

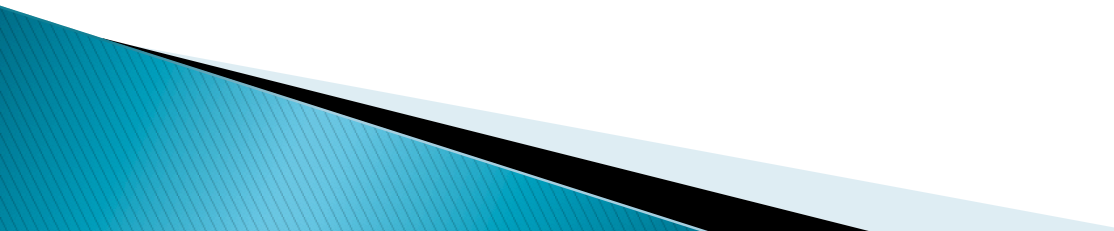
H1N1 and Zika Viruses, Critical Issues In The Paediatric Population

Dr. Windsor Frederick

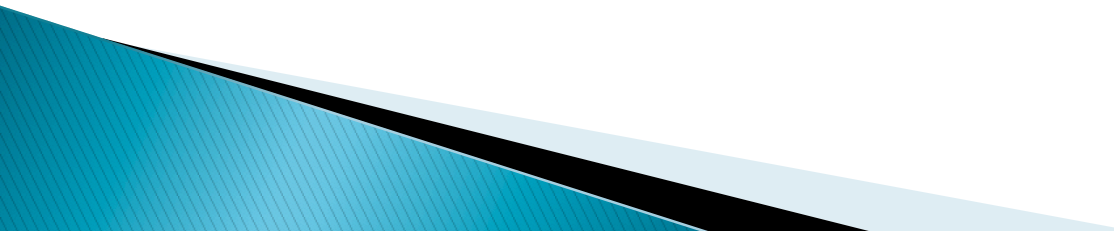
UWI Faculty of Medical Sciences Symposium

31st January 2016

Introduction

- ▶ **H1N1!!!! ZIKA VIRUS!!!!**
 - ▶ H1N1 – Component of seasonal influenza
 - ▶ Zika– Rapidly approaching!
 - ▶ Unique clinical issues that arise in children
- 

Objectives– H1N1

- ▶ Clinical presentation
 - ▶ Risk factors
 - ▶ Complications
 - ▶ Differential Diagnosis
 - ▶ Management
 - ▶ Vaccination
- 

