aventis	Intanza*	
		Seqirus	Fluad*	
2016-2017	TIV (egg-based)	Novartis		Porta de la transparencia Plataforma de Contratación del Sector Público
		Pasteur MSD		
		BGP Products		
	adjuvanted/virosomol/intradermal IV	Sanofi Pasteur MSD	Intanza*	
		Novartis	Fluad*	
	TIV (cell-based)	Novartis	(Not awarded)	
2015-2016	TIV (egg-based)	Novartis		Porta de la transparencia
		Sanofi Pasteur MSD		
		BGP Products		
	adjuvanted/virosomol/intradermal IV	Sanofi Pasteur MSD	Intanza*	

Season	Vaccine type	MAH	Vaccine brand name	Source
		Novartis	Fluad*	Plataforma de Contratación del Sector Público
	TIV (cell-based)	Novartis	Optaflu *	
2014-2015	TIV (egg-based)	Abbott Laboratories		Boletín Oficial del Estado TED Plataforma de Contratación del Sector Público
		GlaxoSmithKline		
		Novartis		
		Sanofi Pasteur MSD,		
	adjuvanted/virosomol/intradermal IV	Novartis.	Fluad*	
		Sanofi Pasteur MSD	Intanza*	
	TIV (cell-based)	Novartis	Optaflu*	
2013-2014	TIV (egg-based)	GlaxoSmithKline		Boletín Oficial del Estado
		Novartis		
		Sanofi Pasteur MSD		
	adjuvanted/virosomol/intradermal IV	Alentia Biotech		
		Janssen Cilag		
		Novartis	Fluad*	
		Sanofi Pasteur MSD	Intanza	

*Inferred brand

Source 2019/2020: https://www.diariofarma.com/2019/07/03/sanidad-adjudica-el-acuerdo-marco-de-gripe-a-sanofi-sequirus-y-mylan
Source 2018/2019: https://www.20minutos.es/noticia/3211357/0/consejo-gobierno-prorroga-acuerdo-marco-para-adquisicion-vacunas-para-campana-contra-gripe-2018-19/
Sources 2017/2018: https://www.boe.es/diario_boe/txt.php?id=BOE-B-2017-50085 and http://transparencia.gob.es/servicios-buscador/contenido/contratolicitacion.htm?id=Licitacion_ece7d9ceeecd144887246e2885079976571c083e&fcAct=2017-09-06T12:56:32.991Z&lang=ca
Sources 2016/2017: http://transparencia.gob.es/servicios-buscador/contenido/contratolicitacion.htm?id=Licitacion_11c741c7ac3f3c62528e293cb23b50b1988ee876&lang=ca-valencia&fcAct=2016-11-16T23:46:19.343Z and https://contrataciondelestado.es/wps/wcm/connect/f228e54b-8dd7-4817-89fe-17442d2ab5d4/DOC_CAN_ADJ2015-121409.pdf?MOD=AJPERES
Sources 2015/2016: http://transparencia.gob.es/servicios-buscador/contenido/contratolicitacion.htm?id=Licitacion_11c741c7ac3f3c62528e293cb23b50b1988ee876&lang=ca-valencia&fcAct=2016-11-16T23:46:19.343Z and https://contrataciondelestado.es/wps/wcm/connect/f228e54b-8dd7-4817-89fe-17442d2ab5d4/DOC_CAN_ADJ2015-121409.pdf?MOD=AJPERES
Sources 2014/2015: https://www.boe.es/diario_boe/txt.php?id=BOE-B-2014-16918 and http://ted.europa.eu/TED/notice/udl?uri=TED%3ANOTICE%3A273045-2014%3ATEXT%3AES%3AHTML&src=0 and https://contrataciondelestado.es/wps/wcm/connect/4ac8823f-df84-4e50-b48b-6881f49e5449/DOC_CAN_ADJ2014-610995.pdf?MOD=AJPERES
Source 2013/2014: https://boe.es/diario_boe/txt.php?id=BOE-B-2013-32863

Spain/ Valencia region (in DRIVE)

Valencia does not participate in the framework agreement and organizes their own tenders. The source for the data presented in table 9j is not procurement data but based on reported use in the Valencia region in the vaccine registry (Table 9j).

Table 21. Influenza vaccine brand availability (data based on actual vaccines used up to 2018-20), 2013-14 to 2019-20, Valencia – Spain (in DRIVE)

Tendered season	Vaccine type	MAH	Vaccine brand name	Source
2019-2020	QIV	Sanofi	Vaxigrip Tetra	Generalitat Valenciana
	QIVc	Seqirus	Flucelvax Tetra	
	aTIV	Seqirus	Chiromas	
2018-2019	TIV	Mylan	Influvac	FISABIO vaccine registry
	aTIV	Seqirus	Chiromas	
2017-2018	TIV	Mylan	Influvac	
	aTIV	Seqirus	Chiromas	
2016-2017	TIV	Sanofi	Vaxigrip	
	TIV	Sanofi	Intanza	
2015-2016	TIV	Sanofi	Vaxigrip	
	TIV	Novartis	Optaflu	
2014-2015	TIV	Sanofi	Vaxigrip	
	aTIV	Novartis	Chiromas	
2013-2014	aTIV	Novartis	Chiromas	
	TIV	Novartis	Chiroflu	
	Virosomal TIV	Berna-Janssen	Inflexal V	
2012-2013	TIV	Sanofi	Intanza	
	TIV	Sanofi	Antigripal Pasteur	
2011-2012	TIV	Sanofi	Gripavac	
	TIV	Sanofi	Intanza 15	
	Virosomal TIV	Berna-Janssen	Inflexal V	

Source:
2019-2020: http://www.sp.san.gva.es/sscc/opciones4.jsp?CodPunto=3507&Opcion=VACUNAS&MenuSup=SANMS&Nivel=2&Seccion=SANPS1210102
2018-2019 and earlier: FISABIO vaccine registry

Sweden (not in DRIVE)

No data on historical vaccine availability or use has been found for Sweden.

7.3.3 Countries with direct purchase systems

France (in DRIVE)

In France, Influvac and Vaxigrip were consistently the most reimbursed vaccines throughout 2013 to 2017, followed by Immugrip (Table 9l). It was assumed that the years reflect the year in which the influenza season commenced. Brands with less than 1000 doses in a year were not considered in the summary assessment presented later in this deliverable. The reimbursement data provides supporting information for the switch to QIV in France during the last season.

Table 22. Influenza vaccine brand availability (data based on vaccines reimbursed), 2013-14 to 2019-20, France (in DRIVE)

Season	Vaccine type	MAH	Vaccine brand	Doses reimbursed	Source
2019-2020	QIV	Sanofi	Vaxigrip Tetra		ANSM
	QIV	Mylan	Influvac Tetra		
	TIV	Mylan	Influvac		
2018	TIV	Abbott	INVLUAC	20219	Medic'AM 2018
		Sanofi	VAXIGRIP	3518	
		Sanofi	IMMUGRIP	220	
	QIV	Abbott	INFLUVAC TETRA	4634305	
		Sanofi	VAXIGRIPTETRA	3629233	
		GSK	FLUARIXTETRA	187266	
2017	TIV	Abbott	INFLUVAC	4324612	Medic'AM 2017
		Sanofi	VAXIGRIP	3134690	
		Sanofi	IMMUGRIP	496330	
		GSK	FLUARIX	128	
		Seqirus	AGRIPPAL	1	
		Sanofi	MUTAGRIP PASTEUR	7	

Season	Vaccine type	MAH	Vaccine brand	Doses reimbursed	Source
2019-2020	QIV	Sanofi	Vaxigrip Tetra		ANSM
	QIV	Mylan	Influvac Tetra		
	TIV	Mylan	Influvac		
2016	TIV	Abbott	INFLUVAC	3796119	Medic'AM 2016
		Sanofi	VAXIGRIP	3408584	
		Sanofi	IMMUGRIP	492386	
		GSK	FLUARIX	3275	
		Seqirus	AGRIPPAL	134	
		Sanofi	MUTAGRIP PASTEUR	10	
2015	TIV	Abbott	INFLUVAC	2863363	Medic'AM 2015
		Sanofi	VAXIGRIP	3319721	
		Sanofi	IMMUGRIP	727207	
		GSK	FLUARIX	108544	
		Seqirus	AGRIPPAL	10264	
		Sanofi	MUTAGRIP PASTEUR	31	
2014	TIV	Abbott	INFLUVAC	2521398	Medic'AM 2014
		Sanofi	VAXIGRIP	3217081	
		Sanofi	IMMUGRIP	769356	
		GSK	FLUARIX	167717	
		Seqirus	AGRIPPAL	47927	
		Sanofi	MUTAGRIP PASTEUR	43	
2013	TIV	Abbott	INFLUVAC	2313011	Medic'AM 2013
		Sanofi	VAXIGRIP	3326051	
		Sanofi	IMMUGRIP	729815	
		GSK	FLUARIX	182410	
		Seqirus	AGRIPPAL	37285	
		Sanofi	MUTAGRIP PASTEUR	101	

2019-2020: https://www.ansm.sante.fr/Dossiers/Vaccins/Vaccins-contre-la-grippe-saisonniere/(offset)/4

England (in DRIVE)

Numerous influenza vaccine brands, especially inactivated TIV, were dispensed in England by pharmacies and dispensing general physicians (Table 9m). For the purpose of the current deliverable hospital dispensing was not considered
For the 2019-2020 season, the NHS lists the following vaccines [13]:

- LAIV: Fluenz Tetra (AstraZeneca)
- QIVe: Fluarix Tetra (GSK), Quadrivalent Influenza vaccine (MASTA), Quadrivalent influenza vaccine Tetra MYL (Mylan), Quadrivalent Influvac sub-unit Tetra (Mylan), Quadrivalent Influenza vaccine (Sanofi Pasteur)
- TIV-high dose: Trivalent Influenza Vaccine High-Dose (Sanofi Pasteur)
- QIVc: Flucelvax Tetra (Seqirus)
- aTIV: Fluad (Seqirus).

