

# Evaluation of the Impact of A Paediatric Urgent Care Centre in Reducing Non-Emergent Emergency Department Visits in Singapore

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## Objectives

The Children’s Urgent Care Clinic (CUCC) is a community-based pilot by the National University Hospital in Singapore which aims to optimise healthcare resources by redirecting non-emergent paediatric cases (up to 18 years old) away from tertiary Children’s Emergency (CE) care towards the CUCC.

The CUCC is intended to meet the needs of patients with non-emergent conditions, complementing the care provided by primary care and private paediatrician services, thus freeing up CE resources to care for emergent cases. It officially opened on 4 February 2021.

This evaluation assesses the effectiveness of the CUCC in reducing non-emergent paediatric attendances from the CEs using a difference-in-difference approach.

## Methods

### Difference-in-Difference Analysis

To measure the reduction of non-emergent Children’s Emergency attendances due to the CUCC, we employed a difference-in-difference (DID) approach and hypothesised that only patients residing near the CUCC would modify their CE utilisation behaviour.

Geospatial analysis showed that about 90% of the CUCC patients lived within an 8-km radius. Therefore, an 8-km radius was used to demarcate the boundary for the treatment group, i.e., postal codes of Singapore Residents aged 0-17 years who lived within this 8-km boundary, while the control group was defined as postal codes of Singapore Residents aged 0-17 years residing outside of this 8-km radius (Figure 1).

The DID approach of estimating the treatment effect involved comparing the changes in per-capita non-emergent CE visits before and after the CUCC's establishment between regions near the CUCC (the treatment group) and regions farther away (the control group). The first half of year 2019 was determined as pre-CUCC implementation, while the first half of 2022 was determined as post-CUCC implementation.



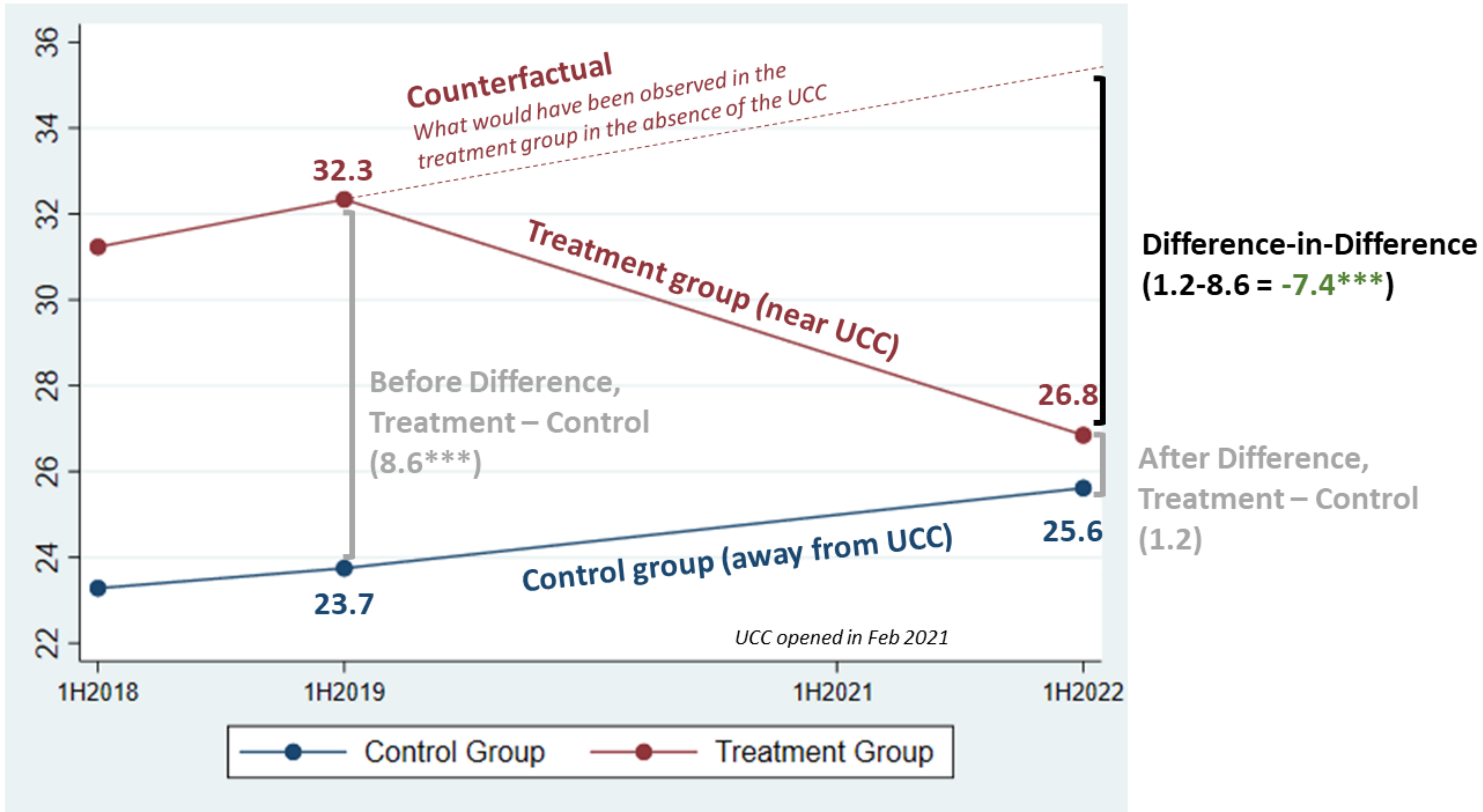
Figure 1. Defining the treatment and control groups for the difference-in-difference analysis

## Results

The DID showed that the CUCC resulted in an estimated daily reduction of about 14^ non-emergent CE attendances nationally in the first half of 2022, accounting for about 6% of daily historical non-emergent national CE attendances based on data from the first half of 2019.

This estimate is a conservative one, since the analysis was restricted to CE utilisation incurred by Singapore Residents (excluding non-Residents) as population data at the postal code level was only available for Singapore Residents.

Figure 2. Average daily non-emergency CE attendances per 100,000 Singapore Resident population (0-17 years)



One of the key assumptions of DID is parallel trends across treatment and control groups in the absence of treatment, which can be verified pre-intervention, i.e., 2018-2019.  
^ Multiplied difference-in-difference estimate with 0-17 Singapore Resident population in the treatment group  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Conclusion

The pilot has been successful in right-siting non-emergent CE cases to the CUCC. Further monitoring and evaluation will be essential to assess the long-term impact and sustainability of CUCC in the broader context of paediatric urgent care in Singapore.

## Declaration

This poster represents the findings of the researchers and does not represent the views of the Singapore government.

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