Housing is Health Care

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BEST CHILDREN'S HOSPITALS U.S.News RANKED IN 10 SPECIALTIES 2012-13

MAGNET RECOGNIZED AMERICAN NURSES CREDENTIALING CENTER

2015 Winner-
HUD Secretary's Award
for Healthy Homes

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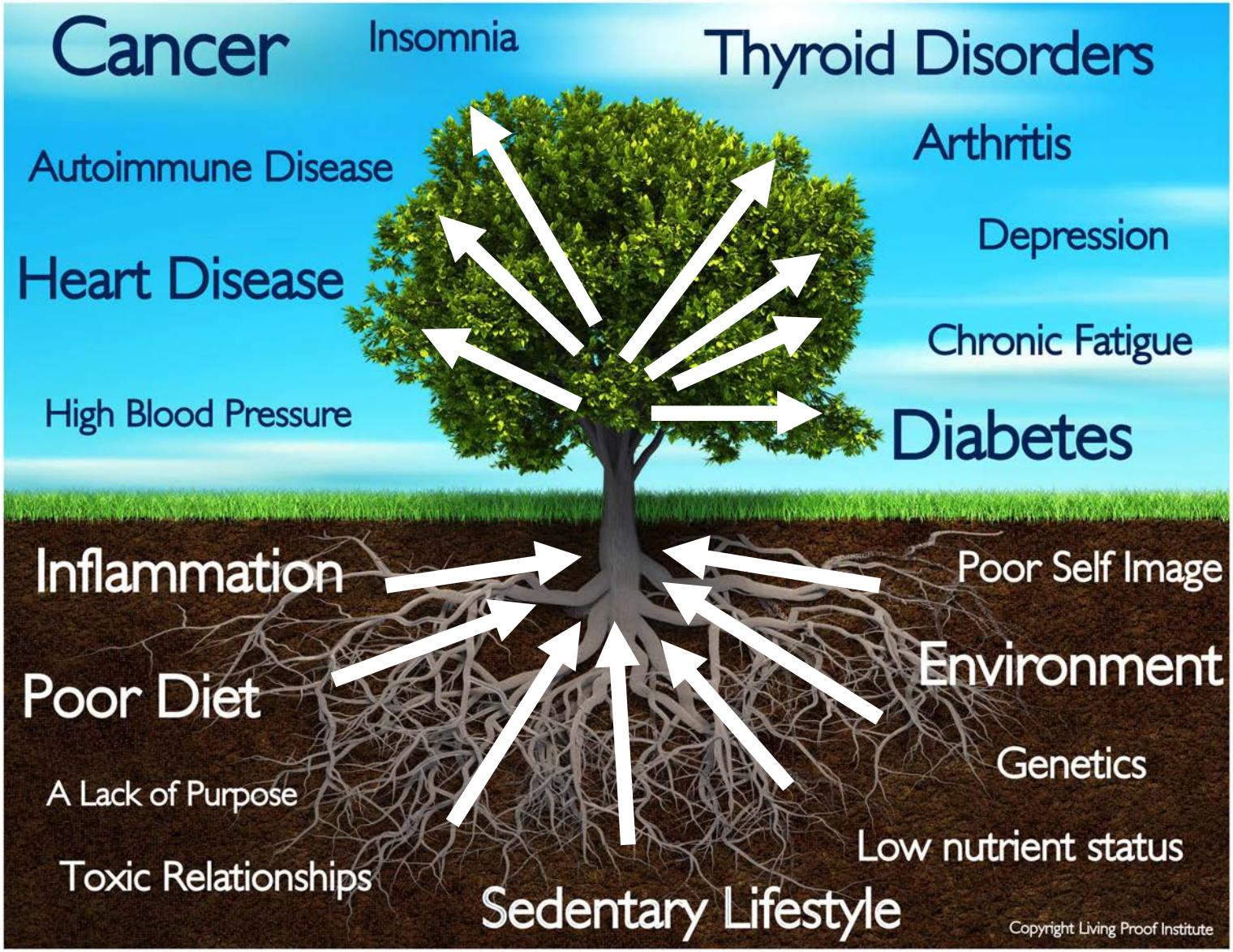
Result in poor health outcomes and difficult times later in life



The roots of chronic disease grow through life. If not addressed,

Why Homes Matter?

People experience illness in their community.

Not in the hospital,

In their homes,

In their neighborhoods

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The indoor environmental health in homes is more important than ever before

Children are growing up indoors

Young children spend **nearly 80%-90%** of their time inside

Image from The Indoor Generation by VELUX, 2018

Jack accumulates risk

- Lives in Poverty
- Lead paint in his bedroom
- Home has roaches
- Does not have access to fresh produce
- Mom works 2 jobs
- Highway runs through neighborhood
- Squalid neighborhood
- Nearest park is 5 miles away

