

Project Title

Vaccine Cost savings of New National Childhood Immunization Schedule

Project Lead and Members

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Organisation(s) Involved

SingHealth Polyclinics

Healthcare Family Group(s) Involved in this Project

Medical

Applicable Specialty or Discipline

Paediatrics

Project Period

Start date: Nov 2019

Completed date: Dec 2021

Aims

- Aim to compare the cost of vaccine uptake based on the old and new NCIS at the recommended 12 months of age

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign, Value-based Care, Quality Improvements, Productivity, Cost Saving, Manpower Saving, Value Based Care, Functional Outcome

Keywords

Paediatrics, Immunization, Vaccination, Vaccines

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Polyclinics
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INTRODUCTION

Childhood immunization administered according to stipulated schedules serves to optimize immunity based on evidence from clinical trials. On 1st November 2020, there was a change in National Childhood Immunization Schedule (NCIS). New vaccines and combination vaccines were incorporated into the NCIS. This study thus aims to compare the cost of vaccine uptake based on the old and new NCIS at the recommended 12 months of age.

Old NCIS

COVERED VACCINATIONS

- Hepatitis B
- Diphtheria, Tetanus, Pertussis, Poliovirus, Haemophilus B (5in1)
- Measles, Mumps, Rubella (MMR)
- Pneumococcal (PCV13)
- Influenza

New NCIS

ADDITIONAL VACCINATION

- Varicella

COMBINATION VACCINATIONS

- Diphtheria, Tetanus, Pertussis, Poliovirus, Haemophilus B, **Hepatitis B** (6in1)
- MMRV. (Measles, Mumps, Rubella and **Varicella**)



Vaccine Schedule

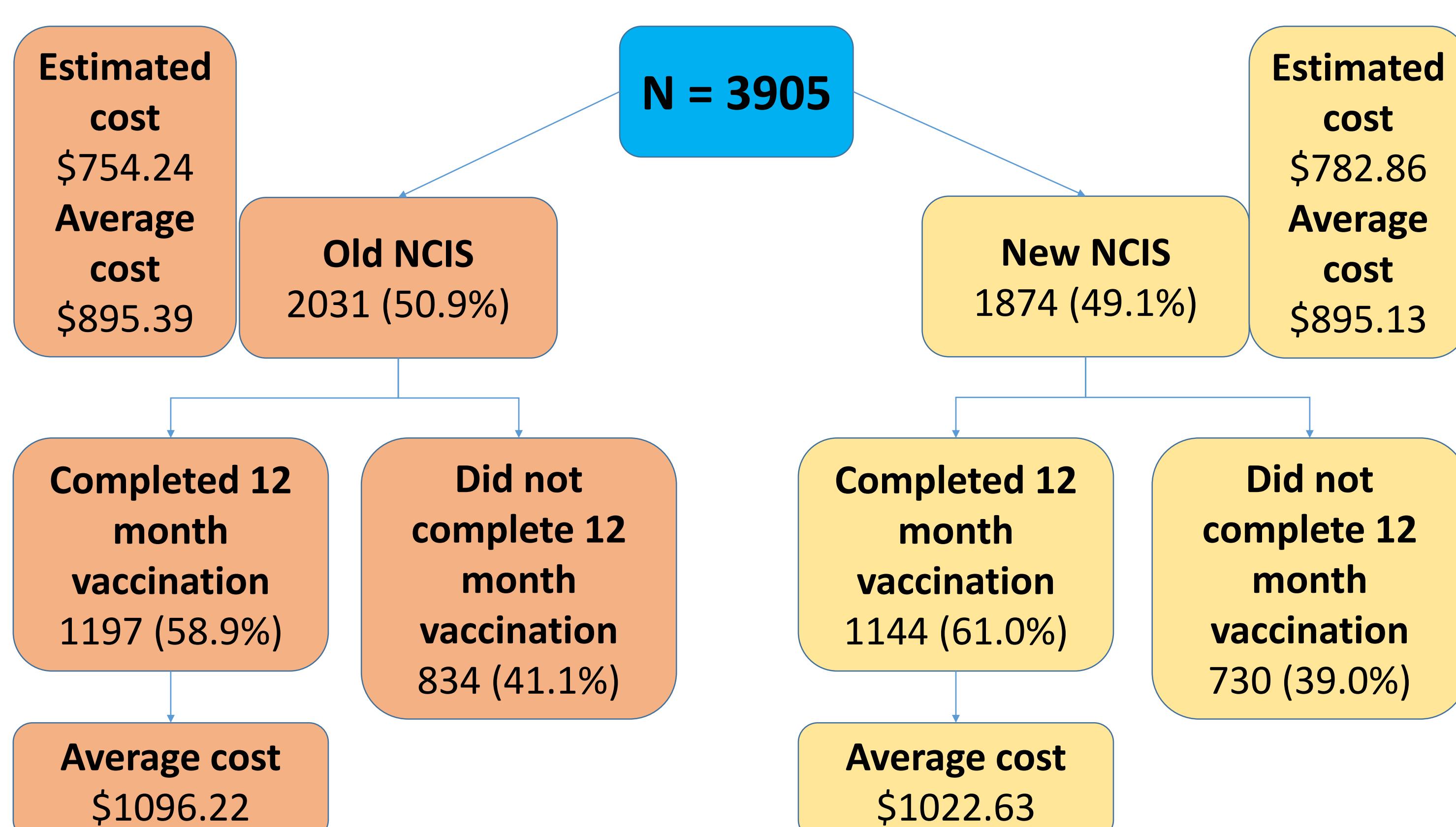
Month	Old NCIS				Old/New	New NCIS				
	HepB	5in1	PCV13	MMR		Influenza	6in1	5in1	PCV13	MMR
1 st	D1									
2 nd						D1				
3 rd		D1	D1							
4 th		D2					D1	D1		
5 th		D3	D2							
6 th	D2				D1	D2		D2		
12 th				D1					D1	D1

*D1, D2 and D3 refers to Dose 1, Dose 2 and Dose 3 respectively.

METHODS

This is a retrospective study analyzing childhood vaccination data from old and new NCIS with data taken from November 2019 to December 2021. Vaccination records for children were obtained and analyzed according to the recommended 12 month vaccination. All statistical analysis was performed by using SPSS version 25.0. Childhood vaccine related healthcare expenditure was estimated using the average vaccine price from major private general practitioner clinics and group practice available in Singapore.

RESULTS



A total of N = 3905 children vaccination records were obtained. Average cost of vaccine uptake was higher than estimated cost as children has also opted for optional vaccines such as Meningococcal and Rotavirus. The new NCIS reduced the visit count and injections to the children with the help of combination vaccines and schedule optimizations. Children only require 4 visits in the new NCIS as compared to the 6 visits required previously in the old NCIS. Cost savings was achieved, with an approximate \$74 difference. 12 month vaccination percentage was increased by 2.1%. Intangible cost savings such as time and manpower required was saved as well especially during the Covid-19 pandemic.

CONCLUSION

This study found that the new NCIS offered protection for more childhood infectious diseases without incurring additional cost compared to the old NCIS.

