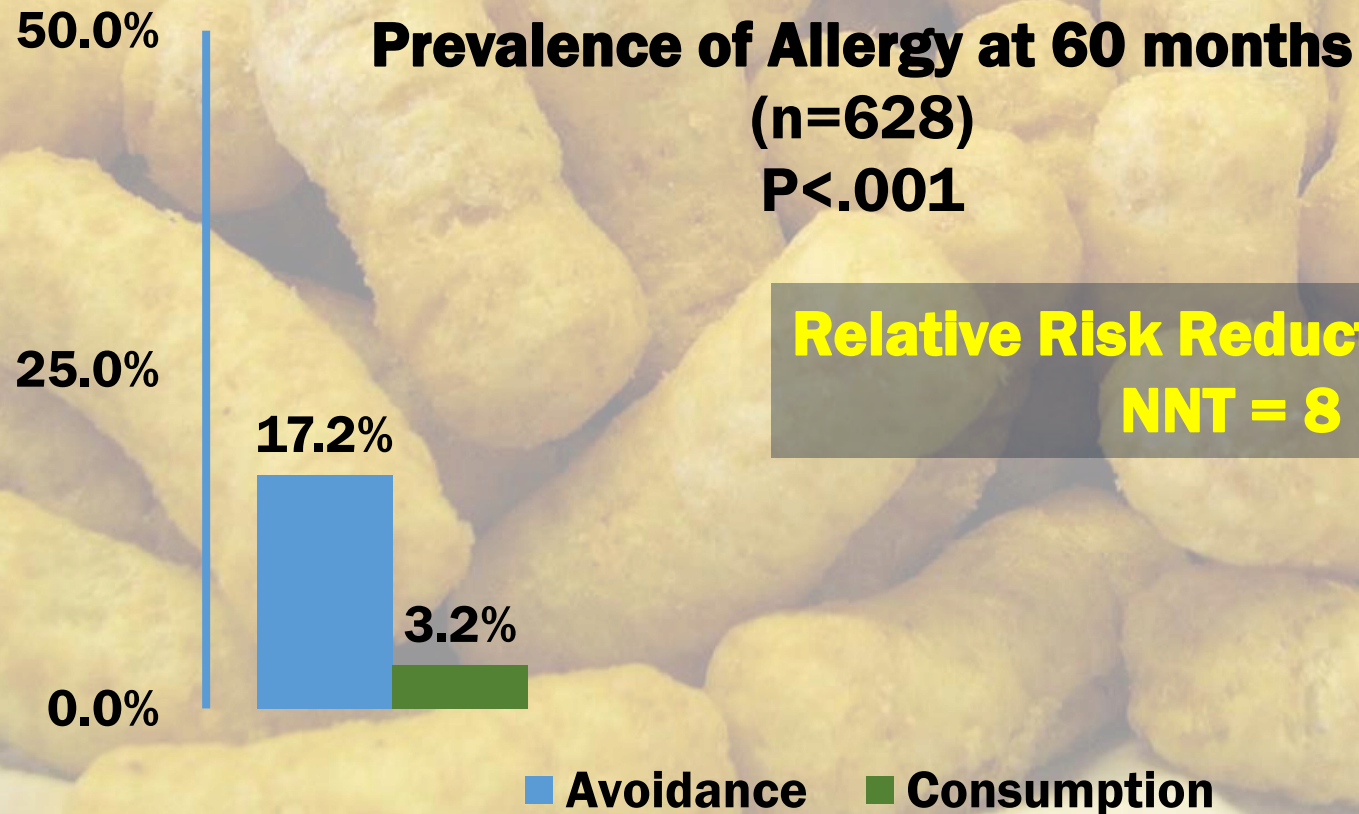# ENGAGING THE PUBLIC HEALTH WORKFORCE IN PEANUT ALLERGY PREVENTION

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LEAP – Infant Peanut Introduction Results in Lower Prevalence of Peanut Allergy In Comparison to Avoidance

Prevalence of Allergy at 60 months
(n=628)
P<.001

Relative Risk Reduction of 81%
NNT = 8

50.0%

25.0%

17.2%

3.2%

0.0%

■ Avoidance   ■ Consumption

Du Toit et al. 2015.

