



Pan American
Health
Organization



World Health
Organization

REGIONAL OFFICE FOR THE Americas

SARInet

Severe Acute Respiratory Infections network

SARInet





Sue Min Nathaniel-Girhdharrie, CARPHA

SARI/ARI SURVEILLANCE IN CARPHA MEMBER STATES





SARI/ARI Surveillance in CARPHA Member States*

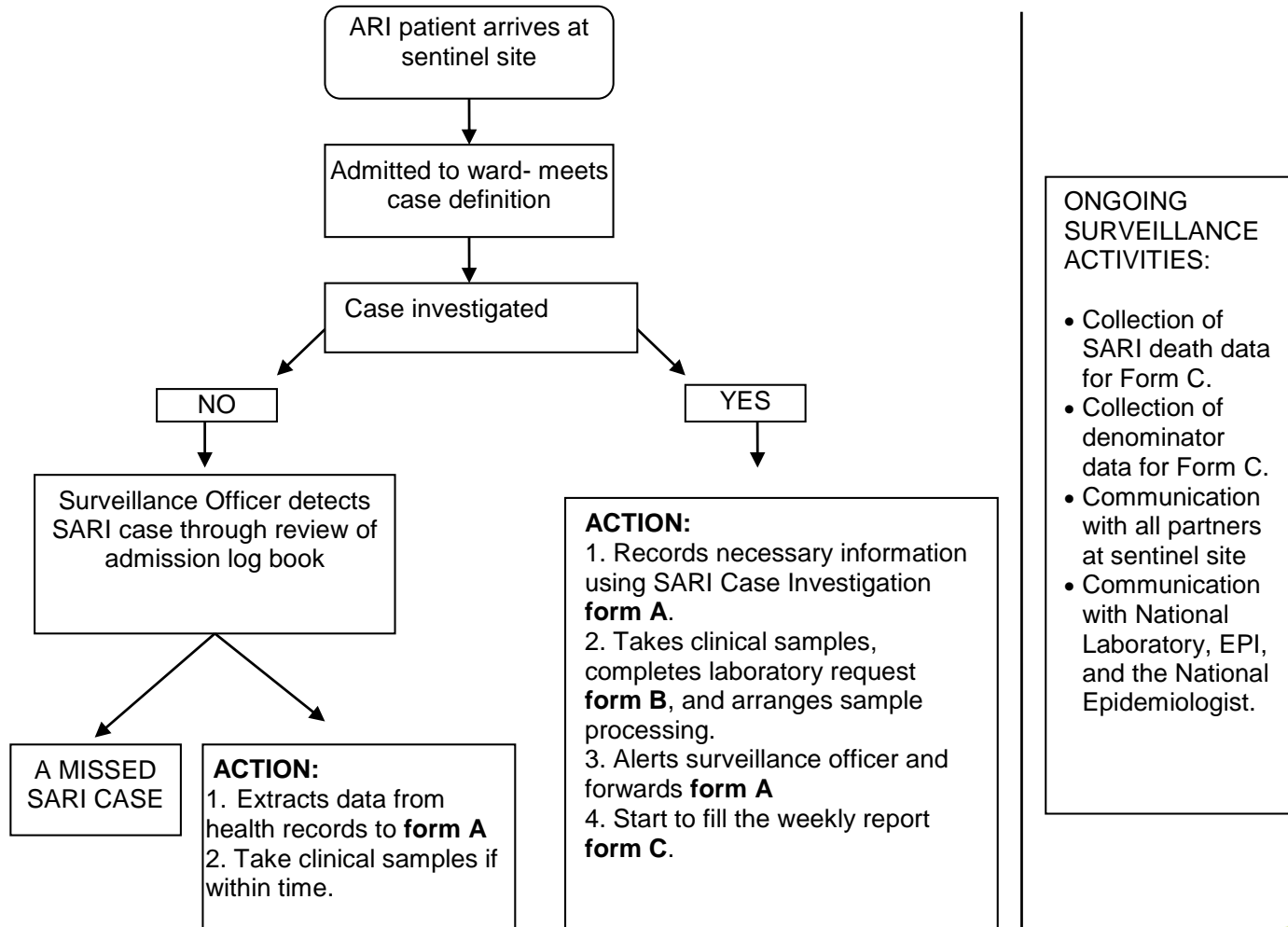
Objectives of SARI Surveillance:

