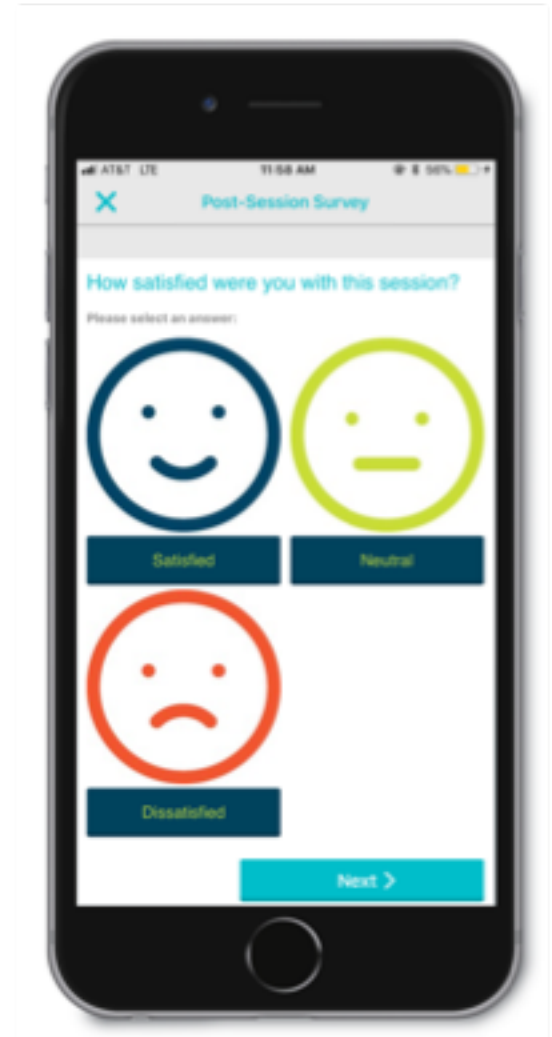# MEALS ON WHEELS
ANNUAL CONFERENCE & EXPO
2018

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BIG DATA, BIG RESULTS: Leveraging Your Data to Quantify Your Program's Impact

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TODAY'S AGENDA

1. Who are we?

2. What challenge did we face?

3. How did we quantifying VNA's impact in Dallas?

4. How are we engaging donors and sharing our story?

5. How can you make data work for your organization?

6. Q&A

WHO ARE WE?

An introduction to VNA and PwC

The Visiting Nurse Association of Texas

PwC's DoubleJump™ Health Incubator

Our Mission

The mission of VNA is to help seniors age with dignity and independence at home. VNA offers Meals on Wheels in Dallas County, and Palliative, Hospice and Private Care in 13 North Texas Counties. On average each day, VNA carries a census of 270 patients through our Palliative and Hospice Programs, and provides more than 4,100 meals via Meals on Wheels to hungry homebound seniors and disabled adults.

Responsible Business Leadership

Driven by our purpose and values, we are making an impact in our communities and delivering business value by helping create a more equitable society

Bodylogical®

A validated, scientific breakthrough in computational modeling of an individual human body that creates a "digital twin" to accurately simulate health predictions to help combat chronic disease.

WHAT CHALLENGE DID WE FACE?

"What does it all mean? What's the *impact*?"

How do I quantify the *real-world effect* of Meals on Wheels?

What impact does this have on the *community at large*?

How do you differentiate and *signal the value* created by your organization?