The NEW ENGLAND JOURNAL of MEDICINE

DRAZEN'S DOZEN:
ARTICLES THAT
CHANGED PRACTICE
SINCE 2000

Addendum guidelines for the prevention of peanut allergy in the US: Report of the NIAID-expert panel – January 2017

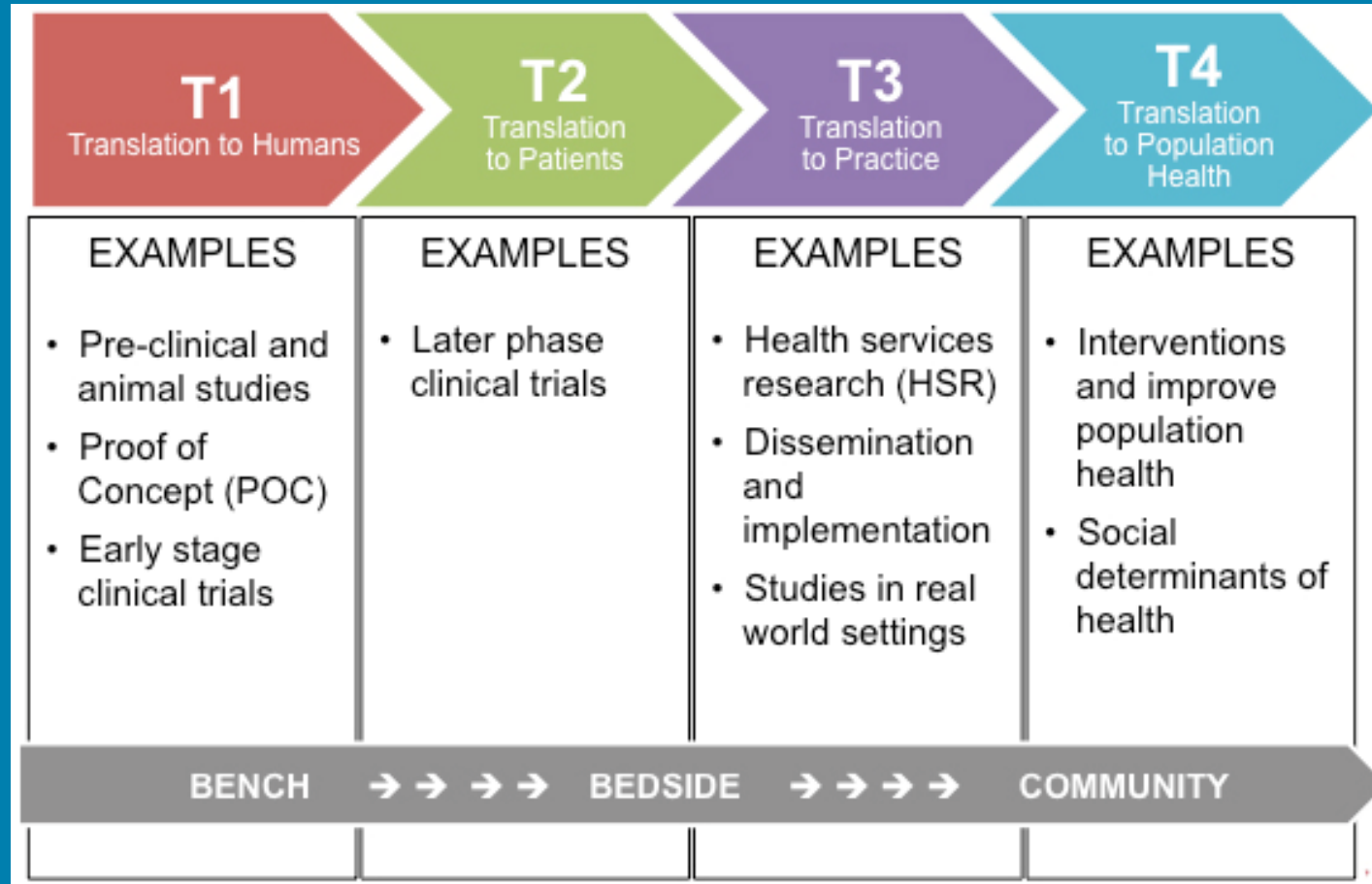| Addendum guideline	Infant criteria	Recommendations	Earliest age of peanut introduction
1	Severe eczema, egg allergy, or both	Strongly consider evaluation by sIgE measurement and/or SPT and, if necessary, an OFC. Based on test results, introduce peanut-containing foods.	4-6 months
2	Mild-to-moderate eczema	Introduce peanut-containing foods	Around 6 months
3	No eczema or any food allergy	Introduce peanut-containing foods	Age appropriate and in accordance with family preferences and cultural practices