- To detect unusual or unexpected viral respiratory outbreaks
- To determine the epidemiologic characteristics of influenza and other viral respiratory diseases
- To monitor circulating influenza virus strains
- To make recommendations for annual vaccine composition
- To detect in a timely manner the emergence of new subtypes
- Guide the development of policy and guidelines for influenza prevention and control

* Excluding Haiti



SARI SURVEILLANCE ACTIVITIES AT SENTINEL SITES



- ONGOING SURVEILLANCE ACTIVITIES:**
- Collection of SARI death data for Form C.
 - Collection of denominator data for Form C.
 - Communication with all partners at sentinel site
 - Communication with National Laboratory, EPI, and the National Epidemiologist.



CARPHA's Role

Laboratory detection technique

- Real-time RT-PCR (ABI StepOnePlus, ABI 7500 & Stratagene Mx3000P)
- IFA (transfer of technology to countries/ in-country test) and viral isolation (vaccine production)

Detection capacity

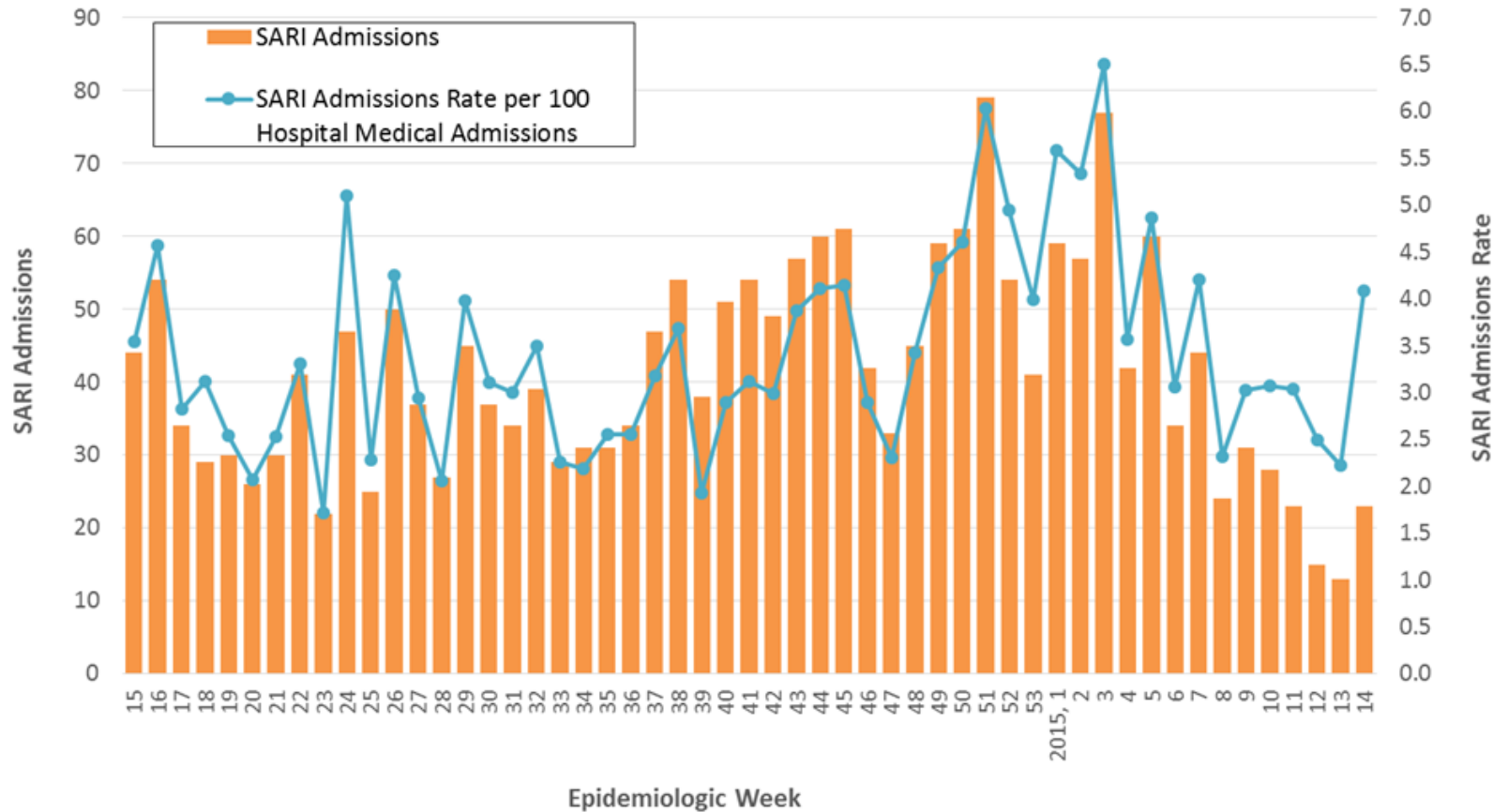
- Influenza A & B
- Influenza A subtypes (H3N2, H1N1 pdm09, H5N1, H7N9)
- Influenza B subtypes (Yamagata, Victoria)
- Non-influenza respiratory viruses (RSV, Parainfluenza 1,2,3, HMPV, Adenovirus, Rhinovirus)
- MERS-CoV
- EV-D68 (Jan 2015)