https://ephtracking.cdc.gov/showChildEHMain.action

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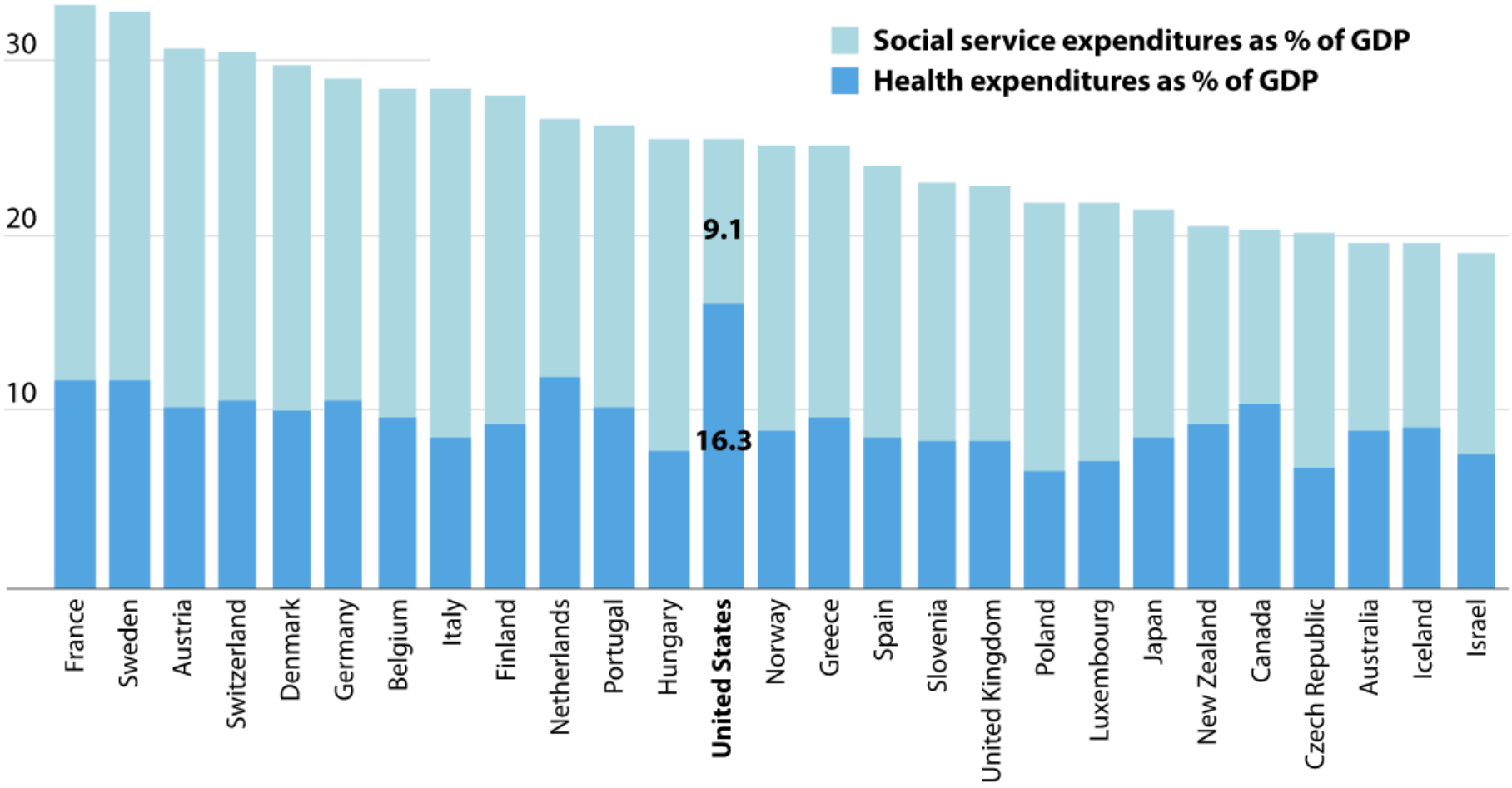
The US spends far more on health care, and far less on the social determinants of health than any other developed country

