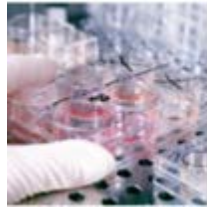




NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service



Comparison of characteristics of individuals hospitalised with acute and chronic respiratory illness testing influenza positive at two surveillance sites in South Africa, 2011-2016

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Background

In 2014, the **World Health Organization (WHO)** updated currently used SARI surveillance case definition as:

- **Severe Acute Respiratory Infection (SARI) case** – acute respiratory infection with history of fever or measured fever of $\geq 38^{\circ}\text{C}$; and cough with onset within the last 10 days and requires hospitalization

Expanded

- **Severe Respiratory Infection (SRI) case** – respiratory infection; irrespective of symptom duration

Objectives

To compare the characteristics of influenza positive hospitalised individuals with lower respiratory tract infection presenting with acute (≤ 10 days) and chronic (> 10 days) symptom duration

Methods

Study Design

- **Prospective hospital-based syndromic surveillance** – 2 hospitals

Study Procedures

- All participants fitting the case definitions were approached for enrolment, those consenting were then enrolled.
- **Specimens Collected**
 - Nasopharyngeal (NP) & oropharyngeal (OP) swabs
 - Samples were tested for Influenza by multiplex real-time reverse-transcription PCR (rRT-PCR)

Figure1: Number of participants enrolled and influenza detection rate, Pneumonia Surveillance, South Africa 2011-2016

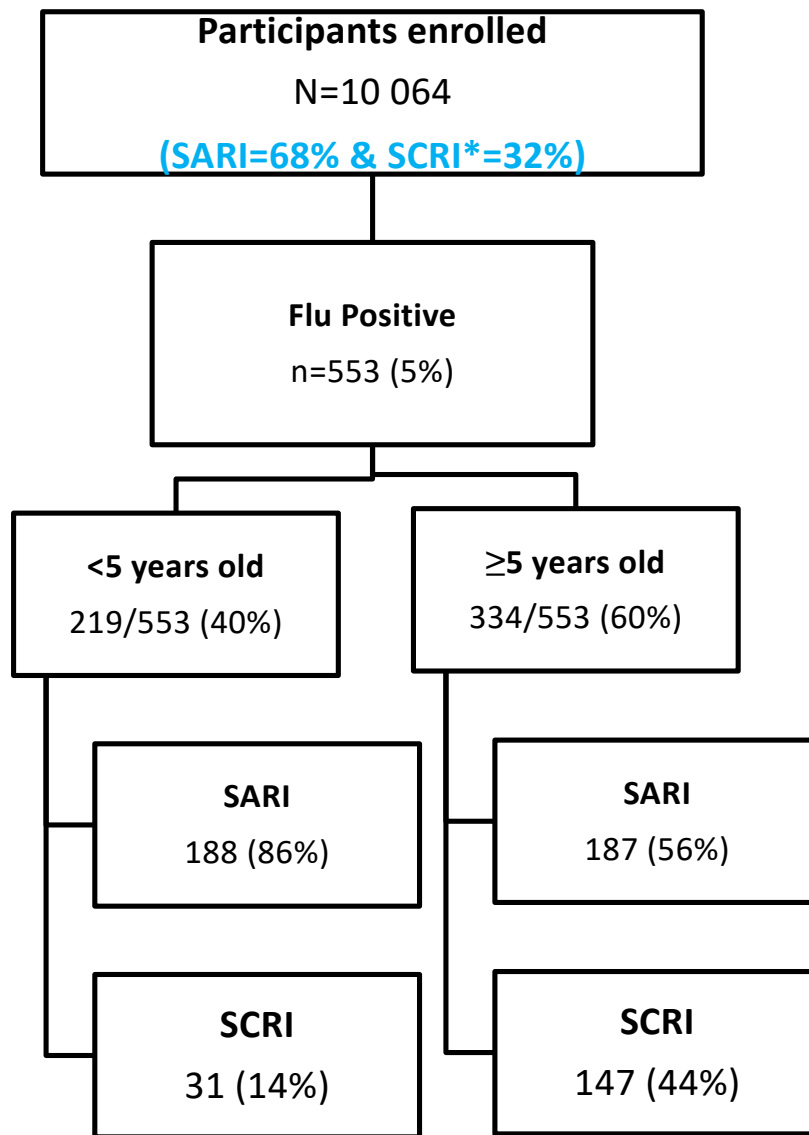


Table1: Comparison of influenza positive SARI and SCRI patients, <5 years old, Pneumonia Surveillance, South Africa 2011-2016