Table 23. Influenza vaccine brand availability (data based on vaccines dispensed by pharmacies and dispensing doctors), 2013-14 to 2019-20, England (in DRIVE)

Vaccine type	MAH	Vaccine	2019-20-	2018-2019	2017-2018	2016-2017	2015-2016	2014-2015	2013-2014
Source			**NHS**						
Adjuvanted TIV	Seqirus	Fluad_Vac 0.5ml Pfs Adjuv Trivalent Influenza_Vac 0.5ml Pfs	6,144,901						
Inactivated IV	Not specified	Influenza_Vac Inact 0.5ml Pfs	2,188,443	6,136,667	5,725,540	7,347,245	7,779,182	7,960,689	7,398,588
QIV	Abbott	Influenza Tetra MYL_ Vac 0.5ml Pfs Influvac Sub-Unit Tetra_Vac 0.5ml Pfs	707,831						
QIV cell-based	Seqirus	Flucelvax Tetra_Vac 0.5ml Pfs	673,036						
TIV	Abbott	Influvac Sub-Unit_Vac 0.5ml Pfs Influenza MYL_Vac 0.5ml Pfs	173,817	130,078	240726	290088	288321	325454	157245
Inactivated IV	Not specified	Influenza_Vac SplitViron Inact 0.5ml Pfs	14,831						
TIV	Abbott	Imuvac_Vac 0.5ml Pfs	9,670	506,667	1573602	1335684	1586558	1671936	1547297
QIV	GSK	Fluarix Tetra_Vac 0.5ml Pfs	7,588	242,227	416449	350092	228832	224982	40781
TIV	Seqirus	Enzira_Vac Inact 0.5ml Pfs	1,144	18,411	220000	230574	238469	352514	444320
TIV	Seqirus	Agrippal_Vac 0.5ml Pfs	454	189,267	301128	484197	82769	73733	97108
TIV High dose	Sanofi Pasteur	Trivalent_Vac Inact High Dose 0.5ml Pfs	198						
Live QIV	AstraZeneca	Fluenz_Tetra Vac Nsl Susp 0.2ml Ud	180		186	222	850	71167	
QIV	Not specified	Quadrivalent_Vac Inact 0.5ml Pfs		2,676,712	1,752,238				
TIV	Seqirus	Fluvirin_Vac 0.5ml Pfs		200	8157	8006	14049	26154	90753

Vaccine type	MAH	Vaccine	2019-20-	2018-2019	2017-2018	2016-2017	2015-2016	2014-2015	2013-2014
TIV	Sanofi	Intanza_Vac 15mcg/0.1ml Strain Pfs		168	4651	44823	52284	78963	86288
TIV	GSK	Fluarix_Vac 0.5ml Pfs		77,181	19	14		5,546	420,351
TIV	Novartis (now Seqirus)	Optaflu_Vac 0.5ml Pfs		16,460	17	1,151	9,513	13,004	27,598
TIV	CSL	Begrivac_Vac 0.5ml Pfs		1721	13	590	7,050	18,369	31,766
TIV	Crucell	Viroflu_Vac Inact 0.5ml Pfs			5		5,733	10,757	147,634
Live TIV	AstraZeneca	Fluenz_Vac Nsl Susp 0.2ml Ud		21,843				91917	91917
Virosomal adjuvanted TIV	Crucell	Inflexal V_Vac 0.5ml Pfs		1		399	1006	3864	7566
Inactivated, not specified	Not specified	Influenza_Vac Surf/Antgn Inact 0.5ml Pfs		96		126497			
TIV	Abbott	Influvac Desu_Vac 0.5ml Pfs		127		1		7485	226813
TIV	Sanofi	Intanza_Vac 9mcg/0.1ml Strain Pfs				32	519	2322	4045
TIV	Baxter	Mastaflu_Vac 0.5ml Pfs		2		117	3603	2322	13508

Source: NHS https://www.nhsbsa.nhs.uk/prescription-data/dispensing-data/prescription-cost-analysis-pca-data. The prescription data dispensed in the have been manually added for the months of September to February of every season.

Belgium (not in DRIVE)

An application was sent to the Belgian Farmanet database in March 2018 to obtain data on influenza vaccine brands and the number of doses for the years 2013-2014 onwards; however, the application was rejected. Reasons for the rejection were the fact that not all influenza vaccine manufacturers are involved in DRIVE and that Farmanet data could provide a commercial advantage to the involved manufacturers.

Information on the type and brand of vaccines available in Belgium, but not doses, was available from Vax Pro, an online newsletter of the Belgium Scientific Consultation Group. TIV vaccines, including the intradermal vaccine, and QIV have been consistently procured together until 2017/18 season, before switching to only QIV brands from 2018-19 onwards.

Table 24. Influenza vaccine brand availability, 2013-14 to 2019-20, Belgium (not in DRIVE)

Season	Vaccine type	MAH	Vaccine brand name	Nr of doses	Source
2019-2020	QIV	Abbott GSK Sanofi	Influac Tetra Alpharix-Tetra Vaxigrip Tetra		Health Belgium
2018-2019	QIV	Abbott GSK Sanofi	Influac Tetra Alpharix-Tetra Vaxigrip Tetra	-	VaxPro 2018
2017-2018	TIV	Abbott	Influvac S.	-	VaxPro 2017 Hoge Gezondheidsraad België
	QIV	GSK Sanofi	Alpharix-Tetra Vaxigrip Tetra	-	
2016-2017	TIV	Sanofi Abbot	Vaxigrip Influvac S	-	VaxPro 2016
	QIV	GSK	Alpharix-Tetra,	-	
	LAIV	Astra Zeneca	Fluenz Tetra	-	
2015-2016	TIV	Abbot Sanofi	Influvac Vaxigrip Intanza	-	VaxPro 2015
	QIV	GSK	Alpharix-Tetra	-	
2014-2015	TIV	Abbot Sanofi	Influvac S Intanza Vaxigrip	-	VaxPro 2014
	QIV		Alpharix-Tetra	-	

Season	Vaccine type	MAH	Vaccine brand name	Nr of doses	Source
2019-2020	QIV	Abbott GSK Sanofi	Influac Tetra Alpharix-Tetra Vaxigrip Tetra		Health Belgium
2013-2014	TIV	Abbot Sanofi	Influvac S Intanza Vaxigrip	-	VaxPro 2013
	QIV	GSK	Alpharix-Tetra	-	
	Virosomal	Other	Inflexal V	-	

Source:
Season 2019-2020: https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/advies_9531_seizoensgriep_2019-2020_1.pdf
Season 2018-2019 : https://www.vaxinfopro.be/spip.php?article2722&lang=nl&retour=1
Season 2017-18 : https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/hgr_9418_seizoensgriep_2017-2018.pdf
http://www.vaxinfopro.be/spip.php?article2320&lang=nl&retour=1
Season 2016-17 http://www.vaxinfopro.be/spip.php?article1973&lang=nl&retour=1
Season 2015-16 http://www.vaxinfopro.be/spip.php?article1596&lang=nl
Season 2014-15 http://www.vaxinfopro.be/spip.php?article1180&lang=nl&retour=1
Season 2013-14 http://www.vaxinfopro.be/spip.php?article829&lang=nl&retour=1

Portugal (not in DRIVE)

Two or three vaccine brands are typically available in Portugal. This used to be only TIV, before fully switching to QIV in 2019-2020.

