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# The Role of Health Literacy in Engaging Target Populations for Developing and Evaluating Health Care Interventions

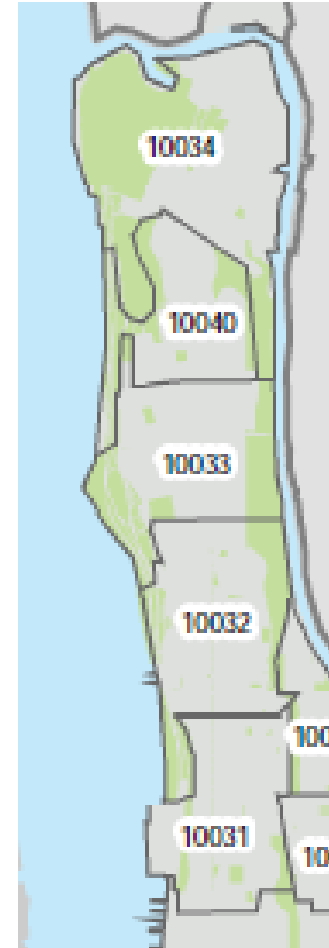
Suzanne Bakken, PhD, RN, FAAN, FACMI  
Columbia University, New York, NY

# Data-based Community Engagement in Washington Heights/Inwood

5 zip codes: 10031, 10032, 10033, 10034, 10040

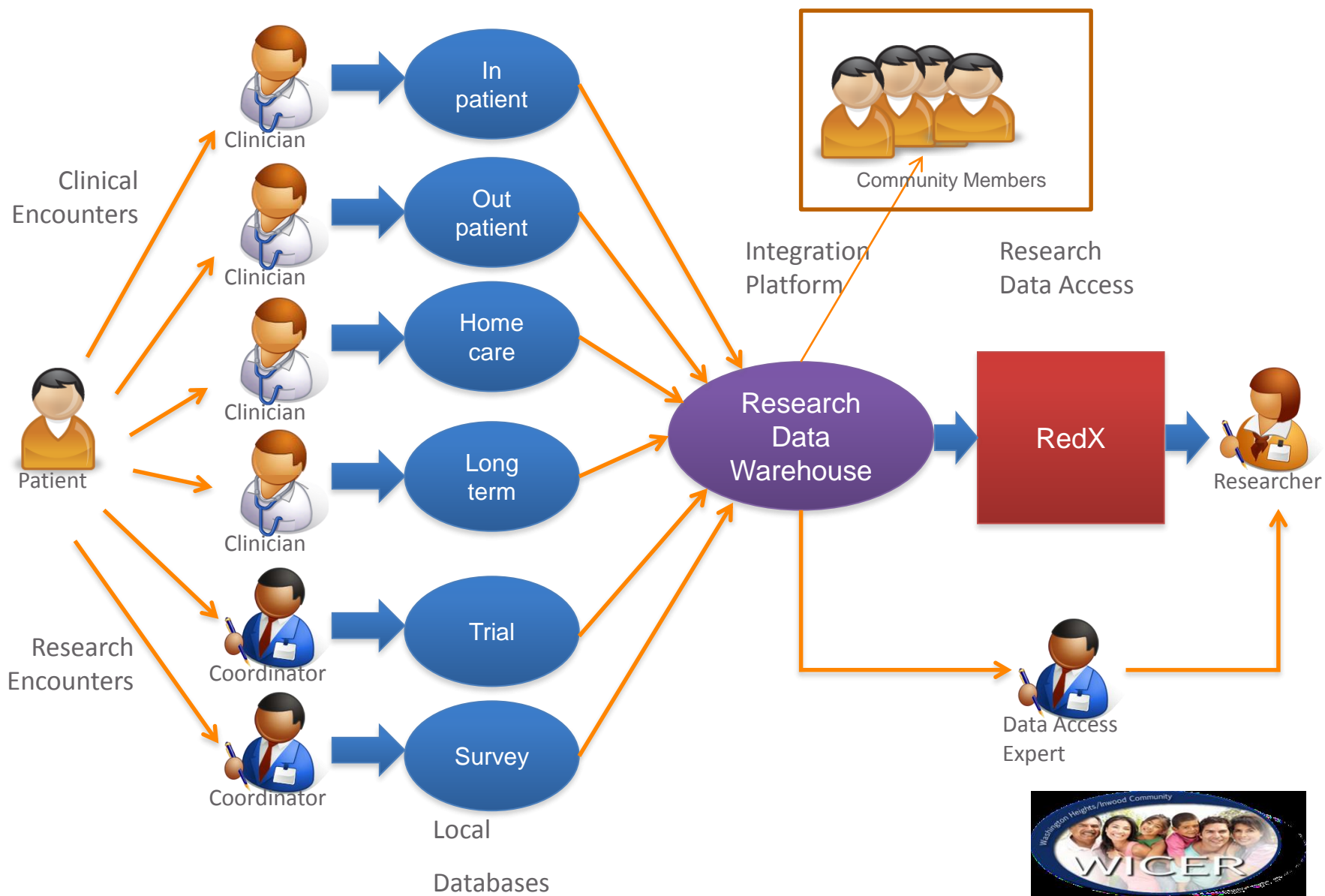
Represents significant issues in healthcare disparities

