

SURVEY OF NOSOCOMIAL INFLUENZA IN SOUTH-WESTERN SWISS HOSPITALS DURING TWO SEASONAL EPIDEMICS

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BACKGROUND

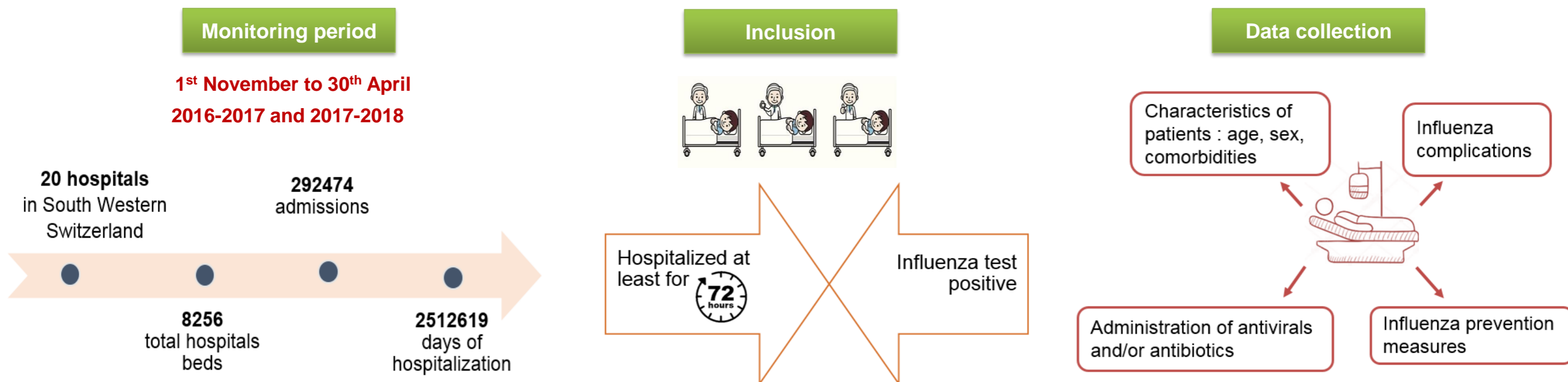
Healthcare-associated influenza infections increase morbidity and mortality in hospitalized patients. Influenza virus infections engender a substantial financial burden, due to both medical care costs and productivity loss.

Vaccination is the most effective way to protect yourself and your patients against influenza virus. However vaccination rate of healthcare workers (HCW) in Swiss facilities is <50%. So far, no multicenter study analyzed the impact of nosocomial influenza in Switzerland.

OBJECTIVE

The aim of this retrospective survey was to describe nosocomial cases of seasonal influenza, in order to highlight potential risk groups and improve care support.