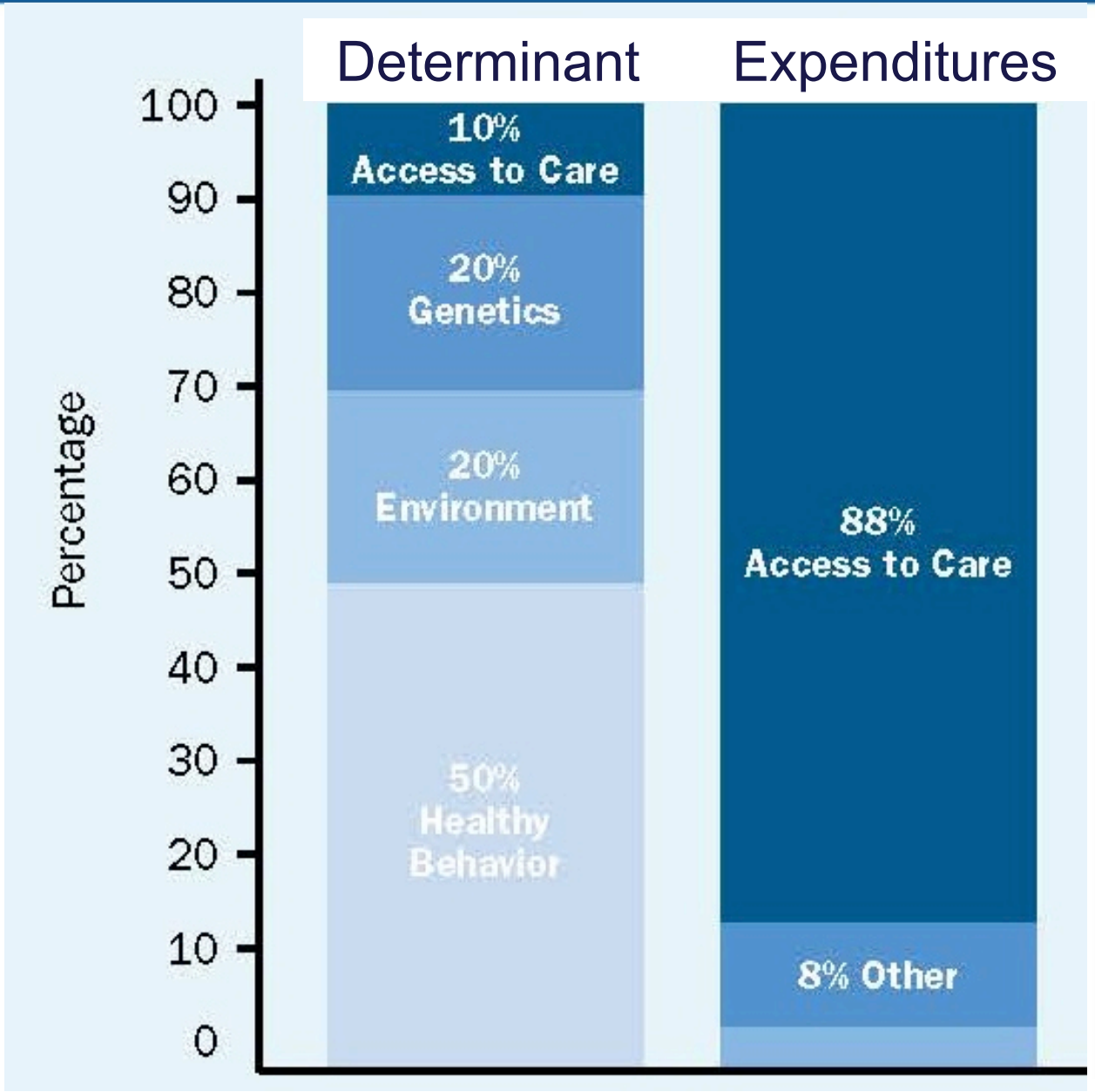


Health at a Glance 2009 – **OECD Publishing**

Mismatch:

Lots of Health Care,

Not Enough Health



Boston Paradox, Lots of Health Care, Not Enough Health– **NGHI, 2007**

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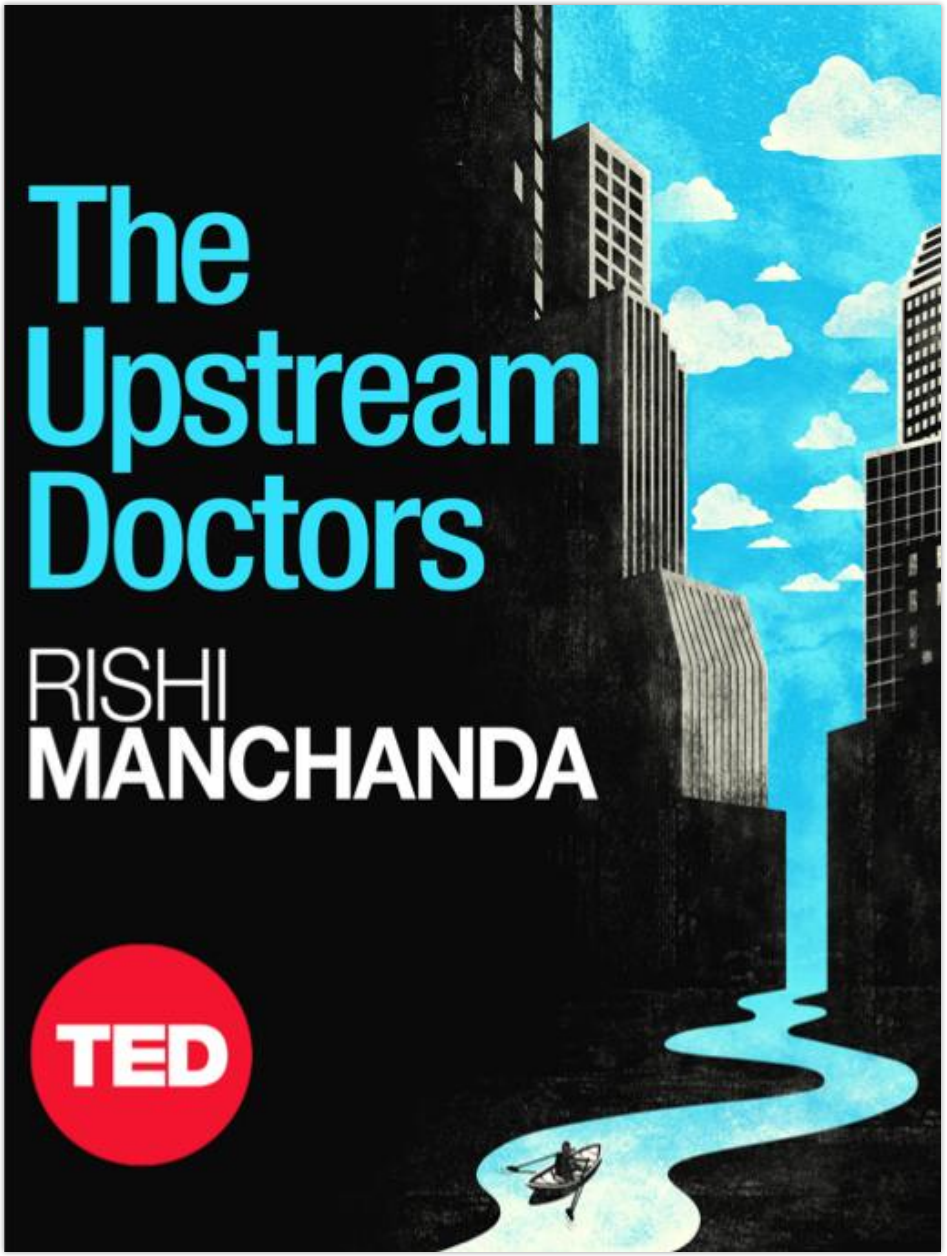
Indoor environmental management of our homes is