Low education levels, low health literacy scores by multiple measures



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# Participatory Design of Infographics for Returning Research Results

- Established WICER visualization working group that includes investigators from a variety of disciplines including nursing, medicine, public health, biomedical informatics, engineering, human factors, communication, art, fashion, theater
- Creation of infographics of varying levels of complexity based on cognitive tasks
- Focus groups regarding preference and acceptability organized according to level of health literacy
- Basic research regarding comprehension
- *Applied research related to actionability in consumer-facing and provider-facing applications*

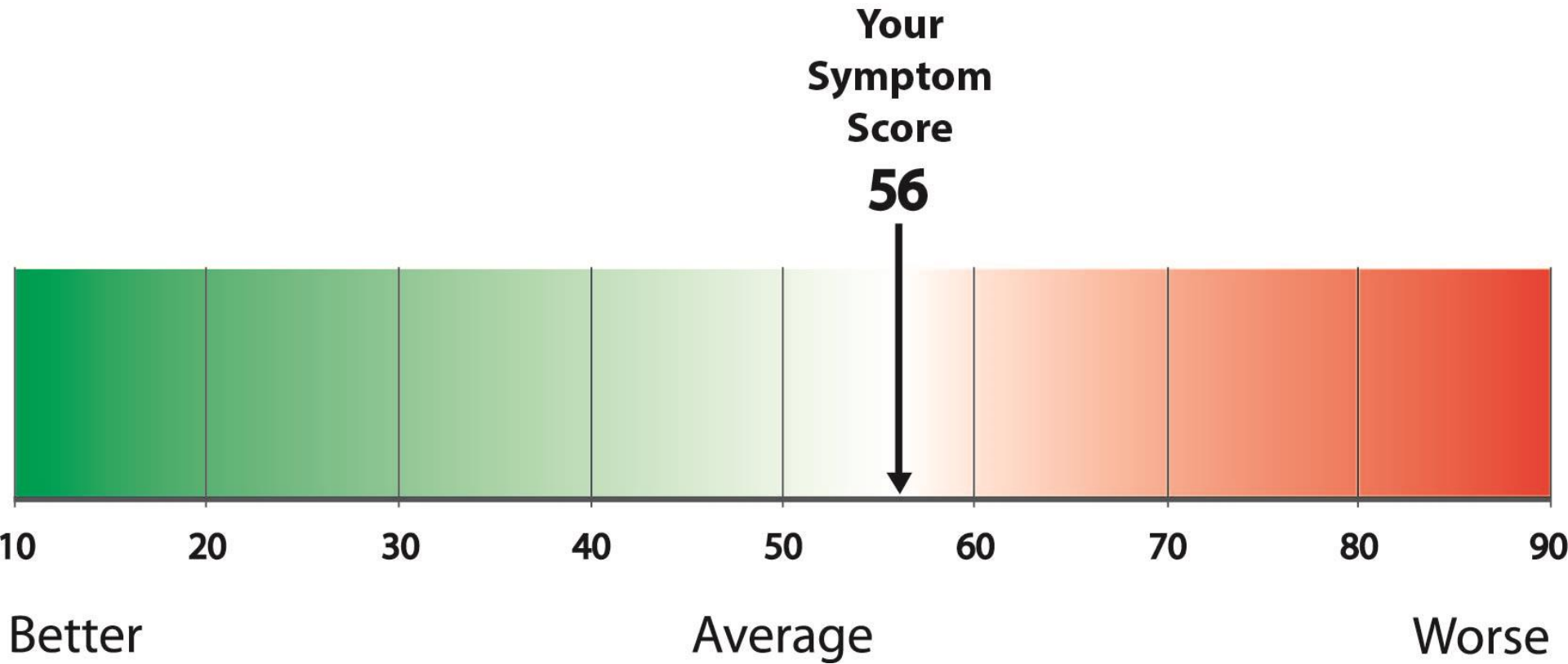
Arcia et al., 2013; Arcia et al., 2014, Arcia et al, 2015



