

# Visitor Restriction Policy on Pediatric Wards during Novel Coronavirus (COVID-19)

## Outbreak: A Survey Study across North America

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### Brief Description

Visitor restriction policies in pediatric wards during the early phase of novel coronavirus (COVID-19) outbreak are variable across North America.

## **Abstract**

Visitor restriction policies in pediatric wards during the novel coronavirus (COVID-19) outbreak are variable. Among 36 hospitals that responded to our survey, 97% allowed at least one visitor, with 67% restricting to one caregiver. 69% required the visitor to wear personal protective equipment and only 19% allowed non-household visitors.

## **Keywords**

**COVID-19; Novel Coronavirus; Pediatrics; Infection Control; Visitor; Survey**

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## Introduction

The current novel coronavirus (COVID-19) outbreak has posed unprecedented infection prevention and control challenges within health care settings, with numerous reports of infected healthcare workers worldwide. Transmission within health care settings was also a significant concern during the SARS-CoV-1 outbreak, and many hospitals had quickly implemented measures to reduce its spread, including enhanced screening and visitor restriction [1]. Visitors, including household and non-household contacts, may indeed contribute to the spread of viral infections within health care settings [2].

Pediatric hospitals have unique considerations compared to adult hospitals regarding the management of caregivers or visitors. Children, especially newborns, infants and toddlers, are dependent on their parents or caregivers to perform their daily living activities. While excluding all hospital visitors may be feasible in adult hospitals, implementation of a similar policy within pediatric hospitals is an important challenge, as it would require increased nursing care for hospitalized children. Furthermore, parents or caregivers are the decision makers for dependents and their presence is important to develop care plans. Finally, separating caregivers from their children during a time of acute illness may be traumatic for their family and health care team. As a result, the balance between a strict visitor policy to minimize the possibility of nosocomial transmission of COVID-19 and the provision of family centered care has become a challenging question for pediatric hospitals. The objective of this study was therefore to identify and compare visitor restriction policies of different pediatric institutions across North America.

## Method

An online self-administered survey was sent to infection preventionists at pediatric hospitals and community hospitals with pediatric wards in Canada and the United States via the Canadian Pediatric and Neonatal Infection Control group and a pediatric infectious diseases listserv (590 registrants at the study period), respectively. The survey consisted of questions about their baseline visitor restriction policies, impact of COVID-19 on the number of visitors allowed and screening policies, as well as on the use of personal protective equipment (PPE) by visitors. The detailed survey can be found in the supplementary material (Appendix 1). The survey was sent out on Mar 29 and Apr 12, 2020 using Research Electronic Data Capture (REDCap).

## Results

A total of 36 hospitals answered the survey across North America with 32 from the United States and 4 from Canada. Of the 36 hospitals, 28 (78%) were tertiary or quaternary pediatric hospitals and 8 (22%) were community hospitals with a pediatric ward. Before the onset of the COVID-19 outbreak, only 7 (19%) hospitals answered that they had active screening for all visitors, while 18 (50%) hospitals performed active screening in select situations, including active screening for visitors under certain ages (n=1), and active screening only in winter season (n=16). Eleven (31%) hospitals performed only passive screening on a regular basis (Table 1). Due to the current COVID-19 outbreak, 34 (94%) hospitals changed their screening policy. These changes included active screening for all visitors (n=19, 56%), entry screening (n=9, 26%) and temperature screening (n=8, 24%).

For a hospitalized child with suspected/confirmed COVID-19, all 36 hospitals restricted the number of visitors. While most hospitals restricted to one (n= 24, 67%) or two (n=9, 25%) visitors, one hospital did not allow any visitors (Table 2). Twenty-nine out of the 36 hospitals (81%) did not allow any visitors who were non-household contacts. Regarding restriction on the age of visitors, 74% of hospital (n=26) restricted household contacts under a certain age. The majority restricted all visitors under 18 years of age (n=16), with others restricting those under 12-17 years (n=5). In terms of infection prevention measures for household contacts visiting a child with confirmed or suspected COVID-19, hand hygiene (n=27, 77%), surgical mask (n=24, 69%), gloves (n=6, 17%), gown (n=6, 17%) and eye protection (n=1, 3%) were recommended. Six centers (17%) did not recommend any infection prevention measures. Thirty hospitals out of 36 (86%) did not allow household contacts to be outside of their child's room. The PPE for household contact visitors was supplied as follows: offered if requested in 2/24 (8%) hospitals, recommended in 8/24 (33%), required in 10/24 (42%), and not applicable or missing answers in 4/24 (17%).

## **Discussion**

We found that most pediatric hospitals and community hospitals with a pediatric ward allowed at least one caregiver to remain with their hospitalized child. This is consistent with pediatric guidelines from CDC and Public Health Ontario that recommend excluding visitors or limiting visitors to one essential caregiver, but is different from policies in adult hospitals where visitors are generally not allowed during the current COVID-19 outbreak [3-5].

Variation in visitor restriction policies and procedures have been reported even before the COVID-19 pandemic [6]. Our study showed that more than 90% of hospitals changed their visitor screening policies due to the current COVID-19 outbreak, 56% of which included

active screening for all visitors. This highlights the magnitude of the impact from the COVID-19 outbreak on visitor restriction policy in pediatric hospitals and community hospitals with pediatric wards.

There have been relatively few studies measuring the effectiveness of visitor restriction to prevent nosocomial infections. One previous study reported that limiting the number of visitors per patient could achieve a 37% reduction of all nosocomial respiratory viral infections [7]. It has been hypothesized that limiting the number of visitors in a patient room may prevent the transmission of respiratory viruses by avoiding over-crowding. In another study of pediatric and adult hospitals, 58% of respondents acknowledged the age of visitors as a factor of their visitor restriction policies, which is similar to our results [8].