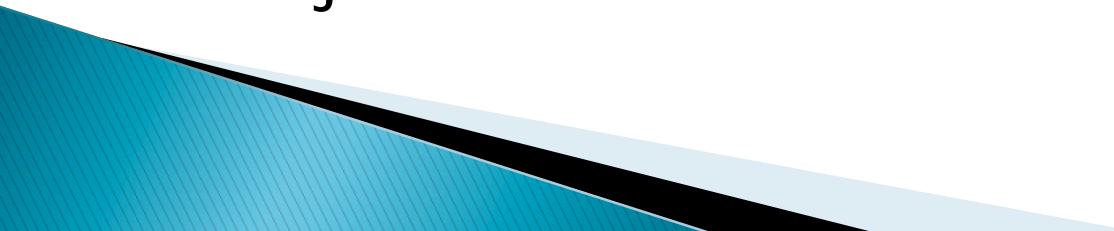
Objectives– Zika

- ▶ Clinical presentation
 - ▶ Risk factors
 - ▶ Complications
 - ▶ Management
- 

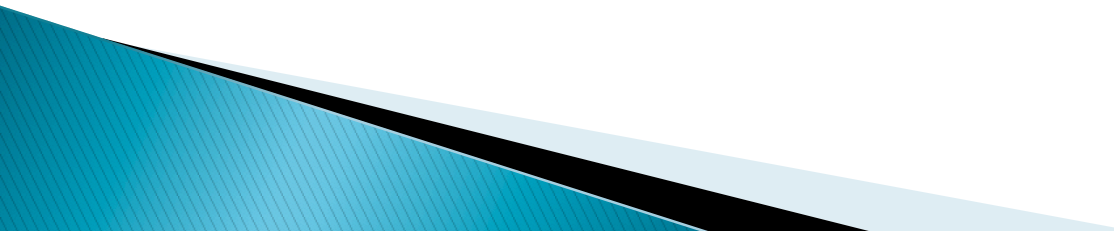
H1N1 – Clinical Presentation

Older children–Similar spectrum of illness as adults

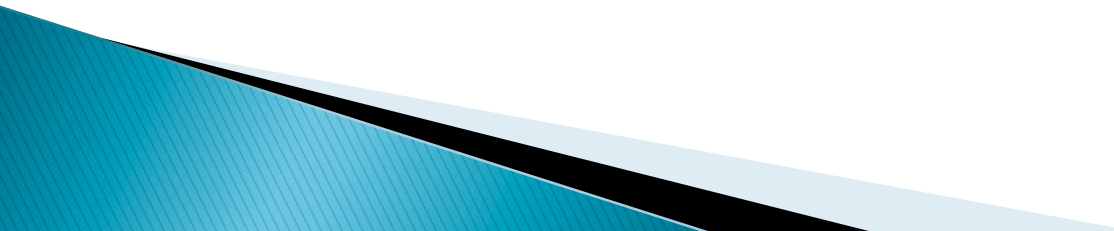
H1N1 Clinical Presentation

- ▶ High fever
 - ▶ Chills
 - ▶ Myalgia
 - ▶ Headache
 - ▶ Fatigue
 - ▶ Sore throat/pharyngitis
 - ▶ Nasal congestion
 - ▶ Rhinitis
 - ▶ Nonproductive cough
 - ▶ Cervical lymphadenopathy
 - ▶ Conjunctivitis
- 

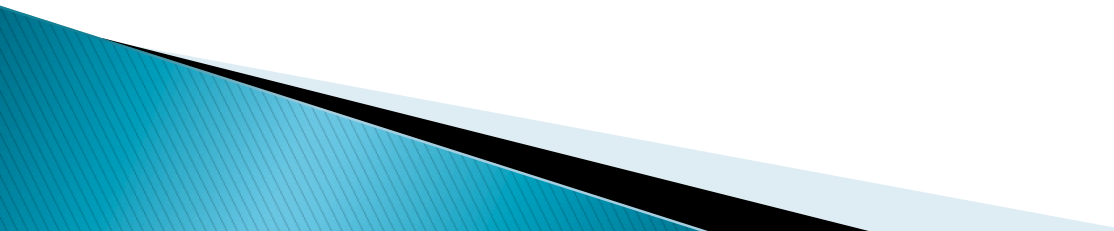
H1N1 Clinical Presentation

- ▶ Younger children:
 - A greater incidence of GI symptoms
 - More non-specific presentations
 - More at risk of developing severe illness and complications
- 

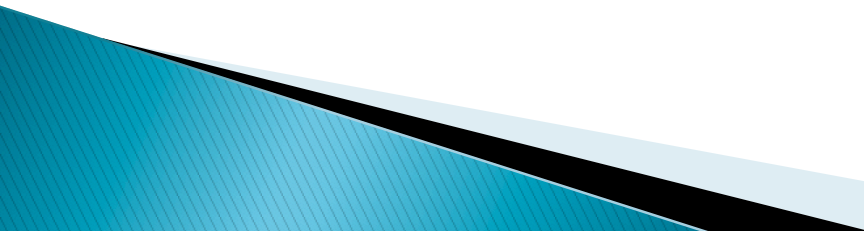
H1N1 – Non-specific Presentations in Younger Children

- ▶ Viral upper and lower respiratory tract infections
 - ▶ Pneumonia
 - ▶ Bronchiolitis
 - ▶ Croup
 - ▶ Septicaemia
 - ▶ “Septicaemia”
- 

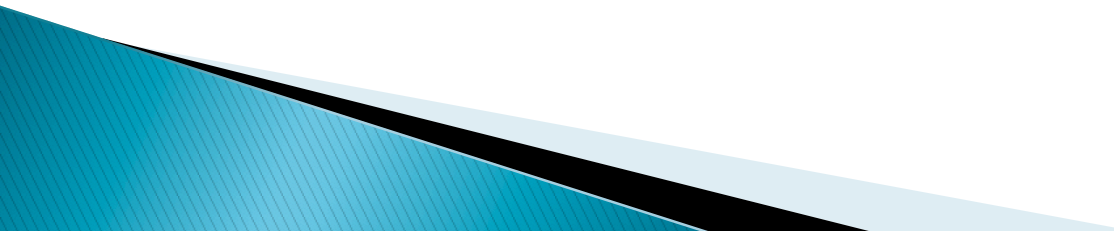
H1N1 – Patients At Risk For Complications

