Global Influenza Hospital Surveillance Network

www.gihsn.org

ANNUAL MEETING, 19-20 OCTOBER 2020

GIHSN 2019-2020: RESULTS BY SITE

All Sites

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

CANADA

Melissa K Andrew, MD, PhD, MSc(PH)
Shelly A McNeil, MD, FRCPC

Foundation for Influenza Epidemiology

CANADA

CANADA

Serious Outcomes Surveillance Network

#included = **1528**
(Age range 18-106)

#LCI = **812**

#sequenced = **ongoing**

Site description

- 11 adult academic and community hospital sites in 5 Canadian Provinces (Nova Scotia, Ontario, Quebec, Alberta, British Columbia) representing ~6000 acute care beds
- Population enrolled is approximately 2/3 older adults >=65 years of age, admitted to hospitals with an acute respiratory illness
- Influenza seasons in Canada typically begin with early influenza A activity, followed by a later influenza B peak

Global Influenza Hospital Surveillance Network

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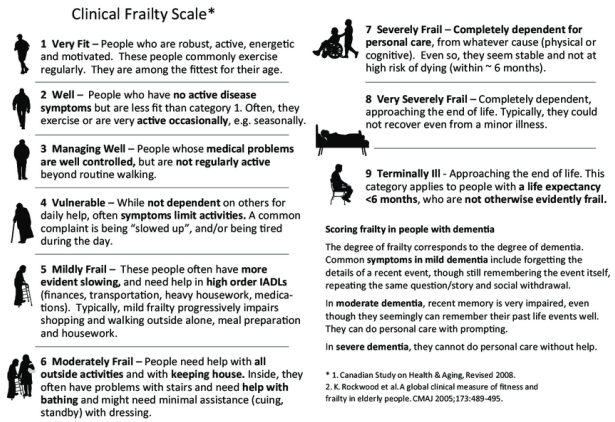
Serious Outcomes Surveillance Network

Results

	CFS 1-3 non-frail 520 (34.0%)	CFS 4 pre-frail 302 (19.8%)	CFS 5 mild frailty 240 (15.7%)	CFS 6 mod frailty 246 (16.1%)	CFS 7-9 severe frailty 103 (6.7%)	P value
age	57.5 (19.6)	72.4 (12.5)	77.6 (12.0)	80.1 (13.1)	75.5 (17.0)	
vaccination	201 (38.7%)	161 (53.3%)	136 (56.7%)	153 (62.2%)	59 (57.3%)	p<0.001
ICU	66 (12.7%)	43 (14.2%)	18 (7.5%)	26 (10.6%)	11 (10.7%)	p=0.2
death	12 (2.3%)	11 (3.6%)	13 (5.4%)	22 (8.9%)	19 (18.4%)	p<0.001
Influenza A	205 (74.8%)	127 (80.9%)	98 (86.0%)	85 (79.4%)	54 (79.4%)	
Influenza B	69 (25.2%)	30 (19.1%)	16 (14.0)	22 (20.6%)	14 (20.6%)	



Clinical Frailty Scale*

1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 Well – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 Managing Well – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 Vulnerable – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 Mildly Frail – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 Moderately Frail – People need help with **all outside activities** and with **keeping house.** Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 Severely Frail – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9 Terminally Ill - Approaching the end of life. This category applies to people with a **life expectancy <6 months,** who are **not otherwise evidently frail.**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

Key messages

- Older and frailer patients were more likely to have been vaccinated
- Detection of influenza A and B was similar across grades of frailty
- Overall 12.1% of influenza patients were admitted to ICU and 5.5% died
- Death increased with frailty, but ICU admission did not
- Death was higher in the influenza group
- The experience of severe outcomes was similar for influenza A and B

Global Influenza Hospital Surveillance Network

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Serious Outcomes Surveillance Network

Conclusion & Challenges

CONCLUSIONS:

- Frailty was associated with increased vaccination and with increased mortality
- Influenza A and B co-circulated, and both were associated with similar morbidity and mortality

CHALLENGES:

- Getting sequencing established locally has been a challenge – delayed by COVID-19 but now on track to complete last season's sequences and be ready for 2020/21
- Influenza screening has been impacted by COVID-19; reduced influenza circulation with the COVID control measures, and study personnel issues at busy COVID-19 sites
- For context, we describe COVID control measures in Canada: many non-essential businesses and shops closed, people working remotely where possible, restaurants and bars were closed, schools closed March 13-end of the school year (June), government support for individuals and businesses. Not a full "lock down", no curfew. Grocery and essential stores remained open with operating restrictions.

MEXICO

Guillermo M. Ruiz-Palacios, MD, FIDSA
on behalf of the Global Influenza Hospital Surveillance Network-Mexico

Foundation for Influenza Epidemiology

Global Influenza Hospital Surveillance Network
MEXICO

MÉXICO

INSTITUTO NACIONAL DE CIENCIAS MEDICAS Y NUTRICION SALVADOR ZUBIRAN
Coordinating Center

