Trajectories of seasonal influenza vaccination uptake in French people with diabetes from 2006 to 2015
Aurélie Bocquier, Lisa Fressard, Sébastien Cortaredona, Florence Galtier, Pierre Verger

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Influenza B in the general population.

Retrospective analysis of French surveillance data from 2003 to 2017

A. Mosnier a, b,*, I. Daviaud c, J.-C. Soulayry a, S. Van der Werf a, B. Lina a, J.-M. Cohen b

a Research department, Open Rome & Réseau des Grog, Paris, France
b Research department, Réseau des Grog, Paris, France
c National Reference Centre for Influenza, Institut Pasteur, Paris, France
d National Reference Centre for Influenza, Hospices Civils de Lyon, Lyon, France

* Corresponding author.
E-mail address: amos@openrome.org (A. Mosnier)

Context Much attention has been paid to influenza over the past three decades with a rare focus on influenza B. Since 2000, two distinct influenza B lineages (Yamagata and Victoria) circulate alternately or simultaneously, raising the issue of potential vaccine mismatch with trivalent vaccines that contain only one of the 2 B lineages. Since 2013, WHO influenza vaccine recommendations give advice on a vaccine strain for each influenza B lineage and manufacturers have developed quadrivalent seasonal vaccines containing the two lineages of influenza B viruses. In France, between 1984 and 2017, influenza surveillance in the general population has been performed by two sentinel networks, based on general practitioners and paediatricians, the Réseau national des GROG (from 1984 to 2014) and the Sentinelles network (since 2014). Practitioners of the network are providing weekly data describing their activity and collect nasal swabs in a fraction of their patients consulting for acute respiratory infection (ARI) or influenza-like infection (ILI). These swabs are sent by surface mail to the laboratories of the National Reference Centre.

Objective Our study aims to describe the circulation of the two lineages of influenza B viruses in the general population, during fourteen influenza seasons in France (2003–2017).

Methods A retrospective descriptive analysis of the GROG 2003–2013 database, completed by the Sentinelles surveillance data publicly available from 2014 was performed. Every virologically confirmed influenza positive case was included in the study, except for those with an influenza A and B co-infection. Patients whose age was unknown were also excluded.

Results and discussion Overall, 21,070 virologically confirmed influenza cases could be included, comprising 5478 influenza B cases (26.6%). The contribution of influenza B to the seasonal influenza burden varied from year-to-year. Influenza B represented more than 5% of influenza viruses detected in eight of the fourteen studied seasons. Influenza B was considered as dominant (>60% of all influenza viruses of the season) in 2005–2006 (61.8%) and 2015–2016 (71.5%) and was co-dominant (41–60% of all influenza viruses of the season) in 2010–2011 (47.4%) and 2012–2013 (55.0%). The influenza B viruses impact was mainly observed in children of the 5–14 years old group (33.0%) but was also significant in the ≥65 years old group (22.5%). In the 8 seasons where influenza B viruses substantially circulated, both Victoria and Yamagata lineages were detected. They respectively accounted for 57.8% and 42.2% of all influenza B cases for which the lineage was available. Each lineage was predominant during four seasons: Victoria in 2005–2006, 2008–2009, 2010–2011 and 2015–2016; Yamagata in 2004–2005, 2007–2008, 2012–2013 and 2014–2015. A mismatch between the dominant circulating influenza B lineage and the lineage included in the seasonal influenza vaccine was observed during four (28.5%) of the fourteen seasons analysed, including two seasons where influenza B viruses predominated (2005–2006, 2007–2008, 2008–2009 and 2015–2016). This is consistent with the results of a similar study carried out in 26 countries that reported a type B lineage mismatch in 25% of seasons. In our study, for 58.2% of the documented type B infections, the reported lineage was not included in the seasonal trivalent vaccine. Again, this is consistent with results recently published from Finland between 1999 and 2012 where 41.7% of the documented influenza B cases belonged to the mismatched lineage.

Conclusion Our results support the added value of the quadrivalent vaccine to increase vaccine effectiveness.

Disclosure of interest A. Mosnier link with: member of Sanofi influenza board, link with: member of GEIG Scientific Committee; I. Daviaud, J.-C. Soulayry declare that they have no competing interest; S. Van der Werf link with: member of GEIG Scientific Committee; B. Lina link with: member of Astra Zeneca influenza board.

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the “post-pandemic decreasing” T may have lost confidence in SIV after contro-
versies in France during the 2009 mass vaccination campaign against the
pandemic. About 10% became more likely to be vaccinated during the study
period; our results suggest that receiving free vouchers for the first time might
have triggered or fostered this behavioral change. Changing GPs and hospital-
ization for an influenza-like illness were associated with both increasing and
decreasing trajectories. These events may represent key opportunities to foster
or prevent behavioral changes toward SIV. Further research is needed to better
understand the chronology of these events and potential causal pathways. These
results should help stakeholders to adapt public health interventions to specific
subgroups.

Disclosure of interest The authors declare that they have no competing inter-
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**P8-13**

**Demand for family planning satisfied among adolescents by marital status and parity: An analysis of 73 low and middle-income countries**

C. Coll,*, A. Barros, F. Ewerling, F. Hellwig

* Corresponding author.

Introduction Despite the worldwide positive trends in contraceptive use and
family planning indicators over the last decades, progress among adolescent
women has been happening in a slower pace, and the demand for family plan-
ning satisfied remains very low in this populational group. Social-cultural and
structural barriers often prevent adolescents from achieving their reproductive
desires, which can result in unintended and unhealthy pregnancies. The aim of
the present study is to describe the demand for family planning satisfied with
modern methods (mDFPS) among adolescents aged 15–19 by marital status and
parity in low and middle-income countries (LMICs).