Table 25. Influenza vaccine brand availability, 2013-14 to 2019-20, Portugal (not in DRIVE)

Season	Vaccine type	MAH	Vaccine brand name	Nr of doses	Source
2019-2020	QIV	Sanofi Pasteur	Vaxigrip Tetra		DGS
	QIV	Mylan	Influvac Tetra		
2018-2019	TIV	Sanofi Pasteur	Istivac		DGS
	TIV	Mylan	Influvac		
	QIV	Sanofi Pasteur	Vaxigrip Tetra		
2017-2018	TIV	Sanofi Pasteur	Istivac		
	TIV	Mylan	Influvac		
2016-2017	TIV	Sanofi Pasteur	Istivac		
	TIV	Mylan	Influvac		
2015-2016	TIV	GSK	Fluarix		
	TIV	Sanofi Pasteur	Istivac		
	TIV	Mylan	Influvac		
2014-2015	TIV	GSK	Fluarix		
	TIV	Sanofi Pasteur	Istivac		
	TIV	Mylan	Influvac		
2013-2014					

Source 2019-2020: https://www.dgs.pt/directrizes-da-dgs/normas-e-circulares-normativas/norma-n-0062019-de-07102019-atualizada-a-14102019.aspx
Previous years: https://www.dgs.pt/paginas-de-sistema/saude-de-a-a-z/gripe/normas-e-orientacoes.aspx

7.4 Influenza vaccine brand and type availability: differences across European member states and changes from one season to another

The aim of this section is to describe vaccine availability across seasons in different countries separately for type and brand. Specifically, the vaccine types are described, the number of vaccine brands is shown, and it is determined whether brand availability in one year is predictive of brand availability in the subsequent year. Additional information is available in the Annex.

7.4.1 Country-specific vaccine types across seasons

Vaccine type availability in Belgium, Croatia, Denmark, Finland, France, Ireland, Italy, Lithuania, the Netherlands, Norway, Portugal, Slovenia, Spain (framework agreement and Valencia region), UK/England and UK/Scotland. Vaccine type availability from the 2013-2014 influenza season until the 2019-2020 season (when available) is shown in Figure 1. Overall vaccine type availability was stable in the earlier seasons, and vaccine type switches or additions were observed in the more recent seasons.

In eight of the sixteen studied countries (or regions), a single vaccine type was available in (most of) the seasons 2013-2014 through 2019-2020. This was TIV before transitioning to QIVe, typically as of 2019-2020. In Belgium, both TIV and QIVe were available before switching to solely QIVe as of 2019-2020.

In Finland, Norway and the UK, LAIV has been available in addition to TIV or QIVe for use in children since 2013-2014 or 2014-2015.

In Italy, Spain and the UK, additional vaccine types have been available particularly for the use in the elderly, such as iTIV (up to 2017-2018, after which it was no longer marketed), aTIV and, as of 2019-2020, QIVc (although QIVc is also recommended for other age groups). In the UK, aTIV has been available since 2018-2019 and QIVc was introduced in 2019-2020. Additionally, TIV-HD was introduced in England; however, it is yet unclear if it was also used in the 2019-2020 season as it was not reimbursed. iTIV was available in the earlier seasons in small quantities but was phased out.

For Italy, data was only included as of the 2017-2018 season. In addition to TIV and/or QIVe, aTIV was available, as were iTIV (in 2017-2018 only, after this it was no longer marketed) and QIVc (in 2019-2020 only).

In Spain, typically three or four vaccine types are purchased through the framework agreement. Two of the vaccines purchased in earlier seasons are no longer on the market, and two quadrivalent vaccine types were available for the first time in the 2019-2020 season. In the Valencia region, the number of vaccine types purchased has increased from one until 2017-2019 (TIV) to two in 2018-2019 (TIV and aTIV) and three in 2019-2020 (QIVe, aTIV and QIVc).

Due to the stability of vaccine types in earlier season, vaccine type use in one season was predictive of vaccine type use in the next season. However, due to the recent switch from tri- to quadrivalent vaccines and the introduction of new vaccines such as QIVc the landscape has changed in the 2018-2019 and 2019-2020 seasons.

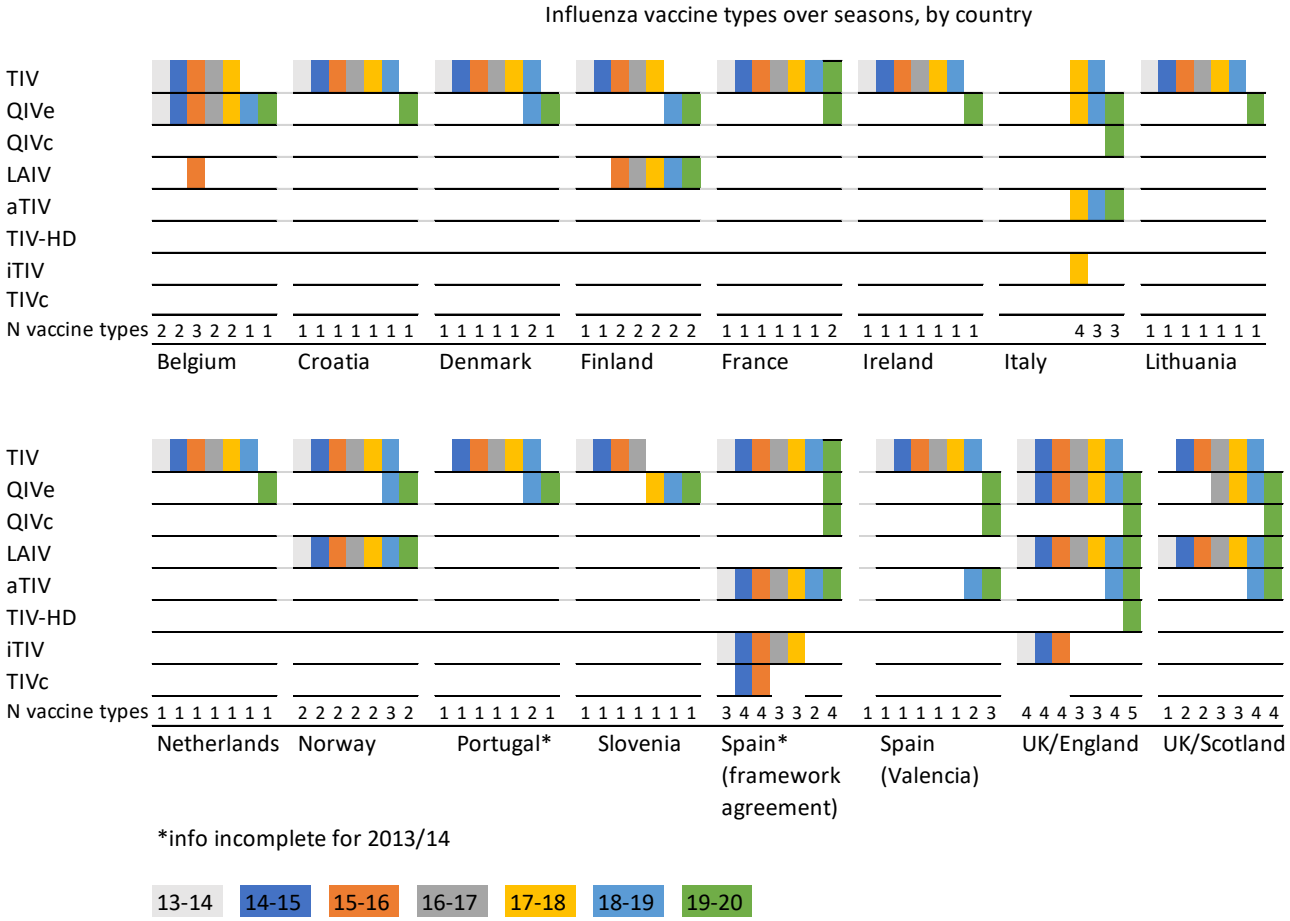

Figure 2. Vaccine type availability from 2013-2014 until 2019-2020, by country. For France and England, where data for the 2013-2014 to 2018-2019 seasons were retrieved from databases, only vaccines that represented at least 0.5% of all influenza vaccines were included. In Italy, vaccines are procured at the regional level, whereas here, vaccines available at the country level are shown.

7.4.2 Country-specific number and stability of TIV and QIVe brands across seasons

Country-specific number and stability of brands across seasons was performed only for TIV and QIVe, as for the other vaccine types only a single brand was available.

Figures 2 and 3 show the number of TIV and QIVe brands available across seasons in different countries, respectively. In addition, they reflect the diversity of TIV and QIVe brands across seasons. Each bar represents the total number of TIV and QIVe brands, the solid colours reflect the number of brands that were also available in the country in the previous season, whereas the shaded colours reflect the number of brands that were not available in the country in the previous season. For the 2017-18 season for Italy and the 2013-14 season for all countries, the data on the previous season were not retrieved and therefore, the shaded/solid colour does not reflect any information on brand availability in the previous season.

TIV was consistently available prior to the switch to QIVe (see section 4.4.1).
It is observed that overall, the number of TIV brands available in each country was relatively stable across the seasons, and the decline in the number of TIV brands observed in some countries in the last season was due to the transition to QIVe.

In most countries, the brands available in one season were a relatively good predictor of the brand being available in the subsequent season. Notable exceptions are Ireland, Spain/Valencia region and UK/Scotland where frequent changes in brand across seasons were observed.

