

# MOM'S SALIVA MAY BOOST INFANTS' IMMUNE SYSTEMS

Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

## Cause Map

### 1 Problem

<b>What</b>	Problem(s)	More children suffering from allergies in industrialized nations
<b>When</b>	Date	New study released May 2013
	Differences	Babies are exposed to fewer microbes than in the past
<b>Where</b>	Physical Location	Industrialized nations
<b>Impact to the Goals</b>		
	<b>Safety</b>	Baby less likely to suffer from allergies

This incident ??

A new study found that "cleaning" an infant's pacifier by mouth may help prevent allergies.

**"I think, like any new study, this is going to be challenged and questioned. But what it points out pretty clearly is that we are yet to fully discover the many and varied benefits of saliva."**

- Dr. Berg, president of the American Academy of Pediatric Dentistry and salivary researcher at the University of Washington

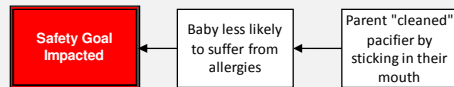
## CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause

- Step 1 **Problem** What's the Problem?
- Step 2 **Analysis** Why did it happen?
- Step 3 **Solutions** What will be done?

### 2 Analysis

**Basic Level Cause Map** - Start with simple Why questions.



#### Basic Cause-and-Effect

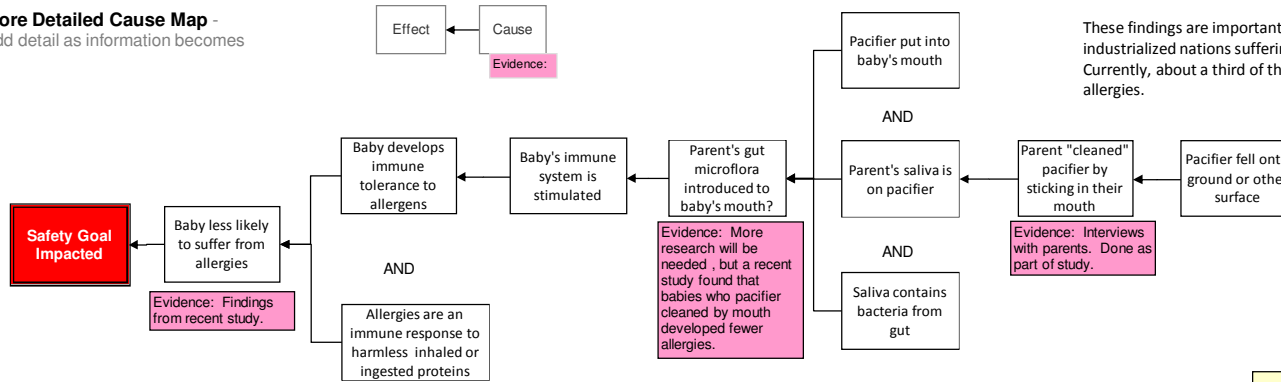
Researchers determined that babies given pacifiers exposed to their parents' saliva developed fewer allergies. It's still not clear whether the benefits come from the actual oral cleaning of the pacifier or if this was just a marker of parents who had a more laid back approach to cleanliness, but scientists are finding increasing evidence that some exposure to more microbes early in life results in fewer allergies.

#### More Detailed Cause-and-Effect

In this example, researchers found that infants whose parents cleaned their pacifiers by sucking on them, rather than by boiling or rinsing with tap water, had lower rates of eczema, fewer signs of asthma and smaller amounts of a type of white blood cell that rises in response to allergies. The key seems to be that saliva contains traces of the parents' gut microflora. The infant's immune system is stimulated by this exposure to their parents' microflora and this seems to help prevent allergies, which are caused by the immune system responding to harmless inhaled or ingested proteins. The study also found that children who are delivered vaginally develop fewer allergies than those who are born via cesarean, which limits exposure to bacteria during birth.

These findings are important because the percentage of the population in industrialized nations suffering from allergies has risen rapidly in the 20<sup>th</sup> century. Currently, about a third of the children in affluent countries are affected by allergies.

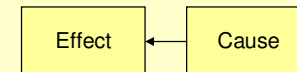
**More Detailed Cause Map** - Add detail as information becomes



### 3 Solutions

The final step of the Cause Mapping process is to come up with potential solutions that could be used to prevent the problem from reoccurring. Studies, such as this one, are being done to try and determine what is causing the increase in allergies but the causes are not definitively known yet. Circumstantial evidence seems to point to lack of exposure to microbes in early childhood as a risk factor. This study was relatively small and more research on a larger scale will need to be done, but it is beginning to seem that children who get a little dirty and put a few questionable things in their mouths actually benefit from the exposure.

#### Why?



NOTE: Read the Cause Map from left to right with the phrase "Was Caused By" in place of each arrow.

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.

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