Worsening of health disparities?

- "these studies were conducted in highly selected and motivated families largely from higher socioeconomic backgrounds with higher levels of education, in resource-rich settings. Whether a similar neutral impact would be seen at a population level, in the absence of the monitoring and advice available within a clinical trial, is unclear and of significant concern."

- Estimated increase in food allergy prevalence per decade is greater among non-Hispanic Blacks versus Hispanics and Whites.

- Compared with whites, Black and Hispanic children have higher rates of food allergy-related anaphylaxis and emergency department visits.
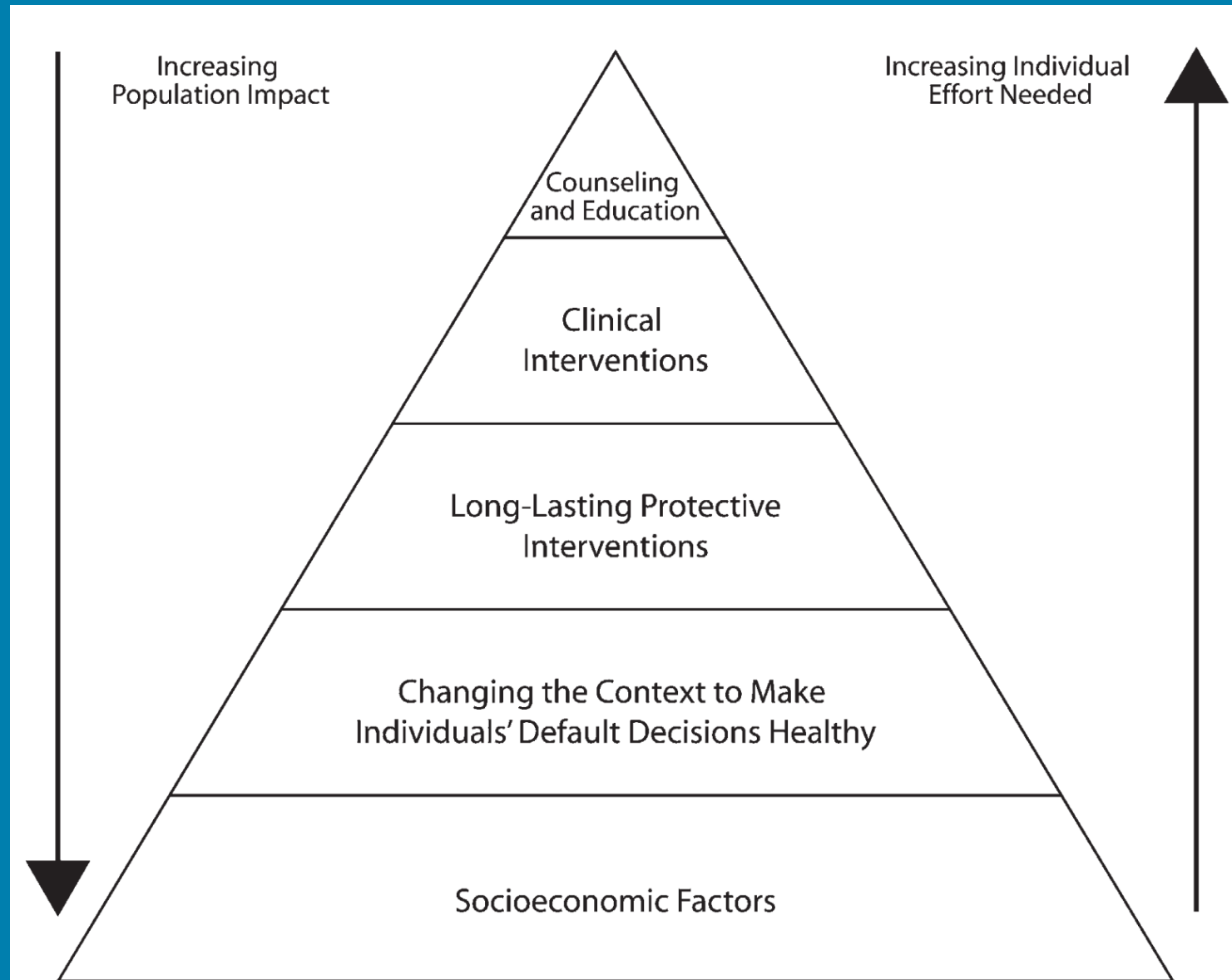
Turner et al. 2018.
Keet et al. 2014.
Mahdavinia et al. 2017.

