



# Research Beginnings: Picking a Topic and Mentor

**Sharon Herring, MD, MPH**

September 10, 2015



# Choosing Your First Project

May generate anxiety

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- How do I pick a research topic?
- Clinical research or basic research?
- What methods/techniques do I need to know?
- What resources are available?
- Who will mentor me?
- Will I ever be funded to have protected time to engage in research?

# Things to remember...

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- Research is fun!
  - *Why?* Scientific inquiry is based on asking questions about phenomena observed in the natural world
    - Humans are naturally inquisitive – we come up with questions all the time
    - Key is to capture the most feasible and interesting questions into productive research projects

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- Research takes time
  - So don't be so hard on yourself as you move slowly

**Example start-up timeline**  
*(note the 1 year planning process!!)*

Countdown to RCT (Begin Jan 2013)  
 Timeline as of July 2011:

<b>RCT IRB submission #1</b> <u>Need to nail down:</u> Outcomes Assessments (when/number of these/what) Protocol for screening and baseline assessments Inclusion/exclusion criteria (screening forms) General overview of intervention (some content, #of contacts) ? Letter from Einstein	Goal to submit to TU IRB September 1, 2011
<b>RCT supplies – (have purchase by Nov 30<sup>th</sup>)</b> Body weight scales Measuring cups Water bottles Walking DVD Lunch plate Baby bibs Baby survival bag Kcal kings Target gift cards for incentives	Goal to purchase by Nov 1, 2011
<b>Intervention protocol and content – pregnancy</b> Health coach guide Text messages (skill and self-monitoring) for pregnancy Handouts for pregnancy portion Facebook resources	Complete by December 15, 2011
<b>RCT IRB addendum #1</b> Submit pregnancy protocol and content to IRB, work with IT to set up texts, FB	Complete by February 1, 2012
<b>Intervention protocol and content – postpartum</b> Health coach guide Text messages (skill and self-monitoring) for postpartum Handouts for postpartum portion Facebook resources	Complete by June 1, 2012
<b>Pilot pregnancy portion of intervention</b>	Goal is to begin recruitment in June 2012 (goal to finish pilot in September 2011)
<b>RCT IRB addendum #2</b> Submit postpartum protocol and content to IRB, work with IT to set up additional texts	Complete by August 1, 2012
<b>Changes to RCT protocol/content after pilot</b> ? RCT IRB addendum #3	Complete by November 1, 2012
<b>Begin recruitment and enrollment for RCT</b> Continue to recruit x 6 months Last 1-yr pp visit (early winter 2015)	Goal is to begin in early January 2013 Goal is to end by January 2015

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- Research takes time
  - So don't be so hard on yourself as you move slowly
- Research is an iterative process