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# Anxiety Symptoms



# Feeling Run Down



You  
*A Little Bit*

Not At All  
A Little Bit  
Somewhat  
Quite A Bit  
Very Much



Other women in  
your age group  
*Very Much*

# Overall Health

Poor

Fair

Good

Very Good

Excellent

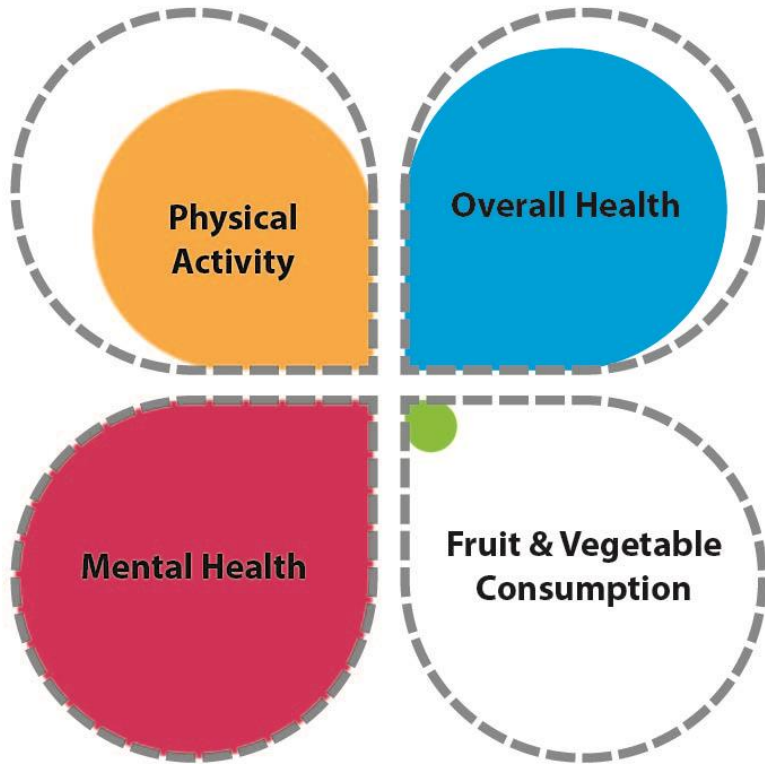
You  
*Very Good*



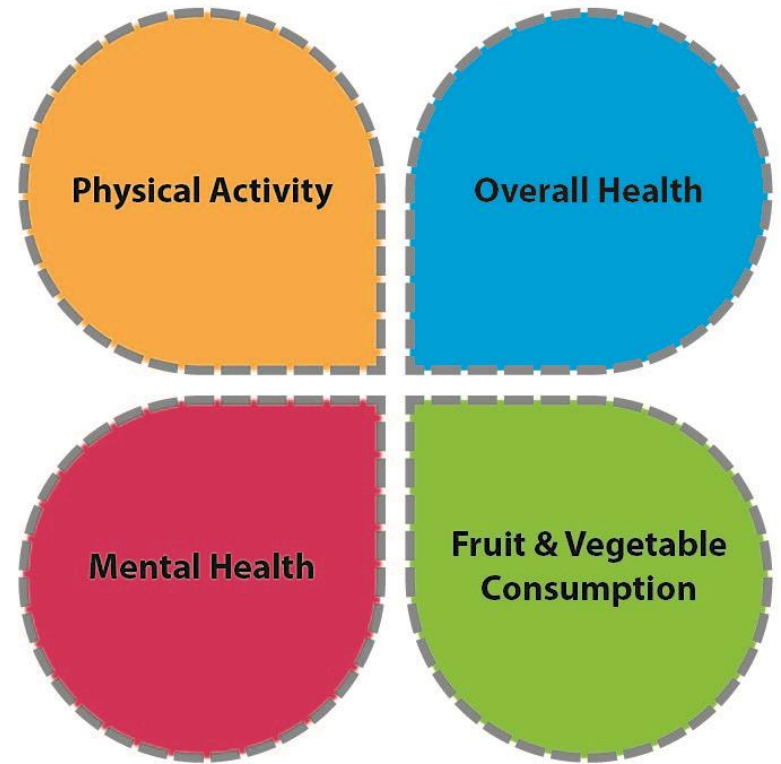
Other women in  
your age group  
*Fair*