Surveillance

- Collection of both individual case data and aggregate data
- Monitor, analyse and report weekly to member states and other external stakeholders



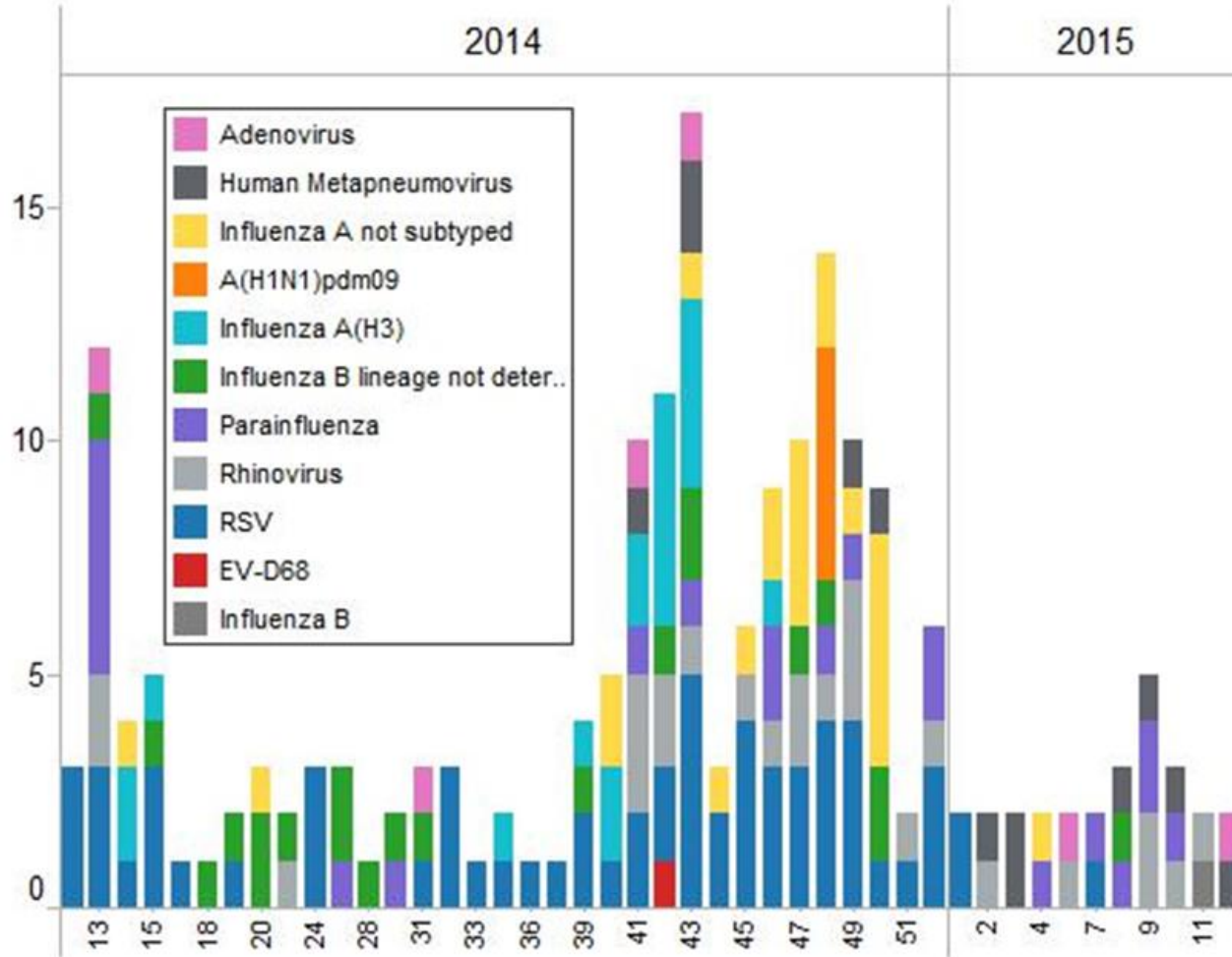
SARI Admissions and SARI Admissions Rate per 100 Hospital Medical Admissions from Sentinel Sites in Select CARPHA Member States* EW 15 2014 - EW 14, 2015