CDC recommends surgical masks or face covers for all essential visitors [4]. Public Health Ontario recommends for visitors to have PPE, including surgical mask, gown, gloves and eye protection, in the room of a suspected or confirmed COVID-19 patient [5]. Two-thirds of the hospitals allowing caregivers required them to wear PPE in the patient's room, with surgical masks being the most commonly required PPE element. There are two potential rationales for the use of surgical masks. Most significantly, surgical masks could act as a source control strategy since caregivers of children with COVID-19 could act as asymptomatic carriers and unknowingly transmit the infection to others [9]. Maintaining a safe distance of at least two meters from the caregiver could also be another effective strategy to mitigate the spread of COVID-19 within healthcare settings. Another possible reason for the use of surgical masks would be to protect the caregiver from becoming infected by the patient. However, the importance of this reason is highly debatable given that household contact would have likely already happened prior to the child's hospitalization.

Our study revealed that most of the hospitals (86%) restricted caregivers only to the patient room. This is also consistent with guideline recommendations about the movement of visitors within healthcare settings, stating that visitors should only visit the patient room and avoid going to any other locations within the facility [3].

There are concerns that strict changes to visitor restriction policies driven by the COVID-19 outbreak may have negative impacts on patient care [10]. Standardizing visitor restriction policies in pediatric hospitals by making a risk-benefit balance between optimizing family-centered care and decreasing potential sources of transmission of COVID-19 is challenging. Of note, our study is limited by reporting bias because of the low response rate, especially from community hospitals with pediatric wards. We may have had more responses from hospitals with considerable changes to their visitor restriction policy compared to those with few changes. We could not investigate the relationship between the local incidence of COVID-19 and intensity of visitor restriction policy in each hospital. Importantly, some pediatric hospitals with relatively low local incidence of COVID-19 at the time of study, including Canadian hospitals had strict visitor policy. However, not being to evaluate factors for strict visitor restriction policy is another limitation.

## **Conclusions**

In conclusion, this study revealed some variations of visitor restriction policies among pediatric wards across North America, related to the COVID-19 outbreak. Evaluating the effectiveness of visitor restriction on the spread of this emerging respiratory infectious disease will be crucial in developing standardized visitor restriction policies.

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## **Note**

*Potential conflicts of interest.* All No reported conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest.

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Table 1. Results of visitor restriction policy on pediatric ward (N=36)

	N (%)
<b>Country</b>	
USA	32 (89)
Northeast	6 (19)
Midwest	11 (31)
South	5 (14)
West	5 (14)
US territory	1 (3)
Missing	4 (11)
Canada	4 (11)
<b>Type of hospital</b>	
Tertiary or quaternary pediatric hospital	28 (78)
Community hospital with pediatric ward	8 (22)
<b>Baseline screening policies for visitors</b>	
Active screening for all visitors	7 (19)
Active screening for some situation	18 (50)
Under certain age	1 (3)
In winter season	16 (44)
Only passive screening	11 (30)

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Table 2. Visitor restriction policy during the COVID-19 outbreak

	N (%)
<b>Has the screening policy changed in the context of the current COVID-19 global outbreak?</b>	
Yes	34 (94)
Started active screening	19 (56)
Started part of building entry screening	9 (26)
Started temperature screening	8 (24)
No	2 (6)
<b>Restriction on the number of caregivers permitted per patient with suspected/confirmed COVID-19</b>	
Yes	36 (100)
No visitor allowed	1 (3)
Restricted to one visitor	24 (67)
Restricted to two visitors	9 (25)
Restricted to three visitors	1 (3)
Other/missing	1 (3)
No	0 (0)
<b>Allowance for household caregivers to visit<sup>†</sup></b>	
Allowed to visit	35 (97)
Not allowed to visit	1 (3)
<b>Restriction of household caregivers according to age</b>	
No age limit	6 (17)
Under certain age	26 (74)
Under 18 years	16
Under 12-17 years	5
Only adult allowed	3
No sibling allowed	2
Missing	3 (9)
<b>Household caregiver's infection prevention measures in the patient room<sup>‡</sup></b>	
Hand hygiene	27 (77)
Gloves	6 (17)
Gown	5 (14)
Surgical mask	24 (69)
N-95 respirator	0 (0)
Eye protection	1 (3)
No additional measures required	6 (17)
<b>Restriction policy of household caregivers outside of the patient room<sup>‡</sup></b>	
Restricted to the patient room	30 (86)
Allowed to be outside of the patient room	5 (14)
<b>Household caregiver's infection prevention measures outside of the patient room<sup>§</sup></b>	
Hand hygiene	3 (60)
Gloves	0 (0)
Gown	0 (0)
Surgical mask	3 (60)
N-95 respirator	0 (0)

Eye protection	0 (0)
No additional measures required	0 (0)
<b>How is the personal protective equipment supplied to visitors? <sup>  </sup></b>	
Offered if requested	2 (8)
Recommended	8 (33)
Required	10 (42)
Not applicable/missing	4 (17)

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\*Non-freestanding tertiary or quaternary pediatric hospitals with adult academic medical centers may be included

<sup>†</sup>Non-household contact visitors were allowed in 7 of 36 hospitals (19%)

<sup>‡</sup>The questions were asked only if participants allowed any household caregivers to visit (N=35)

<sup>§</sup>The question was asked only if participants allowed any household caregivers to be outside of the patient room (N=5)

<sup>||</sup>The question was asked only if participants answered any personal protective equipment for household caregivers in the patient room (N=24)

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