# T3/T4 Research – Solutions to Address Health Disparities and Population Health

T1 Translation to Humans	**T2** Translation to Patients	**T3** Translation to Practice	**T4** Translation to Population Health
EXAMPLES	EXAMPLES	EXAMPLES	EXAMPLES
• Pre-clinical and animal studies • Proof of Concept (POC) • Early stage clinical trials	• Later phase clinical trials	• Health services research (HSR) • Dissemination and implementation • Studies in real world settings	• Interventions and improve population health • Social determinants of health

BENCH → → → → BEDSIDE → → → → COMMUNITY

Public health problems need public health solutions

Increasing Population Impact

Increasing Individual Effort Needed

Counseling and Education

Clinical Interventions

Long-Lasting Protective Interventions

Changing the Context to Make Individuals' Default Decisions Healthy

Socioeconomic Factors

Frieden TR. The Health Impact Pyramid. 2010.

Changes to Australian infant feeding guidelines for allergy prevention in 2016 were followed by a marked increase in early peanut introduction

PEANUT

A — p<0.0001

HN 2007-2009   HN 2009-2011
EN 2017-2018
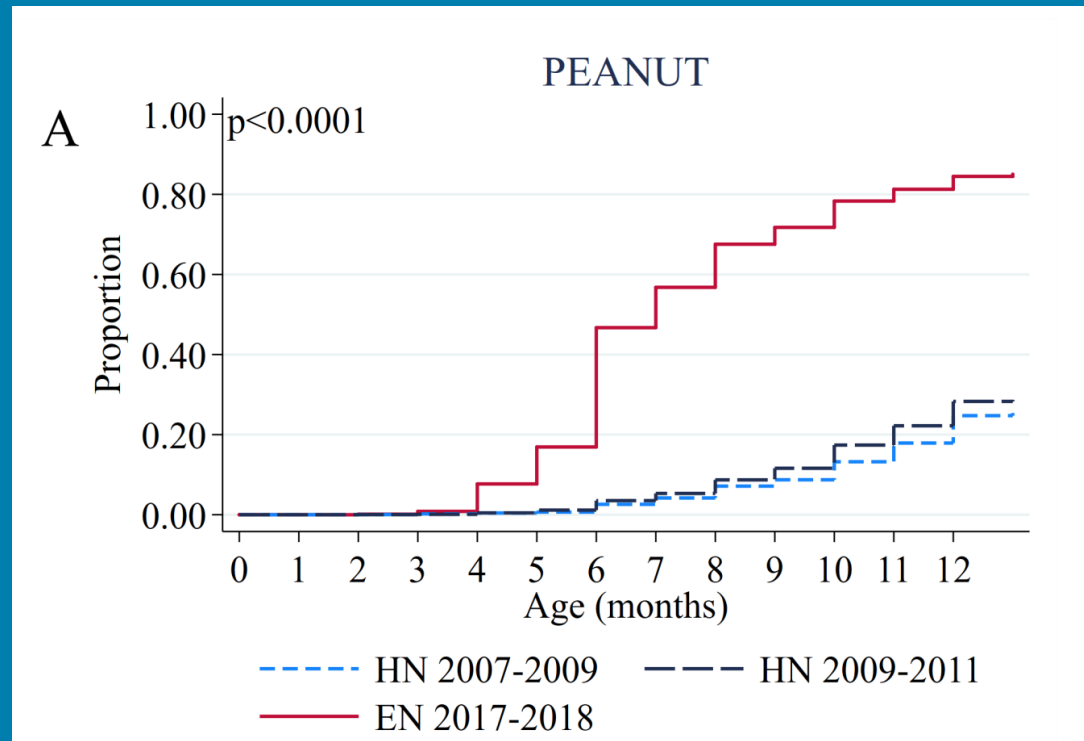
Table III. Source of advice family received