Our mission: Analyze the MoW program to determine impact, quantify ROI, and ground donation discussions in data.
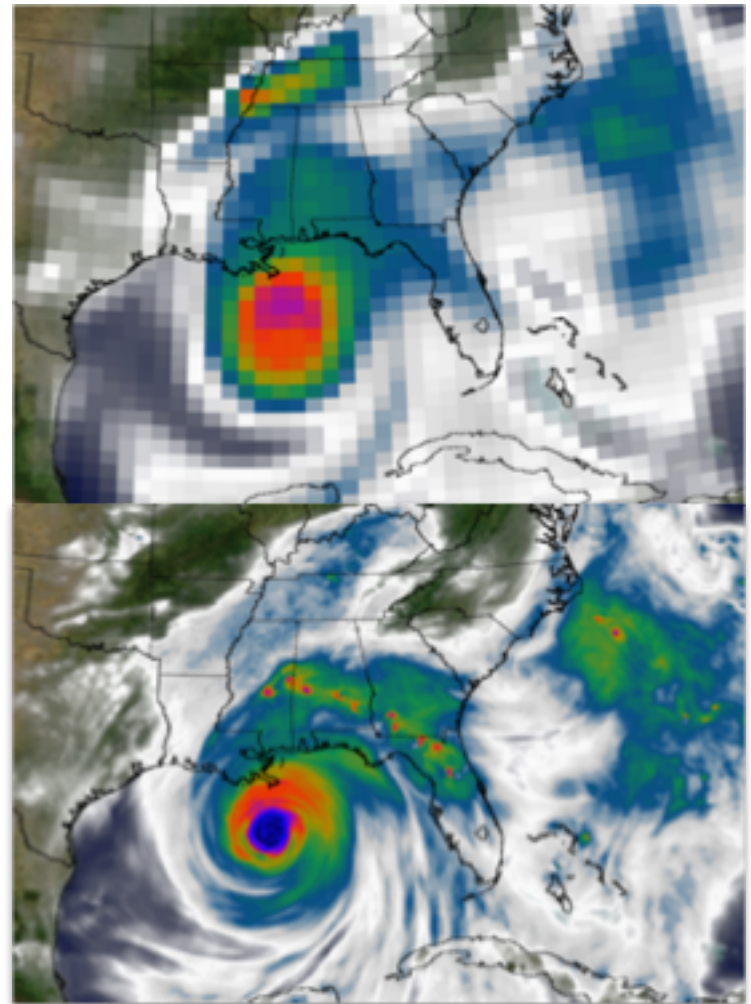
HOW DID WE QUANTIFY IMPACT?

The power of simulation modeling

Models are used across multiple industries

By developing models to represent the systems we are trying to understand, we can:

1. Run hundreds of thousands simulations to understand possible outcomes
2. Test different hypothesis to understand the impact of choices
3. Run optimizations to find the best alternatives

HOW DID WE QUANTIFY IMPACT?

Creating a community of digital twins

### Fusing science & analytics to create a "digital twin"

PwC's patent-pending model unlocks science to manage health and understand costs

- Transformed academic and medical science into math model
- Replicated physiological systems and associated interactions
- Validated with numerous data sets
- Published results in peer-reviewed journal (PLOS ONE) and at various scientific conferences since 2016
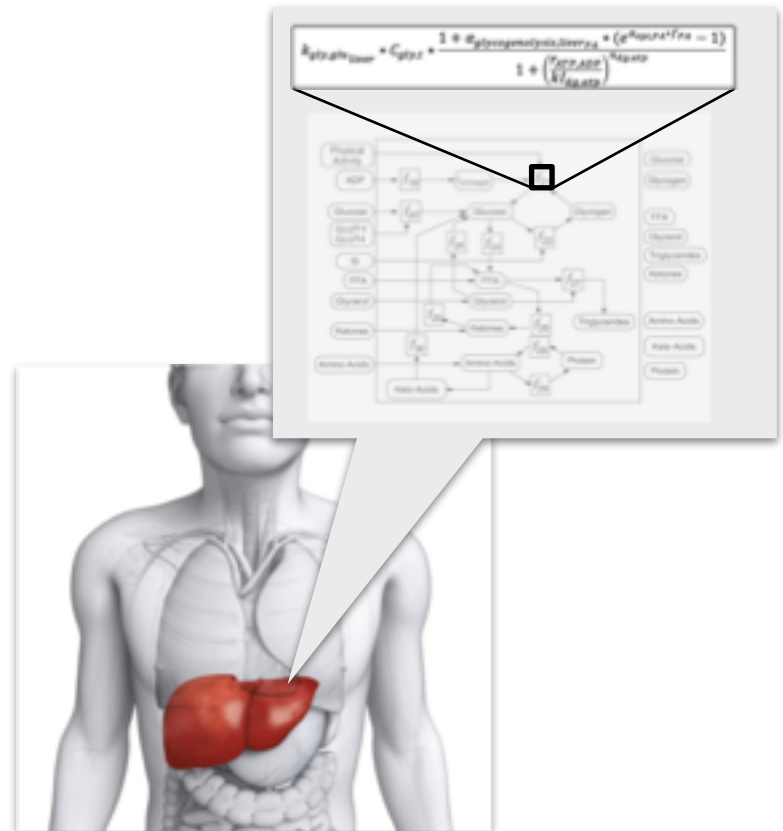
HOW DID WE QUANTIFY IMPACT?