# Ideal Research Cycle

1) Observe Phenomena;  
Formulate Questions

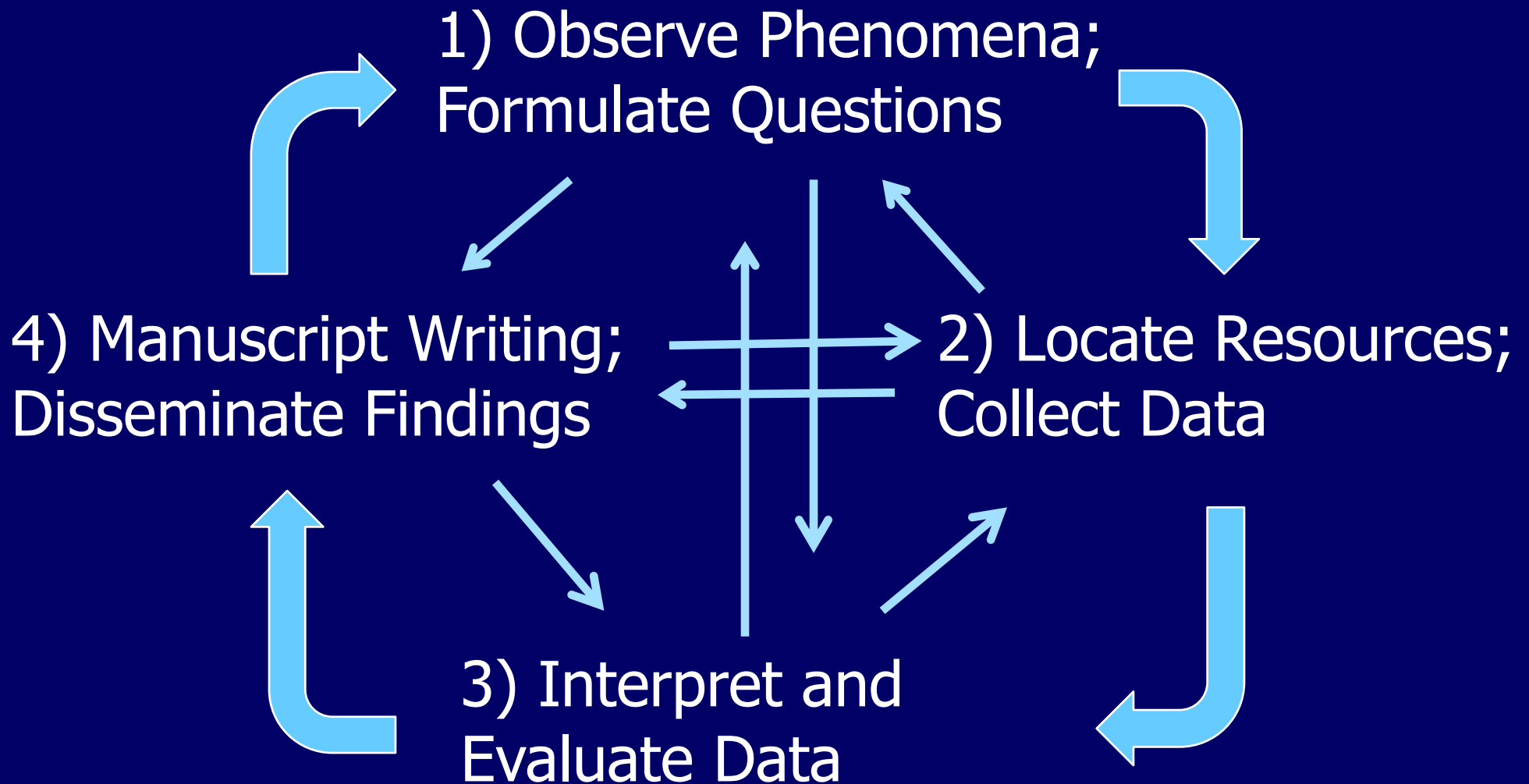
2) Locate Resources;  
Collect Data

3) Interpret and  
Evaluate Data

4) Manuscript Writing;  
Disseminate Findings



# Actual Research Cycle





# Developing a Research Topic

## Key elements

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- **Interest** (to you and to the medical community)
- **Importance** (significance of research project)
- **Scope** (depth and breadth of a topic)
- **Time** (pick something you can successfully address in the time constraints/due dates)
- **Focus** (know what you're looking for; refine/adjust as needed)
- **Assignment** (follow directions, e.g., guidelines from funders)

# Refining a Research Topic

## Key elements

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- **Background reading** (to give you an overview of the topic; scope)
  - Pubmed, Wikipedia, Textbooks, Lectures
  - Zoom-in/Zoom-out
    - Obesity – too broad
    - Obesity in 18 year olds who live in Colorado and smoke - likely too narrow
- **Assess feasibility** (primary data collection or secondary data analysis; resources)

# Refining a Research Topic

## Ways to narrow your topic

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- **Anticipate the results before doing the first study**
  - Follows a hypothesis driven approach (based on the scientific method)
  - If the major results aren't interesting, maybe you shouldn't do it
  - Helps you set a plan in motion for future studies
- Asking/answering **who, why, when, what, where, and how**

# Refining a Research Topic: One Example

Obesity prevention and  
treatment

**Topic of interest**

# Refining a Research Topic: One Example

Obesity prevention and  
treatment

**Who?**

# Refining a Research Topic: One Example

Obesity prevention and  
treatment for women

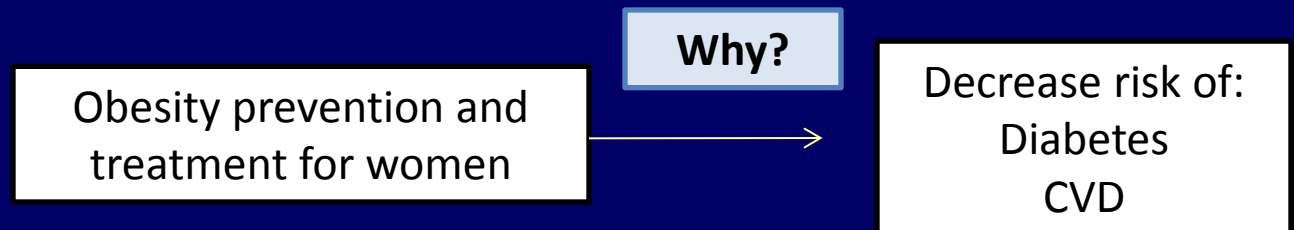
**Who?**

# Refining a Research Topic: One Example

Obesity prevention and  
treatment for women

Why?