Methods We obtained data from nationally representative surveys (Demo-
graphic and Health Surveys and Multiple Indicator Surveys) with public
available datasets carried out since 2005. We use the most recently collected
data from any country. The present analyses are based on currently sex-
ually active adolescent women aged 15–19 years. mDFPS was defined as the
proportion of women in need of contraception that are currently using
modern contraceptive methods (IUD, implants, pill, injectable, diaphragm,
condom, foam or jelly, patch, emergency contraception; and male and female
sterilization). Women in need of contraception are those who are fecund and
do not want to become pregnant within the next two years or are unsure if or when they want to become pregnant. Pregnant women with a
mistimed or unwanted pregnancy are also considered in need of contra-
ception. We estimated the mean mDFPS coverage for each country and
world region by adolescent group defined by marital status and parity (mar-
ried 1+ children, married, no children, not married sexually active). Analyses
are presented by world region following the UNICEF classification. All
analyses took into account the multistage sampling strategies and sample
weights.

Results A total of 73 LMICs with available information for sexually active adolescents were included in this analysis (9 from the CEE and the CIS, 8 from
the East Asia and the Pacific, 16 from the Eastern and Southern Africa, 16 from
the Latin America and Caribbean, 3 from South Asia and, 21 from the West and
Central Africa). Adolescents who were married with no children presented the
lowest mean mDFPS coverage in all world regions when compared to married
adolescents with one or more children and those who were not married. mDFPS
coverage ranged from 12.8 % in West and Central Africa to 41.6 % in Latin
America and Caribbean among not married with no children adolescents; from
18.8 % in West and Central Africa to 60.5 % in Latin America and Caribbean
among married with one or more children adolescents and, from 19.4 % in East
Asia and the Pacific to 73.9 % in CEE and the CIS among not married sexually
active adolescents. mDFPS among married adolescents with no children was
below 20 % in 32 of the 73 the low and middle-income countries analysed, of

which 14 presented a mDFPS below 10 % (8 of them belonging to the West and
Central Africa).

Conclusion Overall, we found that most of the girls who wanted to delay,
or limit pregnancy were not using a modern contraceptive method. In all world
regions, the lowest mDFPS coverage was found for married adolescents with no
children. In this sense, priority countries for interventions are those belonging
to the West and Central Africa region. Global efforts to prevent unintended
pregnancies and improve pregnancy spacing among adolescents should consider
the existing social norms regarding marriage and fertility expectations so that
family planning strategies can effectively reach adolescents in these countries.

Disclosure of interest The authors declare that they have no competing inter-
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**P8-14**

**The global influenza hospital surveillance network (GIHSN), a worldwide platform for timely generation of severe influenza epidemiological data**

C. El Guerche-Seblain,*, C. Commaille-Chapus,†,‡, M. Morizet,†, J.-Y. Robin,*, C. Mahé,*,

* Global Vaccines Epidemiology and Modeling, Sanofi Pasteur, Lyon, France

†,‡ Strategy, Open Health Company, Paris, France

* Corresponding author.

Introduction According to World Health Organization (WHO) estimates, annual influenza epidemics are estimated to result in about 3 to 5 million cases
of severe illness, and about 290,000 to 650,000 deaths worldwide. While policy
makers are expected to place higher value on vaccines indicated for prevention
of severe illness, high quality global data on severe influenza are scarce. This is
further complicated by the variability of the viruses and the severity of influenza
epidemics between years and geographical areas. The Global Influenza Hospi-
tal Surveillance Network (GIHSN) supported by the Foundation for Influenza
Epidemiology is a platform to generate such important public health data.

Methods The GIHSN consists of a network of country sites affiliated with public health authorities coordinating several hospitals. This multicen-
ter, prospective, hospital-based active surveillance, is coordinated by the Open
Health Company and funded by the Foundation for Influenza Epidemiology
created by Sanofi Pasteur. A standard protocol is shared between sites allowing
for comparison and pooling of data across sites. Patients hospitalized during the
influenza season are asked for recent (less than 7 days old) influenza-like-
illness (ILI) symptoms before admission. All consenting ILI cases are swabbed
and tested by multiplex real-time polymerase chain reaction (RT-PCR) for
influenza. Influenza positive RT-PCR samples are sub-typed to identify A/H1N1,
A/H3N2 strain subtypes or B/Yamagata, B/Victoria lineages. When vaccine
uptake allows, vaccine effectiveness is estimated using a test negative design
method. Sites are invited to share their data through an online collection tool.
Data are then aggregated, and indicators are displayed using state-of-the-art data
visualization techniques on the network website www.gihsn.org. Data are man-
age through an associative engine, which can combine a very large number
of data sources and indexes every possible relationship in the data. Users are
not restricted to linear exploration within partial views of data and can gain
immediate insights and explore data in multiple directions.

Results The GIHSN has been progressively scaled up and has generated data
for six consecutive seasons, for both Northern and Southern hemisphere, rep-
resenting now a yearly sample of more than 12,000 individual samples tested
by RT-PCR with detailed demographic, clinical and virological data. During
the 2016–2017 season, close to 3000 cases of hospitalizations from influenza
have been documented. Type of data generated include influenza activity and
lengths of epidemics, pattern of strain circulation by subtype by region, burden
of severe laboratory confirmed influenza for various populations, analyses of
disease risk factors and vaccine effectiveness estimates. Genetic strain sequenc-
ing characterization is also generated locally. Results are published yearly in
peer reviewed scientific journals and presented in international conferences. For
the 2017–2018 season, the GIHSN expanded to more than 40 hospitals in 20
countries.