Total included = **847**

Laboratory confirmed influenza = **171**

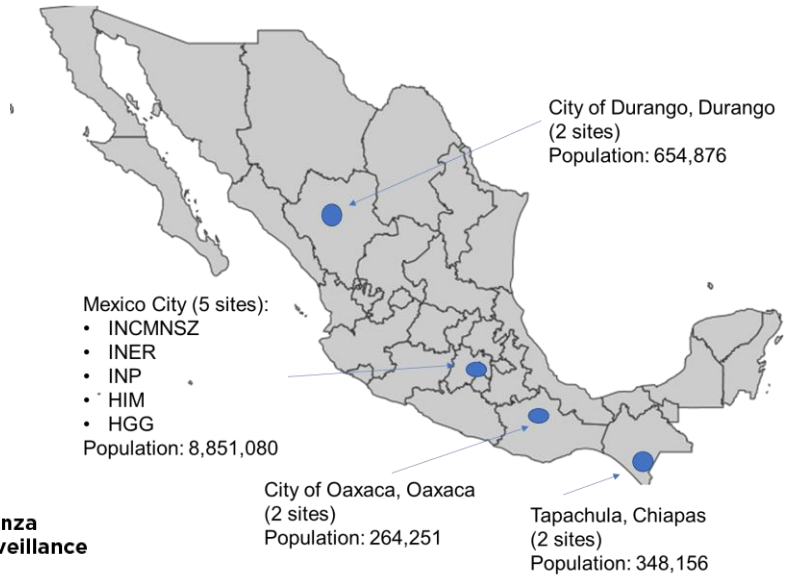
Total sequenced = **79**

For oral presentation

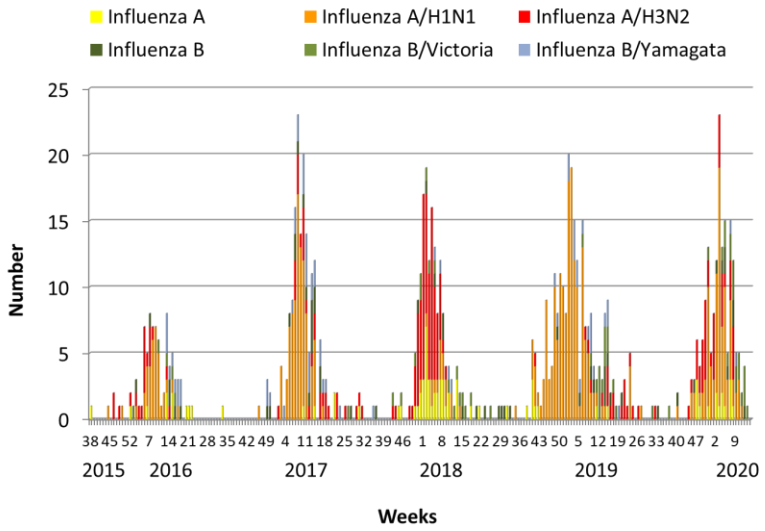
2019-2020 Influenza Season

Study conducted in 11 hospitals in four provinces of Mexico

Geographical location of study sites



Influenza A(H1N1)pdm09, A(H3N2), and Influenza B circulated during this season



Global Influenza Hospital Surveillance Network

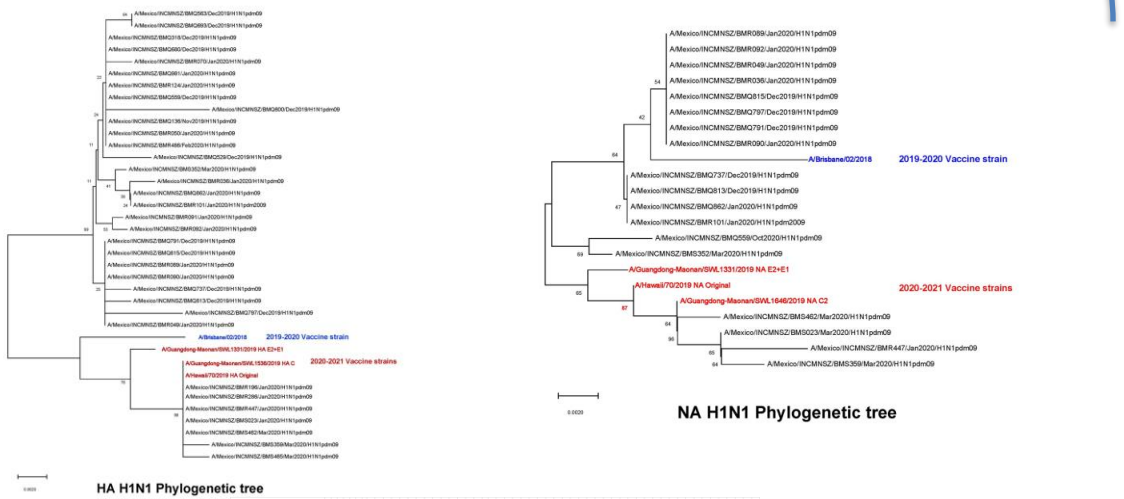
MEXICO

INSTITUTO NACIONAL DE CIENCIAS MEDICAS Y NUTRICION SALVADOR ZUBIRAN
Coordinating Center

Sequencing of influenza A(H1N1)pdm09 and A(H3N2)

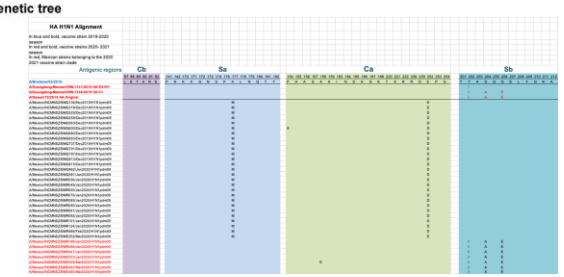
For oral presentation

Influenza A(H1N1)pdm09 strains

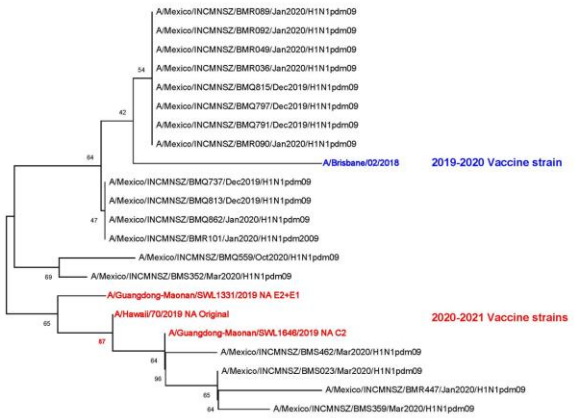


HA H1N1 Phylogenetic tree

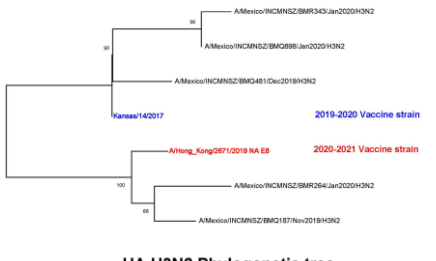
NA H1N1 Phylogenetic tree



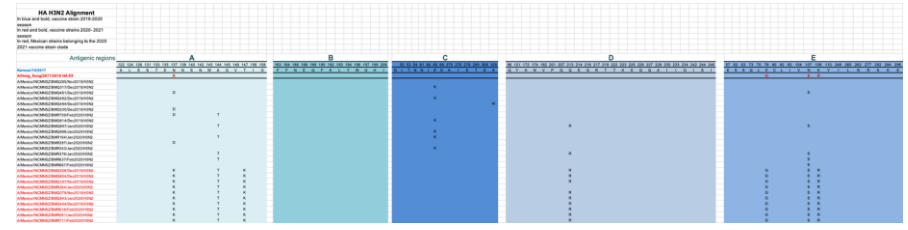
Influenza A(H3N2) strains



NA H1N1 Phylogenetic tree



HA H3N2 Phylogenetic tree



Global Influenza Hospital Surveillance Network

MEXICO

INSTITUTO NACIONAL DE CIENCIAS MEDICAS Y NUTRICION SALVADOR ZUBIRAN
Coordinating Center

Conclusion & Challenges

Conclusions:

- The 2019-2020 influenza season started In October 2019 and ended the last week of April 2020.
- Rhinovirus (24%), Respiratory Syncytial Virus (22%) and Influenza (18%) were the most commonly detected virus among hospitalized patients with acute respiratory infection during the 2019-2020 season in Mexico
- Influenza A(H1N1)pdm09 was the predominant subtype during this season followed by influenza A(H3N2) and influenza B. There was a small fraction of A viruses that could not be subtyped.
- A total of 79/171 influenza stains were sequenced for the hemaglutinin and neuraminidase aminoacids.
- Simultaneous circulation of genetically and antigenically diverse A(H1N1)pdm09 and A(H3N2) virus was observed and represent a challenge for vaccine adequate protection
- Common coronavirus subtypes circulated during the 2019-2020 season with coronavirus NL63 and coronavirus HKU1 being the more prevalent subtypes.

Challenges and Future Directions:

- Improvement of data entry with an improved electronic remote data entry system
- Improvement of monitoring of study data within the electronic remote data entry system

BRAZIL
HOSPITAL PEQUENO PRÍNCIPE/_CURITIBA/BRAZIL

Heloisa I G Giamberardino
Sonia M Raboni

Foundation for Influenza Epidemiology

CURITIBA - BRAZIL

Universidade Federal do Parana (UFPR)
Hospital Pequeno Principe (HPP)

#included = **315**

#LCI = **7**

#sequenced =
7 INFLUENZA
2 SARS-COV-2

SITE PRESENTATION

Hospital Pequeno Principe , quarternary pediatric hospital, Curitiba, South Brazil.
It is a sentinela hospital for Severe Acute Respiratory Infection (SARI)

370 beds

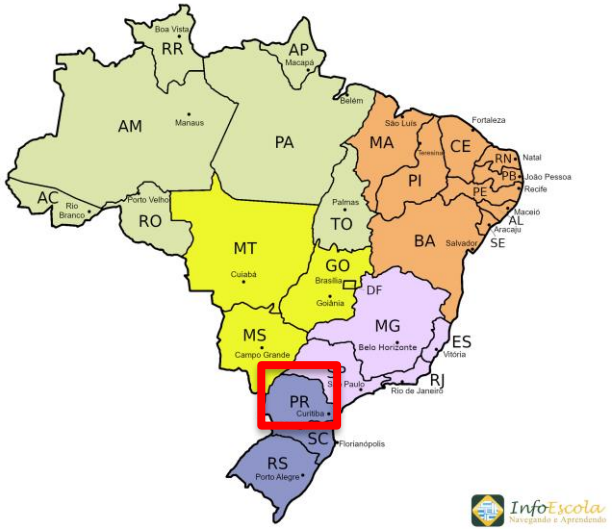
62 PICU beds

22 929 hospitalizations/year

2 655 employess

21 242 surgeries

305 005 outpatients medical consultations



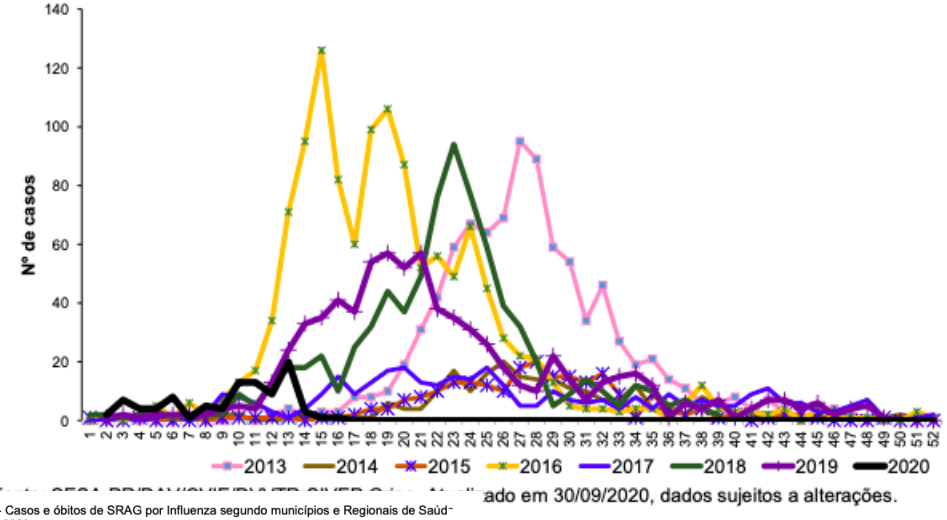
Global Influenza Hospital Surveillance Network

CURITIBA - BRAZIL

Universidade Federal do Parana (UFPR)
Hospital Pequeno Principe (HPP)

SARI - EPIDEMIOLOGICAL SCENARIO IN PARANA STATE AND CURITIBA CITY

Gráfico 3 – Casos de SRAG por Influenza segundo a semana de início dos sintomas, residentes no Paraná, 2013 a 2020.