# Refining a Research Topic: One Example





# Refining a Research Topic: One Example

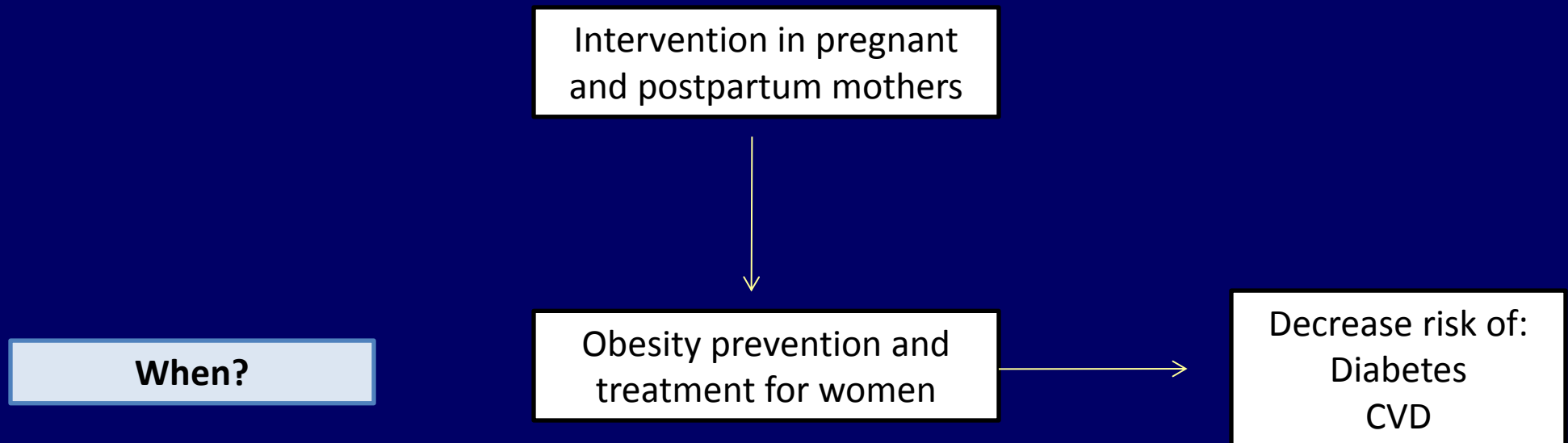
**When?**

Obesity prevention and  
treatment for women

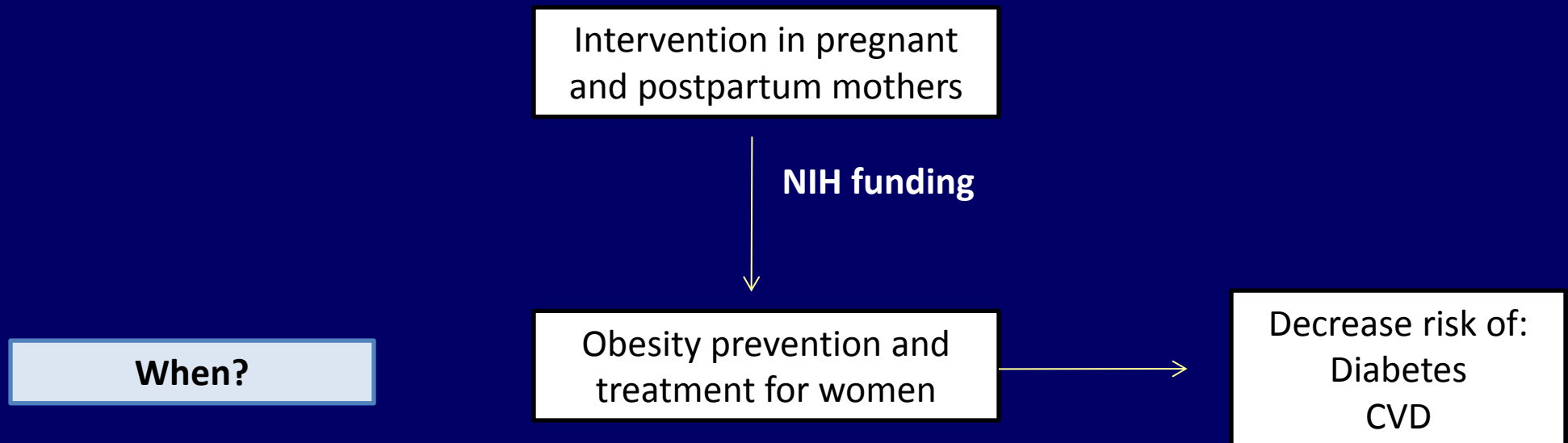


Decrease risk of:  
Diabetes  
CVD

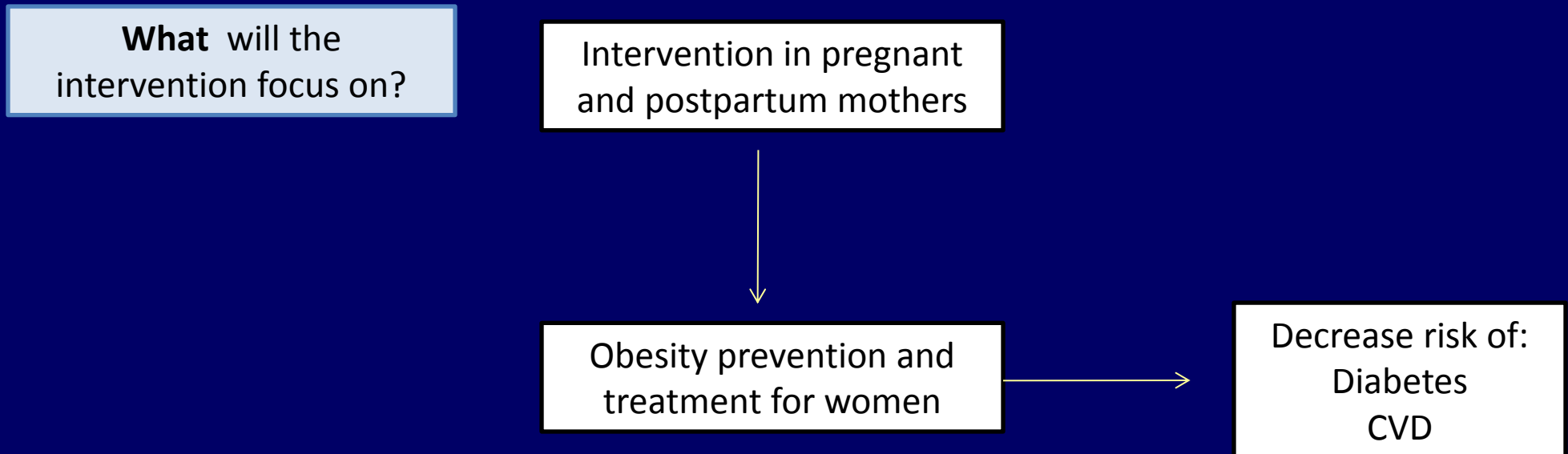
# Refining a Research Topic: One Example



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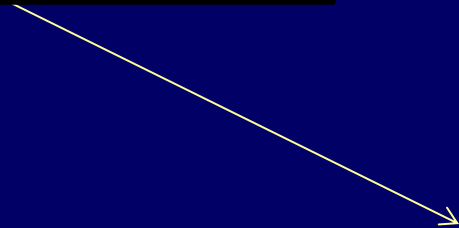
Prospective observational study to identify intervention targets

**What** will the intervention focus on?

Intervention in pregnant and postpartum mothers

Obesity prevention and treatment for women

Decrease risk of:  
Diabetes  
CVD



# Refining a Research Topic: One Example

Prospective observational study to identify intervention targets

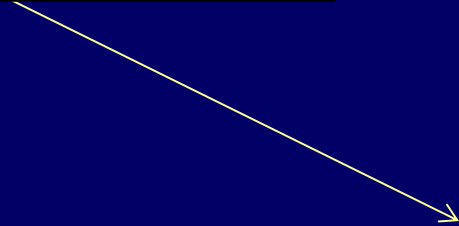
DOM funding

**What** will the intervention focus on?

Intervention in pregnant and postpartum mothers

Obesity prevention and treatment for women

Decrease risk of:  
Diabetes  
CVD



Original article

## Determinants of Excessive Gestational Weight Gain in Urban, Low-Income Women

Sharon J. Herring, MD, MPH<sup>a,\*</sup>, Deborah B. Nelson, PhD<sup>b</sup>, Adam Davey, PhD<sup>b</sup>, Alicia A. Klotz, MPH<sup>a</sup>, La Vette Dibble, BA<sup>b</sup>, Emily Oken, MD, MPH<sup>c</sup>, Gary D. Foster, PhD<sup>a</sup>

<sup>a</sup>Center for Obesity Research and Education, Department of Medicine, Temple University School of Medicine, Philadelphia, Pennsylvania

<sup>b</sup>Department of Public Health, Temple University College of Health Professions and Social Work, Philadelphia, Pennsylvania

<sup>c</sup>Obesity Prevention Program, Department of Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care, Boston, Massachusetts

Article history: Received 6 October 2011; Received in revised form 21 May 2012; Accepted 24 May 2012

### A B S T R A C T

**Background:** Factors influencing excessive weight gain in pregnancy have not been well-studied among urban, low-income women.