- ▶ Age : <5years , especially <2years
 - ▶ Co-morbidities
- 

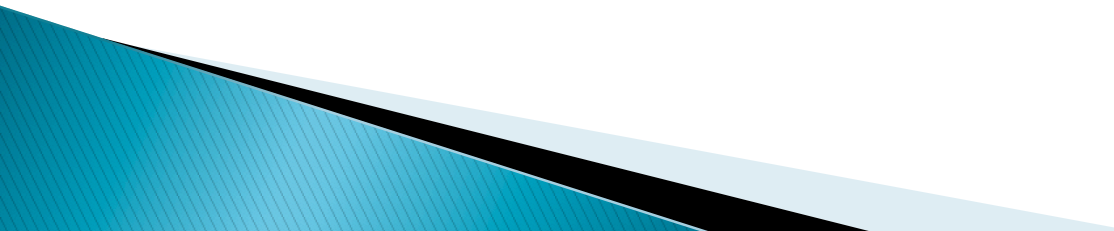
H1N1 Patients At Risk For Complications

- ▶ Asthma,
 - ▶ Neurological or neurodevelopmental conditions
 - ▶ Chronic lung disease
 - ▶ Congenital heart disease
 - ▶ Blood disorders
 - ▶ Diabetes mellitus
 - ▶ Immune Deficiency
 - ▶ Patients on long-term aspirin therapy
 - ▶ Kidney disorders
 - ▶ Liver disorders
 - ▶ Metabolic disorders
- 

H1N1 Complications

- ▶ Viral pneumonia
 - ▶ Secondary bacterial pneumonia
 - ▶ Otitis media
 - ▶ Sinusitis
 - ▶ Croup
 - ▶ Bronchiolitis
 - ▶ Dehydration
 - ▶ Exacerbation of chronic medical conditions
 - ▶ Myositis
 - ▶ Myocarditis
 - ▶ Guillain–Barré syndrome
 - ▶ Reye syndrome
 - ▶
- 

Management H1N1

- ▶ Supportive care
 - ▶ Cough and cold medications not recommended for younger children
 - ▶ Special attention to oral intake and hydration status
 - ▶ Antiviral therapy for selected patients
- 

Management H1N1 –Antiviral Medication

- ▶ Hospitalized children
 - ▶ Risk factors
- 

Medications

▶ Oseltamivir:

- Approved for treatment of influenza A or B in children aged 2 weeks or older
- Approved for use in children older than 1 year, for prevention of influenza following exposure.

▶ Zanamivir :

- Approved for the treatment of uncomplicated acute influenza A or B in persons aged 7 years and older
- Approved for prophylaxis of influenza in adults and pediatric patients aged 5 years and older.

Medication

- ▶ Evidence is equivocal on the effectiveness of antiviral medications in preventing serious complications in children
- ▶ A higher incidence of side effects in children

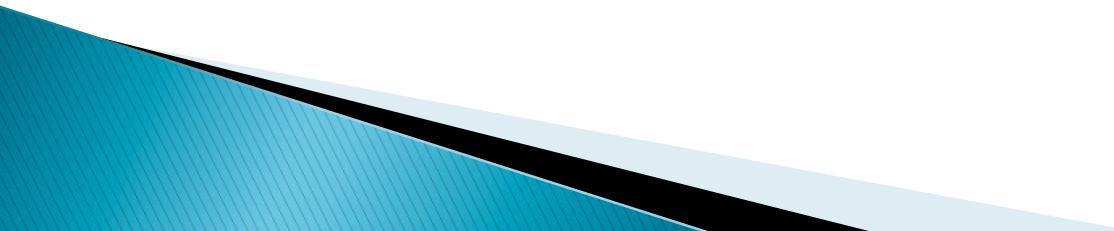
H1N1 Prevention

- ▶ Seasonal influenza vaccination
- ▶ Parental education
- ▶ Hygiene
- ▶ young children may be infectious for >5–7 days