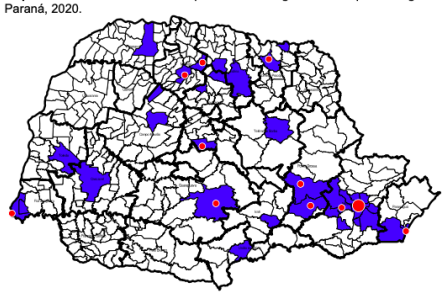
ado em 30/09/2020, dados sujeitos a alterações.

Tabela 7 - Casos e óbitos de SRAG por Influenza segundo subtipo viral, residentes no Paraná, 2013 a 2020.

Classificação Final	2013		2014		2015		2016		2017		2018		2019		2020	
	Casos	Óbitos	Casos	Óbitos	Casos	Óbitos	Casos	Óbitos	Casos	Óbitos	Casos	Óbitos	Casos	Óbitos	Casos	Óbitos
Influenza A(H1N1)pdm09	384	47	48	8	37	4	1.087	218	1	0	237	46	532	110	65	11
Influenza A(H1) Sazonal*	6*	0	0	0	4*	1*	1*	1*	0	0	0	0	0	0	0	0
Influenza A(H3) Sazonal	114	6	165	8	124	11	4	1	210	36	381	63	58	13	2	1
Influenza A não subtipado	3	0	1	0	0	0	55	14	0	0	12	3	2	0	2	0
Influenza B	401	13	14	0	63	9	76	6	132	18	38	1	103	10	26	1
TOTAL	908	66	228	16	228	25	1.223	240	343	54	668	113	695	133	95	13

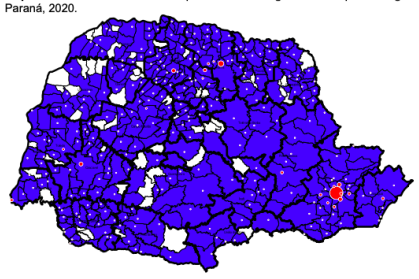
Fonte: SESA-PR/DAV/CVIE/DVVTR-SIVEP Gripe. Atualizado em 30/09/2020, dados sujeitos a alterações.
*Obs: Resultados provenientes de laboratórios particulares, prováveis Influenza A(H1N1)pdm09.

Mapa 1- Casos e óbitos de SRAG por Influenza segundo municípios e Regionais de Saúde Paraná, 2020.



Casos de SRAG por Influenza
Óbitos de SRAG por Influenza
Fonte: SESA-PR/DAV/CVIE/DVVTR-SIVEP Gripe. Atualizado em 30/09/2020, dados sujeitos a alterações.

Mapa 2- Casos e óbitos de SRAG por COVID-19 segundo municípios e Regionais de Saúde, Paraná, 2020.

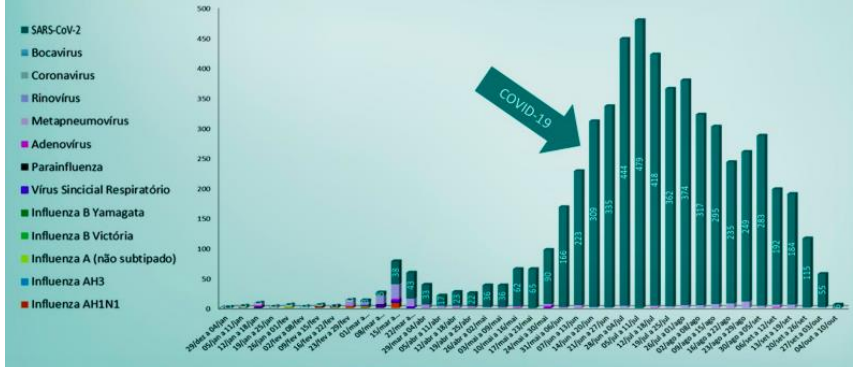


Casos de SRAG por COVID-19
Óbitos de SRAG por COVID-19
Fonte: SESA-PR/DAV/CVIE/DVVTR-SIVEP Gripe. Atualizado em 30/09/2020, dados sujeitos a alterações.

80% reduction in influenza circulation

PAINEL COVID-19 CURITIBA

SRAG 2020 – Distribuição dos vírus respiratórios em pacientes internados por SRAG, por semana epidemiológica do início dos sintomas



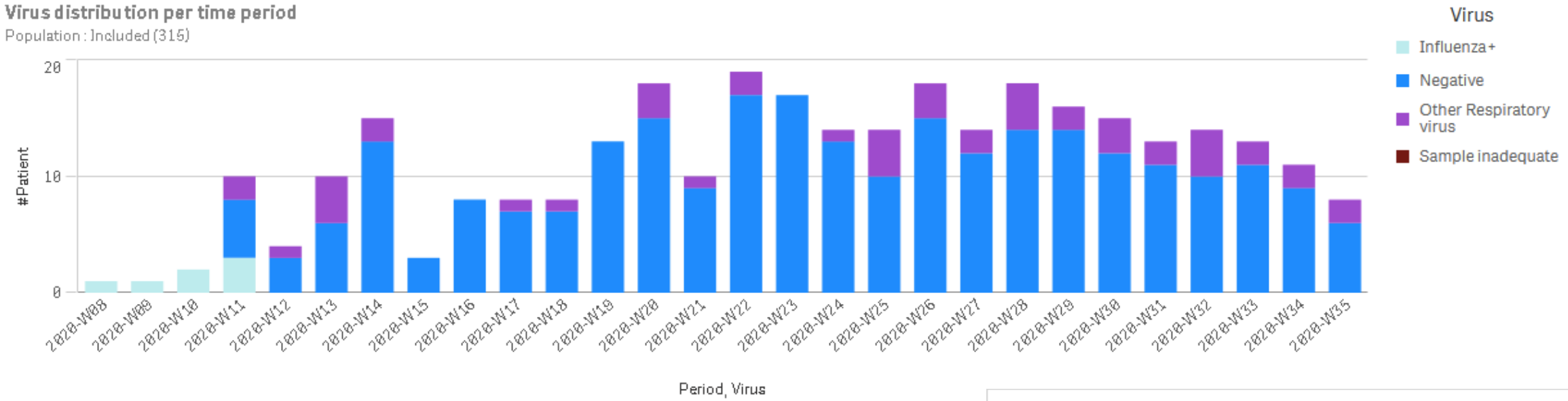
*SRAG=Síndrome Respiratória Aguda Grave

Fonte: SMS/CE/SIVEP-SRAG hospitalizados residentes em Curitiba.
Dados obtidos em 09/10/2020, até a semana epidemiológica 41 (de 04/10 a 10/10/2020)

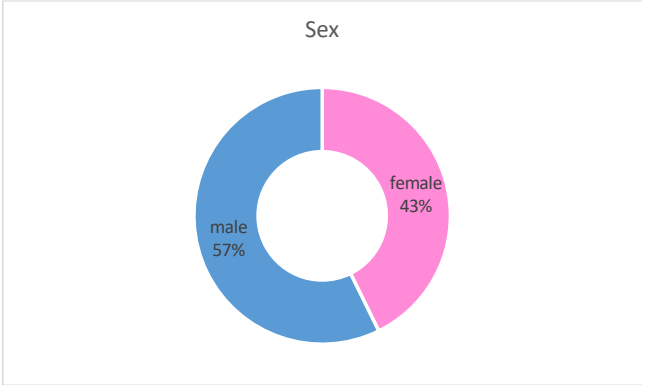
Global Influenza Hospital Surveillance Network