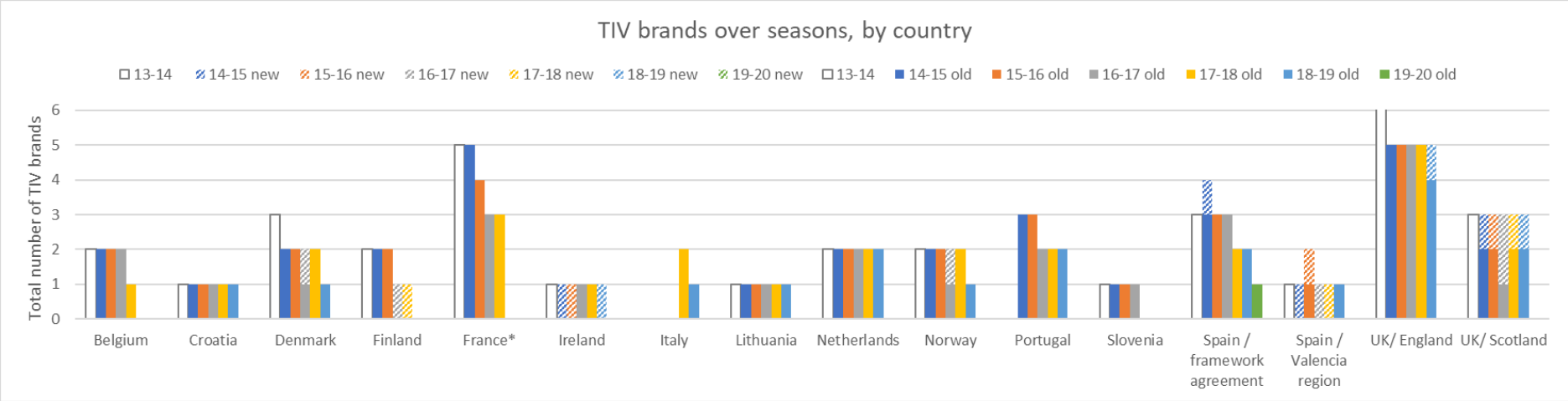

Figure 3. TIV brands across seasons, by country. For France and England, where data for the 2013-2014 to 2019-2020 seasons were retrieved from databases, only vaccines that represented at least 0.5% of all influenza vaccines were included. In Italy, vaccines are procured at the regional level, whereas here vaccines available at the country level are shown. The solid colours reflect the number of brands that were also available in the country in the previous season whereas the shaded colours reflect the number of brands that were not available in the country in the previous season. (The number of vaccines is shown for 2013-14; however, due to lack of data on the previous season, it has not been indicated how many of these were new compared to the previous year; the same applies to the 20187-18 season for Italy).

In most countries, QIVe has only been available since 2018-2019 or 2019-2020. For these countries with recent introduction of QIVe, it is too early to comment on the stability of the number of brands and the choice of brands. However, it is noted that the number of QIVe brands purchased is often equal to the number of TIV brands purchased in previous seasons.

Exceptions to this are Belgium, Italy, Slovenia and the UK, where QIVe has been available for a minimum of three seasons. In Belgium, Italy and the UK, the number of QIVe brands has increased, likely due to the phaseout of TIV. In Slovenia, the number of QIVe brands has been stable for three seasons. In Belgium, Slovenia and England, brand availability in one season was a full predictor of the brand being available in the subsequent season. In Scotland, brand availability in one season is generally also a good predictor of brand availability in the subsequent season, with only one exception.

For Italy, brand availability at the national level is shown. Vaccines are, however, procured at the regional level. For the 2019-2020, three QIVe brands are available at the national level; however, typically one and sometimes two brands of QIVe are procured by each individual region (see section 4.3.2).

For aTIV, LAIV, QIVc and TIV-HD, only one brand each has been available in Europe in the seasons studied.

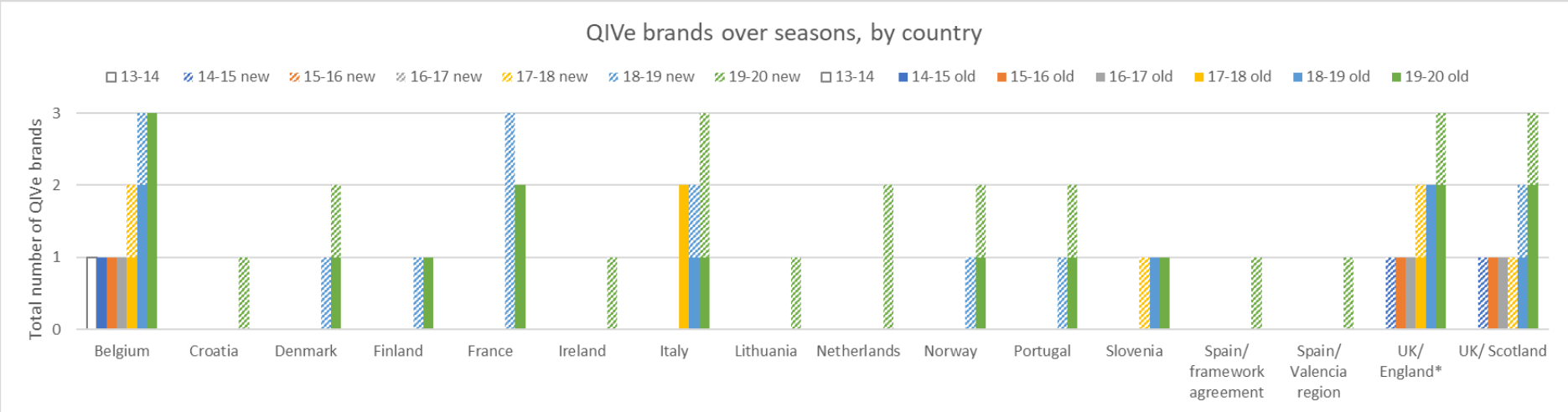

Figure 4. QIVe brands across seasons, by country. For France and England, where data for the 2013-2014 to 2018-2019 seasons were retrieved from databases, only vaccines that represented at least 0.5% of all influenza vaccines were included. In Italy, vaccines are procured at the regional level, whereas here vaccines available at the country level are shown.

8. Vaccines at the DRIVE study sites 2019-20 – comparison to prospective brand availability data

Vaccines available at the 2019-20 DRIVE study sites were compared to the assessment from the publicly available information on prospective vaccine brand availability (i.e. before the start of the vaccination campaigns). The comparison was based on procurement data, or, if not available, on vaccine recommendations. For Romania, no public source of prospective vaccine brand availability was identified.

8.1 Comparison to procurement data

For Finland and Italy, vaccines for the 2019-20 season were prospectively ascertained through procurement sources. To verify if the procured vaccines reflect the actual use of the vaccine brands, we compared the data obtained from the vaccine procurement sources (as presented in this report) to the data on vaccine brand use as determined for the 2019-20 season at the DRIVE study sites in Finland and Italy (as per DRIVE Study report 2019-20, D7.6).

Finland

In Finland, Vaxigrip Tetra and Fluenz Tetra were purchased for the 2019-20 season, and both vaccines were captured in the DRIVE studies in Finland.

Table 26. Comparison of vaccines identified as procured and vaccines captured in the DRIVE network 2019-20, Finland

		Vaccine captured at DRIVE sites in Finland	
Vaccine	Vaccine identified as procured	HUS	THL
Fluenz Tetra	Yes	No	Yes
Vaxigrip Tetra	Yes	Yes	Yes

Italy

Procurement in Italy is organized at regional level. The CIRI-BIVE and the ISS are multi-region study sites, whereas the CIRI-GP sites are located in the regions of Liguria and Veneto. All vaccines identified as procured were captured at one or more of the Italian DRIVE sites. Conversely, several vaccines were captured at the DRIVE sites but not identified as procured. These were Agrippal (n=13), Fluenz Tetra (n=1), and Influvac (n=1). It is noted that the CIRI-GP site did report expected use of the brand Agrippal.

Table 27. Comparison of vaccines identified as procured and vaccines captured in the DRIVE network 2019-20, Italy

		Vaccine captured at DRIVE sites in Italy		
Vaccine	Vaccine identified as procured	CIRI-BIVE	CIRI-GP (Liguria and Veneto region)	ISS
Agrippal	No	No	Yes	Yes
Fluad*	Yes	Yes	Yes	Yes
Fluarix Tetra*	Yes	Yes	Yes	Yes
Fluenz Tetra	No	No	No	Yes
Flucelvax Tetra*	Yes	No	Yes	Yes
Influvac	No	No	No	Yes
Influvac Tetra*	Yes	No	Yes	No
Vaxigrip Tetra*	Yes	Yes	Yes	Yes

*identified as procured in Liguria and/or Veneto region

8.2 Comparison to recommendations

For Austria, England, France and Spain Valencia, prospective information on procured vaccine brands was not readily found. Prospective information on vaccine brands from the national or regional vaccine recommendations was compared to data on vaccine brand use as determined for the 2019-20 season at the DRIVE study sites in the respective countries (as per DRIVE Study report 2019-20, D7.6).