* Note: Graph includes data from Barbados, Belize, Jamaica, St. Lucia, St. Vincent & Grenadines and Trinidad & Tobago.

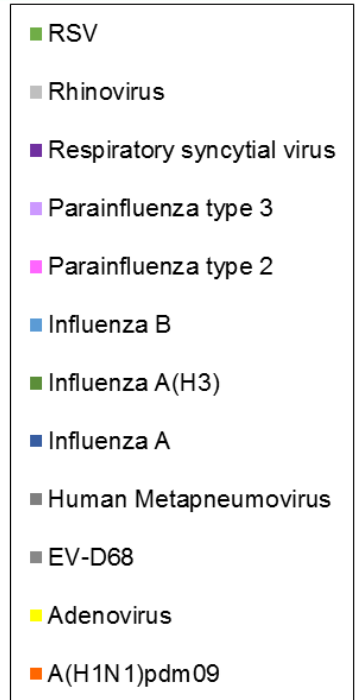
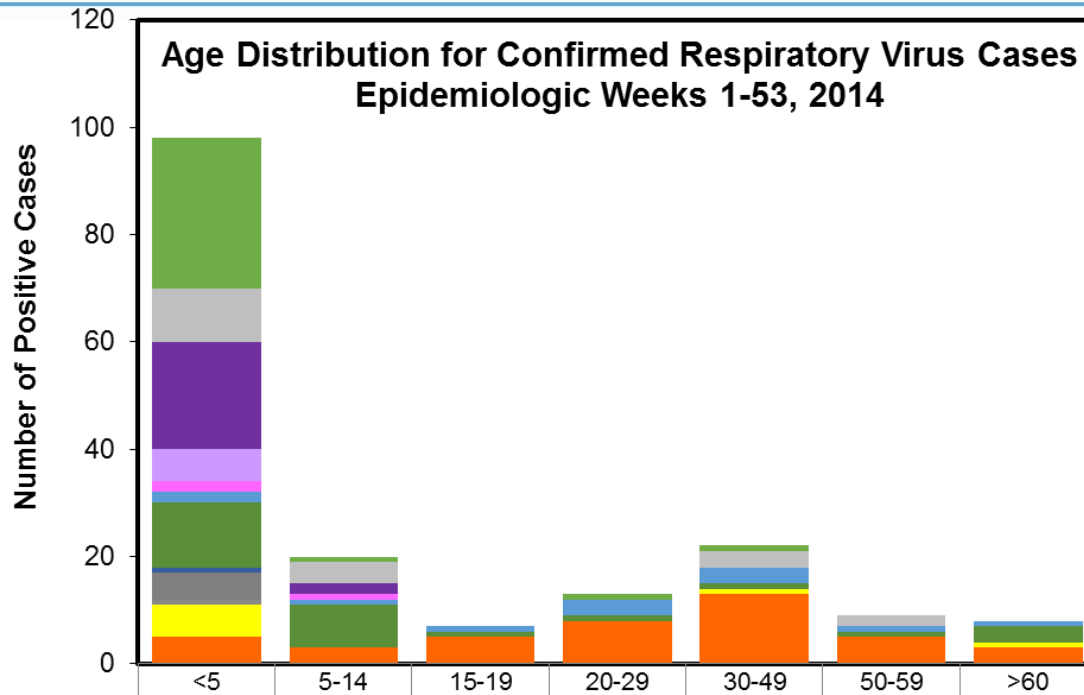