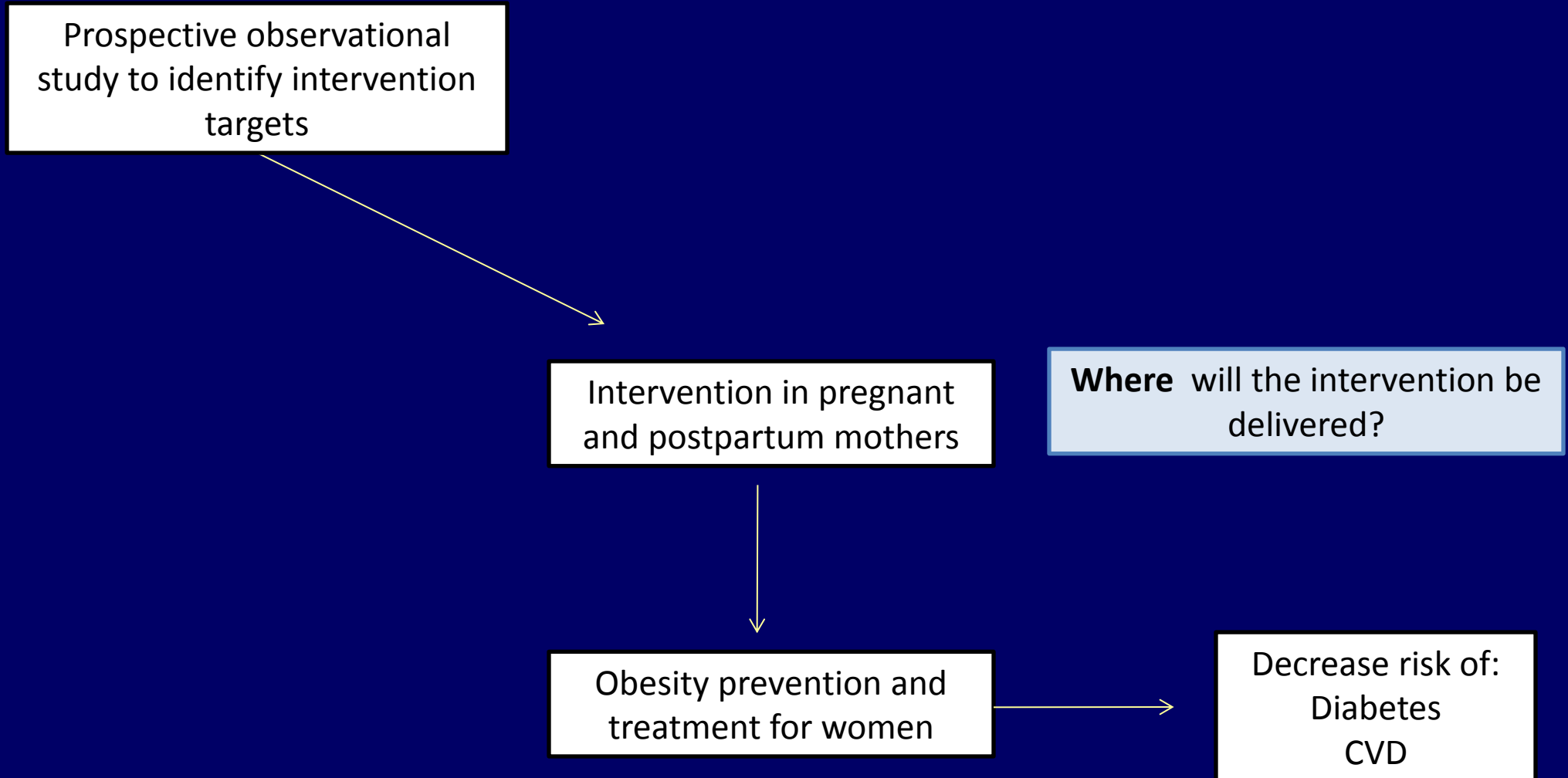
**Methods:** This prospective cohort study of 94 prenatal care patients at a large university hospital in Philadelphia examined associations of modifiable midpregnancy behaviors and nonmodifiable or early pregnancy factors with excessive gestational weight gain. Data were collected through questionnaires and medical record abstraction from 2009 to 2011.

**Findings:** The majority of women were African American (83%) and all (100%) received Medicaid. Nearly two thirds (60%) were overweight or obese in early pregnancy and 41% experienced excessive gain. In multivariable logistic regression analyses, significant predictors of excessive gestational weight gain included high early pregnancy body mass index (odds ratio [OR], 4.20; 95% confidence interval [CI], 1.43–12.34 for overweight/obese vs. normal weight), nulliparity (OR, 3.35; 95% CI, 1.17–9.62 for nulliparity vs. multiparity), and clinician advice discordant with Institute of Medicine guidelines (OR, 5.88; 95% CI, 1.04–33.32 for discordant vs. concordant advice). Watching under 2 hours of television daily (OR, 0.18; 95% CI, 0.03–1.03), and engaging in regular physical activity during pregnancy (OR, 0.35; 95% CI, 0.11–1.09) were suggestive of a reduced risk of excessive gain.

**Conclusions:** In this sample of urban, low-income women, high early pregnancy body mass index, nulliparity, and discordant clinician advice were directly associated with excessive gestational weight gain, with a trend toward decreased risk for viewing fewer hours of television and engaging in regular physical activity. Intervening on these targets may optimize gestational weight gain and promote long-term maternal health.