Combining data for rich insights
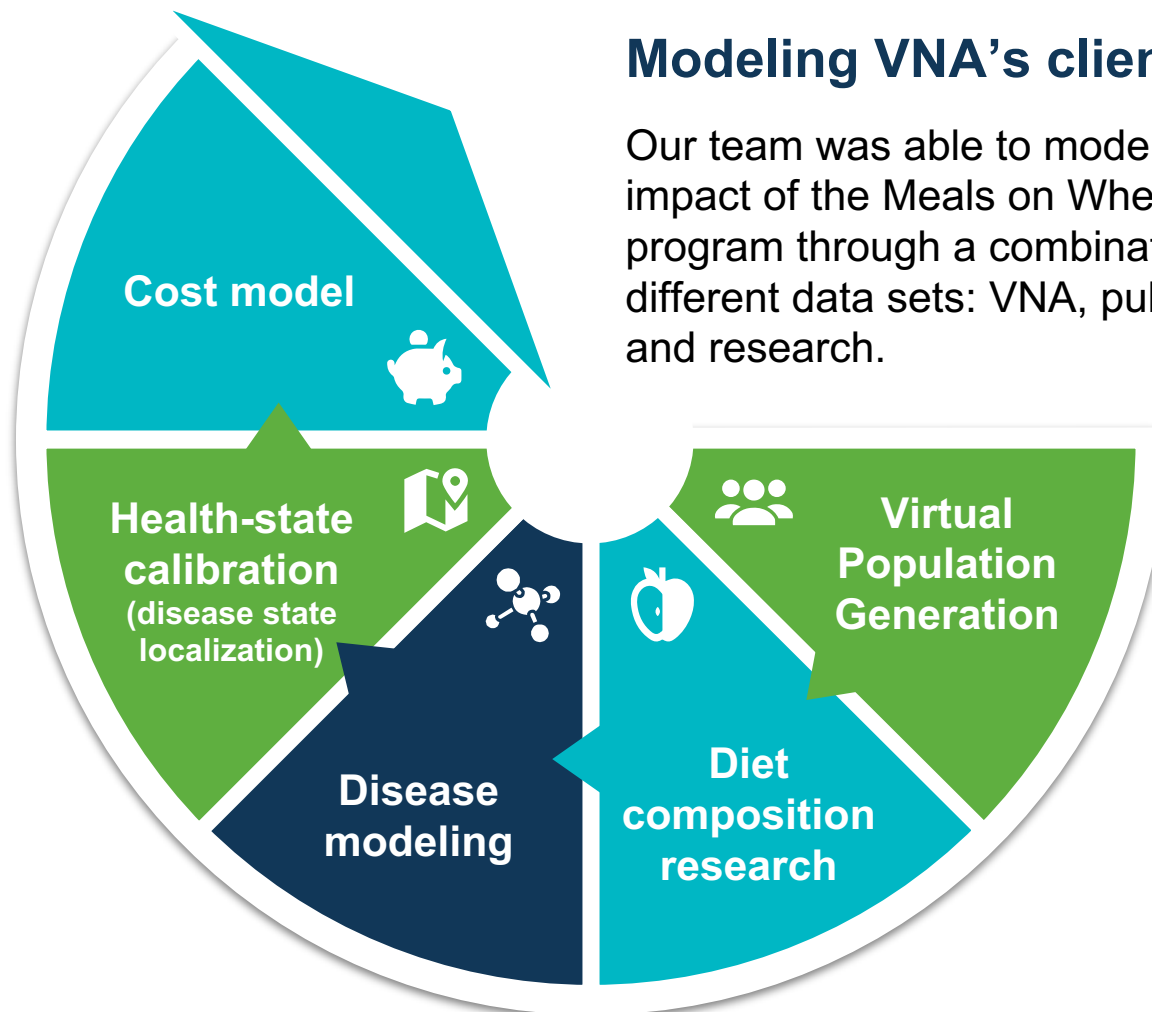
Modeling VNA's clientele