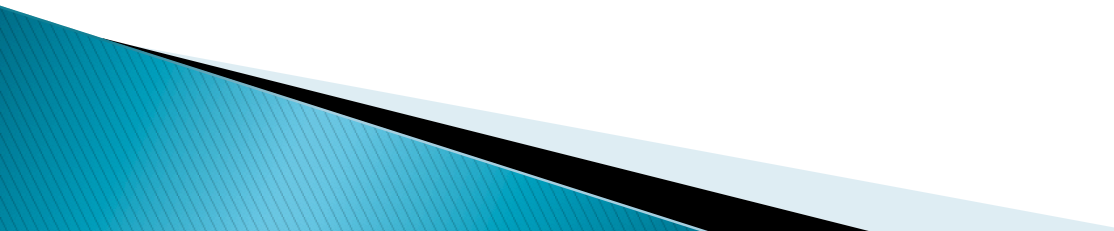
H1N1 Vaccination CDC

- ▶ Yearly flu vaccine for everyone 6 months and older.
- ▶ Children aged 6 months through 8 years may require 2 doses ≥ 4 weeks apart
- ▶ Age 6 months to 2 years IIV
- ▶ Age > 2 years LAIV or IIV

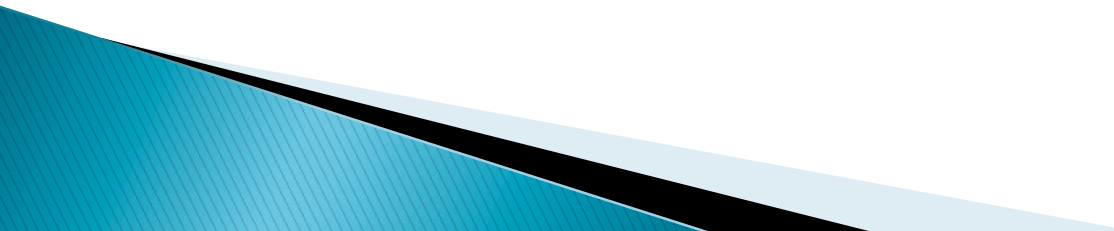
H1N1 UK

- ▶ Yearly flu vaccine for children aged 6 months to 4 years.
 - ▶ All children in school years 1 and 2
 - ▶ Older children with risk factors
- 

Zika Virus– Clinical Presentation

- ▶ Fever
 - ▶ skin rashes
 - ▶ Conjunctivitis
 - ▶ muscle and joint pain
 - ▶ malaise
 - ▶ headache
- 

Zika Virus– Challenges

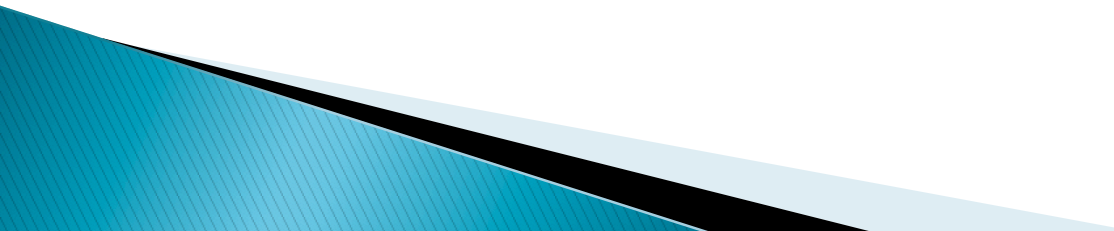
- ▶ Non-specific presentations in younger children and infants
 - ▶ Distinguishing between Zika and dengue fever
 - ▶ Reports of possible congenital abnormalities due to vertical transmission
- 

Zika Virus – Complications

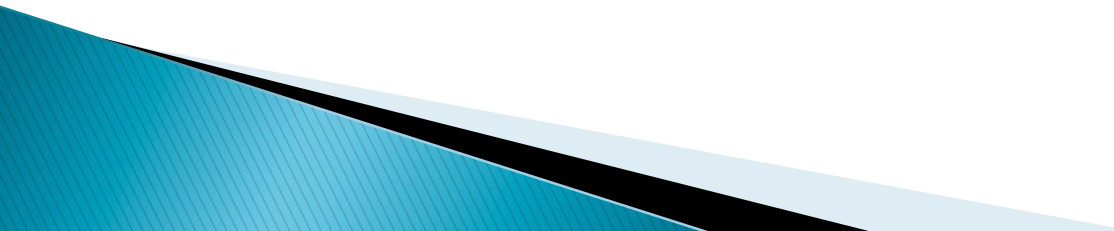
- ▶ Possible association with Guillain–Barre syndrome
- ▶ Other neurological complications--
meningitis, meningoencephalitis, myelitis