<u>upstream</u> health care



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“Clean indoor air as important as meds in controlling kids’ asthma”

"Reducing exposure to things like second-hand cigarette smoke, dust mites and furry pets may be as effective as medications at controlling asthma"

Match interventions to child’s IgE or skin test allergy results

Reduces asthma symptoms with the same efficacy as medication

Effects sustained for 1 year after interventions

Matsui et al. 2016. Section on Allergy and Immunology. AAP Council on Environmental Health. Indoor Environmental Control Practices and Asthma Management. Pediatrics.

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Detailed summaries of asthma care programs that include home visits showed significant return on investment (ROI)

- 17 home-based intervention programs reported positive return on investment (ROI) data
- A few programs observed positive ROIs only among selected populations (e.g., higher health care utilization).
- Interpretation limited by heterogeneous ROI calculations

Hsu, et. al., Economic Evidence for US Asthma Self-Management Education and Home-Based Interventions, 2016, J Allergy and Clinical Immunology in Practice 4 (6), 1123-1134.

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What data do we need for evaluate ROI?

- Size of target population
- Risk Stratification
- Enrollment rate
- Duration of program pilot
- Baseline costs
  - Existing services
  - New program services

- Data Types:
  - Health Utilization
    - Hosp., ED, Meds., procedures
  - Staff Labor
  - Cost of Education materials
  - Cost of Home Interventions

Example of Program Impact using ROI

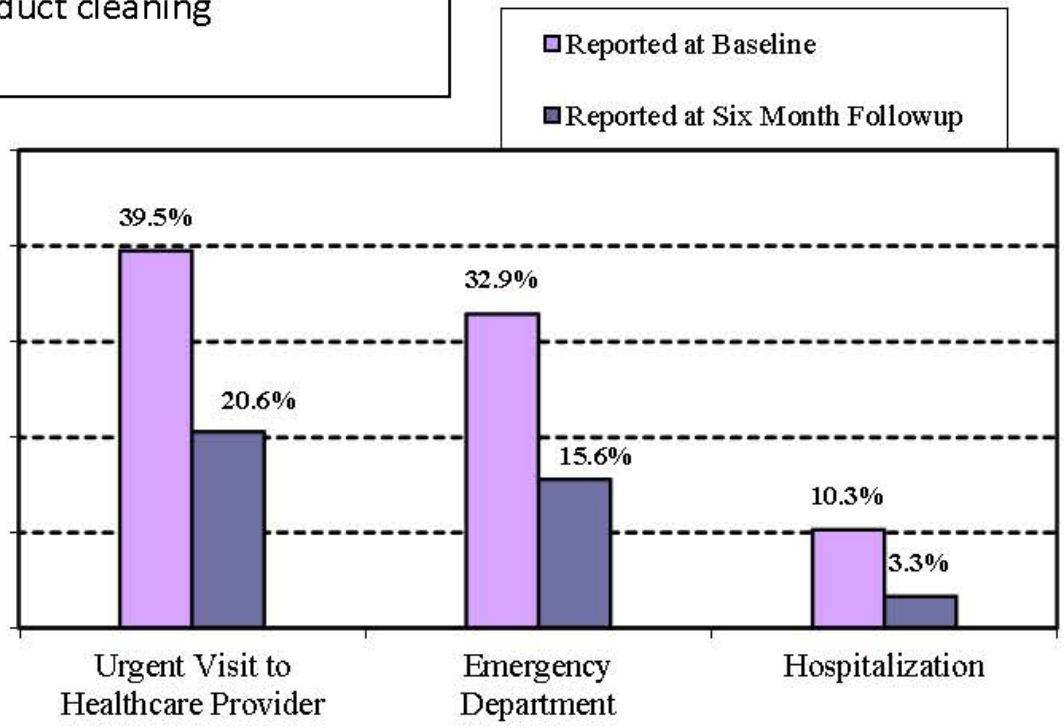
Asthma Tier I Interventions	Asthma Tier II Interventions
HEPA vacuum	Beds and/or pillows
Non-scented bleach	Carpet removal
Non-scented cleaning Furnace filters	Air conditioning unit
Smoking cessation kit	Floor replacement
Mattress/pillow covers	HEPA air filter unit
	Bathroom vent installation
	HVAC duct cleaning