Source	Percent*	95% CI
MCHN	68.1	64.9 - 71.2
Lactation Consultant	0.6	0.2 - 1.4
GP	4.1	2.9 - 5.6
Pediatrician	5.2	3.9 - 6.9
Allergist	1.6	1.0 - 2.7
Friend	4.7	3.4 - 6.3
Family member	9.4	7.6 - 11.6
Previous child	8.4	6.7 - 10.4
Online	9.1	7.3 - 11.2
Other	2.1	1.3 - 3.3
Missing	0.8	0.4 - 1.7

Soriano et al. JACI. In Press 2019

The Women, Infants, and Children Program (WIC)

- The Special Supplemental Nutrition Program for Women, Infants, and Children, simply known as the WIC program, is a federally-funded, state-administered program that serves to safeguard the health of low-income pregnant, postpartum, and breastfeeding women, infants, and children up to age 5 who are at nutritional risk.

- WIC's Four Service Pillars
  - Healthy Food
  - Nutrition Education
  - Breastfeeding Support
  - Healthcare Referrals

- Success in implementation of other primary prevention strategies
  - Immunizations
  - Lead toxicity screening

Institute of Medicine - Planning a WIC Research Agenda 2015., Bersak and Sonchak. 2018., Thomas et al. 2014., Aoki and Brody. 2018.

Proposed Research – Aims and Hypothesis

- Aim: To determine existing knowledge, attitudes, and practices regarding food allergy prevention education among WIC nutritionists.

- Hypotheses:
    - *WIC nutritionists currently have low knowledge of peanut allergy prevention and do not currently incorporate peanut allergy prevention in their nutrition evaluation.*
    - *WIC nutritionists will recognize peanut allergy as a substantial public health burden worth preventing and they will have interest in incorporating into their scope of practice simple risk factor identification and referral to clinical settings.*

Proposed Research – Approach

- Study design and population: Cross-sectional survey disseminated to North Carolina WIC nutritionists

- Instrument development:
  - Conceptual framework: Andersen's Behavioral Model and Access to Medical Care.
  - Survey items will be designed to capture:
    - knowledge of food allergy and peanut allergy prevention strategies
    - existing practices, or feasibility of future practices, concerning
      - risk factor identification
      - referral to pediatricians for further risk assessment,
      - advisement of peanut introduction; and
    - attitudes and perceptions regarding population and individual impact of food allergy

Proposed Research – Approach

- Data Collection: Online questionnaire (SurveyMonkey)

- Data analysis:
  - Descriptive statistics for baseline knowledge, attitudes, practices
  - Logistic regression to explore explanatory variables for willingness to engage in risk factor identification and referrals
  - To facilitate interpretation of regression parameter estimates,
    - continuous summary scores may be transformed to categorical variables
    - Cluster correlation effects within WIC agency sites will be considered

Future Directions

- Aim 2: Qualitatively describe barriers and facilitators of identifying at-risk infants for peanut allergy in the WIC program (focus groups)

- Aim 3: Determine public health best practices for timely referral to general pediatricians and/or pediatric allergists for further risk stratification and prevention counseling.

- Future projects: Pilot intervention of risk factor identification (e.g., eczema screener) embedded in nutrition assessment → triggers referral to pediatrician and/or allergist.

Future Directions

- **Policy Change Question:** Can inclusion of peanut butter in the WIC infant food package facilitate widespread adoption of early peanut introduction?