The Impact of Universal Mask Policy on Respiratory Viral Infections (RVIs) in the Neonatal Unit

Singapore Healthcare Management 2018

KK Women's and Children's Hospital
SingHealth

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Background

Respiratory viral infection (RVI) is a major cause of morbidity in preterm VLBW infants. Up to 14% of all RVI in the first 2 years of life occur while still admitted. Early-life viral infection causes acute illness and can be associated with the development of wheezing and asthma in later life. In Jan 2016, our neonatal unit implemented universal face mask policy for all staff members and visitors to reduce the burden of RVI among our patients.

Aim

To review the impact of our universal face mask policy on the incidence of RVI among patients in the Neonatal Intensive Care Unit (NICU) & Special Care Nursery (SCN) in our hospital.

Methodology

We conducted a retrospective review of the incidence of RVI among all infants admitted to our 40-bedded level 3 NICU and 60-bedded level 2 SCN, before (Jan 2014 – Dec 2015) and after (Jan 2016 – Mar 2018) implementation of a universal face mask policy for all staff members and visitors. RVI was diagnosed via DFA or multiplex PCR for symptomatic infants

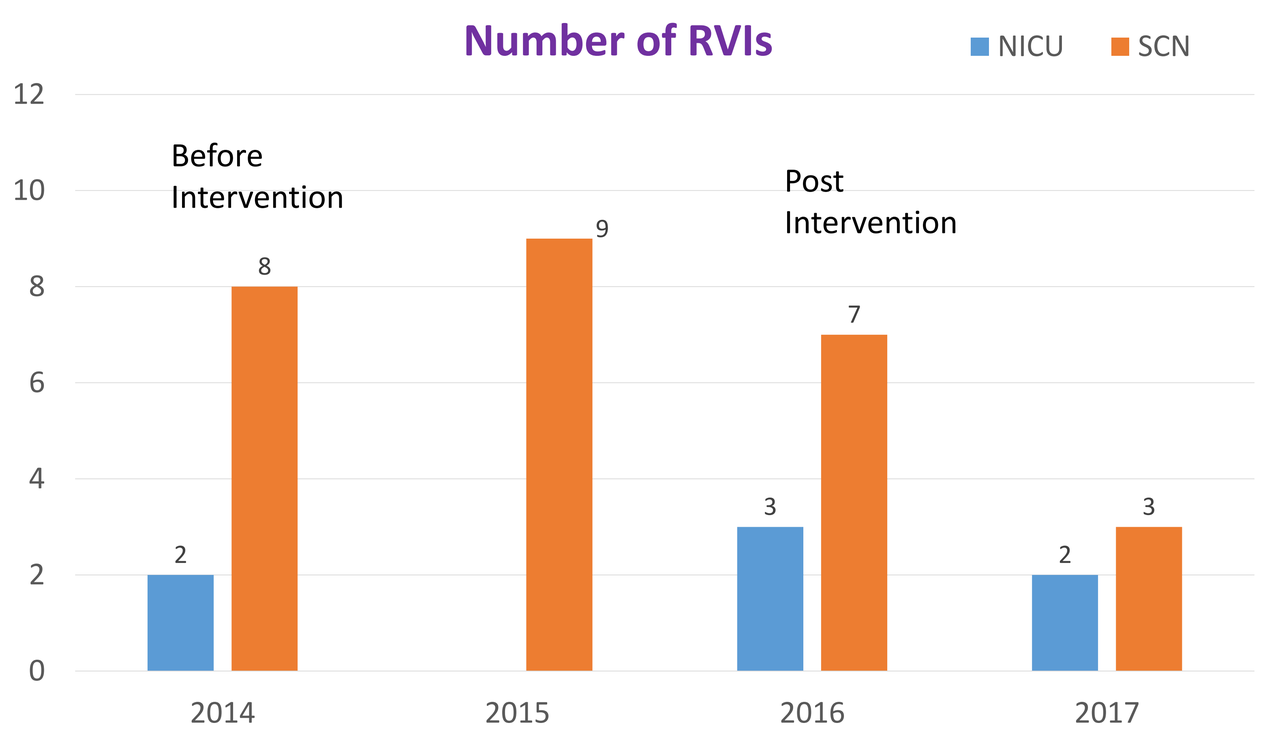
Table 1. RVI Rates Before and After Institution of Universal Mask Policy in the NICU & SCN

Location by study	RVIs No.	Total Patient Days	RVIs Rate
Before Universal Mask Policy			
SCN	17	32225	0.5
NICU	2	21995	0.1
Overall	19	54220	0.3
After Universal mask Policy			
SCN	10	30662	0.3
NICU	5	25850	0.2
Overall	15	56512	0.3

Respiratory syncytial virus (43%) and rhinovirus (33%) were the most common organisms detected both before and after the intervention. Other viruses detected included: parainfluenza virus (16%), adenovirus (3%) and human metapneumovirus (3%). There was a reduction of parainfluenza virus infection (24% to 8%) and no case of adenovirus or human metapneumovirus post-intervention.

Result

There was a decreased in the incidence of RVIs in SCN with a reduction from 0.5 to 0.3 per 1000 patient-days, compared to the NICU where the incidence increased minimally from 0.1 to 0.2 per 1000 patient-days (Table 1).



Conclusion

There was a reduction in the RVI rates in our SCN after implementation of a universal masking policy. This intervention could be of benefit in the prevention of RVI among our high-risk infants in a closed setting.

We would like to acknowledge the doctors & nurses for their help and support, especially the late Dr Gomez for his leadership in driving this initiative.