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Investigating the effects of childhood vaccination: Rotavirus in Chile

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Rotavirus is a viral disease - mainly transmitted by the fecal-oral mode - that is the leading cause of severe acute gastroenteritis among infants and children less than 5 years of age. The symptoms vary from mild to severe diarrhea with fever and vomiting that may produce rapid dehydration. In most of the cases, severe symptoms require hospitalization and eventually can lead to death.

There exist two licensed rotavirus vaccines that have proven to be safe and effective to prevent rotavirus infections in young children and infants. However, Chile's national childhood immunization program does not currently include vaccination against rotavirus. The disease is responsible for 47% of the hospitalizations of children less than 3 years of age in Chile, which represents an important social and economic burden for the country. We present an ongoing study that is one of the first steps into making public health recommendations for rotavirus control and prevention in Chile, using mathematical models. We developed an ordinary differential equations model that describes the disease dynamics of rotavirus and analyzes the effect of vaccination into the country's hospitalization incidence.

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