# Health Compared to Ideal



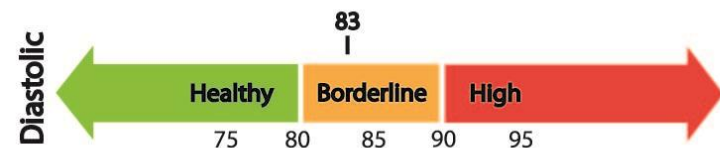
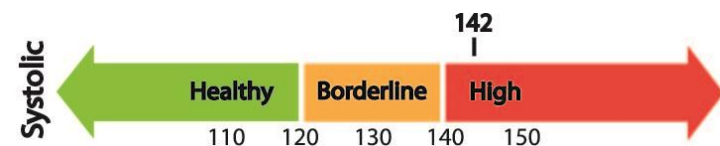
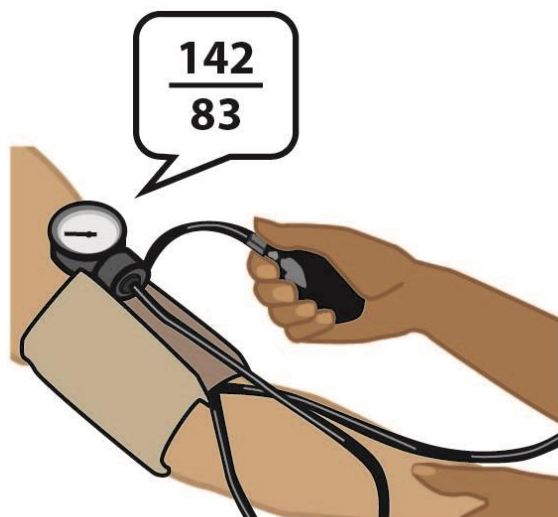
**You**