Our team was able to model the impact of the Meals on Wheels program through a combination of different data sets: VNA, public, and research.

Cost model

Health-state calibration (disease state localization)

Disease modeling

Diet composition research

Virtual Population Generation

WHAT DID WE DISCOVER?

The value of a meal to the Dallas community

Each meal provides ~48% ROI to the Dallas community in terms of health improvements for clients

$6 per Meal Cost

$8.87 per Meal Value

WHAT DID WE DISCOVER?

A shift in the distributions to the left indicates MoW client health improvement
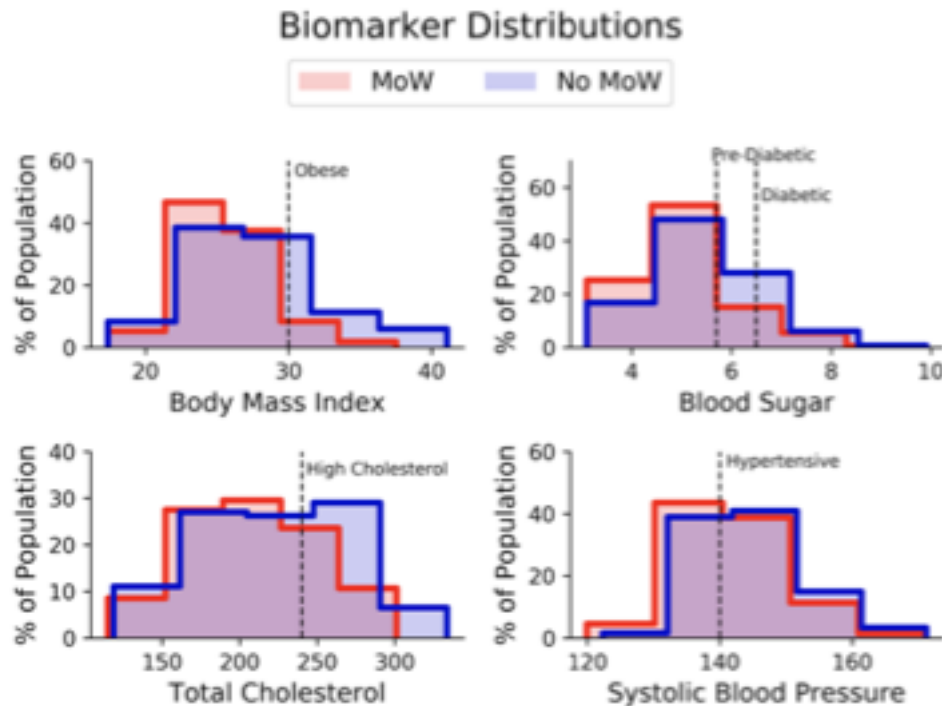
Blue Line
The health state of clients VNA serves without receiving any MOW meals

