Data Driven Community Health Improvement (CHI) Process

2016 CSTE Annual Conference
Pre-Conference Workshop

June 19, 2016
**PART 1 AGENDA**

*CHI Workshop Part 1:* Calculating and utilizing sub-county level indicators or small area estimates to identify and address health disparities (3.5 hours).

8:30 am  **Introduction**
- Learning objectives
- Logistics & ground rules
- Brief Refresher: Community Health Improvement Process

8:45 am  **SCALE Project Introduction**
- Need & utility
- Resource & tips for getting started

9:05 am  **Calculating Life Expectancy at the Sub-county Level**
- Best practices tools & resources
- Challenges and solutions

9:45 am  **Table top exercise 1**
PART 1 AGENDA (cont’d)

10:00 am    Break

10:30 am    Exercise 1 Report out

10:45 am    Lessons From the Field
            • The Maine DOH Experience
            • The Florida DOH Experience
            • Q & A

11:45 am    National SCALE Project Next Steps
            • Accessing Resources
            • Introduction to PHASE III
            • Q & A and Wrap-Up

12:00 pm    Lunch

1:15 pm    Reconvene in this room.
CHI Workshop Part 2: Utilizing small area data; cost effective, evidence based interventions; & a collective impact framework for measurable results/impact

1:15 pm  CHI Evidence-based/best practices (Vickie Boothe)
  • Prioritizing interventions
  • Defining impact
  • Higher impact, cost effective interventions
  • Resource demonstrations
  • Introduction to Monitoring & Evaluation

2:00 pm  Lessons from the field (Amy Laurent)
  • Menu labelling & ACA evaluation
  • Q & A

2:15 pm  Table Top Exercise 2: Prioritizing Interventions
PART 2 AGENDA (cont’d)

3:00 pm   Break

3:30 pm   Re-cap

3:40 pm   SKC Multi-sector, collaborative CHI (Amy Laurent)
           • Policy, Systems & Environment Change
           • Collective Impact
           • Results Based Accountability
           • Collective Impact Evaluation
           • Q & As

4:00 pm   Wrap-up and Evaluation

4:30 pm   Adjourn
INTRODUCTION
Part 1 Learning Objectives

At the end of this session participants will be able to:

- Access resources for calculating sub-county measures of life expectancy (LE)
- Articulate how LE estimates can be used to identify neighborhood disparity “hotspots”
- Identify local social and environmental disparity drivers
- Utilize LE estimates to catalyze collaborative actions
- Articulate & apply lessons from the field
- Join SCALE Phase 3, if interested
CHI PROCESS REFRESHER
CHI PROCESS REFRESHER
Community Health Needs Assessment and Implementation Strategies – Drivers

- IRS requirements for tax-exempt hospitals and community benefits every 3 years (n>3,000)

- National voluntary public health department accreditation every 5 years (PHAB) (n~2,400)

- Federally Qualified Health Centers (n>1,200)

- Other state requirements for needs assessment

- Grant requirements or grant-related activities
Final 2014 IRS CHNA Regulations

- Non-profit hospitals must conduct a community health needs assessment (CHNA) and adopt an implementation strategy for addressing “significant” community health needs at least once every three years.

- The hospital must “solicit” and “take into account” input from a state or local health department and members of medically underserved (disparately impacted), low-income, and minority populations.

- Health needs may include “financial and other barriers to accessing care, preventing illness, ensuring adequate nutrition, or social, behavior and environmental factors that influence health in the community.”

- 2016 CHNAs must include an impact evaluation of the actions in the previous CHNA.

Common Elements for the Community Health Improvement Process

1. Prepare and organize
2. Engage the community
3. Develop a goal or vision
4. Conduct community health assessment(s)
5. Prioritize health issues
6. Develop/implement community health improvement plan
7. Monitor process & short-, medium-term outcomes
8. Evaluate process, outcomes, and impact
Effective Community Health Assessments

4 Products

- **Secondary data analysis** (already collected and analyzed data)
  - Compare indicators against peer communities, national & state avgs, HP 2020 benchmarks
  - Examine trends
  - Identify most prevalent, severe and important outcomes and determinants

- **Community opinions**
  - Primary data (qualitative and quantitative)
  - Collected through key interviews, town halls, listening sessions, and surveys
  - Identify community’s prioritized set of outcomes and determinants

- **Assessment of health disparities**

- **Assets of the Health System and Community**
Identifying Disparities

- **Traditional Method**
  - Analyzing outcomes/determinants by race/ethnicity, sex, socio-economic status