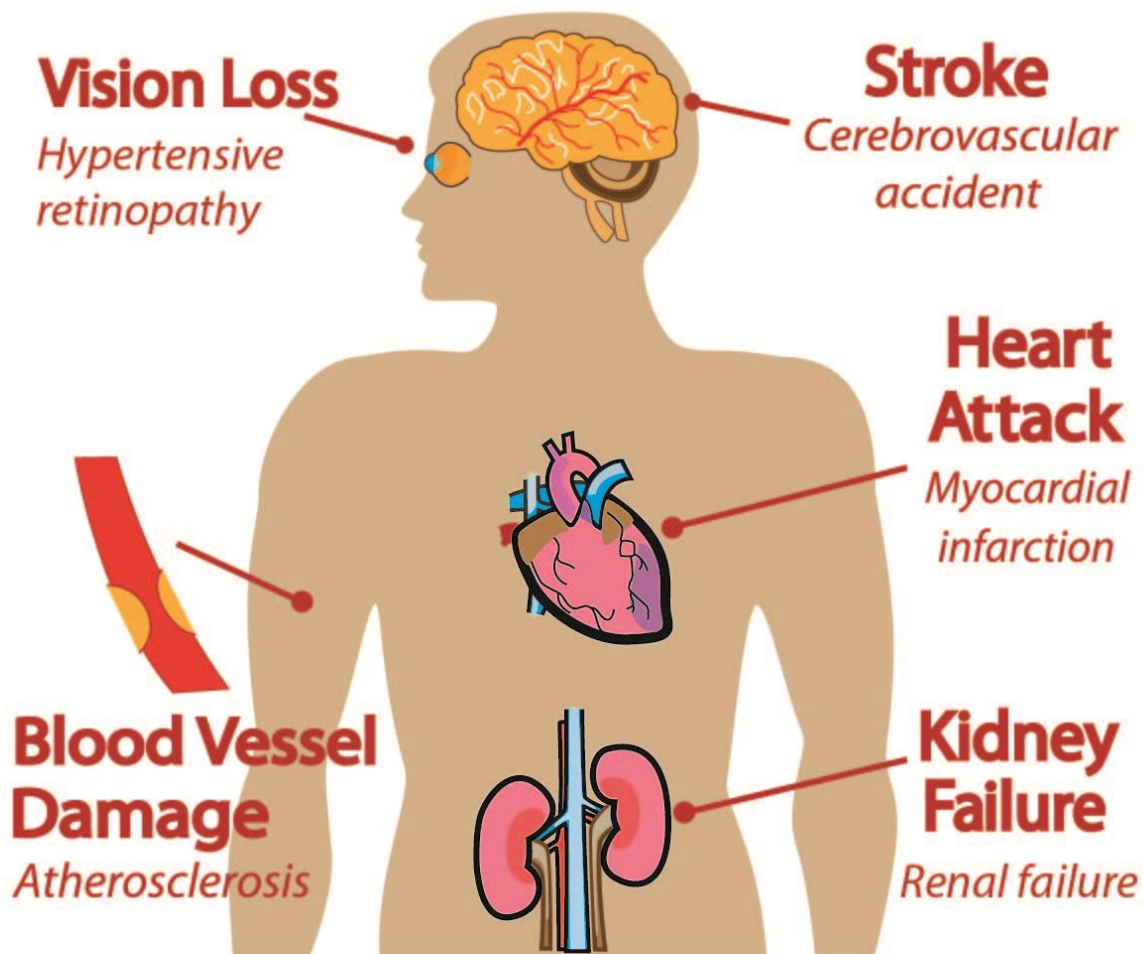
**Ideal**



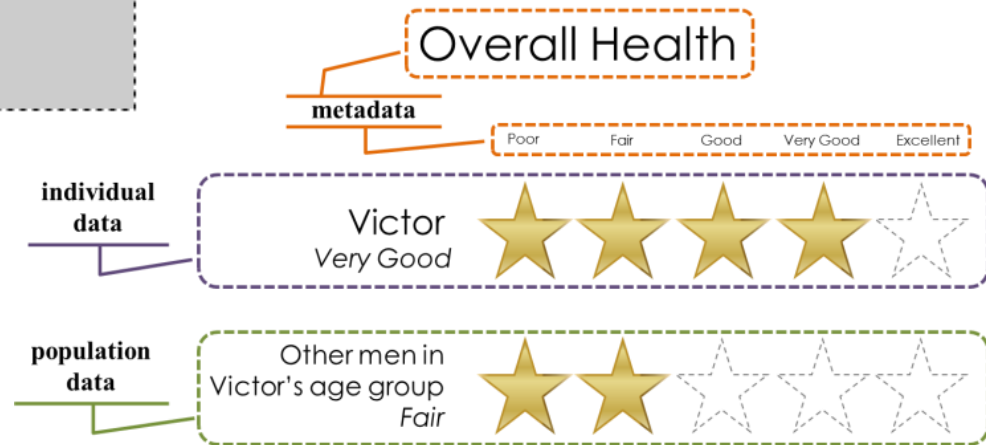
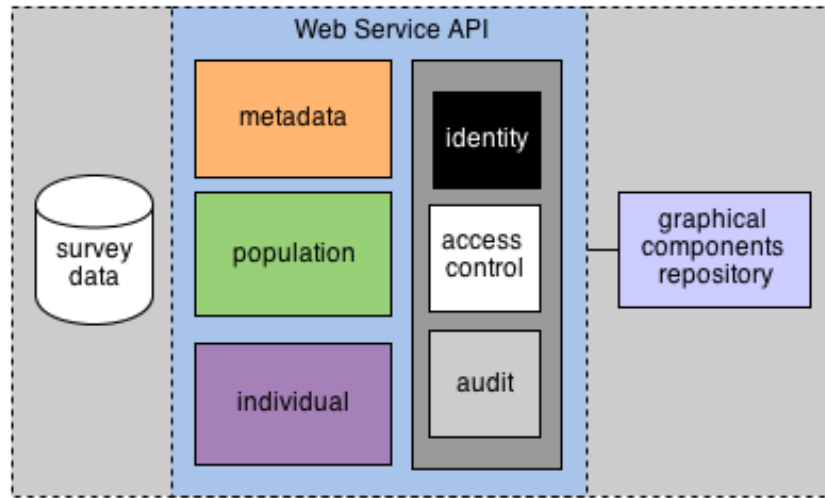
# Your Blood Pressure



# Risks of High Blood Pressure



# The EnTICE<sup>3</sup> Framework and Sample Infographic



Velez, Arcia,, Bakken, 2014



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# Key Lessons

- More is more – data without context lacks meaning
- Icons interpreted literally
- Comparisons to others difficult to convey
- Receipt of tailored infographics in Town Hall format considered useful and important
- Automation is essential for Big Data and possible



# Acknowledgments

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## Research Team

- Faculty: Adriana Arcia, Bobbie Berkowitz, J. Thomas Bigger, Walter Bockting, Bernadette Boden-Albala, Kenrick Cato, Dawn Dowding, Elaine Fleck, George Hripcsak, Haomiao Jia, Robert Lucero, Nancy Reame, Tawandra Rowell-Consuelo, Nick Tatonetti, Chunhua Weng, Adam Wilcox
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