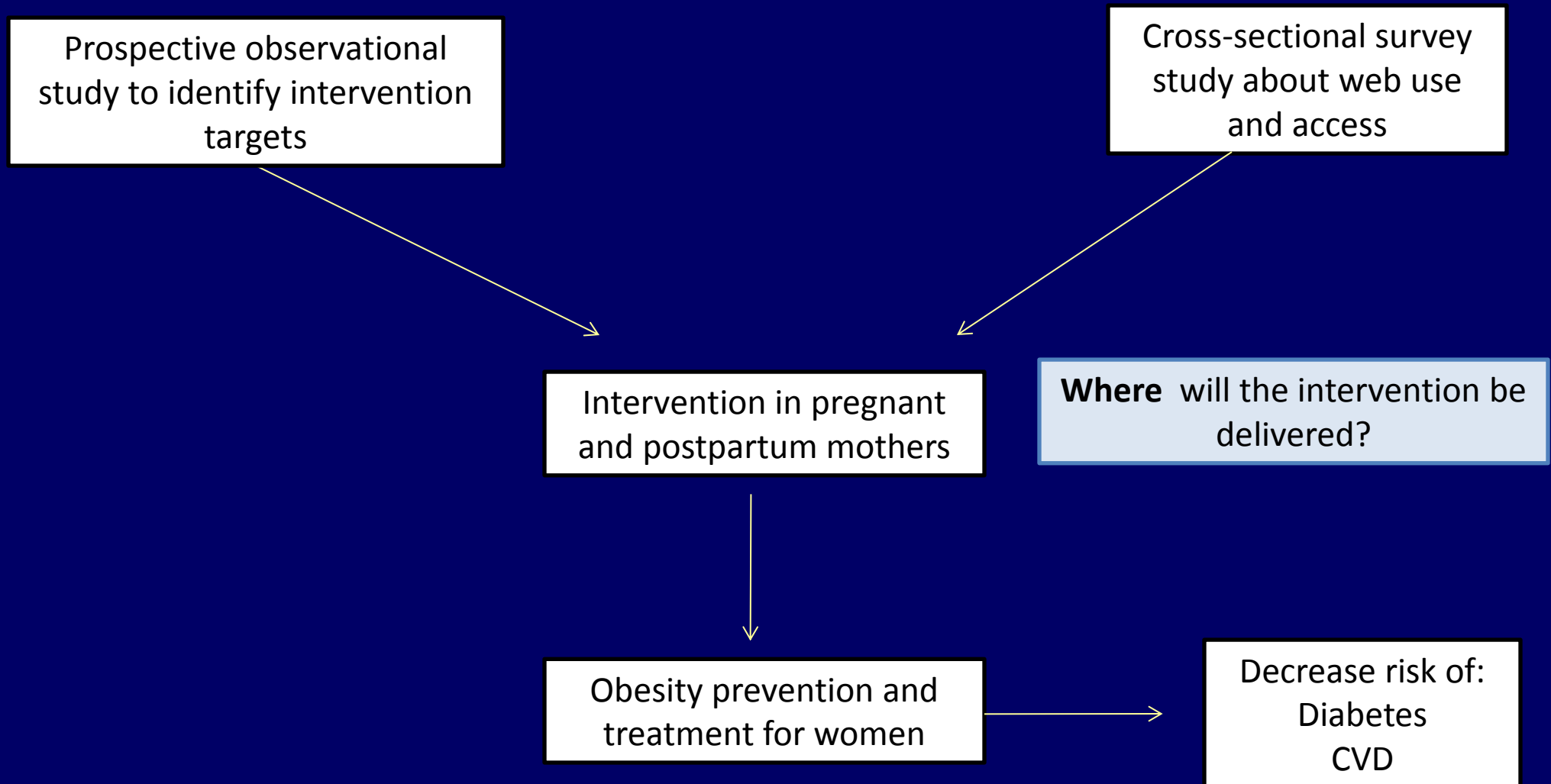
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# Refining a Research Topic: One Example