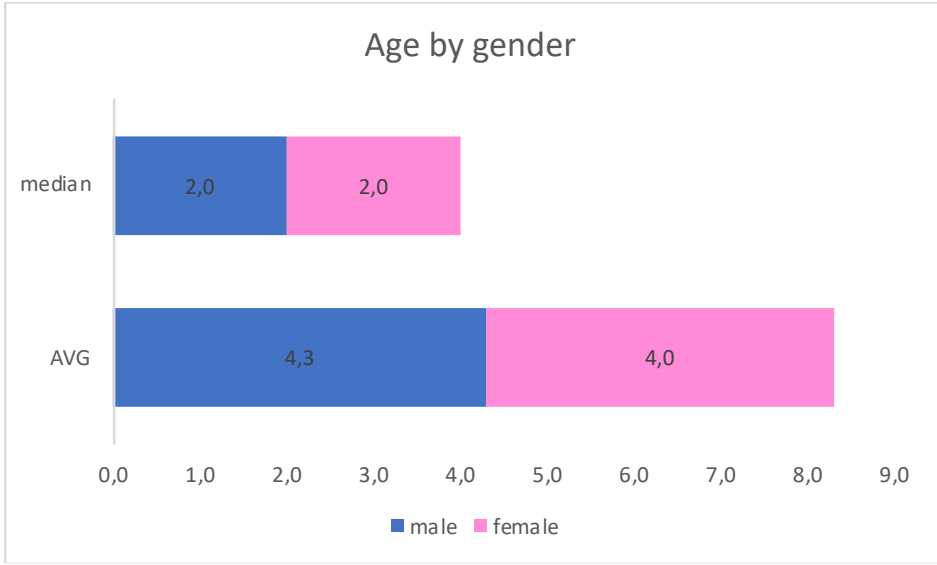
CURITIBA - BRAZIL

Universidade Federal do Parana (UFPR)
Hospital Pequeno Principe (HPP)



Indicator	N
Screnning	559
Included	315
Included with validated collection	279
LCI	7
Others virus	48
Negatives	224





Global Influenza Hospital Surveillance Network

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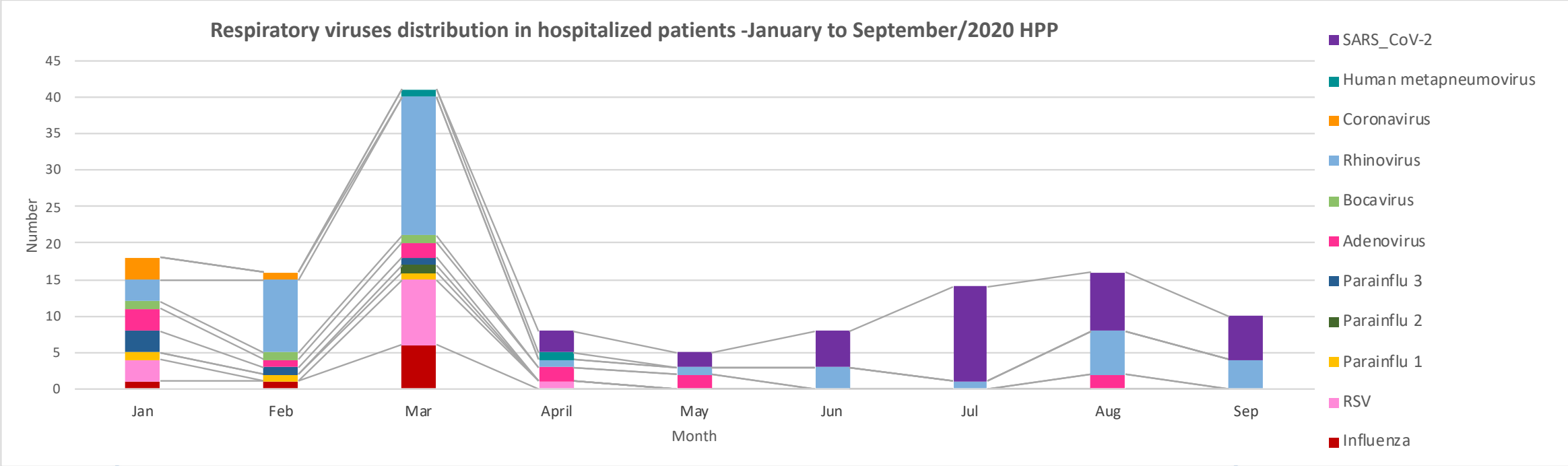
Universidade Federal do Parana (UFPR)
Hospital Pequeno Principe (HPP)

RESULTS



SARI SURVEILLANCE

STUDY PERIOD

Global Influenza Hospital Surveillance Network

CURITIBA, BRAZIL

Universidade Federal do Parana (UFPR)
Hospital Pequeno Principe (HPP)

CONCLUSION & CHALLENGES

Conclusions

- Recruitment period for 2019-2020 season – from March 15 to September 09, 2020
- We detected 7 cases of influenza, 5 influenza A and 2 influenza B
- The low circulation of influenza occurred both in the state of Parana and in the city of Curitiba
- This was a very atypical epidemiological year

Chalenges and Future Directions

- With the SARS-CoV-2 prevention measures, there has been a significant reduction in the circulation of all respiratory viruses, including influenza.
- Try to start the collection earlier, February / 2021, to increase the monitoring period, and increase the chance of capturing more samples of influenza
- Improve the standardization of nucleotide sequencing on our site

PERU

Víctor Alberto Laguna Torres

Foundation for Influenza Epidemiology

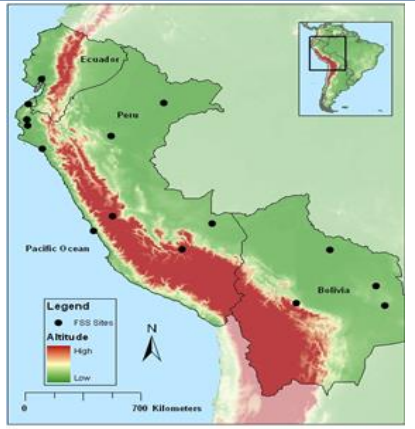
PERÚ

Tropical Medicine Institute Universidad Nacional M. de San Marcos (UNMSM) Instituto de Investigación Nutricional (IIN). Clínica Internacional. Lima

#included = **151**

#LCI positive= 14
#LCI negative = 137

#sequenced = 14



PERÚ: NETWORK FOR INFLUENZA AND OTHER RESPIRATORY VIRUSES HOSPITAL SURVEILLANCE

V. Alberto Laguna, Juana del Valle, Estela Ramirez , J. Martins Nora Reyes

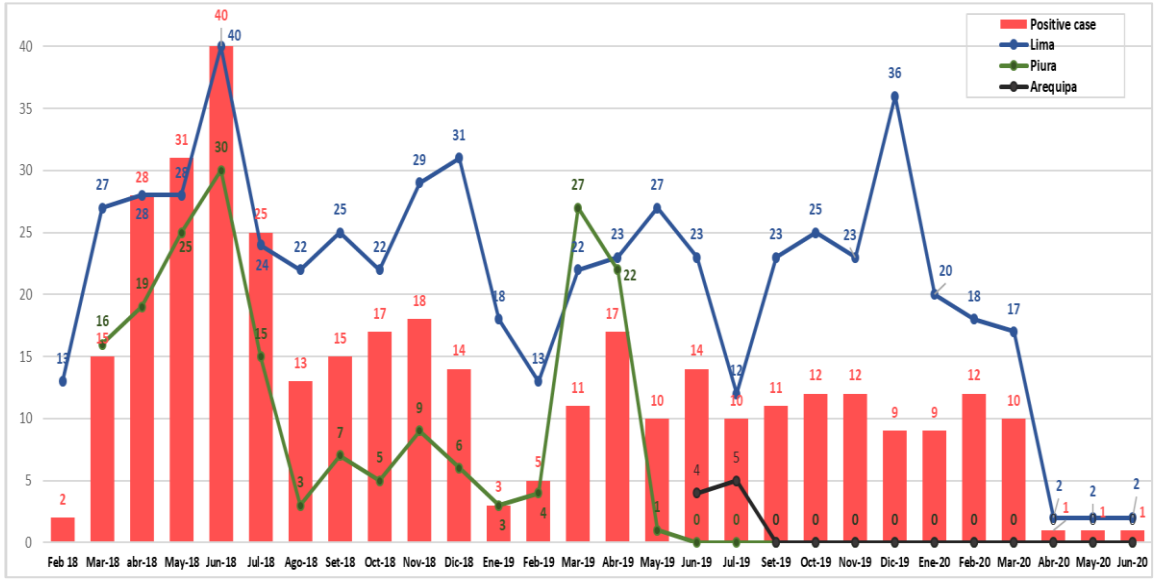
Table 1 Characteristics of the screened population. Peru Sept 2019- June 2020

