

## Background

### Flu

Influenza (flu) is a contagious respiratory infection transmitted by droplet contact from person to person.

- Complications can arise after the initial infection such as: bacterial pneumonia, infections of sinus and ear and exacerbation of chronic conditions
- In 2017-2018 flu season
  - > 900,000 people were hospitalized
  - > 90,000 people died from flu including 185 children

Certain people are at increased risk of contracting flu and having poor outcomes

- Immunocompromised
- Young children
- Older adults
- Pregnant women



### Why Vaccinate in Pregnancy?

- Seasonal Influenza vaccine is recommended to prevent infection in pregnant women and is considered to be safe in any trimester.
- However, there is suboptimal vaccine uptake despite the recommendation. Only **53.6%** of pregnant women are vaccinated

### Benefits

#### Reduced hospitalizations

- Systematic review by Mertz et al., demonstrated that pregnant women who contracted influenza were at a higher risk for hospitalization and mortality (Mertz et al., 2017).

#### Protection for infants

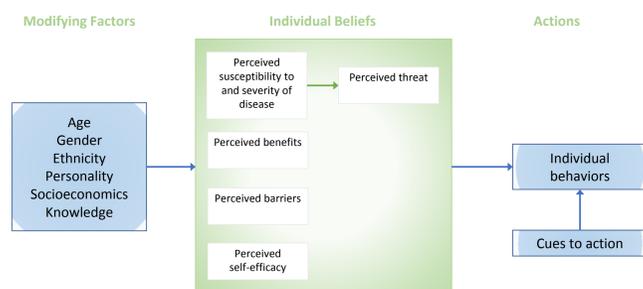
- Study by Zaman et al., revealed that women who received flu vaccine while pregnant had a lower rate of respiratory infections and their infants had fewer cases of influenza than infants whose mothers did not receive vaccine while pregnant (Zaman et al., 2008).

#### Cost effectiveness

- It is estimated that medical costs related to influenza during pregnancy can be as high as \$107,742,336 with overall costs of \$111,593,174 including loss of productivity and other aspects related to influenza (Xu et al., 2016).