Variable		Acute symptoms n/N(%)	Chronic symptoms n/N(%)	Univariate analysis OR (95% Confidence interval)	p-value	Multivariable analysis OR (95% Confidence interval)	p-value
Age group (years)	<1	90/188 (48)	12/31 (39)	Reference			
	1-4	98/199 (52)	19/31 (61)	1.4 (0.7 – 3.2)	0.345		
Site	KTHC*	91/188 (52)	9/31 (29)	0.4 (0.2 – 1.0)	0.049	0.4 (0.2 – 0.9)	0.030
Sex	Female	79/188 (42)	12/31 (39)	0.9 (0.4 – 1.9)	0.729		
Any fever	Yes	146/188 (78)	20/31 (65)	0.5 (0.2 – 1.2)	0.118		
HIV status	Positive	16/163 (10)	4/28 (14)	1.5 (0.5 – 5.0)	0.478		
Any other underlying illnesses	Yes	6/188 (2)	3/31 (10)	6.6 (1.3 – 34.4)	0.025		
Prematurity	Yes	30/188 (16)	4/31 (13)	0.8 (0.3 – 2.4)	0.664		
Malnutrition	Yes	40/142 (28)	5/27 (19)	0.6 (0.2 – 1.6)	0.303		
Died	Yes	2/186 (1)	0/31 (0)	1			
Influenza Type**	B	44/186 (24)	16/30 (53)	3.7 (1.7 – 8.2)	0.001	3.8 (1.7 – 8.6)	0.001

*Klerksdorp Tshepong Hospital Complex

**Influenza A & B comparison

Table2: Comparison of influenza positive SARI and SCRI patients, 5 years old and above, Pneumonia Surveillance, South Africa 2011-2016

Variable		Acute symptoms n/N(%)	Chronic symptoms n/N(%)	Univariate analysis OR (95% Confidence interval)	p-value	Multivariable analysis OR (95% Confidence interval)	p-value
Age group (years)	5-24	31/187 (17)	14/147 (10)	Reference			
	25-44	89/187 (47)	72/147 (49)	1.8 (0.9 – 3.6)	0.104		
	45-64	44/187 (24)	39/147 (26)	2.0 (0.9 – 4.2)	0.084		
	65+	23/187 (12)	22/147 (15)	2.1 (0.9 – 5.0)	0.087		
Site	KTHC	123/187 (66)	93/147 (63)	0.9 (0.6 – 1.4)	0.634		
Sex	Female	110/187 (59)	83/147 (56)	0.9 (0.6 – 1.4)	0.665		
Any fever	Yes	103/187 (55)	49/146 (34)	0.4 (0.3 – 0.6)	0.001	0.4 (0.3 – 0.7)	0.001
HIV status	Positive	118/177 (66)	97/140 (69)	1.2 (0.7 – 1.9)	0.548		
Any other underlying illnesses	Yes	15/187 (8)	7/146 (5)	0.6 (0.2 – 1.5)	0.244		
Diabetes	Yes	15/186 (8)	2/146 (1)	0.8 (0.04 – 0.7)	0.015	0.2 (0.04 – 0.8)	0.025
Died	Yes	17/181 (9)	17/31 (12)	1.3 (0.6 – 2.6)	0.481		
Hospital duration (days)	<4	77/176 (44)	38/138 (28)	Reference			
	4-7	50/176 (28)	49/138 (36)	2.0 (1.1 – 3.5)	0.015	2.1 (1.2 – 3.7)	0.013
	8+	49/176 (28)	51/138 (37)	2.1 (1.2 – 3.7)	0.008	2.1 (1.2 – 3.7)	0.011

Conclusion

- Influenza positive patients 5 years old and above without fever and >10 days of symptoms duration may be missed by WHO SARI case definition
- In systems measuring influenza burden it may be useful to include patients with symptom duration of more than 10 days and those without fever.

National syndromic surveillance for pneumonia in South Africa

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