Austria

For Austria, a list of vaccines available in Austria in the 2019-20 season is available alongside the vaccine recommendations. Four of the five vaccines identified as available were captured in the DRIVE data.

		Vaccine captured at DRIVE sites in Austria
Vaccine	Vaccine identified as available	MUV
Fluad	Yes	No
Fluarix Tetra	Yes	Yes
Flucelvax Tetra	Yes	Yes
Influvac Tetra	Yes	Yes
Vaxigrip Tetra	Yes	Yes

England

For the 2019-20 season, the NHS listed numerous vaccines. Five of these vaccines were captured at the DRIVE study site in England. Conversely, all vaccines captured at the DRIVE study site were listed in the recommendations.

Vaccine	Vaccine identified as recommended	Vaccine captured at DRIVE sites England
Fluenz Tetra	Yes	Yes
Fluad	Yes	Yes
Fluarix Tetra	Yes	No
Flucelvax Tetra	Yes	Yes
Influvac Tetra	Yes	Yes
QIV (Masta and MYL*)	Yes	No
TIV-high dose	Yes	No
Vaxigrip Tetra	Yes	Yes

*unclear which brands these refer to

France

Three vaccines were found to be recommended in France; all three were captured at the DRIVE study site in France.

Table 28. Comparison of vaccines identified as recommended and vaccines captured in the DRIVE network 2019-20, France

Vaccine	Vaccine identified as recommended	Vaccine captured at DRIVE sites in France
Influvac	Yes	Yes
Influvac Tetra	Yes	Yes
Vaxigrip Tetra	Yes	Yes

Spain Catalonia

For the 2019-20 season, four vaccine brands were recommended in Catalonia. Three of these brands were captured at one or both of the DRIVE sites in Catalonia. One vaccinee was reported to have received Fluarix Tetra, which was not recommended in the region.

Table 29. Comparison of vaccines identified as recommended and vaccines captured in the DRIVE network 2019-20, Spain Catalonia

		Vaccine captured at DRIVE sites in Spain Catalonia	
Vaccine	Vaccine identified as recommended	GTPUH	VHUH
Agrippal	Yes	Yes	Yes
Fluad	Yes	Yes	Yes
Flucelvax	Yes	No	No
Fluarix Tetra	No	No	Yes (n=1)
Vaxigrip Tetra	Yes	Yes	No

Spain Madrid

For the 201-20 season, two vaccine brands were recommended in the region of Madrid. One of these brands was captured at the DRIVE site in Madrid. It is noted that the total number of subjects reported by this site was very low (n=15); therefore, it is not surprising that only one brand was captured.

Table 30. Comparison of vaccines identified as recommended and vaccines captured in the DRIVE network 2019-20, Spain Madrid

		Vaccine captured at DRIVE sites in Madrid
Vaccine	Vaccine identified as recommended	La Paz University Hospital
Agrippal	Yes	Yes
Fluad	Yes	No

Spain Valencia

Three vaccine brands were recommended in Valencia in 2019-20 and all three were captured in the DRIVE data.

Table 31. Comparison of vaccines identified as recommended and vaccines captured in the DRIVE network 2019-20, Spain Valencia

		Vaccine captured at DRIVE sites in Spain Valencia
Vaccine	Vaccine identified as recommended	FISABIO
Fluad	Yes	Yes
Flucelvax	Yes	Yes
Vaxigrip Tetra	Yes	Yes

9. Limitations

Overall limitations apply and the data needs to be interpreted with caution:

- Data for many countries is still missing, specifically for countries with regional procurement systems.
- Brands specifications were not available for all countries and frequently not available for specific seasons.
- The completeness of the data is not clear in some situations.
- The data may be limited by the health care systems it captures, such as in the UK, where procurement of LAIV for children was not observed, as the data was restricted to the GP setting and children do not receive their vaccine from these providers.
- Data on vaccine volume, by type and brand, was specifically limited and in this form would not allow to truly inform the feasibility of capturing IVE data on specific brands in terms of sample size.
- For the reported coverage it was not always clear what was used as denominator, either at risk population or total population. It is crucial to understand the EU influenza vaccine volume to estimate IVE, but also for other purposes, such as the monitoring of the performance of the seasonal influenza vaccine programs and pandemic preparedness.
- Except for the UK, the current data does not inform on the vaccine availability at the clinic level, only at the regional or national level. For the UK, vaccine availability at the clinic level (pharmacies and dispensing GPs) is not available prospectively.
- It is not always clear which setting the procurement data reflects, or the procurement data is limited to certain settings. For example, vaccine procurement in hospitals may differ from the general practitioner or pharmacy setting.
- The data on volume concerns a mix of tendered, procured, reimbursed, or administered vaccines.
- For some countries data on procured vaccines was not available.
- Coverage and brand availability for the age strata applied in DRIVE were not available.

The following limitations apply to the methods:

- The data from several countries with national procurement relied on the input from members of the public health institutes. No formal publications were available for this data for reference.
- The data collection was extremely cumbersome. Individual sources for country specific information were needed for all data elements, except for overall coverage, which was available in a single data source for some seasons in most countries. This supports the need to have an EU repository with these data to allow systematic data collection.

10. Discussion and conclusion

Using solely the public sources of information, this deliverable has brought together for the first time, to our knowledge, a comprehensive overview of influenza vaccine availability – overall, by type and by brand - based on 1) vaccine recommendations and programs, 2) coverage, and the 3) vaccine procurement outcomes over a number of seasons. The data from this deliverable was already available to the Consortium to support the site selection for the 2018-19 season.

Influenza vaccine recommendations have not changed substantially in Europe in the last 7 seasons. Since 2014-15, vaccine recommendations have been issued to the health care worker and pediatric population more frequently.

Major shifts in the vaccination coverages in more recent seasons are not observed within a country from season to season. Between countries, vaccine coverage can substantially differ. The overall vaccine coverage shows a slightly declining trend and is still low in many countries; this represents a challenge to achieving sufficient vaccinated individuals to study IVE in all countries in Europe. It is also an important consideration for site selection.

The following observations regarding the influenza vaccine type and brand availability and diversity are made across European Member states and seasons:

- Variability in type and also brand within and between seasons is lower in countries with national procurement compared to countries with regional procurement systems or direct purchase.

- Countries with national procurement generally allow fewer opportunities to study IVE other than conventional TIV.

- In some countries, the generic product is available, instead of the brand product. In these situations, it would be difficult to identify vaccine products that have been produced using the same manufacturing platform.

Regarding the informativeness of previous influenza vaccine type or brand availability to project availability in the subsequent season, the following observations are made:

- In countries with national procurement systems, vaccine availability in a previous season is generally informative of vaccine availability in the next season

- Exceptions do apply, but there appears to be a historic establishment of certain MAHs being more often providers of influenza vaccines in certain countries.

- In a country with regional procurement (data from multiple seasons was only available for Spain) and countries with direct purchase (France, England, Belgium, Portugal) consistent procurement of a specific vaccine type appears to be informative of the vaccine availability in a subsequent season as determined in the cumulative dataset across regions or clinics. This would also apply to brands where there is only one brand available of a specific type. Availability of vaccine type and brand may, however, still vary between clinics and the likelihood of capturing specific brands will depend on the population and sample size captured in the surveillance.

- For vaccine types with multiple brands available, projection of the vaccine brand availability based on previous vaccine availability is more challenging.

- The influenza vaccine landscape is changing, and a shift towards quadrivalent vaccines is observed, alongside the introduction of new vaccines (e.g. cell-based, high dose).

- Logically, in the case of a multiyear tender vaccine and within the tender period, the availability in one season is informative of vaccine availability in subsequent seasons.

- The identified data sources do not allow to determine vaccine availability at the clinic level or do not allow to do so prospectively (England). As shown with the example of the DRIVE study sites in Finland and Italy, this does not impact the likelihood of capturing specific vaccine types and brands because these concern study sites with wide national coverage and a large population sample. However, for settings where this does not apply, information on the national or regional level will not provide certainty of vaccine type and availability at the clinic level.

There is a good match between the expected availability of influenza vaccine brands, based on procurement data and recommendations, and the vaccines captured in the DRIVE data; however, in many instances, the timing of the knowledge is not sufficient to support targeted prospective site selection.

Another implication for the operational implementation of IVE studies:

- One product can have multiple brand names, sometimes even in the same country. Hence, to support the local and pooled analyses on the type and brand level, an overview was created of the currently licensed influenza vaccines in Europe, including their respective brand names and countries where the brand is licensed. Information on the product's manufacturing characteristics has also been included to support the stratified analysis. Although no differences have been identified by country in the age indication, this information has been collected as well.