METHOD



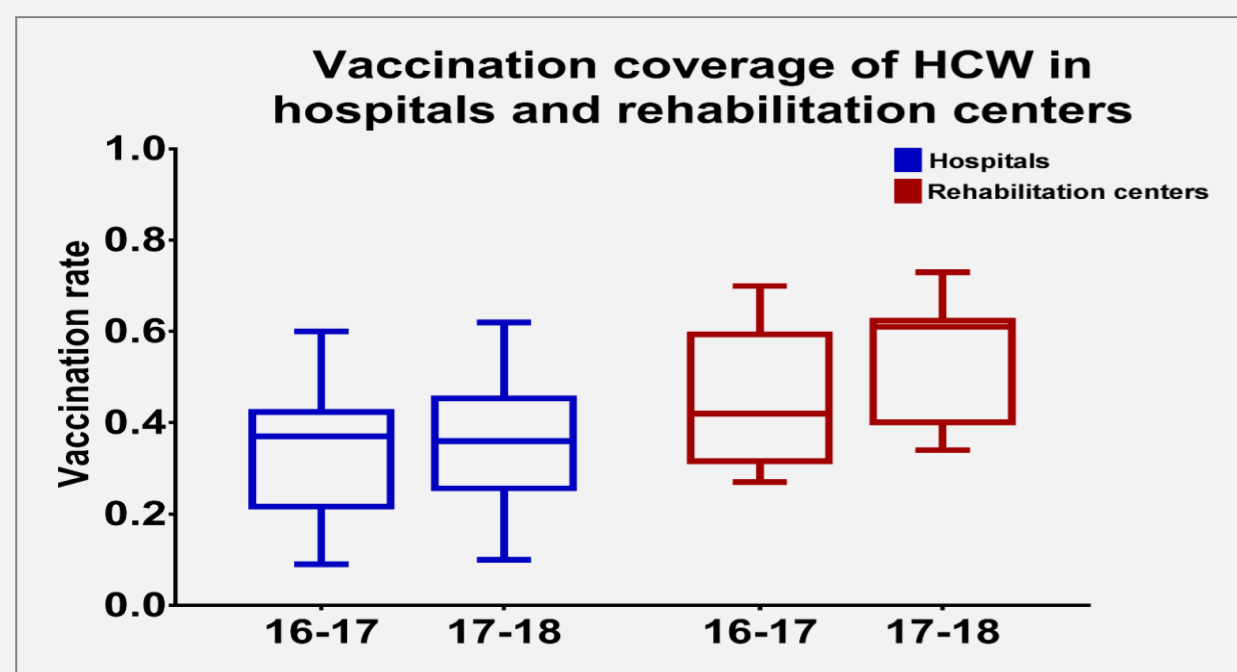
RESULTS

Characteristics of patients			
	2016-2017 N=504	2017-2018 N=332	p-value
Sex M, n (%)	200 (39.7)	132 (39.8)	1.00
Age, years, mean (SD)	79 (16)	74 (18)	<0.0001
Care unit, n (%)			
Medicine	151 (30)	114 (34.3)	0.19
Rehabilitation	114 (22.6)	28 (8.4)	0.0001
Geriatrics	96 (19)	63 (19)	1.00
Others	88 (17.5)	89 (26.8)	0.001

Nosocomial influenza cases			
	2016-2017 N=504	2017-2018 N=332	p-value
PCR diagnosis, n (%)	424 (84.1)	288 (86.7)	0.32
Antigen detection diagnosis, n (%)	80 (15.9)	44 (13.3)	0.32
Influenza A, n (%)	497 (98.6)	75 (22.6)	0.0001
Influenza B, n (%)	7 (1.4)	257 (77.4)	0.0001
Nosocomial influenza cases/100 admissions during epidemic period	0.69 (1.1)	0.42 (0.5)	0.79
Nosocomial influenza cases/100 days of hospitalization during epidemic period	0.47 (0.43)	0.27 (0.20)	0.14

Clinical data and complications			
	2016-2017 N=343	2017-2018 N=229	p-value
Comorbidities, n (%)	251 (73.2)	219 (95.6)	0.0001
Diabetes	78 (22.7)	40 (17.5)	0.14
Pulmonary pathology	55 (16)	50 (21.8)	0.09
Denutrition	48 (14)	45 (19.7)	0.08
Immunosuppression	37 (10.8)	51 (22.3)	0.0002
Neurology	26 (7.6)	24 (10.5)	0.23
Dialysis	4 (1.2)	7 (3.1)	0.12
Pregnancy	3 (0.9)	2 (0.9)	1.00
Clinical, n (%)			
Fever	269 (78.4)	174 (76)	0.54
T°>38.5°	136 (39.7)	97 (42.4)	0.54
Cough	225 (66)	153 (66.8)	0.78
Complications (eCDC), n (%)	25 (7.3)	44 (19.2)	0.0001
Pneumonia	20 (5.8)	28 (12.2)	0.008
Intensive care	25 (7.3)	12 (5.2)	0.38
Death during hospitalization	21 (6.1)	14 (6.1)	1.00

Influenza vaccination and treatments			
	2016-2017 N=343	2017-2018 N=229	p-value
Vaccination, n (%)			
Vaccinated	16 (4.7)	11 (4.8)	1.00
Not vaccinated	40 (11.7)	40 (17.5)	0.06
Unknown vaccination status	287 (83.7)	177 (77.3)	0.06
Antiviral therapy, n (%)			
Oseltamivir	230 (67.1)	171 (74.7)	0.06
Relanska disk	1 (0.3)	0	1.00
Antibiotic treatment, n (%)	86 (25)	70 (30.1)	0.0004
Penicillins	62 (18.1)	48 (20.9)	0.39
Cephalosporins	19 (5.5)	28 (12.2)	0.005
Quinolones	16 (4.7)	16 (7)	0.26
Carbapenems	9 (2.6)	9 (3.9)	0.46
Others	1 (0.3)	4 (1.7)	0.08
Mean duration of antibiotic treatment, days (SD)	7.9 (3.2)	9.4 (7.2)	0.67



CONCLUSION

Incidence of nosocomial influenza virus infections varies from 0.42-0.69 cases/100 admissions during epidemic period. In 2016-2017, an outbreak occurred in rehabilitation centers. Risk factors associated with influenza virus infections are diabetes, pulmonary diseases, malnutrition and immunosuppression.

Complications are more represented in 2017-2018 (p = 0.0001), mostly pneumonia. It could be explained by the fact that the patients had more comorbidities that year. Vaccination status of patients is often unknown. The majority of patients received antiviral treatment and 25-30% of them were also treated with antibiotics.

Vulnerable patients must be offered better influenza virus protection by decreasing exposure to the virus by vaccinating HCW and applying infection control measures.