Mich. Dept. of Community Health

Cost Benefit (3 years)
Total Program Cost:
$1,299,207

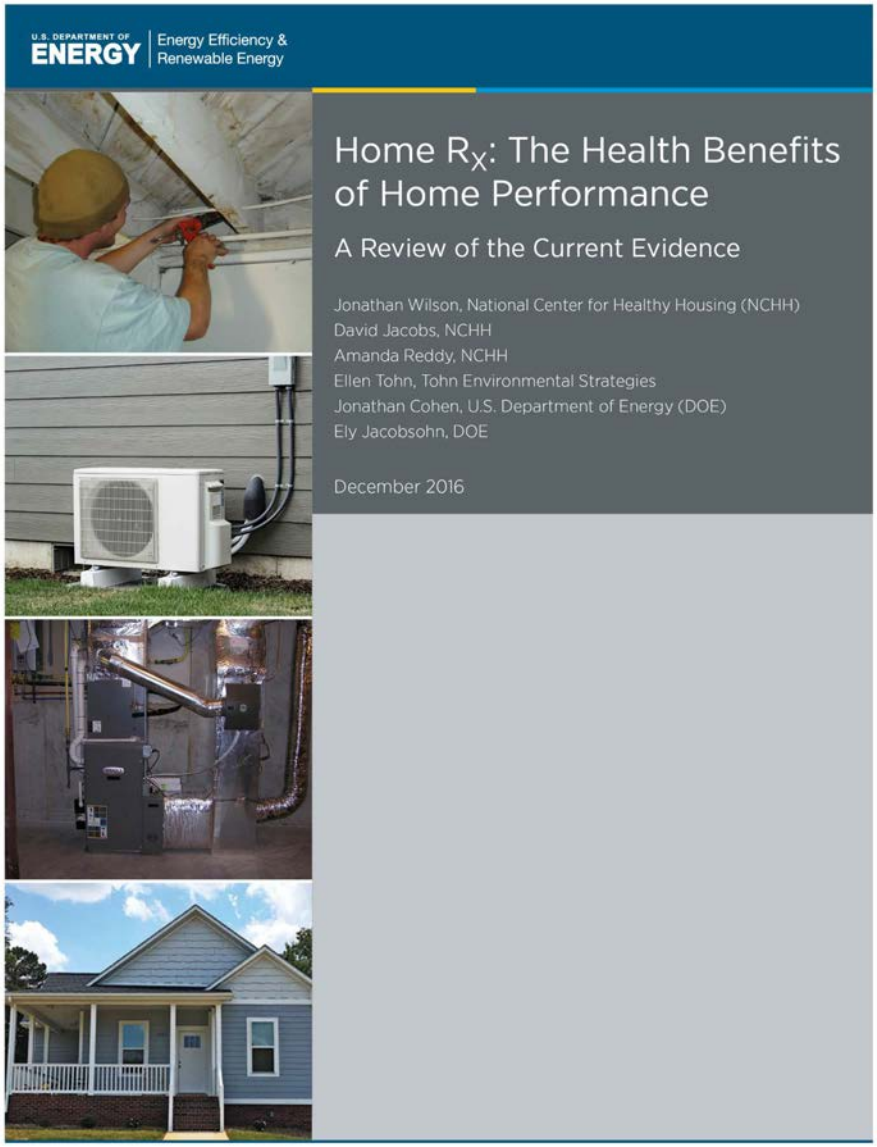
Net Benefits:
$2,524,193

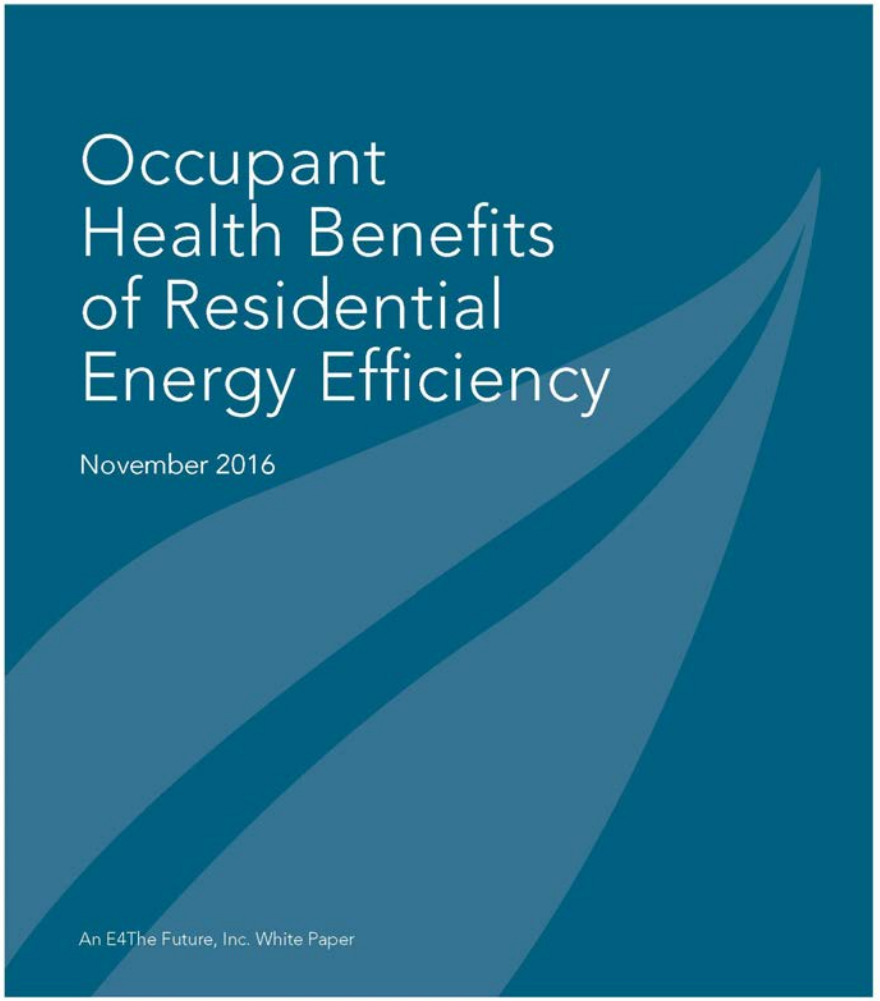
ROI = $1.94 Benefit / $1 in prog. cost



Case Studies: The Benefits of Home Visits for Children with Asthma- National Center for Healthy Housing, Report, 2014

Home Performance is Health Performance





E4 THE FUTURE
ENERGY • ECONOMY • EQUITY • ENVIRONMENT

Documented Health Benefits of Energy Efficiency

- Occupants experience fewer respiratory-related Emergency Department visits after energy efficiency (EE) (National Evaluation of WAP)
- Occupants report better control of their asthma (Breysse)
- Occupants report better physical and mental health after energy ef work (multiple studies)

Wilson, Jonathan et.al. Home RX: The Health Benefits of Home Performance, A Review of the Current Evidence, December 2016, Dept. of Energy.

Thanks to Jonathan Wilson and Ellen Tohn for this information.