Overall, publicly available data on procured vaccines in a previous season appears to have some though limited value to inform on vaccine availability to support prospective selection of study sites, depending on the country, the underlying procurement system as well as the size and population sample which is captured by the surveillance, and the introduction of new vaccine types on the market makes predictions more difficult. Unexpected changes may occur over time, in autumn 2020 during the COVID-19 emergency several influenza vaccines were used in Europe to address the increased demand for influenza vaccines. In addition, it also supports an initial understanding of the general feasibility of estimating brand-specific VE.

11. Acknowledgments

We would like to acknowledge Sara Ciampini for compiling Italian procurement data for the 2019/20 season.

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13. Annex

The following tables have been created to present vaccine type and availability and change across seasons:

a. Vaccine type - provides the number of available vaccine types in each season and the changes in vaccine type availability from one season to the next
b. Brand count by MAH and vaccine type – provides the number of available brands by MAH and vaccine type in each season and the count of brands by vaccine type, which change from one season to the next
c. Individual brand availability – provides an overview of the available brands in each season

Table 10 provides a description of the variables presented in tables 11 to 14. Of note, across the tables, cells in "orange" consistently reflect a change from one season to the next.

As the variability of influenza vaccine availability was expected to vary with the underlying procurement system, countries were grouped according to the influenza vaccine procurement system for this assessment. Given that the data on volume was not consistently available, no analysis of changes in vaccine volume has been performed at this stage.

Table 10a: Colour coding applied in heat maps to describe vaccine availability and changes from season to season as presented in Tables 11 to 14

Colour code	Indication of:	
	Change from one season to the next	Increasing colour intensity reflects an increasing number of changes
	Any availability	Single colour to reflect any availability
	Count (not including count of changes)	Increasing colour intensity reflects increasing count

Table 10b: Description of the variables to describe vaccine availability and changes from season to season as presented in Tables 11 to 14

Table	Variable	Description
a. Vaccine type availability	Count of different available vaccine types	Total (count) of the different vaccine types available in a given season
	Availability of specific vaccine types – by type	Any availability of a specific type (0 or 1 value)
	Change in availability of vaccine type from one season to the next	(columns by types) - indicates a change in the availability of a specific vaccine type (0 or 1 value)
	Count of changes in availability in a vaccine type	Number of vaccine types that incur a change (count) – the count of vaccine types that incur a change from one season to the next, whether it refers to 'initiation' or discontinuation of vaccine type availability,

Table	Variable	Description
		i.e. an initiation of LAIV availability and QIV discontinuation would count as 2.
b. Brand availability counted by MAH and vaccine type	Count of different specified brands	Overall (counts) – counts the total number of different brands available in a season. Only specified brands have been counted or the brands that could be inferred unambiguously
		Columns by MAH and type - counts the number of different specific brands available in a season by MAH and vaccine type
	Changes in brand from the previous season	Overall (counts) – change in the total number of brands available
		(columns by type) (count) - number of changes in the brand availability of a specific vaccine type. This can include a change in the brand, discontinuation, or the start of the use of a brand for a specific vaccine type.
c. Individual brand availability	Brand availability	Availability of a given brand in a given season. (0 or 1 value)

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National procurement systems

Table 11a, b and c present the vaccine brand and type availability in countries with national vaccine procurement 2013-14 to 2017-2018. For the countries with procurement systems characterized in D3.1, six of thirteen countries concerned national procurement systems, including Scotland for which direct purchase was in place prior to the 2016-17 season (see Table 14).

Table 11a: Vaccine availability in countries with national vaccine procurement 2013-14 to 2019-2020 – by vaccine type

NH Season	Country	Availability of specific vaccine types: Total	TIV	QIVe	LAIV	aTIV	Cell	Viro-somal	Number of available types	Change in availability of: TIV	QIVe	LAIV	aTIV	Cell	Viro-somal	Any change	Number of types which incur change
2019-2020	Denmark	1	1		1				1								
2018-2019	Denmark	1	2	1	1				1								
2017-2018	Denmark	1	1	1					0	0	0	0	0	0	0	0	0
2016-2017	Denmark	1	1	1					0	0	0	0	0	0	0	0	0
2015-2016	Denmark	1	1	1					0	0	0	0	0	0	0	0	0
2014-2015	Denmark	1	1	1					1	0	0	0	0	0	1	1	1
2019-2020	Finland	1	2		1	1			0								
2018-2019	Finland	1	2		1	1			0								
2017-2018	Finland	1	2	1		1			0	0	0	0	0	0	0	0	0
2016-2017	Finland	1	2	1		1			0	0	0	0	0	0	0	0	0
2015-2016	Finland	1	2	1		1			1	0	0	1	0	0	0	1	1
2014-2015	Finland	1	1	1					0	0	0	0	0	0	0	0	0
2019-2020	Netherlands	1	2		1	1			1								
2018-2019	Netherlands	1	1	1					0								
2017-2018	Netherlands	1	1	1					0	0	0	0	0	0	0	0	0
2016-2017	Netherlands	1	1	1					0	0	0	0	0	0	0	0	0
2015-2016	Netherlands	1	1	1					0	0	0	0	0	0	0	0	0
2014-2015	Netherlands	1	1	1					0	0	0	0	0	0	0	0	0
2019-2020	Norway	1	1		1				0								
2018-2019	Norway	1	1		1				0								
2017-2018	Norway	1	1	1					0	0	0	0	0	0	0	0	0
2016-2017	Norway	1	1	1					0	0	0	0	0	0	0	0	0
2015-2016	Norway	1	1	1					0	0	0	0	0	0	0	0	0
2014-2015	Norway	1	1	1					0	0	0	0	0	0	0	0	0
2019-2020	Slovenia	1	1		1				0								
2018-2019	Slovenia	1	1		1				1								
2017-2018	Slovenia	1	2	1	1				1	0	1	0	0	0	0	1	1
2016-2017	Slovenia	1	1	1					0	0	0	0	0	0	0	0	0
2015-2016	Slovenia	1	1	1					0	0	0	0	0	0	0	0	0
2014-2015	Slovenia	1	1	1					0	0	0	0	0	0	0	0	0
2019-2020	Ireland	1	1		1				0								
2018-2019	Ireland	1	1	1					0								
2017-2018	Ireland	1	1	1					0	0	0	0	0	0	0	0	0
2016-2017	Ireland	1	1	1					0	0	0	0	0	0	0	0	0
2015-2016	Ireland	1	1	1					0	0	0	0	0	0	0	0	0
2014-2015	Ireland	1	1	1					0	0	0	0	0	0	0	0	0
2019-2020	Scotland																
2018-2019	Scotland	1	2	1	1				0								
2017-2018	Scotland	1	2	1	1				0	0	0	0	0	0	0	0	0
2016-2017	Scotland	1	2	1	1				1	0	0	0	0	1	0	1	1
2015-2016	Scotland	1	3	1	1			1	0	0	0	0	0	0	0	0	0
2014-2015	Scotland	1	3	1	1			1	1	0	1	0	0	0	0	1	1

Table 11b: Vaccine availability in countries with national vaccine procurement 2013-14 to 2019-2020 – brand count by MAH and type

NH Season	Country	Total count of different specified brands	Count unspecified MAH	Count of specified available brands by MAHs: Abbott	GSK	Sanofi	Seqirus	Availability of any brand by MAH, including unspecified; Abbott	GSK	Sanofi	Seqirus	Count of specified brands by vaccine type: TIV	QIV	LAIV	Adjuv	Cell	Viro-somal	Changes in brand from the previous season: Total count if changes in brand from previous season	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal
2018-2019	Denmark	1		1				1				1						1	1	0				
2017-2018	Denmark	2		1		1		1		1		2						0	0					
2016-2017	Denmark	2		1		1		1		1		2						2	2					
2015-2016	Denmark	2			1	1			1	1		2						0	0					
2014-2015	Denmark	2			1	1			1	1		2						1	0					1
2013-2014	Denmark	3			1	1			1	1		2					1	3	2		1			1
2019-2020	Finland	2				1				1			1	1				0		0	0			
2018-2019	Finland	2				1				1			1	1				1		1	0			
2017-2018	Finland	3		1			2	1			1	2		1				1	1		0			
2016-2017	Finland	2		1				1				1		1				2	2		0			
2015-2016	Finland	2	1			1				1		1		1				0	0		1			
2014-2015	Finland	1	1			1				1		1						0	0					
2013-2014	Finland	1	1			1				1		1						1	1					
2019-2020	Netherlands	2		1		1		1		1			2					2		2				
2018-2019	Netherlands																	2	2					
2017-2018	Netherlands	2		1		1		1		1		2						0	0					
2016-2017	Netherlands	2		1		1		1		1		2						0	0					
2015-2016	Netherlands	2		1		1		1		1		2						0	0					
2014-2015	Netherlands	2		1		1		1		1		2						0	0					
2013-2014	Netherlands	2		1		1		1		1		2												
2019-2020	Norway	2		1		1		1		1			2					2		2				
2018-2019	Norway																	0		0				
2017-2018	Norway	2		1		1		1		1		2						0	0					
2016-2017	Norway	2		1		1		1		1		2						2	2					
2015-2016	Norway	2			1	1			1	1		2						0	0					
2014-2015	Norway	2			1	1			1	1		2						0	0					
2013-2014	Norway	2			1	1			1	1		2												
2019-2020	Slovenia	1				1				1			1					0		0				
2018-2019	Slovenia	1				1				1			1					0		0				
2017-2018	Slovenia	2				2				1		1	1					1	0	1				
2016-2017	Slovenia	1				1				1		1						0	0					
2015-2016	Slovenia	1				1				1		1						0	0					
2014-2015	Slovenia	1				1				1		1						1	1					