- **Identifying Geographic Hot Spots**
  - Sub-county Disparities in Life Expectancy
INTRODUCTION TO SCALE PROJECT
TABLETOP EXERCISE 1: ADAPTING THE FLOW CHART
Tabletop Exercise 1 (15 minutes)

1. Briefly introduce yourselves
   1. Name, Organization, Role
   2. Identify a recorder and someone to report out

2. Take 2-3 minutes to individually identify organization or unique jurisdiction challenges which may require flow chart modification:
   • Available time & resources; access to data; existing expertise

3. Discuss and agree on top 3 common challenges & ideas for how they might be addressed.

4. Record list of challenges/potential solutions
Part 2 Learning Objectives

At the end of this session participants will be able to:

- Identify the most cost effective and impactful community-level interventions for addressing disparities and achieving measurable improvements in community health.

- Explain the steps involved in monitoring and evaluating scientifically supported interventions and assessing population health impact.

- Understand how the Collective Impact Framework can be used to engage community members and catalyze multi-sector actions.

- Articulate and apply lessons from the field in identifying disparities and monitoring and evaluating public health impact.
Community Health Improvement (CHI) Process

Organize

Assess

Prioritize and Plan

Implement

Monitoring

Improved Health Status

Data and Analytic Tools

Evaluate

Shared Ownership among Stakeholders
Ongoing Involvement of Community Members
Considerations for Prioritizing & Implementing Community Health Interventions: Best Practices

- **Community Specific Considerations**
  - Community support & engagement?
  - Motivated/willing mandatory multi-sector partners?

- **Scientific Evidence Considerations**
  - Potential public health impact?
  - Documented return on investment?
  - Addresses health disparities/equity?
  - Potential negative consequences?

- **Practical Considerations**
  - Delivery Capacity
  - Sustainability
  - Available guides, TA resources, model programs
  - Available monitoring data
  - Adequate evaluation resources, expertise, data

Sources: NACCHO Prioritizing Health Problems, Public Health Foundation. Priority Setting Matrix, HP2010 Toolkit
IDENTIFYING LEVEL OF EVIDENCE
Assigning Intervention Levels of Evidence

**Evidence level resources**
- [Guide for Community Preventive Services](https://communityguide.org/) (The Community Guide)
- [County Health Rankings & Roadmaps: What Works for Health](https://www.chrr.org/) (CHR&R)

- **Scientifically Supported (SS):** Strategies with this rating are most likely to make a difference. These strategies have been tested in multiple robust studies with consistently positive results.

- **Some Evidence (SE):** Strategies with this rating are likely to work, but further research is needed to confirm effects. These strategies have been tested more than once and results trend positive overall.

- **Expert Opinion (SE):** Strategies with this rating are recommended by credible, impartial experts but have limited research documenting effects; further research, often with stronger designs, is needed to confirm effects.
Scientifically Supported Interventions

- Evidence-based: most likely to make a difference
- Based on systematic reviews
- Many robust studies with consistently positive results
- Scientifically synthesized expected benefits
- **Outcome Evaluations Not Needed**
ASSESSING POTENTIAL PUBLIC HEALTH IMPACT
Assigning Intervention Levels of Evidence

- Evidence level ≠ expected magnitude of benefit (impact)
- Evidence level = degree of confidence that intervention will be beneficial
VARIATIONS IN POTENTIAL IMPACT WITHIN SCIENTIFICALLY SUPPORTED INTERVENTIONS
Definitions of Reach

Potential Reach (0-100%): Percentage of the population who have access to the new or enhanced environment or system

Actual Reach (0-100%): Percentage of the population who receive or participate in the intervention

For a few interventions:
- Potential Reach = Actual Reach
  - SF MUH, SF Worksites, K-6 PE

For many interventions:
- Potential Reach > Actual Reach
  - Parks, Corner Stores, Farmers’ Markets

Impact = Reach (actual) x Intensity x Effect

Source: Wasick et al. 2013
**Definition of Intensity**

- Strength or “dose” of the intervention
  - Frequency
  - Comprehensiveness
  - Duration

**Example:**

- Menu labeling in community fast food restaurants
  vs

- Healthy free breakfast, snacks, and lunches in K=12 schools

Source: Wasick et al. 2013
**Impact = Reach (actual) x Intensity x Effect**

**Definition of Effect**
- Magnitude (and significance) of change on each associated health outcome (benefit) that was examined in existing scientific body of literature.