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Observed health outcomes from home performance work on homes were positive

Reduced Respiratory & Allergy Symptoms	Other Health Improvements	Reduced Emergency Dept. Visits or Hospitalizations	Indoor Environmental Conditions
Allergies	Headaches	Asthma	Moisture
*Asthma**	Hypertension	Other respiratory	Condensation
Colds	Thermal stress		VOCs
Sinusitis	Overall health		*Formaldehyde*
Throat irritation	Mental health		*Radon*
Wheeze			

Italics: some negative outcomes VOCs: Volatile Organic Compounds

* The majority of studies reported asthma improvements; one study documented mixed results

Wilson, Jonathan et.al. Home RX: The Health Benefits of Home Performance, A Review of the Current Evidence, December 2016, Dept. of Energy.

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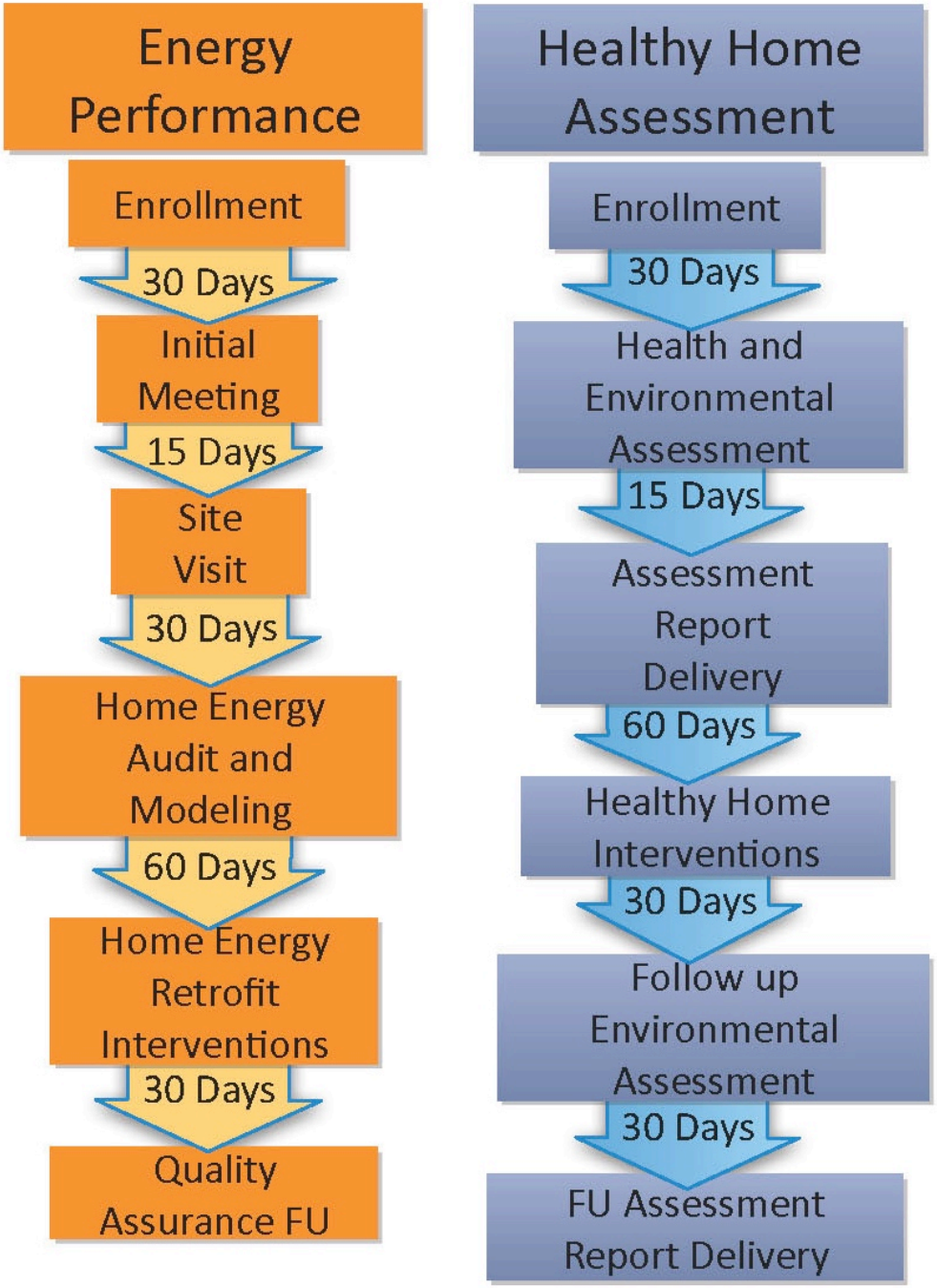
Energy audits and healthy home assessments are very similar processes