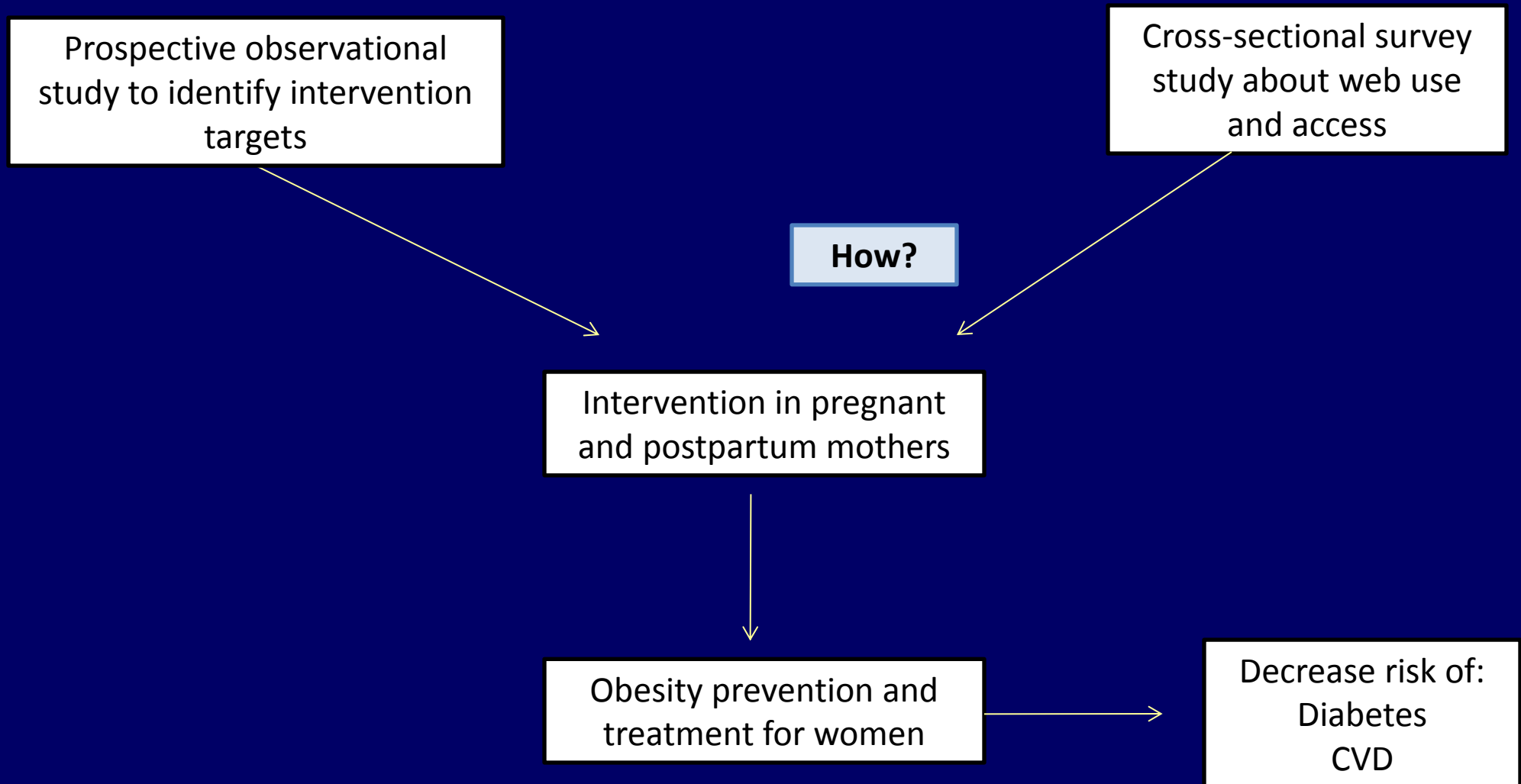




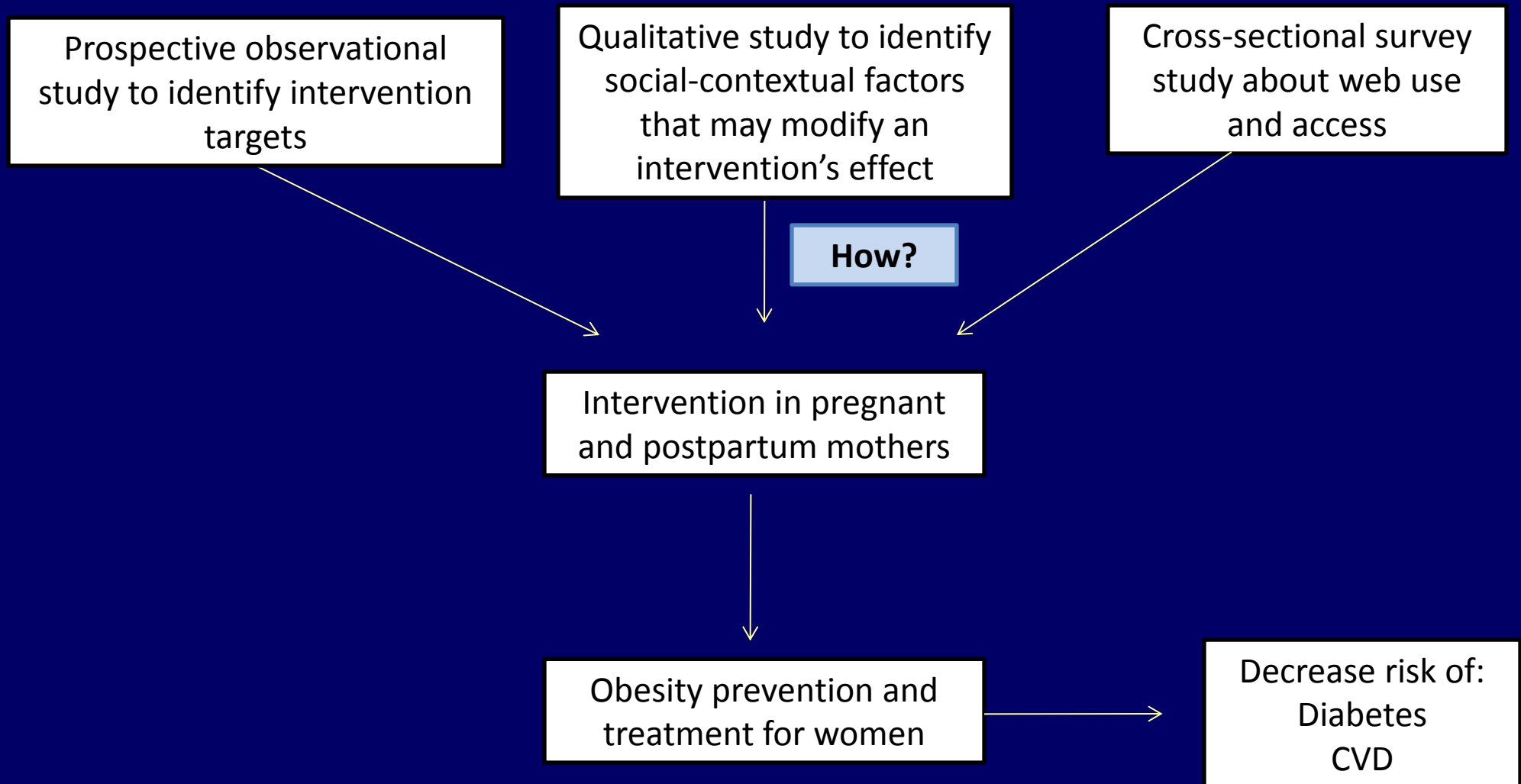
# Refining a Research Topic: One Example



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# Refining a Research Topic: One Example



## Perceptions of Low-Income African-American Mothers About Excessive Gestational Weight Gain

Sharon J. Herring · Tasmia Q. Henry ·  
Alicia A. Klotz · Gary D. Foster · Robert C. Whitaker

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**Abstract** A rising number of low-income African-American mothers gain more weight in pregnancy than is recommended, placing them at risk for poor maternal and fetal health outcomes. Little is known about the perceptions of mothers in this population that may influence excessive gestational weight gain. In 2010–2011, we conducted 4 focus groups with 31 low-income, pregnant African-Americans in Philadelphia. Two readers independently coded the focus group transcripts to identify recurrent themes. We identified 9 themes around perceptions that encouraged or discouraged high gestational weight gain. Mothers attributed high weight

gain to eating more in pregnancy, which was the result of being hungrier and the belief that consuming more calories while pregnant was essential for babies' health. Family members, especially participants own mothers, strongly reinforced the need to "eat for two" to make a healthy baby. Mothers and their families recognized the link between poor fetal outcomes and low weight gains but not higher gains, and thus, most had a greater pre-occupation with too little food intake and weight gain rather than too much. Having physical symptoms from overeating and weight retention after previous pregnancies were factors that discouraged higher gains. Overall, low-income African-American mothers had more perceptions encouraging high gestational weight gain than discouraging it. Interventions to prevent excessive weight gain need to be sensitive to these perceptions. Messages that link guideline recommended weight gain to optimal infant outcomes and mothers' physical symptoms may be most effective for weight control.