**Example:**
- A 20% increase in tobacco unit price would be associated with a 3.6% median reduction in the proportion of adults who use tobacco.
Minutes of physical activity resulting from school-based policies and built environment changes (85 articles)

- Access to parks (1 minute)
- Modified recess (5 minutes more than traditional recess);
- Modified playgrounds (6 minutes);
- Standardized PE curricula (6 minutes > traditional PE);
- Afterschool activity programs (10 minutes);
- Renovate parks (12 minutes)
- Walk/bike to school (16 minutes)
- Classroom activity breaks (19 minutes);
- Mandatory physical education (23 minutes);
- **JUAs (insufficient evidence)

3 Buckets of Prevention

1. Traditional Clinical Prevention
   - Increase the use of evidence-based services

2. Innovative Clinical Prevention
   - Provide services outside the clinical setting

3. Total Population or Community-Wide Prevention
   - Implement interventions that reach whole populations

Bucket 3 List: Methods

- **Highest evidence level rating:**
  - University of Wisconsin County Health Rankings & Roadmaps What Works for Health

- **Secondary source (QA/QC)**
  - The Guide to Community Preventive Services

- **Excluded all clinical interventions**
  - Bucket 1: Traditional Clinical
  - Bucket 2: Innovative Clinical
    - 6/18 Initiative

- **Results: 150 Potential Interventions**
  - One or more systematic reviews
Bucket 3 List: Methods

- **Intervention Inclusion Criteria**
  - 5 Year Timeframe
    - Measurable outcomes, or
    - Surrogate measures
      - Causally linked to outcomes
      - Readily available
  - Costs data
    - Cost savings or neutral
  - Lack of saturation
    - Implemented ≤ 50% of States

- **CDC Program Review**
  - Additional interventions considered
Bucket 3 List: Results

23 Interventions met all criteria

- Total population
- Subpopulations
  - behavioral risk factors (e.g., smoking)
  - low income
- Social determinants of health

Organized by life stage

- Before birth & infancy
- Early childhood
- School Age
- Young Adults
- Adults
- Older Adults
- All Life Stages/SDOH
Health Status Drivers

Factors that Affect Health

- Counseling & Education
- Clinical Interventions
- Long-lasting Protective Interventions
- Changing the Context to make individuals’ default decisions healthy
- Social Determinants of Health

Examples

- Eat healthy, be physically active
- Rx for high blood pressure, high cholesterol, diabetes
- Immunizations, brief intervention, cessation treatment, colonoscopy
- Fluoridation, 0g trans fat, folic acid fortification, iodization, smoke-free laws, tobacco tax
- Poverty, education, housing, inequality

High Impact, Cost Effective Interventions Mapped to the Health Pyramid

High Risk Populations

Wrap Around Services

Clinical Intervention

Counseling and Education

Social Determinants of Health

Changing Context Total & Subpopulations

Policy, system or environmental change to influence behaviors

High touch, coordinated programs to meet complex needs of vulnerable populations

Directly addresses upstream factors (e.g., education, housing)

Early Childhood Education*
Public Transportation Systems*
Clean Diesel Technology Fleet Transition*
Housing Choice Vouchers*
House Rehabilitation Loans and Grants*
Indoor Smoke Free Policies*
State and local EITC programs*

Breastfeeding promotion programs
Comprehensive Tobacco Control
Mass-Reach health communications for tobacco
Multicomponent school-based obesity prevention
Safe Routes to School
School-Based violence prevention
Pregnancy peer support program
Worksite multi-component obesity programs
Activity programs for older adults

Early Child Home Visitation Programs*
Supportive Housing Programs (Housing First)*
Multidimensional Treatment Foster Care*

*Health Plus Interventions: Additional outcomes include increased educational attainment, employment, housing stability, social competency and crime prevention
ASSESSING POTENTIAL IMPACT OF 3 INTERVENTIONS
**2013 Community Guide Review Definition**

- Involves curricular and practice-based changes that increase the amount of time that K-12 students engage in moderate- or vigorous-intensity physical activity during PE classes.

- **Program changes include:**
  - Developing & implementing a well-designed PE curriculum
  - Employing or providing teachers with appropriate training
School-based programs to increase physical activity

- Benefit-cost estimates updated December 2015.
- Literature review updated November 2015.