Variable	Participants	Lima	(%)
Elegible patients	168	168	100.0
Samples taken	151	151	100.0
Gender			
Male	69	69	100.0
Age Group			
Media	2	2	
Median (range)	1[0-5]	1[0-5]	
0-5	84	84	100.0
5-18	16	16	100.0
18-45	3	3	100.0
45-65	2	2	100.0
65-80	3	3	100.0
80+	4	4	100.0
Positive result	78	78	51.7
FLUA	3	3	2.0
H1N1	0	0	0.0
H3N2	3	3	2.0
FLUB	12	12	7.9
RSV	25	25	16.6
Adenovirus	14	14	9.3
Metapneumovirus	35	35	23.2
Bordetella	2	2	1.3
Negative result	73	73	48.3
Coinfeccions	13	13	8.6
Flu coinfeccions	7	7	4.6
OVR coinfeccions	6	6	4.0

A total of 151 samples were taked, of those 84 (55%) were under 5 years of age and 78 (52%) were positive for any respiratory virus. Influenza was positive in 14 samples, of those 03 were FLUA H1N1, none H3N2 and 12 influenza B. (Flu A and B one sample)

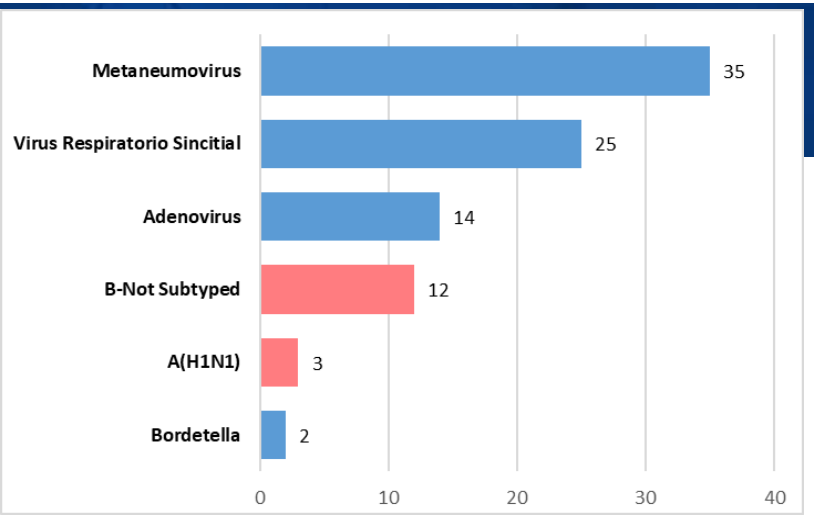
Asthma and CV diseases were the more prevalent chronic conditions. Only 24 (14)% participants received influenza vaccine.

FIGURE N°1: MONTHLY POSITIVE PARTICIPANT DISTRIBUTION BY SITE, 2018-2020



Results

FIGURE N°2: PERU -VIRAL CIRCULATION BY RT PCR, SEPT 2019- JUNE 2020



Between Sept 2019 and June 2020, metapneumovirus (23%) and respiratory sincitial virus (16%) were the most frequent viruses found in Influenza like illness hospitalized participants.

The current COVID-19 pandemic period did not allow us to show an accurate viral distribution. We only sent 14 influenza samples for genotyping to Lyon Laboratory.

FIGURE N°3:LCI PATIENT BY GENDER AND AGE GROUP, SEPT 2019-JUNE 2020

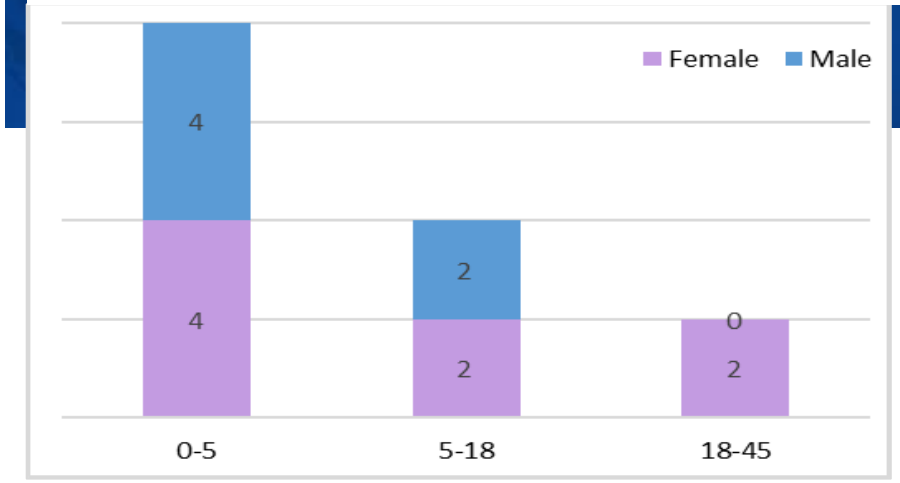
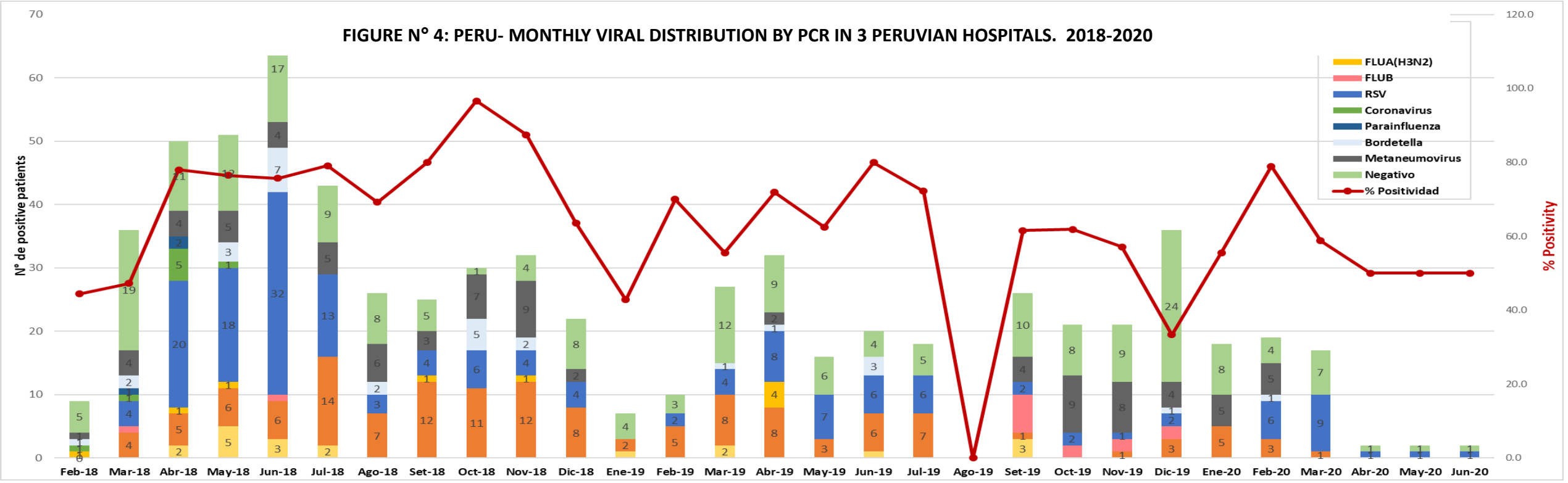


FIGURE N° 4: PERU- MONTHLY VIRAL DISTRIBUTION BY PCR IN 3 PERUVIAN HOSPITALS. 2018-2020



Conclusion & Challenges/

1. Viral circulation was more frequent in patients under 5 years of age specially in those under 6 months
2. The influenza period in the country starts in January-February in the north and in Lima goes from April until August-September.
3. This year the COVID-19 pandemic started in Lima in March, since then all the efforts/resources were allocated in that event. Sample-taking was hindered in our hospitals as a result of this. Starting a sample collection process meant putting teamates-health at risk due to increased exposure to a coronavirus contagion.
4. Over 50% of the patients with co-morbidities such as asthma, CVs diseases or COPD were positive for at least one virus (metapneumovirus, RSV, adenovirus)
5. Vaccination rates were extremely low. In Perú influenza vaccine is available in April provided by PAHO. People usually does not accept vaccination
6. Viral positive people was not related to ICU, mechanical ventilation or death.