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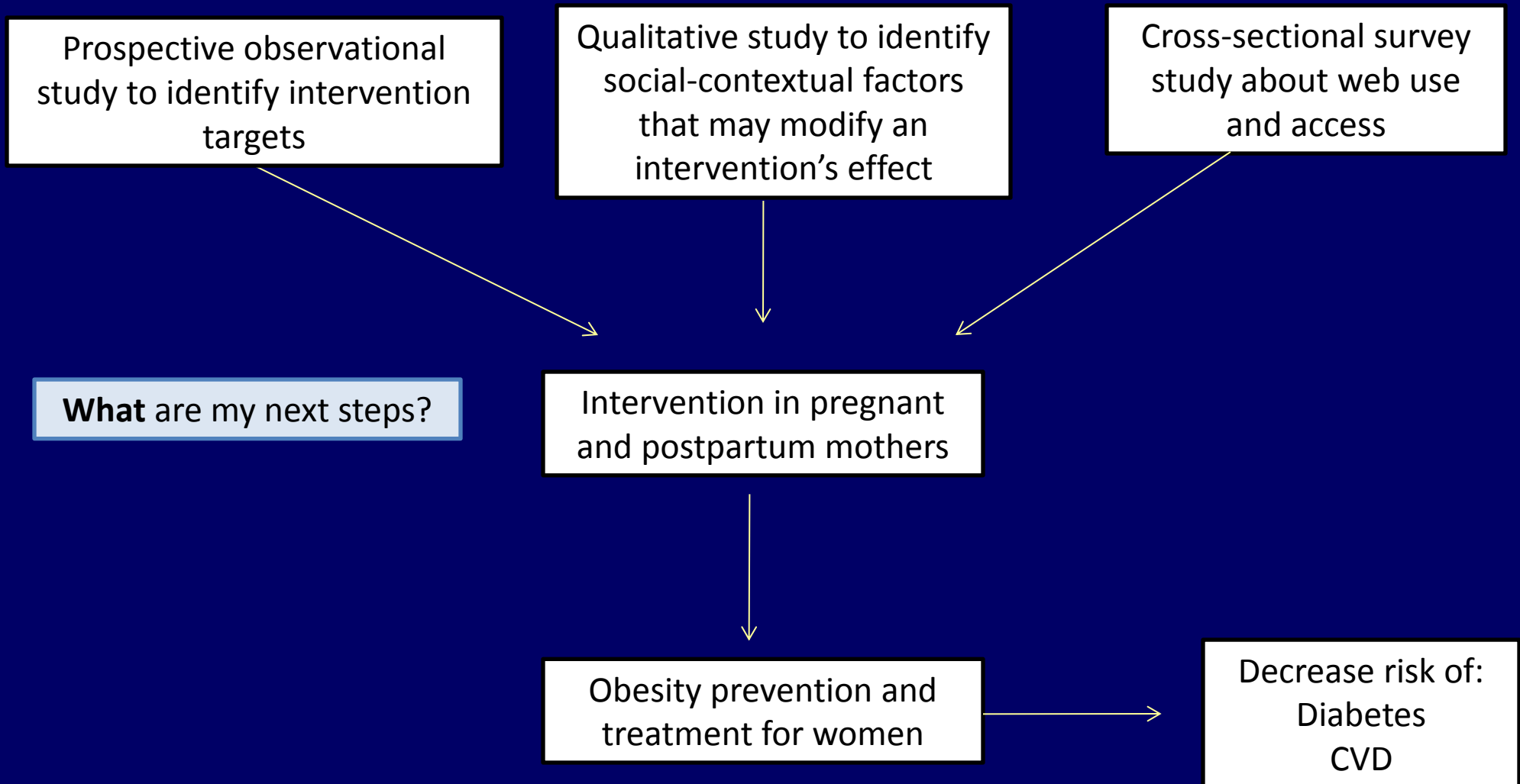
This study was conducted in Philadelphia at Temple University.