Red Line
The health state of clients VNA serves with one MOW delivered daily

MOW positively impacts biomarkers, which propagate health improvements across chronic conditions
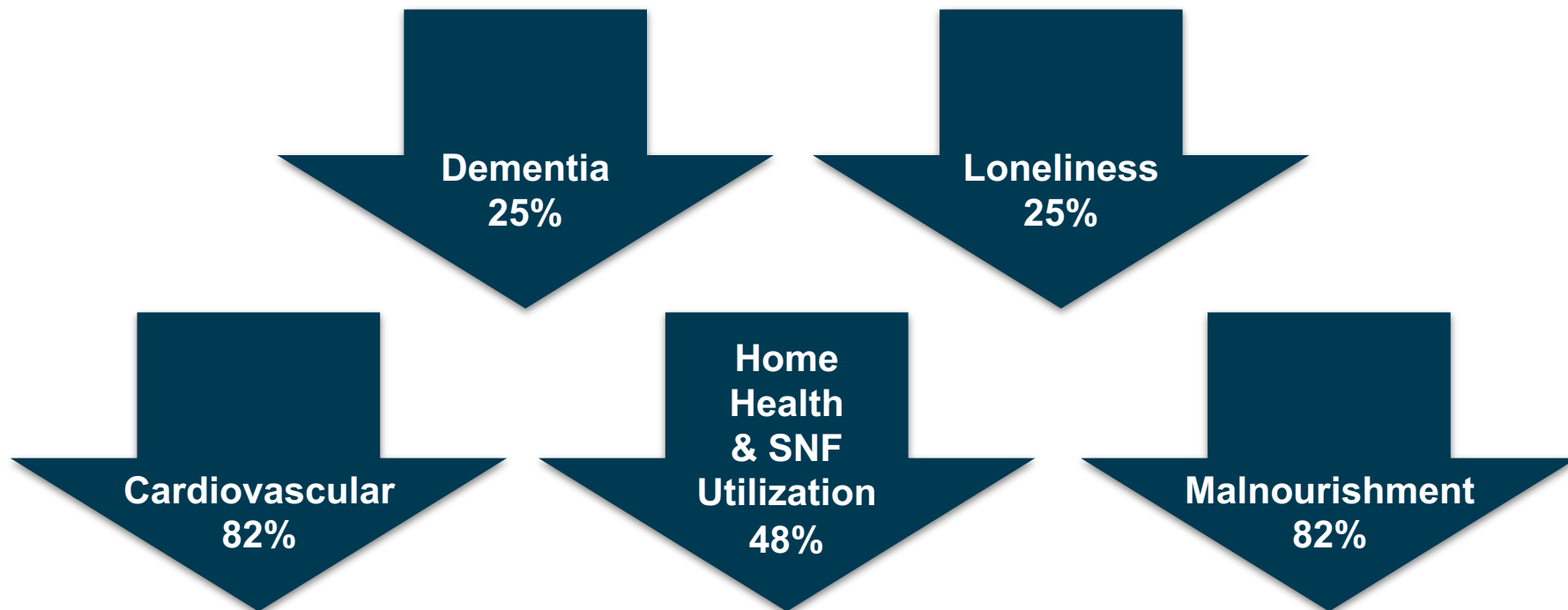
WHAT DID WE DISCOVER?