Challenges/Future direction

1) Next period we will focus our resources in Lima and Piura to get influenza samples according to seasonality
2) Our laboratory is requesting Ministry of Health permission to perform rtPCR for COVID-19 because in the new epidemiologic scenario, sites and volunteers would also request those results.

SOUTH AFRICA

Marta Nunes

Foundation for Influenza Epidemiology

SOUTH AFRICA

University of the Witwatersrand

#included = **2125**

#LCI = **0**

#sequenced = **0**

Site presentation

Two hospitals in Soweto (total population 1.3 million people) are part of our network:

- Chris Hani Baragwanath Academic Hospital (CHBAH): 3,400 beds
- Bheki Mlangeni District Hospital (BMDH): 300 beds

Viral detection testing is not part of the standard of care and all enrolled participants were tested under the study protocol at the Respiratory and Meningeal Pathogens Research Unit laboratory. The HIV prevalence among pregnant women in Soweto is approximately 29%.

SOUTH AFRICA

University of the Witwatersrand

Results

Patients tested up until 15th September

	<5 years old	≥5 years old
N. screened and tested for influenza	1263	5010
Included population[1]	1041[1]	1084[2]
Influenza+	0	0

[1]Admitted in the previous 72 hours and stayed in hospital for at least 1 night. Admitted due to any acute condition possibly associated with an influenza infection (protocol admission diagnosis).
[2]Admitted in the previous 72 hours and stayed in hospital for at least 1 night. Admitted due to any acute condition possibly associated with an influenza infection (protocol admission diagnosis). Compliant with protocol ILI definition.

SOUTH AFRICA

University of the Witwatersrand

Conclusion & Challenges

Despite exhaustive testing no influenza cases were detected under the current study. This mimics the results reported by the national surveillance program.

The lack of an influenza season in South Africa (and in other countries of the Southern Hemisphere) probably reflects the hard lockdown measures, including the closure of regional and international boarders, implemented in the country from end of March.

KENYA

Nancy Otieno

Foundation for Influenza Epidemiology

KENYA

KENYA MEDICAL RESERACH INSTITUTE

#included = **640**

#LCI = **70**

#sequenced = **63**

Site presentation

- Surveillance conducted in 7 sites
  - Coast Provincial General Hospital (PGH)
  - Nyeri PGH
  - Kenyatta National Hospital
  - Nakuru County Referral Hospital (CRH)
  - Kakamega CRH
  - Siaya CRH
  - Marsabit CRH

- Total of 4,100 bed capacity for adults and pediatrics
  - Bed occupancy vary by site, range between 20-120%

Figure 1: Location of GIHSN sites in Kenya

Global Influenza Hospital Surveillance Network

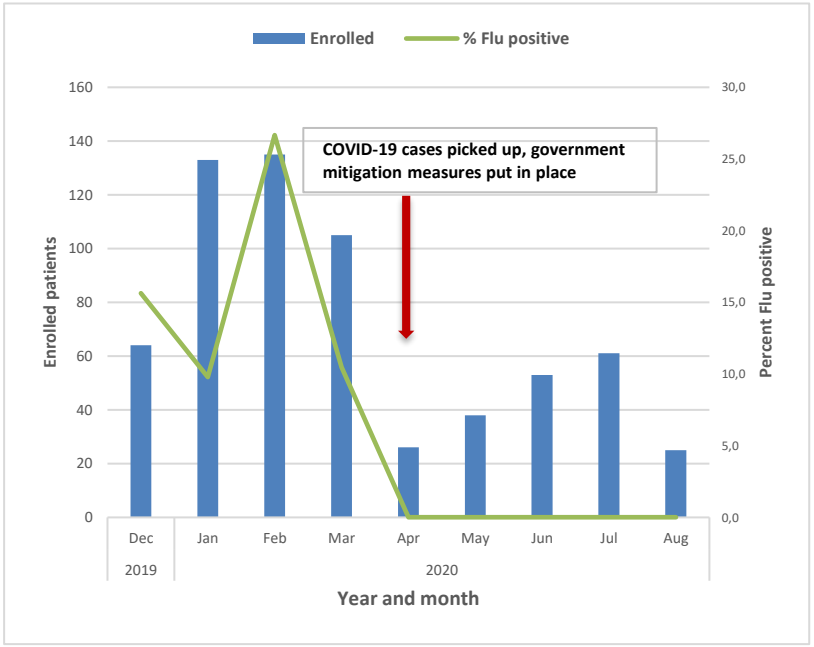
KENYA

KENYA MEDICAL RESEARCH INSTITUTE

Results

- At each of the hospitals surveillance officers identify patients
  - hospitalized with acute onset of illness (< 10 days-routine SARI, <7 days-GIHSN), with cough and reported fever or documented temp. ≥38°C
- Enrolled 640 patients of which 70 (10.9%) tested positive for influenza
  - The majority of the cases were children <5 years of age (525, 82.0%)
  - Very few elderly patients (13, 0.2%), none had influenza
- Influenza A(H1N1)pdm09 was predominant
- We detected no influenza from April – August 2020, coinciding with period when COVID-19 cases increased (Figure 3.)
- Patients with co-morbidities accounted for 265 (41.4%) of influenza-associated hospitalizations, 21 (7.9%) tested positive for influenza
- Malnutrition was most prevalent in 115/525 infants, 12 (10.4%) of the malnourished infants had influenza
- We recorded some influenza vaccination among 10 children

Figure 3: Monthly no. of cases enrolled and % influenza positive



KENYA

KENYA MEDICAL RESEARCH INSTITUTE

Conclusion & Challenges

Conclusions:

- We enrolled 640 patients of which 70 (10.9%) tested positive for influenza
  - The majority of the cases enrolled were young children less than 5 years of age (525, 82.0%)
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Challenges and future directions:

- Late start for 2019-2020 season data collection, started in Dec. 2020 hence missed out on two months of data
- COVID-19 pandemic impacted on healthcare seeking, patients stayed away from health facilities for fear of SARS-CoV-2 testing and isolation when found positive
- Prioritization of SARS-CoV-2 testing by the NIC slowed down influenza testing and hence availability of virus data
- Plans to train KEMRI and NIC staff to generate genetic sequence data were put on hold since all laboratory efforts were directed towards SARS-CoV-2 testing
  - Trainings will be done in 2020-2021 season; having capacity to sequence locally will ease and improve our data uploading frequency