Table 11c: Vaccine availability in countries with national vaccine procurement 2013-14 to 2019-20 – individual brands

NH Season	Country	TIV (inactivated, egg-based)							QIV (inactivated, egg-based)			LAIV		Adjuvanted	Cell	Virosomal
		Vaxigrip	Intanza	Influvac	Agrippal	Afluria	Fluarix	Fluvirin	Vaxigrip	Influvac Tetra	Fluarix tetra	Fluenz Tetra	Fluenz	Fluad	Optaflu	Inflexal
		Sanofi	Sanofi	Abbott	Seqirus	Seqirus/C	GSK	Seqirus	Sanofi	Abbott	GSK	Astrazeneca	Astrazeneca	Seqirus	Seqirus	Other
2019-2020	Denmark								1		1					
2018-2019	Denmark			1												
2017-2018	Denmark	1		1												
2016-2017	Denmark	1		1												
2015-2016	Denmark	1					1									
2014-2015	Denmark	1					1									
2013-2014	Denmark	1					1									1
2019-2020	Finland								1			1				
2018-2019	Finland								1			1				
2017-2018	Finland			1	1							1				
2016-2017	Finland			1								1				
2015-2016	Finland	1										1				
2014-2015	Finland	1														
2013-2014	Finland	1														
2019-2020	Netherlands								1		1					
2018-2019	Netherlands															
2017-2018	Netherlands	1		1												
2016-2017	Netherlands	1		1												
2015-2016	Netherlands	1		1												
2014-2015	Netherlands	1		1												
2013-2014	Netherlands	1		1												
2019-2020	Norway								1		1					
2018-2019	Norway															
2017-2018	Norway	1		1												
2016-2017	Norway	1		1												
2015-2016	Norway	1					1									
2014-2015	Norway	1					1									
2013-2014	Norway	1					1									
2019-2020	Slovenia								1							
2018-2019	Slovenia								1							
2017-2018	Slovenia	1							1							
2016-2017	Slovenia	1														
2015-2016	Slovenia	1														
2014-2015	Slovenia	1														

For systems with national tenders the following was observed:

- All countries have procured primarily TIV for their national programs for the 2013 to 2017 season, switching to QIVe in 2018-19 or 2019-20.
- Only in Finland an additional vaccine type is used, namely LAIV vaccine in the pediatric population.
- Among the countries with national procurement systems, the Netherlands, Denmark, Norway and Finland have multi-year tenders in place, which is reflected in the periodic changes in vaccine brand availability.
- Most frequently, 2 different brands (of the same vaccine type) were available in a given season in countries with national procurement systems.

Informativeness of historical vaccine (brand) availability for future use in countries with national procurement systems:

- Type:
  - The previous season vaccine type availability appears to be generally indicative of subsequent vaccine type availability in countries with national vaccination systems, in this case TIV, until the recent switch to QIV.
  - For Finland, the procurement of LAIV has been consistent since its introduction in 2015-16.
- Brand:
  - For TIV and later QIV vaccine types the informativeness of the data on a brand level is tied to the multiyear tenders where the same brand is used for two or three consecutive seasons.

- Overall brand diversity and extent of change is low. These countries would therefore provide good opportunities to study IVE a few seasons in a row but only for a selected and limited number of brands.

The current data suggest that there is very limited opportunity to study IVE in countries with national procurement systems for brands of vaccine types other than QIV.

Regional procurement systems

Data for countries with regional procurement systems is currently limited. For Italy, historic data was only obtained for the 2017-2018 season onwards (see Table 9i) and thus, it did not permit to describe the changes in vaccine availability or the prediction of vaccine availability from one season to another. For Spain, data is described for the semi-regional procurement system "acuerdo marco" and the region of Valencia. For the procurement through the "acuerdo marco" the specific brand could only be inferred for adjuvanted, cell culture and intradermal vaccines, but not for TIV vaccines. As such, an analysis of changes in brand availability and change was not informative for TIV and data gaps exist.

Table 12a: Vaccine availability in the semi-regional procurement system ("acuerdo marco") of Spain for 2013-14 to 2019-20 – by vaccine type

NH Season	Country	Availability of specific vaccine types:								Change in availability of specific vaccine types								
		Total	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal	Number of available types	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal	Any change	Count of changes in vaccine type avaiability
2019-2020	Spain -framework	3	1	1		1			1								
2018-2019	Spain -framework	2	1			1			0								
2017-2018	Spain -framework	2	1			1			0	0	0	0	0	0	0	0	0
2016-2017	Spain -framework	2	1			1			1	0	0	0	0	1	0	1	1
2015-2016	Spain -framework	3	1			1	1		0	0	0	0	0	0	0	0	0
2014-2015	Spain -framework	3	1			1	1		1	0	0	0	0	1	0	1	1
2013-2014	Spain -framework	2	1			1											
2019-2020	Spain - Valencia	1		1					0								
2018-2019	Spain - Valencia	1	1						0								
2017-2018	Spain - Valencia	1	1						0	0	0	0	1	0	0	1	1
2016-2017	Spain - Valencia	1	1						1	0	0	0	0	1	0	1	1
2015-2016	Spain - Valencia	2	1				1		0	0	0	0	1	1	0	1	2
2014-2015	Spain - Valencia	2	1			1			1	0	0	0	0	0	1	1	1
2013-2014	Spain - Valencia	3	1			1		1	1	0	0	0	1	0	1	1	2

Table 12.2: Vaccine availability in the semi-regional procurement system ("acuerdo marco") of Spain for 2013-14 to 2019-20 – brand count aggregated by type

NH Season	Country	Total count of different specified brands	Count unspecified MAH	Count of specified available brands by MAHs:				Availability of any brand by MAH, including unspecified;				Count of specified brands by vaccine type:						Changes in brand from the previous season						
				Abbott	GSK	Sanofi	Seqirus	Abbott	GSK	Sanofi	Seqirus	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal	Total count if changes in brand from previous season	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal
2019-2020	Spain -framework	4		2		1	1	1		1	1	1	2		1			2	0	2		0		
2018-2019	Spain -framework	2		1			1	1			1	1			1			1	1			0		
2017-2018	Spain -framework	3	1	1		1	1	1		1	1	2			1			1	1			0		
2016-2017	Spain -framework	2	3			1	1	1		1	1	1			1			1	0			0	1	
2015-2016	Spain -framework	3	3			1	2	1		1	1	1			1	1		1	0			0	1	
2014-2015	Spain -framework	2	4			1	1	1	1	1	1	1			1			1	0			1	0	
2013-2014	Spain -framework	1	5			1			1	1	1	1												
2019-2020	Valencia	3		1		1	1	1		1	1		2		1			2		2				
2018-2019	Valencia	1					1				1				1			1	1					
2017-2018	Valencia	2		1			1	1			1	1			1			4	3			1		
2016-2017	Valencia	2				2				1		2						2	1				1	
2015-2016	Valencia	2				1	1			1	1	1				1		2	0			1	1	
2014-2015	Valencia	2				1	1			1	1	1			1			3	2			0		1
2013-2014	Valencia	3					3				1	1			1		1	4	2			1		1

*Table 12c: Vaccine availability in the regional procurement system ("acuerdo marco") of Spain for 2013-14 to 2019-20 – individual brands by type**

		Total count fo different specified brands	Count unspecified MAH	Abbott	GSK	Sanofi	Seqirus	Abbott	GSK	Sanofi	Seqirus	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal	Total count of changes from previous season	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal
2019-2020	Spain -framework	4		2		1	1	1		1	1	1	2		1			2	0	2		0		
2018-2019	Spain -framework	2		1			1	1			1	1			1			1	1			0		
2017-2018	Spain -framework	3	1	1		1	1	1		1	1	2			1			1	1			0		
2016-2017	Spain -framework	2	3			1	1	1		1	1	1			1			1	0			0	1	
2015-2016	Spain -framework	3	3			1	2	1		1	1	1				1		1	0			0	1	
2014-2015	Spain -framework	2	4			1	1	1	1	1	1	1			1			1	0			1	0	
2013-2014	Spain -framework	1	5			1			1	1	1	1												
2019-2020	Valencia	3		1		1	1	1		1	1		2		1			2		2				
2018-2019	Valencia	1					1				1				1			1	1					
2017-2018	Valencia	2		1			1	1			1	1			1			4	3			1		
2016-2017	Valencia	2				2				1		2						2	1				1	
2015-2016	Valencia	2				1	1			1	1	1				1		2	0			1	1	
2014-2015	Valencia	2				1	1			1	1	1			1			3	2			0		1
2013-2014	Valencia	3					3				1	1			1		1	4	2			1		1

* Only specified brands are reflected, not those where only the MAH is provided: largely missing for the Spanish framework

The following observations can be made for Spain:

- TIV vaccine is consistently used across seasons, until the switch to QIV
- Vaccine type diversity was higher in Spain than observed for countries with national procurement systems. Similarly, in Italy type and brand availability appears higher than for national procurement systems. This is expected given the different categories of vaccine procurement according to vaccine type that exists in Spain and Italy.