MoW Reduces Healthcare Costs by ~7% in Dallas

No. of hospitalizations per year for Dallas MoW population
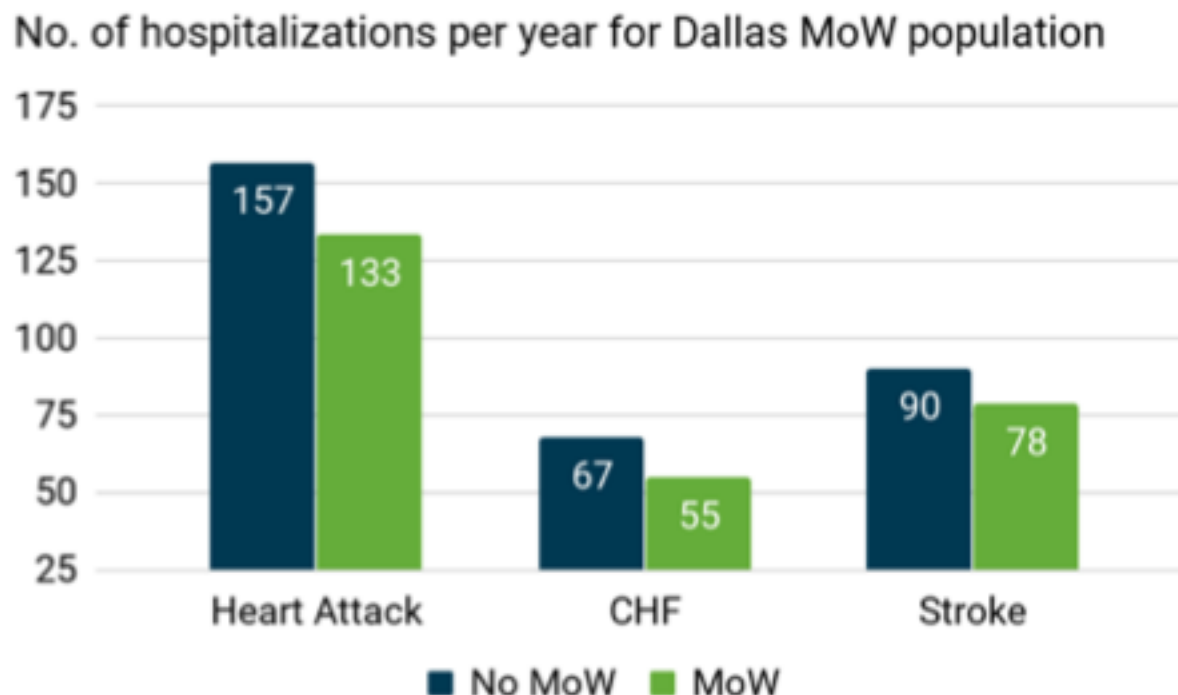
The MOW program is estimate to prevent 24 heart attacks, 12 congestive heart failure hospitalizations, and 12 strokes per year

WHAT DID WE DISCOVER?
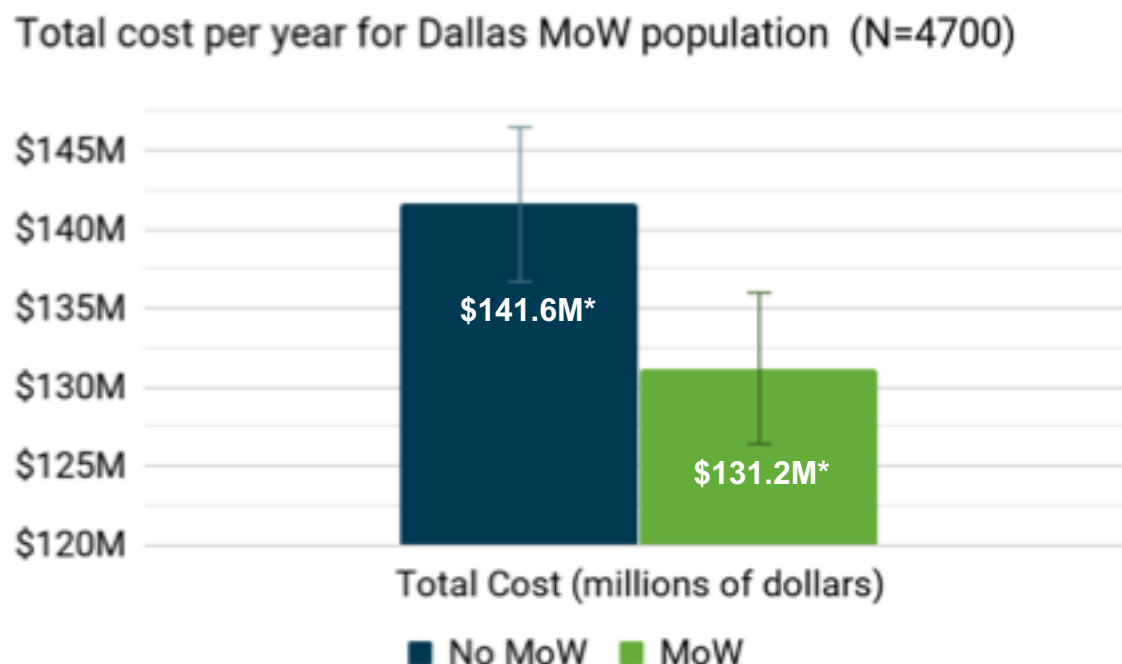
Key areas of community health improvement

Dementia
25%

Loneliness
25%

Cardiovascular
82%

Home
Health
& SNF
Utilization
48%

Malnourishment
82%

WHAT DID WE DISCOVER?