FRANCE-LYON

Hospices Civils de Lyon, France

Pr P. Vanhems, S. Amour, MSc, M. Saadathian-Elahi, PhD

Foundation for Influenza Epidemiology

FRANCE – LYON

Hospices Civils de Lyon

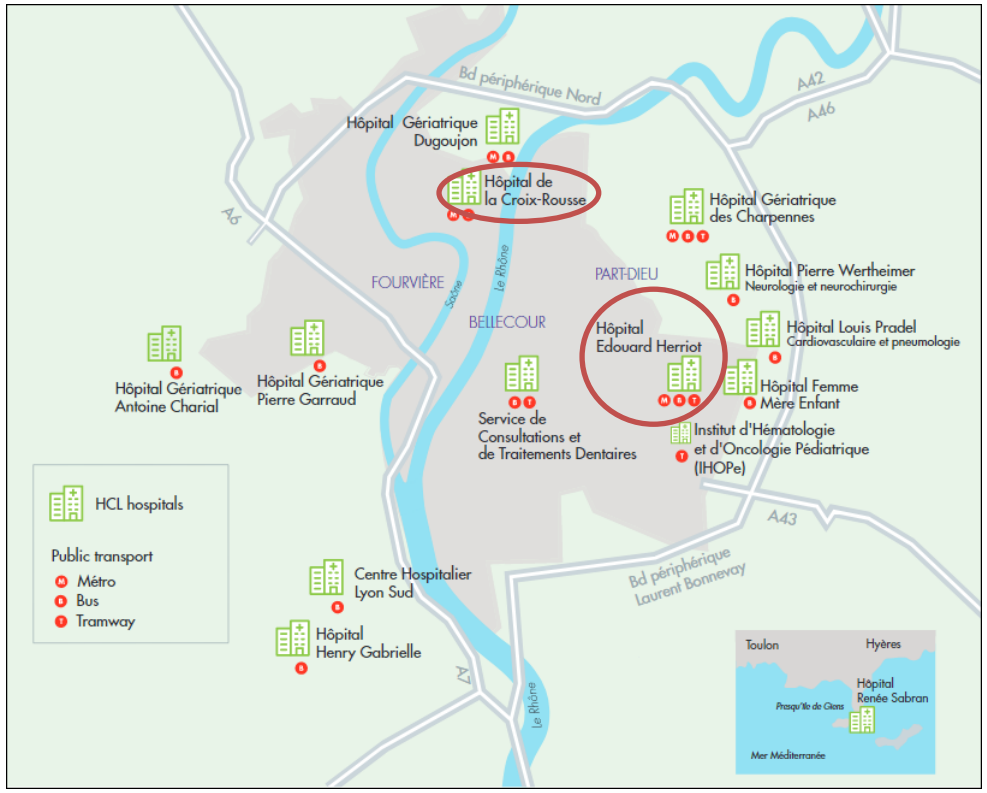
#Included = **156**

#LCI = **44**

#Sequenced = **7**

Site presentation

- Hospices Civils de Lyon (HCL) is the second largest university affiliated hospital in France. Of the 23,000 staff, 5,000 are physicians and more than 13,000 are nursing staff. HCL (around 6000 beds) includes 13 hospitals in Rhone-Alpes (Lyon) and one in the Var department in the south of France (see map below)[1].
- GIHSN protocol is carried out in two hospitals:
  - Edouard Herriot hospital (973 in-patient adult beds)
  - Croix-Rousse hospital (716 in-patient adult beds)



Global Influenza Hospital Surveillance Network

[1]www.chu-lyon.fr

FRANCE – LYON

Hospices Civils de Lyon

Results

- **Increase in the rate of patients included** in the GIHSN network following the addition of Croix-Rousse hospital, despite the relatively mild influenza season and consequences of SARS-CoV2 pandemic on hospital consultation/admission

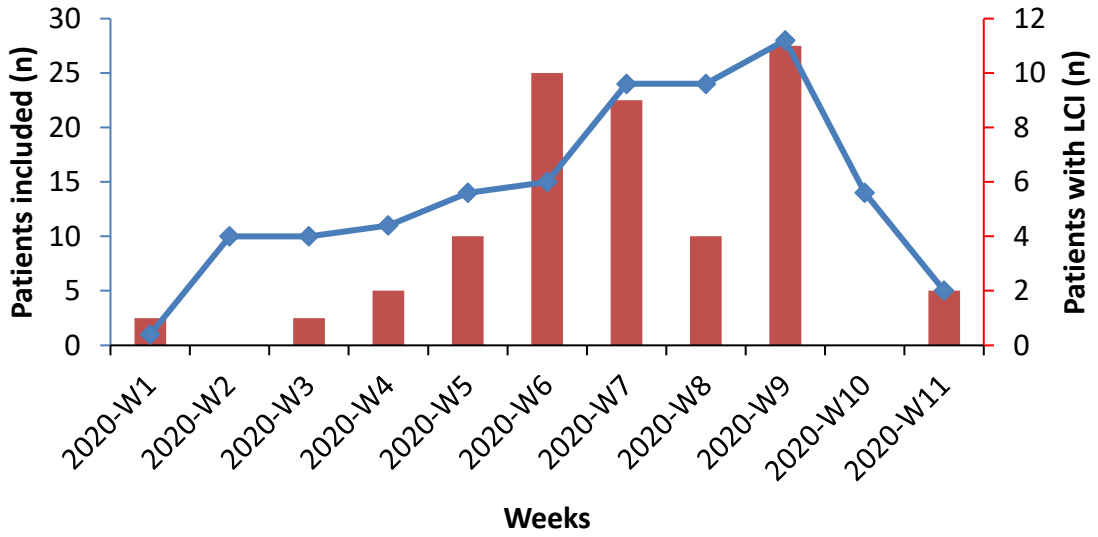


Figure 1 - Evolution of number of patients included (n=156) and patient with LCI (n=44) by weeks

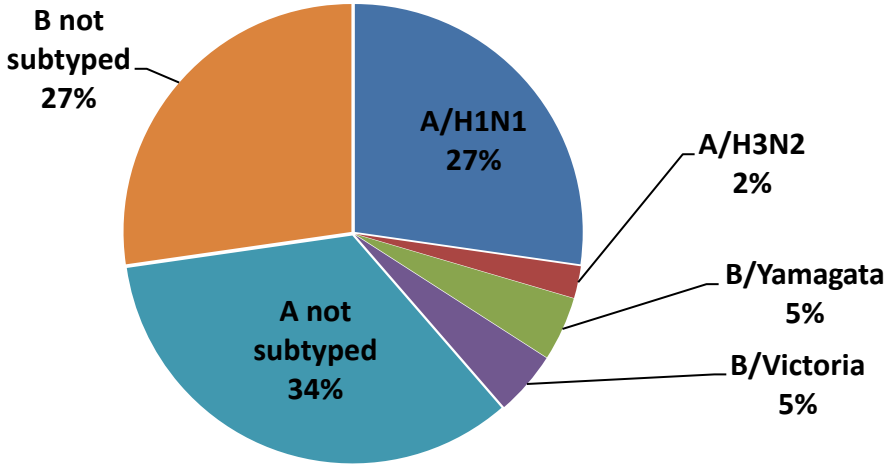


Figure 4 – Influenza distribution by type and subtype status (n=44)

- **Co-circulation of influenza A and B** in the study population (63% and 37% respectively)

Other related research:

- BIED study : Burden of Influenza in Emergency Dept.

2,500 patients including 125 confirmed influenza recruited (13/01/2020 - 09/03/2020)

- Nosocomial Coronavirus (NOSO-COR), 2,500 patients in France

(BMJ Open, in press)

- Nosocomial Influenza (NOSOGRIPPE), 2004-2020

Global Influenza Hospital Surveillance Network

FRANCE – LYON

Hospices Civils de Lyon

Conclusion & Challenges

- Co-circulation of influenza A and B in the study population (67% and 33% respectively) was in agreement with what has been observed in hospitals at national level (62% and 38% respectively) during the 2019-2020 influenza season
- At community level, co-circulation of influenza A and B was slightly different from what has been observed in hospitals (54% and 46% respectively)
- Vaccine coverage among influenza laboratory-confirmed cases was similar to what has been observed during the 2018-19 influenza season.
- Perspective: For the 2020-21 influenza season, we plan to integrate a third university-affiliated hospital in Lyon. Nosocomial influenza is under surveillance by the infection prevention and control team since 2018, allowing smooth running of the study in this hospital.

FRANCE-PARIS

Pr Odile LAUNAY

Foundation for Influenza Epidemiology

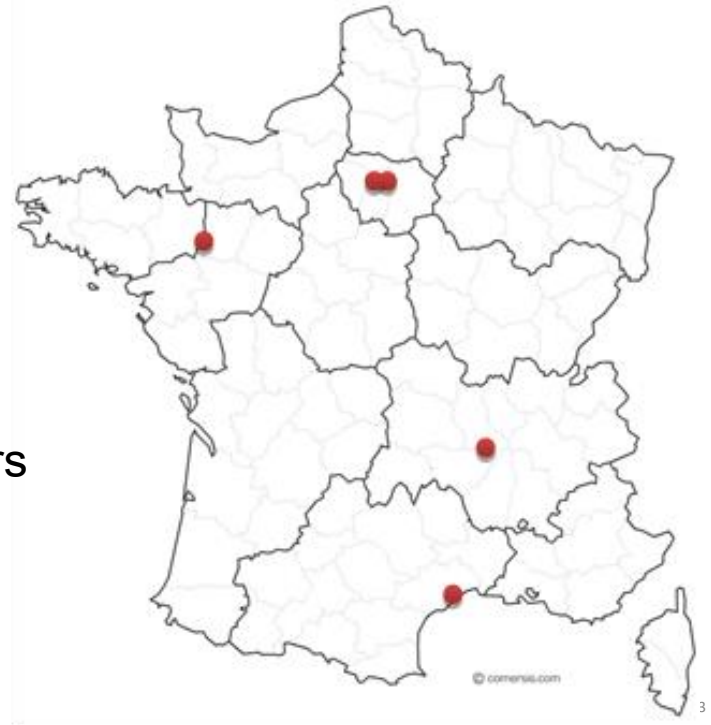
Included N= **445**

LCI N= **89**

Sequenced N= **89**

Site presentation

- Epidemiological study prospective case-control multicenter in France
- 5 participating university hospitals :
  - Paris (Cochin and Bichat hospitals)
  - Lyon,
  - Montpellier,
  - Rennes.
- Study focused on adults patients (≥ 18 years) hospitalized for at least 24 hours for severe acute respiratory infection (SARI)
- Inclusion period: from December 12, 2019 to March 19, 2020.