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Building Analysts are perfect Healthy Home Assessors

Building Diagnostics

- Training in building science
- Trained in measurement
- Understand combustion safety
- Have knowledge of basic health and safety

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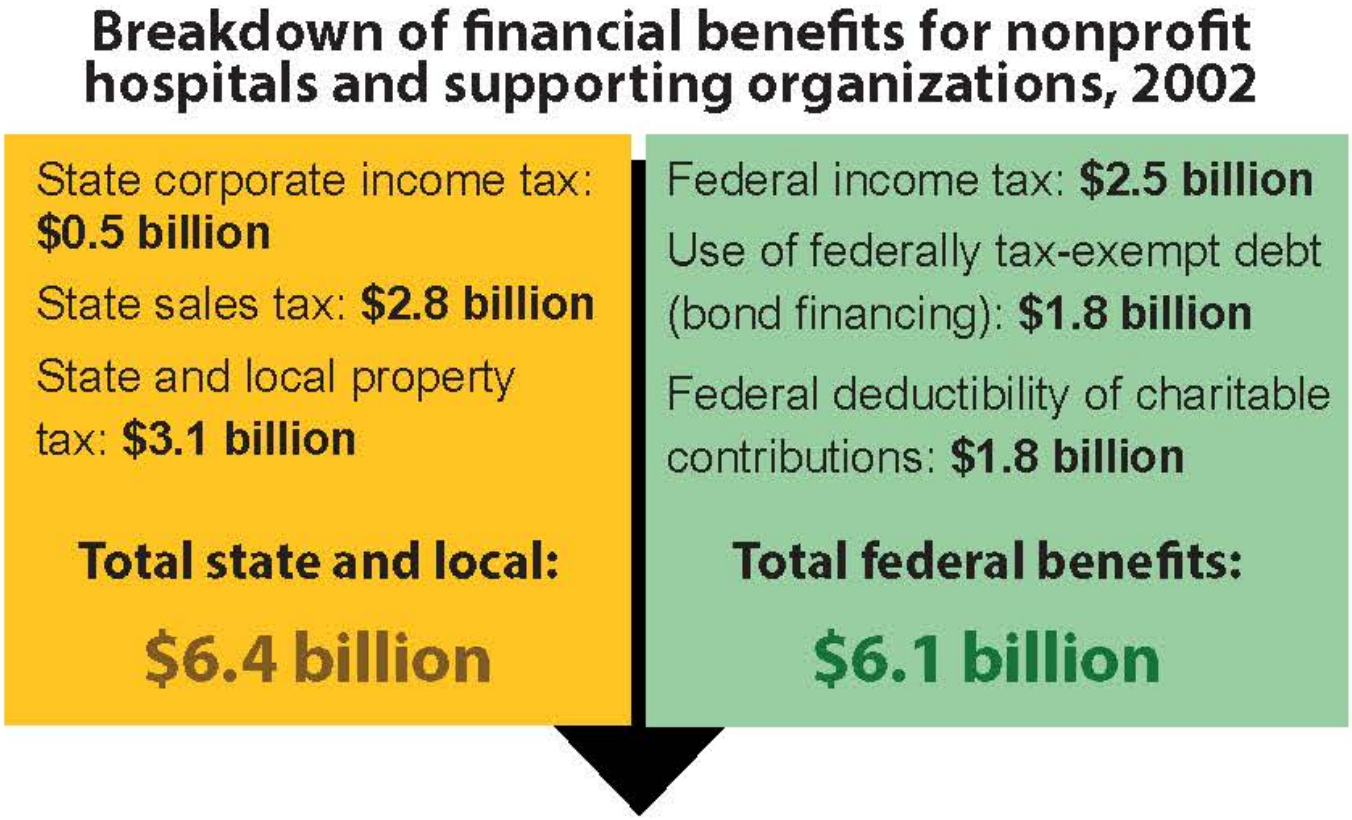
Hospital Community Benefits: Opportunities for Healthy Homes??