Zika Virus– Management Considerations

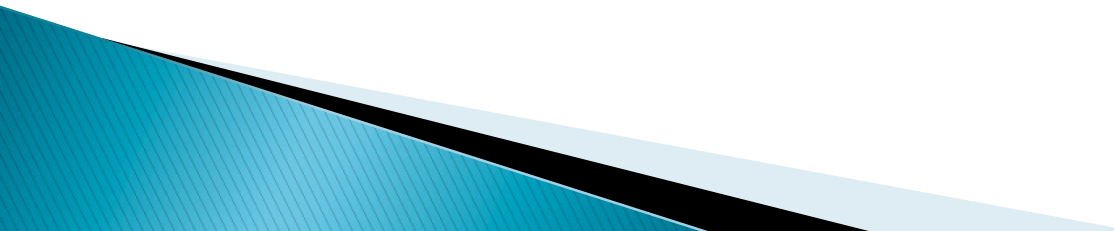
- ▶ Supportive care
 - ▶ Rule out other serious conditions
 - ▶ Attention to oral intake and hydration status

 - ▶ Thorough evaluation and follow up of patients with the possible effects of vertical transmission.
- 

Summary

- ▶ H1N1 – ? Here to stay
 - ▶ Children < 5 are at risk of serious illness
 - ▶ Assessment, diagnosis and management may be more complicated in the paediatric patient.
 - ▶ Influenza vaccination policy development
- 

Summary

- ▶ Zika-Coming soon
 - ▶ Assessment, diagnosis and management are challenging in the presence of circulating dengue and Chikungunya viruses
 - ▶ Neurological complications
 - ▶ Possible association with congenital abnormalities
- 

References

- ▶ 1. H1N1 Flu (Swine Flu): Information for Specific Groups. CDC H1N1 [document on the internet]. Centers for Disease Control and Prevention; 2009 [updated 11 August 2010]. Available from: <http://www.cdc.gov/h1n1flu/>
- ▶ 2. Information For Health Professionals. Influenza(Flu) [document on the internet]. Centers for Disease Control and Prevention; Date of internet publication. 2015 [updated 27 October 2015]. Available from: <http://www.cdc.gov/flu/professionals/index.htm>
- ▶ 3. Grohskopf LA, Sokolow LZ , Olsen SJ, Bresee JS, Broder KR, Karron RA. Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices, United States, 2015–16 Influenza Season. Morbidity and Mortality Weekly Report [document on the internet]. Centers for Disease Control and Prevention; 2015. Available from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a3.htm>
- ▶ 4. Which Children Can Have The Flu Vaccine? [document on the internet]. NHS Choices; 2015. Available from: <http://www.nhs.uk/Conditions/vaccinations/Pages/Which-children-are-eligible-for-the-flu-vaccine.aspx>
- ▶ 5. Amantadine, oseltamivir and zanamivir for the treatment of influenza.[document on the internet]. NICE technology appraisal guidance [TA168]. 2009. Available from: <http://www.nice.org.uk/guidance/ta168/chapter/1-Guidance>

References

- ▶ 6. Amantadine, oseltamivir and zanamivir for the prophylaxis of influenza. [document on the internet]. NICE technology appraisal guidance [TA158]. 2008. Available from: <http://www.nice.org.uk/guidance/TA158>
- ▶ 7. Jefferson T, Jones MA, Doshi P, Del Mar CB, Hama R, Thompson MJ, Spencer EA, Onakpoya IJ, Mahtani KR, Nunan D, Howick J, Heneghan CJ. Regulatory information on trials of oseltamivir (Tamiflu) and zanamivir (Relenza) for influenza in adults and children [document on the internet]. Cochrane Library; 2014. Available from: http://www.cochrane.org/CD008965/ARI_regulatory-information-on-trials-of-oseltamivir-tamiflu-and-zanamivir-relenza-for-influenza-in-adults-and-children
- ▶ 8. Wang K, Shun-Shin M, Gill P, Perera R, Harnden A . Neuraminidase inhibitors for preventing and treating influenza in children [document on the internet]. Cochrane Library; 2012. Available from: http://www.cochrane.org/CD002744/ARI_neuraminidase-inhibitors-for-preventing-and-treating-influenza-in-children
- ▶ 9. Zika Virus Disease. [document on the internet]. World Health Organization; 2016. Available from: <http://www.who.int/csr/disease/zika/en/>

▶