Distribution of influenza and other respiratory viruses under surveillance by Epidemiological Week (EW) CARPHA Member States



Data Source: CARPHA and country-submitted laboratory reports

Data as at: April 15, 2015



| | <5 | 5-14 | 15-19 | 20-29 | 30-49 | 50-59 | >60 |
|-----------------------------|----|------|-------|-------|-------|-------|-----|
| RSV | 28 | 1 | | 1 | 1 | | |
| Rhinovirus | 10 | 4 | | | 3 | 2 | |
| Respiratory syncytial virus | 20 | 2 | | | | | |
| Parainfluenza type 3 | 6 | | | | | | |
| Parainfluenza type 2 | 2 | 1 | | | | | |
| Influenza B | 2 | 1 | 1 | 3 | 3 | 1 | 1 |
| Influenza A(H3) | 12 | 8 | 1 | 1 | 1 | 1 | 3 |
| Influenza A | 1 | | | | | | |
| Human Metapneumovirus | 5 | | | | | | |
| EV-D68 | 1 | | | | | | |
| Adenovirus | 6 | | | | 1 | | 1 |
| A(H1N1)pdm09 | 5 | 3 | 5 | 8 | 13 | 5 | 3 |

**Age Groups (years),
x axis**

N.B. Data from Aruba and Jamaica are not received in the age groups displayed and as such are not included in this graph



The way forward (simple or complicated)

- Some countries routinely submit samples
- Better quality of samples in some instances
- Interest in training/ re-training for in-country testing
- Lack of samples from other countries (all SARI sample and 6 ARI samples weekly)
- Poor quality of samples (also batching of samples)
- Lack of staff in country
- Procurement of reagents in countries (difficult)
- Lack of submission of all Influenza positive samples (viral isolation)



Thank you



Pan American
Health
Organization



World Health
Organization
REGIONAL OFFICE FOR THE
Americas

SARInet

Severe Acute Respiratory Infections network



Caribbean
Public Health
Agency

CARPHA



ARI Case Investigation Form: Clinical and Epidemiologic Record

Country _____

Doctor:
 Hospital/Site:
 Ward:
 E-mail:

Laboratory Where Sample Sent:

Hospital/Medical Record Number:
 Admission Date:/...../..... Discharge Date:/...../.....
 Last Name,..... First Name:.....
 Date of Birth:/...../..... Age:
 Sex:.....
 Date of Onset of Illness:/...../..... Epidemiologic Week
 Number:.....
 Sample taken: Yes No Date Sample Taken:/...../.....
 Type of sample taken:

 Flu Shot: Yes No Date of Vaccination:
/...../.....

Clinical and Epidemiological Profile

| Clinical Profile | Yes | No |
|----------------------|-----|----|
| Sudden fever | | |
| Rhinorrhea | | |
| Cough | | |
| Sore throat | | |
| Conjunctivitis | | |
| Otitis | | |
| Shortness of breath | | |
| Difficulty breathing | | |
| Bronchitis | | |
| Bronchiolitis | | |
| Pneumonia | | |

| | Yes | No |
|--------------------------------|-----|----|
| Adenopathies | | |
| Headache | | |
| Myalgia | | |
| Vomiting | | |
| Diarrhea | | |
| Rash | | |
| Epidemiological Profile | | |
| Sporadic case | | |
| Part of cluster | | |
| Part of outbreak | | |
| Animal contact | | |

Travel History Yes No Where

Treatment: Antivirals Yes No
 Type:.....
 Antibiotics Yes No
 Type:.....

Laboratory Result: Virology..... Bacteriology

Final Diagnosis:

Note: A **cluster** is defined as three or more persons geospatially or socially linked with onset of disease within 10 days of each other.





[NAME OF COUNTRY]: Laboratory Investigation Form APPENDIX 16 – Last updated February 2005

1. Patient Information

Last Name _____
 First Name _____
 Patient ID _____
 Gender M F Age _____ years months
 Date of Birth d | d | m | m | y | y | y | y |
 Street # # - _____
 City/Parish _____
 _____ County _____
 Postal Code _____ Tel: _____

2. Referring Doctor

Name: _____
 Reporting Address: _____

 Tel: _____ Fax: _____

3. Provisional Diagnosis, Additional Notes¹

¹information on risk factors, travel history, lab findings, etc.