Results

Influenza viruses	n	%
A	69	77.5
A(H1N1)	47	52.8
A(H3N2)	12	13.5
B	20	22.5
B/Victoria lineage	10	11.2
B/Yamagata lineage	1	1.1

Conclusions :

- In France, during the 2019-20 season, we observed a majority of influenza A/H1N1
- Influenza vaccine coverage was moderate (58%) in the total population: 44.9% in cases, 60.7% in controls
- IVE against hospitalisation with influenza for the 2019-2020 season: 43.8%

Challenges :

Increase the number of patients the following season even if the COVID-19 virus is in circulation

Vaccine coverage:

Population (n=440)	Cases (n=89)	Controls (n=351)
58%	44.9%	60.7%

Vaccine effectiveness (IVE)* :

	IVE (%)	95% IC	Pvalues
Influenza	43.8	[1.4; 68.0]	0.044
Flu A	54.5	[15.0; 75.6]	0.014
Flu B	-6.5	[-227.5; 65.4]	0.913
<65	26.4	[-84.2; 70.6]	0.513
65-74	72.8	[-7.6; 93.1]	0.064
>=75	44.7	[-44.2; 78.8]	0.226

*Multivariate analyzes are adjusted on age, sex, chronic disease and month of inclusion

Conclusions & challenges

Conclusions :

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- Influenza vaccine coverage was moderate (58%) in the total population: 44.9% in cases, 60.7% in controls
- IVE against hospitalisation with influenza for the 2019-2020 season: 43.8%

Challenges :

Increase the number of patients the following season even if the COVID-19 virus is in circulation

SPAIN

FISABIO-Public Health (Valencia, Spain)

Javier García-Rubio[1], Ainara Mira-Iglesias[1], F. Xavier López-Labrador[1,2], Javier Díez-Domingo[1]

Foundation for Influenza Epidemiology

1. Fundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunitat Valenciana (FISABIO-Public Health), Valencia, Spain
2. Consorcio de Investigación Biomédica de Epidemiología y Salud Pública (CIBERESP), Instituto de Salud Carlos III, Madrid, Spain

SPAIN

FISABIO – Public Health

Included = **1,836**

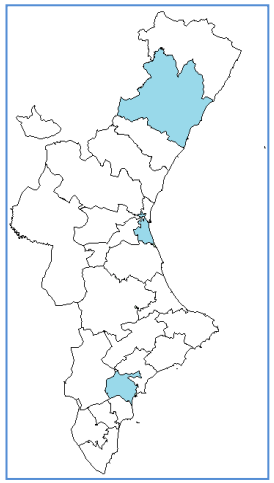
LCI = **125**

Sequenced = **87**

Site presentation

Fisabio Foundation

AIV



4 hospitals

General Castellón	282,043
La Fe Valencia	287,348
Dr. Peset Valencia	279,027
General Alicante	277,193
Total catchment area	**1,125,611**

SPAIN

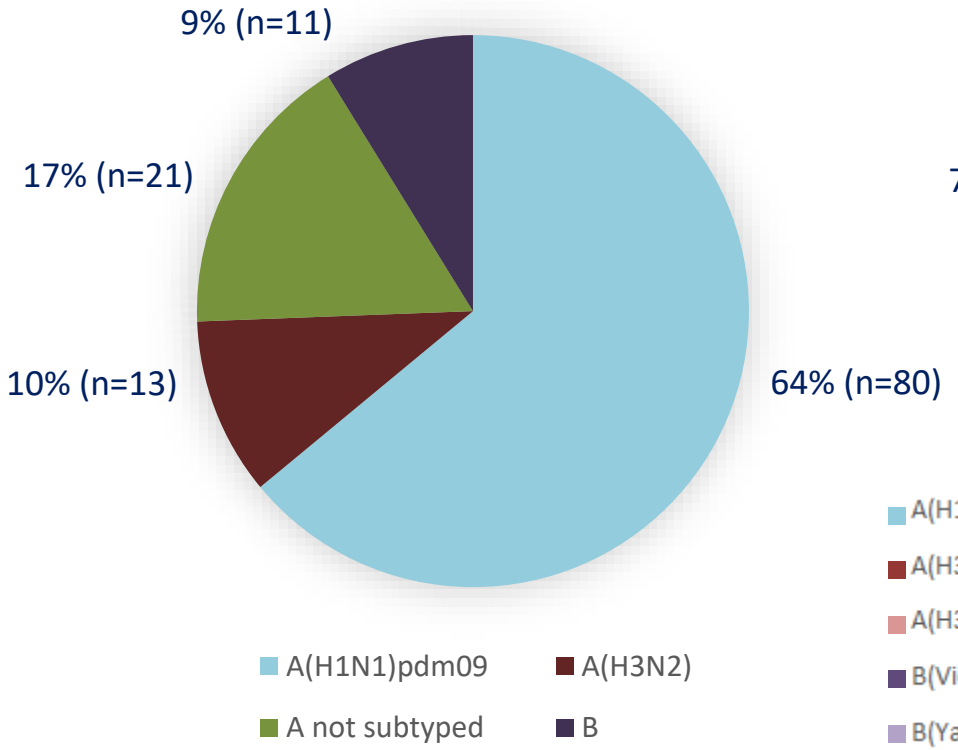
FISABIO – Public Health

Results

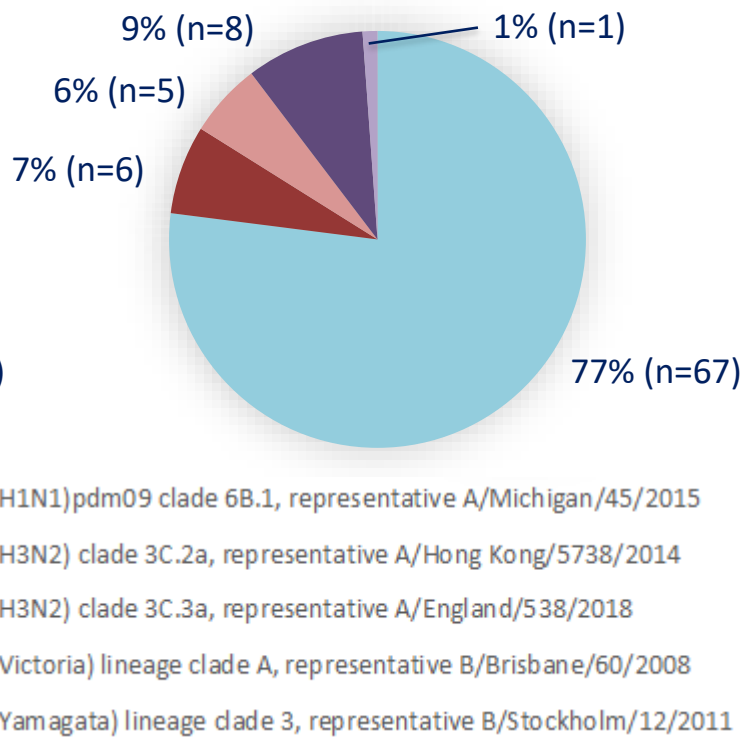
Flu:	125
RSV:	204
HMPV:	29
PIV:	13
HRV/EV:	186
AdV:	12
BoV:	15
CoV:	47

→ **SARS-CoV-2: 1**

Total influenza (125)



Sequenced (87)



Global Influenza Hospital Surveillance Network

SPAIN

FISABIO – Public Health

Conclusion & Challenges

A(H1N1)pdm09 was the predominant influenza strain

The influenza peak was reached at weeks 2020-05/2020-06

Highest influenza hospitalization incidence rate was detected in <1 year old

All the A(H1N1)pdm09 viruses isolated corresponded to the vaccine virus recommendation

The lockdown did not prevent the VAHNSI network from collecting data during almost the entire flu wave