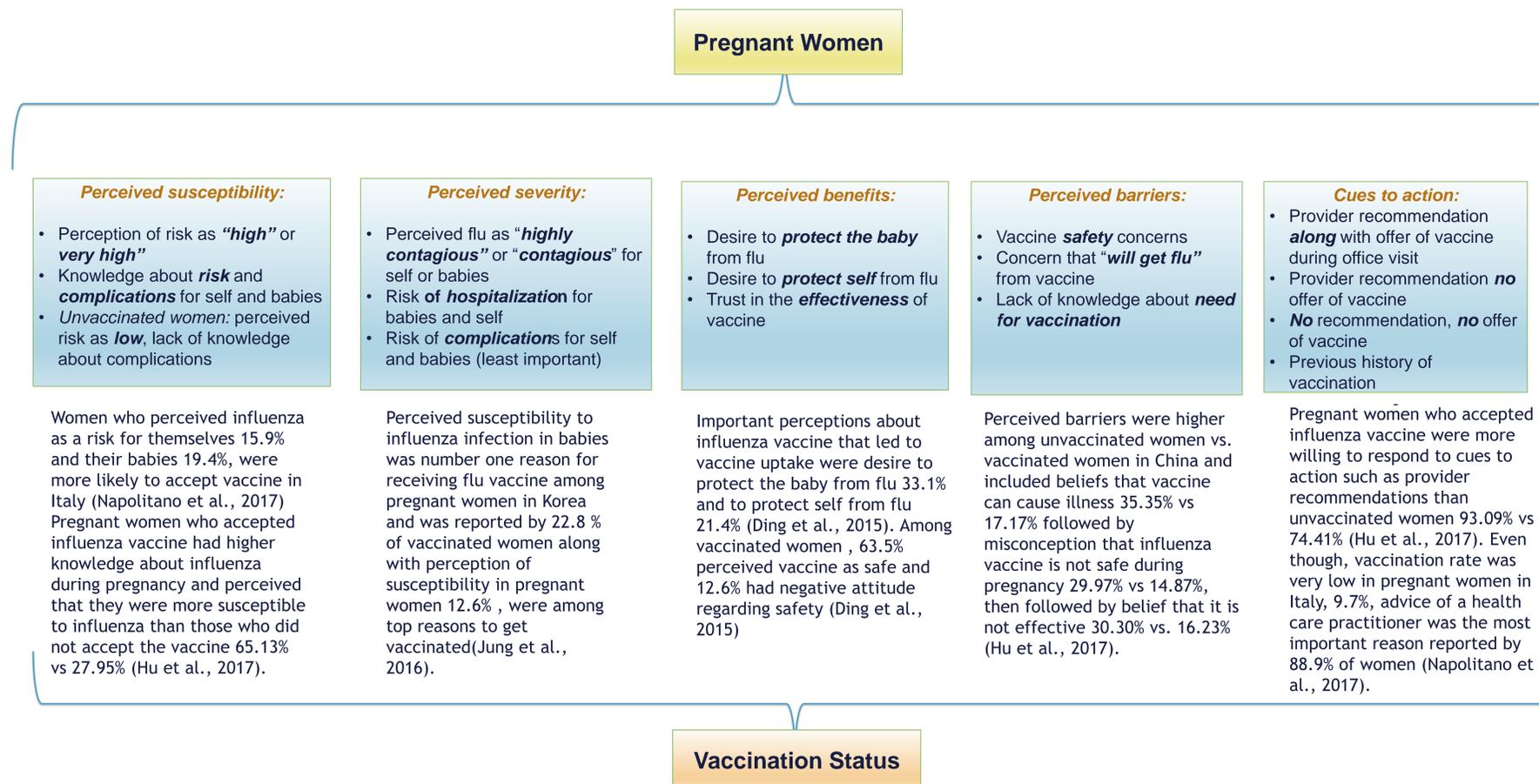
## Theoretical Model

**Health Belief Model (HBM)** "The HBM derives from psychological and behavioral theory developed in 1950 to understand and predict behaviors related to uptake of health services with the foundation that the two components of health-related behavior are 1) the desire to avoid illness, or conversely get well if already ill; and 2) the belief that a specific health action will prevent, or cure illness. In the end, decision making often depends on the person's perceptions of the benefits and barriers related to health behavior. There are six constructs of the HBM." (LaMorte, 2018).



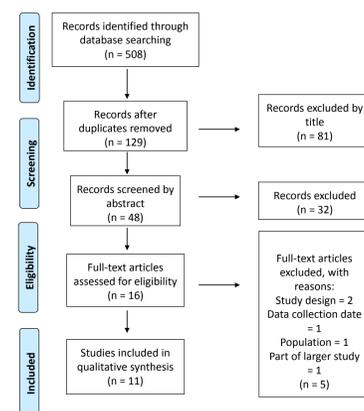
## Results

A final sample of 11 full text, peer-reviewed papers were reviewed and results were organized based on concepts from the Health Belief Model



## Methods

Four electronic databases were searched : PubMed, Ovid Full Journal, Ovid Medliner, CINAHL and Google Scholar with search terms such as **"pregnant women, pregnancy, antenatal, influenza, influenza vaccine, flu vaccine, health belief, perceptions, attitudes, knowledge"**



**Inclusion criteria:** Papers addressed human subjects, were English language, data were collected after December 2012, and were published between 2014-2019

#### Limitations:

- Limited generalizability - not all countries or regions are represented in the final sample of papers.
- Most papers in the final sample used self-report and online opt-in panels for data collection.
- Only one reviewer selected the papers.

#### Strengths:

- Sample sizes in all studies
- Comprehensive search supported by research librarian

## Discussion

### What do we know?

"Cues to action," a construct in the Health Belief Model was addressed in several papers and was a clear factor influencing vaccine uptake in pregnant women.

Provider recommendation along with offer of the vaccine at the time of an office visit was an effective way to improve take-up

### What can we do?

To increase influenza vaccine uptake by pregnant women:

- Providers need to take advantage of the time during the office visit and discuss vaccine safety, effectiveness and risks of no vaccination and make recommendations.
- Vaccine needs to be available and offered during the office visit.
- Printed materials with evidence based information about safety of vaccine, benefits of vaccine to pregnant women and newborns can be provided as supplemental educational materials to increase knowledge and address misconceptions.

## Acknowledgments

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