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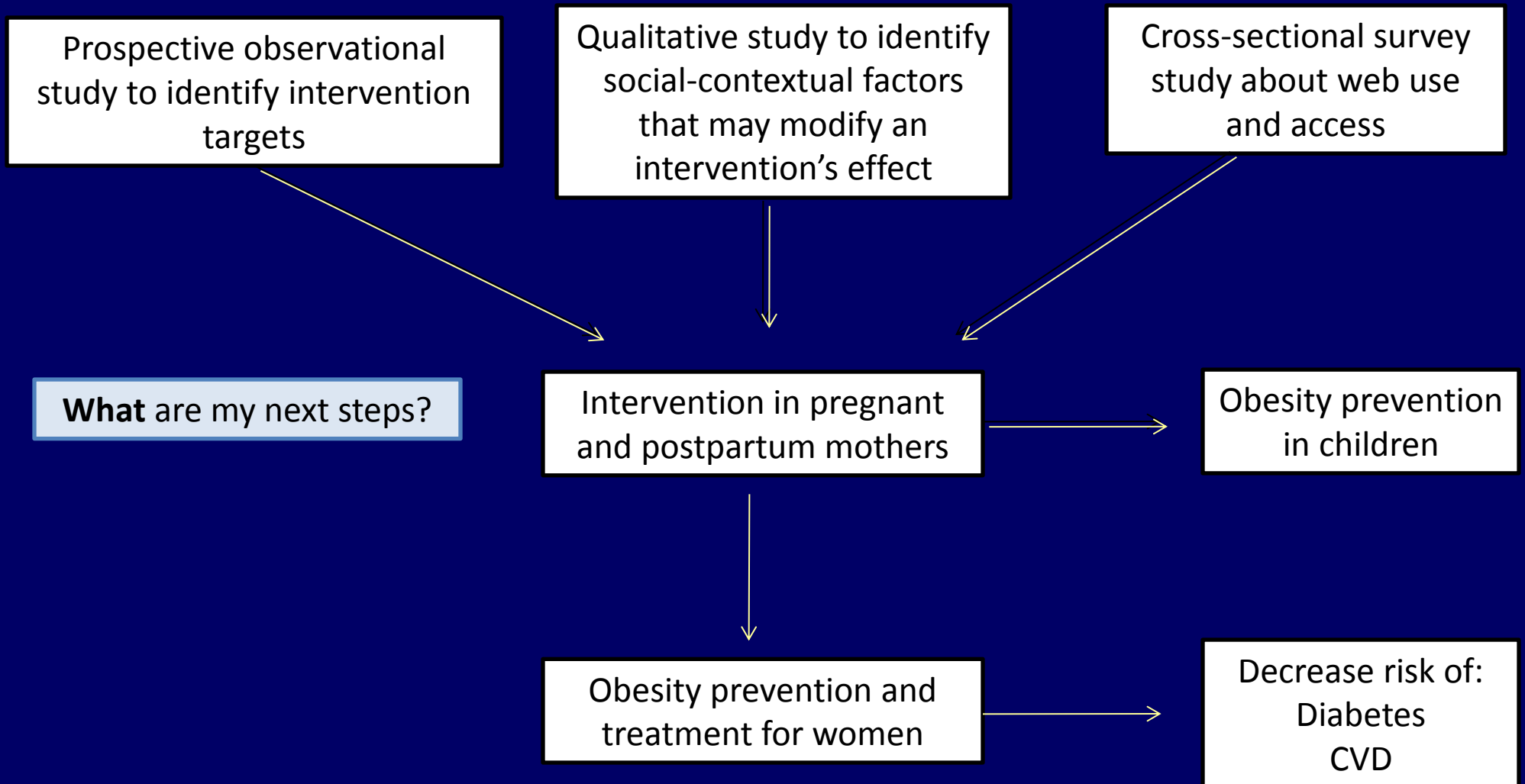
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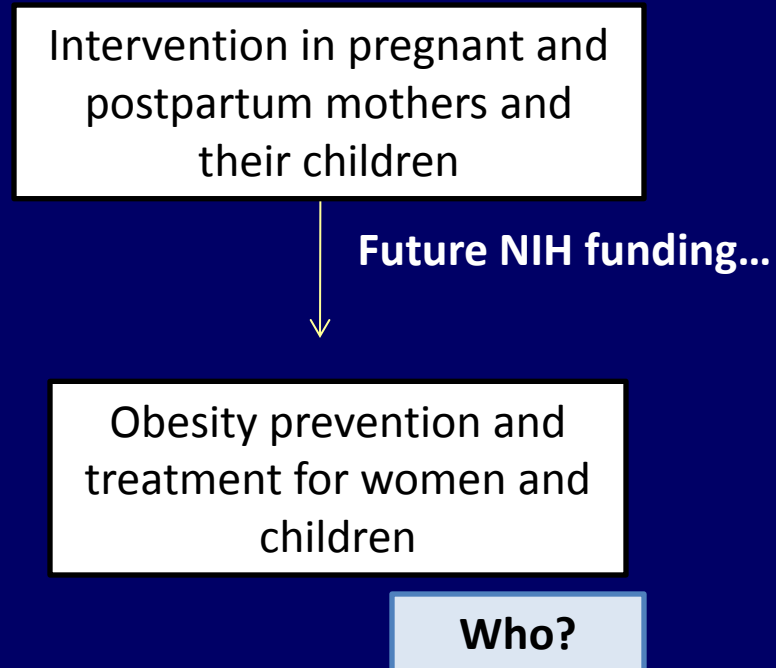
# Refining a Research Topic: One Example



# Refining a Research Topic: One Example



# Refining a Research Topic: One Example



# Who Will Mentor Me?

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- A good mentor, aka: scientific and/or personal advisor, is a critical part of research success
- Best mentorship relationship is longitudinal, e.g., repeated, one-to-one meetings for constructive feedback, ideas, additional training opportunities
- Remember, mentoring is a two-way street



# Essential Mentor Qualities

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- Expertise in topic of interest
  - Pubmed or NIH RePORTER search
- Wide scope of research experience/methodology
- Available and accessible
- Provides opportunities
- Experience mentoring others (e.g., track record of grants/publications with mentees)

# How to Find a Mentor

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- Search home institution (section, department)
  - Remember to look at other schools within the home institution pending interests (e.g., public health, psychology)
- Search pubmed for leading authors in your field
- Network at research meetings in your field of interest
- Get an advanced degree/more research training requiring a thesis or final project (e.g., PhD, MPH)

# How to Find a Mentor

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- Send an email introducing yourself and expressing interest
  - Attach updated CV along with a letter detailing your research interests and desire to work together
- To prepare for the interview, review the potential mentor's publications and be prepared to discuss/reflect on these

# Essential Mentee Qualities

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- Organized, always come prepared with an agenda and materials to review
- Self-motivated, sets personal goals and sticks to them
- Productive, follows through and completes tasks
- Responsive and available
- Avoids defensiveness and displays humility

# Glass Half Full

- ~ 30% success rate for NIH career development awards (K series)
- The award rates for first-time research project grant applicants with a prior LRP or K award are much higher than for those without: For MDs: 44.1 vs 9.2 %; for MD/PhDs: 60.0 vs 10.1 %; and for PhDs: 66.3 vs 10.9 %
- NIH FY16 budget request could fund 1,200 more research grants than in FY15, raising its success rate from 17.2% in FY15 to 19.3% in FY16