Recently, quadrivalent vaccines (egg-based and cell-based) have been introduced in Spain.
Predictability of future vaccine use for Spain:

- Type
  - The procurement of vaccine types was relatively stable in earlier seasons, but switches have taken place in 2018-19 and 2019-20 to include new vaccine types.
- Brand
  - The high diversity of types and brands appears to suggest that there is reasonable likelihood that IVE could be estimated for many different vaccines. However, in the absence of data on volume it does not provide an indication of the feasibility in terms of sample size.

Direct purchase systems

Table 13a, b and c present the vaccine brand and type availability in countries with direct purchase systems for 2013-14 to 2019-2020 (when available), namely England, Belgium and France.
For Scotland, a specific situation existed where the procurement system switched from direct purchase to centrally organized procurement of vaccines in 2016-17. Because the majority of the seasons concern the direct purchase, the country has been included here but is presented separately.

Table 13a: Vaccine availability in countries with direct vaccine purchase for 2013-14 to 2019-20 – by vaccine type

NH Season	Country	Availability of specific vaccine types:							Change in availability of specific vaccine types								
		Total	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal	Number of available types	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal	Any change	Count of changes in vaccine type avaiability
2019-2020	England																
2018-2019	England	2	1	1					0								
2017-2018	England	2	1	1					0	0	0	0	0	0	0	0	0
2016-2017	England	2	1	1					1	0	0	0	0	1	1	1	2
2015-2016	England	4	1	1			1	1	1	0	0	1	0	0	0	1	1
2014-2015	England	5	1	1	1		1	1	0	0	0	0	0	0	0	0	0
2013-2014	England	5	1	1	1		1	1									
2012-2013	England																
2011-2012	England																
2010-2011	England																
2019-2020	Belgium	1		1					0								
2018-2019	Belgium	1		1					1								
2017-2018	Belgium	2	1	1					0	0	0	0	0	0	0	0	0
2016-2017	Belgium	2	1	1					1	0	0	1	0	0	0	1	1
2015-2016	Belgium	3	1	1	1				1	0	1	1	0	0	0	1	2
2014-2015	Belgium	1	1						0	0	0	0	0	0	0	0	0
2013-2014	Belgium	1	1						1	0	0	0	0	0	1	1	1
2012-2013	Belgium	2	1					1	1	0	0	0	0	0	1	1	1
2011-2012	Belgium	1	1						0	0	0	0	0	0	0	0	0
2010-2011	Belgium	1	1														
2019-2020	France			1					0								
2018-2019	France		1	1					1								
2017-2018	France	1	1						0	0	0	0	0	0	0	0	0
2016-2017	France	1	1						0	0	0	0	0	0	0	0	0
2015-2016	France	1	1						0	0	0	0	0	0	0	0	0
2014-2015	France	1	1						0	0	0	0	0	0	0	0	0
2013-2014	France	1	1														

Table 13b: Vaccine availability in countries with direct vaccine purchase 2013-14 to 2019-20 – brand count aggregated by type

NH Season	Country	Total count of different specified brands	Count unspecified MAH	Count of specified available brands by MAHs: Abbott	GSK	Sanofi	Seqirus	Availability of any brand by MAH, including unspecified: Abbott	GSK	Sanofi	Seqirus	Count of specified brands by vaccine type: TIV	QIV	LAIV	Adjuv	Cell	Viro-somal	Changes in brand from the previous season: Total count if changes in brand from previous season	TIV	QIV	LAIV	Adjuv	Cell	Viro-somal
2019-2020	England																							
2018-2019	England	8		3	1	1	5	1	1	1	1	6	2					1	0	1				
2017-2018	England	7	2	2	1	1	5	1	1	1	1	6	1					0	0	0				
2016-2017	England	7	2	2	1	1	5	1	1	1	1	6	1					2	0	0			1	1
2015-2016	England	9	4	2	1	1	6	1	1	1	1	6	1			1	1	1	1	0	2		0	0
2014-2015	England	12	4	2	2	1	6	1	1	1	1	7	1	2		1	1	0	0	0	1		0	0
2013-2014	England	11	4	2	2	1	6	1	1	1	1	7	1	1		1	1							
2019-2020	Belgium	3		1	1	1		1	1	1			3					0		0				
2018-2019	Belgium	3		1	1	1		1	1	1			3					1		1				
2017-2018	Belgium	4		1	1	2		1	1	1		2	2					1	0	1				
2016-2017	Belgium	3		1	1	1		1	1	1		2	1					1	1	0	1			
2015-2016	Belgium	5		1	1	2		1	1	1		3	1	1				2	1	1	1			
2014-2015	Belgium	4		1	1	2		1	1	1		4						1	0	1				
2013-2014	Belgium	5		1	2	2		1	1	1		4	1					3	1	1				1
2019-2020	France	2		1		1		1		1			2					1		1				
2018-2019	France	5		2	1	2		1	1	1		2	3					3	0	3				
2017-2018	France	2	1	1		1		1		1		2						1	1					
2016-2017	France	3	1	1	1	1		1	1	1		3						1	1					
2015-2016	France	4	1	1	1	1	2	1	1	1	1	4						0	0					
2014-2015	France	4	1	1	1	1	2	1	1	1	1	4						0	0					
2013-2014	France	4	1	1	1	1	2	1	1	1	1	4												
2019-2020	Portugal	2		1		1		1		1				2										
2018-2019	Portugal	3		1		2		1		1			2	1										
2017-2018	Portugal	2		1		1		1		1			2											
2016-2017	Portugal	2		1		1		1		1			2											
2015-2016	Portugal	3		1	1	1		1	1	1			3											
2014-2015	Portugal	3		1	1	1		1	1	1			3											
2013-2014	Portugal																							

Table 13c: Vaccine availability in countries with direct purchase for 2013-14 to 2019-20 – individual brands

NH Season	Country	TIV (inactivated, egg-based) Vaxigrip Sanofi	Intanza Sanofi	Influvac Abbott	Agrippal Seqirus	Afluria Seqirus/C	Fluarix GSK	Fluvirin Seqirus	QIV (inactivated, egg-based) Vaxigrip Sanofi	Influvac Tetra Abbott	Fluarix tetra GSK	LAIV Fluenz Tetra Astrazeneca	Fluenz Astrazeneca	Adjuvanted Fluad Seqirus	Cell Optaflu Seqirus	Virosomal Inflexal Other
2019-2020	England															
2018-2019	England		1	2	1	1		1		1	1					
2017-2018	England		1	2	1	1		1			1					
2016-2017	England		1	2	1	1		1			1					
2015-2016	England		1	2	1	1		1			1				1	1
2014-2015	England		1	2	1	1	1	1			1	1	1		1	1
2013-2014	England		1	2	1	1	1	1			1		1		1	1
2019-2020	Belgium								1	1	1					
2018-2019	Belgium								1	1	1					
2017-2018	Belgium	1		1					1		1					
2016-2017	Belgium	1		1							1					
2015-2016	Belgium	1	1	1							1	1				
2014-2015	Belgium	1	1	1			1									
2013-2014	Belgium	1	1	1			1				1					
2019-2020	France								1	1						
2018-2019	France	1		1					1	1	1					
2017-2018	France	1		1												
2016-2017	France	1		1			1									
2015-2016	France	1		1	1		1									
2014-2015	France	1		1	1		1									
2013-2014	France	1		1	1		1									

Of note: there appears to be a gap for England for which no use of LAIV is indicated in the past three seasons. This could be due to the fact that the data sources reflect vaccine availability in pharmacies, whereas children are primarily vaccinated through vaccination programs in schools.

For countries with direct purchase the following is observed:

- Brand diversity in countries with direct purchase was much greater than for national procurement systems, in part due to the availability of multiple brands for QIV
- England and Belgium are among the few countries that have consistently used QIV vaccine.

- England has the highest vaccine brand diversity of all EU countries. Changes in brand availability as determined on an aggregated national level seemminimal, but it is unlikely that this is illustrative of the changes in brand availability at the clinic level which occur from season to season.
- The high brand diversity results in a low volume for some vaccine brands, though the highest volumes are consistently seen across seasons for a smaller selection of brands.

Informativeness for future influenza vaccine use:

- For countries with direct purchase, it is likely to collect data on multiple of vaccine brands in any given seasons but not consistently in every season specifically, as it is expected that brand availability at the clinic level will still differ from season to season.