4. Food/Animal/Environment Sample Details *(if relevant)*

Specimen ID _____
 Name of food/env sample _____
 Where specimen(s) collected _____
 Outbreak Traceback Survey Other.

5. Case/Specimen Status

Single case Outbreak Survey Unknown

6. Date of Onset of Illness

d | d | m | m | y | y | y | y |

7. Outcome

Hospitalized? Y N DK
 Died? Y N DK

8. Signs and Symptoms

Fever → Temp: _____ → Onset: dd | mm | yy |
 Rash → Location: _____ → Onset: dd | mm | yy |
 Pain → Location _____
 Hemorrhagic symptoms → describe _____
 Altered mental state Convulsions Jaundice
 Chills Coryza Neck stiffness
 Circulatory collapse Cough Lymphadenopathy
 Conjunctivitis Diarrhoea, Acute Kernig's sign
Chronic Conditions Diarrhoea, Chronic Paralysis
 Autoimmune disease Failure to thrive Respiratory, Upper
 Connective tissue disorder Genital discharge Respiratory, Lower
 Lymphoproliferative disorder Genital lesions Vomiting
 Transplant recipient/donor Hepatomegaly Weakness of limbs
 Immunocompromised HIV +ve Weight loss
 Other → specify _____

→ ART Drug Info. _____

9. Syndromic Classification

AFP Fever & Rash
 Gastroenteritis Fever & Respiratory or
 Fever & Hemorrhagic Acute Respiratory Infection
 Fever (undifferentiated) Fever & Neurologic

10. Immunization History

EPI No: _____

BCG: Y N dd | mm | yy | MR: Y N dd | mm | yy |
 DPT: Y N dd | mm | yy | Polio: Y N dd | mm | yy |
 HBV: Y N dd | mm | yy | YF: Y N dd | mm | yy |
 MMR: Y N dd | mm | yy | Other?: Y N dd | mm | yy |

*specify _____

| Physician / EHO Use | *Serum; EDTA blood; Blood smear; Sputum; CSF; Swab; Urine; Stool; Tissue; Plasma (PPT); Food; Water; Animal; Environment; if other specify | | | |
|-----------------------|--|------------|------------|------------|
| | | Specimen 1 | Specimen 2 | Specimen 3 |
| | *Type of Specimen | | | |
| | Date Specimen Collected | | | |
| Lab Test(s) Requested | | | | |
| Laboratory Use | Date Received at Nat Lab | | | |
| | Nat Lab Specimen ID | | | |
| | Test(s) Performed | | | |
| | Date(s) Tested | | | |
| | Laboratory diagnosis | | | |
| | Date Referred to CAREC | | | |
| Name of Testing Lab | | | | |

Approved by (Testing, Lab): _____ Date: _____

CAREC USE: Specimen ID (1) _____ (2) _____ (3) _____





Weekly Data Collection Form: SARI Hospitalizations and Deaths

Country: _____

Epidemiologic Week #: _____

Hospital: _____

Week Starting Date: _____

| Surveillance of Severe Acute Respiratory Infection (SARI) | | | | | | | | | |
|---|-------|---------------------|------------------|-------------------|---------|----------|-----------|-----------|-------------|
| | Total | Under 6 <u>mths</u> | 6-11 <u>mths</u> | 12-23 <u>mths</u> | 2-4 yrs | 5-14 yrs | 15-49 yrs | 50-64 yrs | Over 65 yrs |
| SARI Admissions | | | | | | | | | |
| Hospital medical admissions | | | | | | | | | |
| SARI Deaths | | | | | | | | | |
| Deaths in medical admissions | | | | | | | | | |
| Hospital Admissions | | | | | | | | | |
| Deaths in hospitalized patients | | | | | | | | | |

Surveillance Coordinator _____

Signature: _____

Date: _____

Notes:

- The **Epidemiological Week** begins on a Sunday and ends on a Saturday. The date on Sunday is recorded as the **Week Start Date**.
- **Hospital admissions** constitutes all admissions to hospital
- **Hospital medical admissions** constitute all admissions to the medical ward, medical admissions to the paediatric ward, and medical admissions to the intensive care unit (for each particular age group).
- **Deaths in hospitalized patients** constitute all deaths in those admitted to hospital.
- **Deaths in medical admissions** constitutes all deaths on the medical ward, in medical patients on the paediatric ward, in medical patients in the intensive care unit