Changes in visitation policy reduce respiratory viral acquisition in hospitalized children

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Introduction

Balancing the emotional support provided by visitors of hospitalized children and their families against the risk of acquiring infections within the community is challenging for pediatric healthcare institutions, especially during the winter viral respiratory season. Visitation restriction policies have been implemented in many pediatric hospitals as part of multifaceted approaches to reduce nosocomial infection. There are limited data on the efficacy of visitor restriction in the reduction of hospital-acquired viral infections in children to help guide institutional policy decisions.

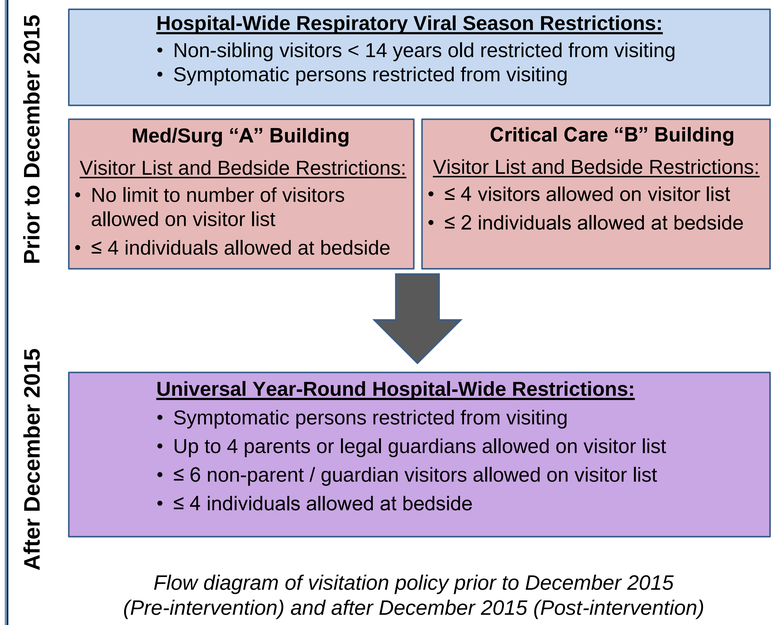
Aim

- Describe the effect of changes to the visitor restriction policy on respiratory viral acquisition at a pediatric quaternary care hospital

Methods

During the 2014-15 respiratory viral season at the study hospital, preliminary data indicated a threefold risk of acquiring a respiratory viral infection while hospitalized in the general medicine / surgical wards of the "A" building compared with the critical care wards of the "B" building, where more stringent visitation policies existed. In an attempt to standardize visitor access across the hospital and reduce potential exposures, new universal visitor policies were implemented in December 2015.

Incidence rates of hospital-acquired positive respiratory viral testing were compared between the 2014-15 (pre-intervention) and 2015-16 (post-intervention) seasons. Positive on admission was defined as testing obtained prior to hospital-day 3. Hospital-acquired was defined as testing obtained ≥ hospital-day 7 to maximally avoid ambiguity of pathogens possibly incubating on admission. Rates were calculated based on "at-risk" patient days (hospital-days ≥ 7) and were standardized to account for differences in frequency and severity across viral seasons. Standardized incidence ratios were calculated with confidence intervals determined using Fisher's exact test based on the Poisson distribution.



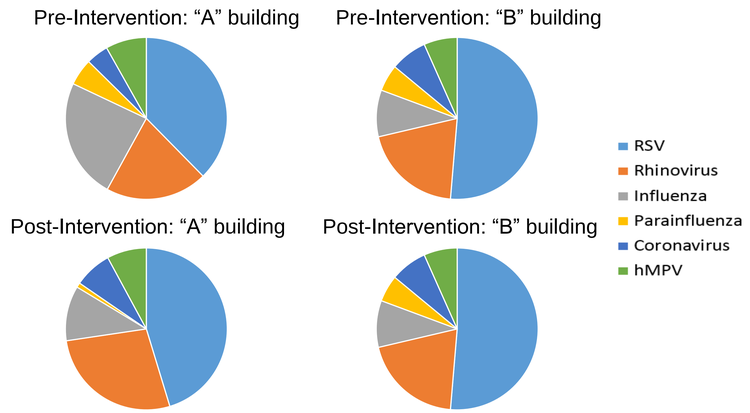
Flow diagram of visitation policy prior to December 2015 (Pre-intervention) and after December 2015 (Post-intervention)

Results

	Pre-Intervention	Post-Intervention
Number of Admissions:		
"A" building	8210	8306
"B" building	1228	1017
Positive on Admission (patients):		
"A" building	423 (5.2%)	312 (3.8%)
"B" building	75 (6.1%)	39 (3.8%)
At-risk Patient Days:		
"A" building	13446	14037
"B" building	8667	9057
Unadjusted Hospital-Acquired Rate†:		
"A" building	4.69	**2.71***
"B" building	1.50	0.88
Standardized incidence ratio:		
"A" building	1.00 (reference)	**0.72 (CI: 0.52-0.98)***
"B" building	1.00 (reference)	1.22 (CI: 0.56-2.31)

† *Per 1000 at-risk patient-days*
* *Post-intervention decrease significant at* P < *0.05*

Respiratory Virus Distribution – Patients Positive on Admission



Respiratory Virus Distribution – Patients Positive ≥ Hospital-Day 7

Conclusion

- Post-intervention standardized incidence ratio was significantly lower in the "A" building where the greatest changes to visitation policy restrictions occurred
- No significant change in acquisition rates occurred in the "B" building where the visitation policy was liberalized but functionally changed little
- Limiting the number of total bedside visitors is associated with a 28% reduction in respiratory viral acquisition in hospitalized children