MoW Reduces Healthcare Costs by ~7% in Dallas

Total cost per year for Dallas MoW population (N=4700)

$141.6M*

$131.2M*

Total Cost (millions of dollars)

■ No MoW ■ MoW

*Bars denote potential range of variation in total cost

VNA saves an estimated **$10.4M** annually in health costs for its clients

HOW ARE WE ENGAGING DONORS?
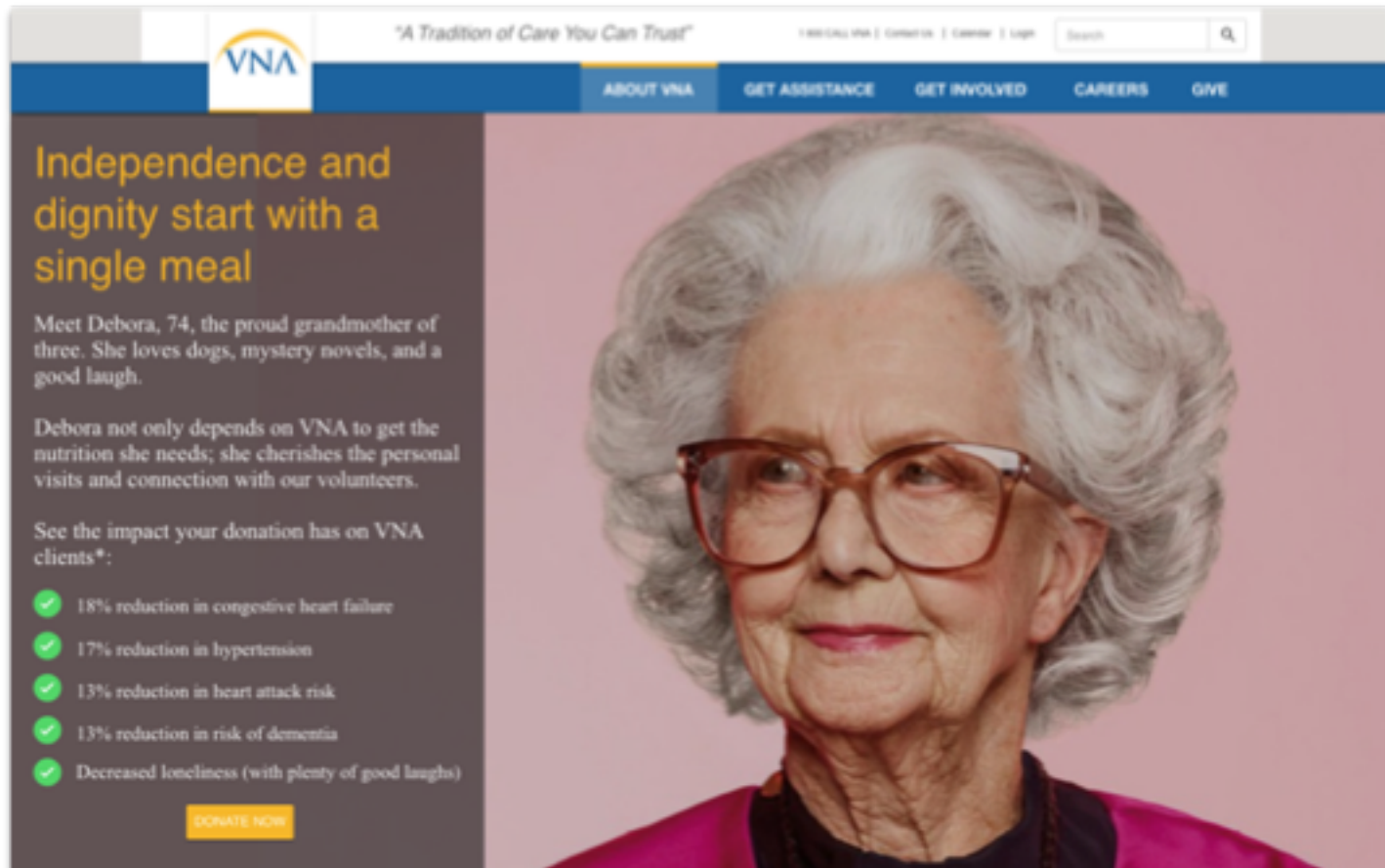
Delivering a powerful message, backed by data
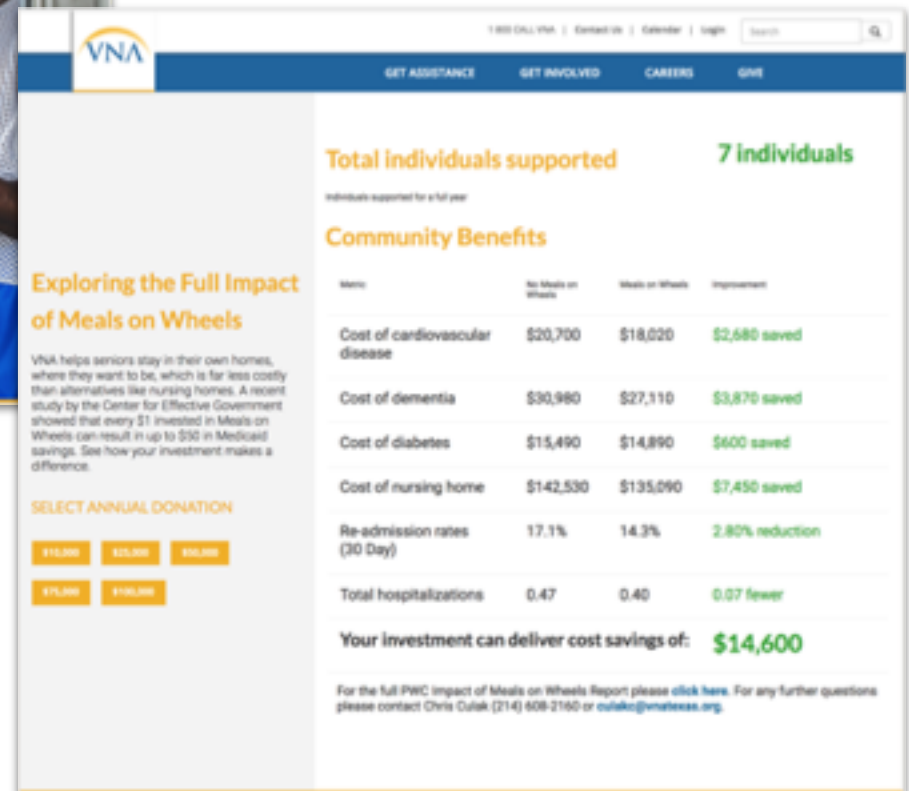
HOW ARE WE ENGAGING DONORS?

Introducing data need not sacrifice your client's powerful, personal message

HOW CAN YOU MAKE DATA WORK?

Collecting and analyzing data uncovers new insights, which can guide your donor strategy

Five years...or 27 months?

Closer analysis of existing data revealed VNA had a been communicating a longer average length of service to donors

Do you have a primary care physician?

VNA is now asking MOW Clients how they access health care, and using that data to identify natural partners and connect clients to care

This initiative not only determined the value of a meal, it was a catalyst to review our current data and discover new insights

HOW CAN YOU MAKE DATA WORK?

What opportunities does your organization have to evaluate & explore the power of data?

1. Start with a list of questions you would like answered

How many of your clients have a physician? Who is their provider? What percentage of your clients is that organization responsible for?

2. Start small...you'll be encouraged by what you find

Even a few, basic questions can help you to learn more about your population and their needs

3. Start backing donor discussions with data

Using real-world data helps validate your organization's messaging and elevate the demonstrated impact in conversations with donors, partners, staff, and volunteers alike

Q&A

What questions can we answer?