2,900

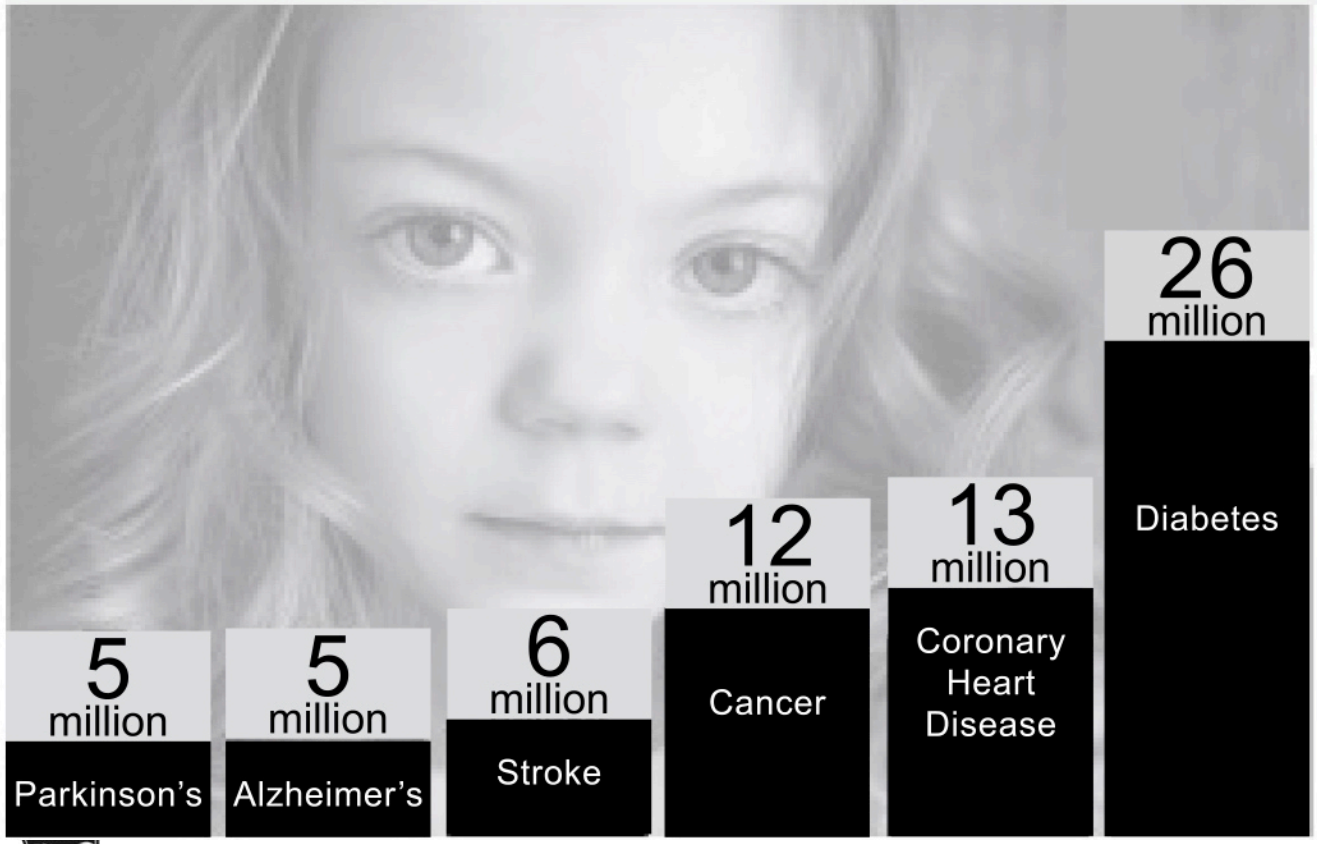
Nonprofit Hospitals in U.S.



HCF_APHA_techbrief2_community benefits_FINAL.pdf

From: www.nchh.org/resources/healthcarefinancing

Asthma and allergies strike 1 out of 5 Americans



www.aafa.org - **ALLERGY FACTS & FIGURES**

Why Hasn't This Happened Already?

Some possible reasons:

- Average time for health care to change practice **is 17 years!!!***
- Health care providers don't know how to find healthy home professionals
- Healthy home professionals don't know how to communicate with health care providers
- Health insurers and managed care comp. are still nervous about who pays for what.

* Morris, Zoë, Steven Wooding, Jonathan Grant, Understanding time lags in translational research, J R Soc Med 2011: 104: 510–520.

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How can I get started helping people?

- Get the training you need to perform healthy home assessments
  - Healthy Home Evaluator are needed
- Join Asthma/Allergy Community Coalitions
- Reach out to local health professionals with knowledge of the role of housing in health
  - Allergists, Immunologists, Pediatricians, Family Practice, Geriatric Medicine, Pulmonologists
- Health providers and insurers may be interested in some kind of package of healthy home services

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Questions?

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