### Benefit-Cost Summary

<table>
<thead>
<tr>
<th>Program benefits</th>
<th>Summary statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participants</strong></td>
<td>$8,218</td>
</tr>
<tr>
<td><strong>Taxpayers</strong></td>
<td>$3,497</td>
</tr>
<tr>
<td><strong>Other (1)</strong></td>
<td>$4,055</td>
</tr>
<tr>
<td><strong>Other (2)</strong></td>
<td>$(238)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$(463)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benefits minus cost</th>
<th>Benefit to cost ratio</th>
<th>Benefits minus costs</th>
<th>Probability of a positive net present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$15,069</td>
<td>$33.54</td>
<td>$15,069</td>
<td>66 %</td>
</tr>
</tbody>
</table>

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our [technical documentation](#).

“Other (1)” category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.
What are Complete Streets?

Safe   Comfortable   Convenient

Source: Smart Growth America, Complete Street Presentation Side Resources, 2015
Complete Streets is not:

- One “special” street project
- A design prescription
- A mandate for immediate retrofit
- A silver bullet; other issues must be addressed:
  - Land use (proximity, mixed-use)
  - Environmental concerns
  - Transportation Demand Management
  - Automobile/pedestrian or biker crash risk**

* Smart Growth America, Complete Street Presentation Side Resources. **Street-Scale Urban Design Land Use Policies. Community Guide Review 2004
Rural roads with shared use trails

Source: Smart Growth America, Complete Street Presentation Side Resources, 2015
Low-traffic, low-speed skinny residential streets

Source: Smart Growth America, Complete Street Presentation Side Resources, 2015
Traffic circles

Source: Smart Growth America, Complete Street Presentation Side Resources, 2015
Findings: “The professional literature about their effects is growing, but small and there has not been sufficient time or experience to create many rigorous evaluations, much less longitudinal studies or meta-analysis.”
Safe Routes to School

CHR&R What Works for Health Results – Scientifically Supported

- There is strong evidence that Safe Routes to Schools (SRTS) increases the number of students walking or biking to school.

- Active travel to school is associated with healthier body composition and cardio fitness levels.

- SRTS has a small positive effect on active travel among children.

- Increased walking and bicycling on urban streets, although beneficial, also pose the risk of increased injury to pedestrian or cyclist, because of increased exposure to motor vehicles.*

Safe Routes to School are programs...

...to increase physical activity

...to improve unsafe walking conditions

...to improve poor air quality by reducing vehicle emissions
Safe Routes to School goals

• Where it’s safe, get children walking and biking

• Where it’s not safe, make changes
Elements of SRTS programs

- Education
- Encouragement
- Enforcement
- Engineering
- Evaluation
Moving Ahead for Progress in the 21st Century (MAP-21)

- Legislation passed in 2012
- Established new program: Transportation Alternatives
- SRTS activities eligible to compete for funding
- State DOT’s and MPO’s administer funds
- Some states have SAFETEA-LU funds remaining

More Information: www.saferoutesinfo.org
CA Assembly Bill 1475 established the SRTS Program in 2000.

- As of 2007, **570 funded projects** with **total cost of over $190 million**.

2008 Economic Analysis

- The effectiveness of the program in reducing crashes, injuries and fatalities involving children in the vicinity of the projects;
- The impact of the program on levels of walking and bicycling to school; and
- The benefits of the program in comparison with other highway safety programs.

### Table 18: Cost-benefit analysis for the SR2S program

<table>
<thead>
<tr>
<th>Change in walking/biking</th>
<th>Change relative to control areas</th>
<th>Cost of program ($ millions)</th>
<th>Benefit per year ($ millions)</th>
<th>Cost per collision reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same as control areas (decrease in walking)</td>
<td>No effective difference</td>
<td>$28.9</td>
<td>$0</td>
<td>n/a</td>
</tr>
<tr>
<td>10% increase</td>
<td>7% decrease</td>
<td>$28.9</td>
<td>$8.33</td>
<td>$282,779</td>
</tr>
<tr>
<td>25% increase</td>
<td>18% decrease</td>
<td>$28.9</td>
<td>$21.43</td>
<td>$109,970</td>
</tr>
<tr>
<td>50% increase</td>
<td>32% decrease</td>
<td>$28.9</td>
<td>$38.09</td>
<td>$61,858</td>
</tr>
<tr>
<td>100% increase</td>
<td>49% decrease</td>
<td>$28.9</td>
<td>$58.33</td>
<td>$40,397</td>
</tr>
</tbody>
</table>
Which intervention has highest relative public health impact?

**Reach x Intensity [x Effect]**

*Enhanced PE*
- All students (school/district/state) x 5 days/wk

*SRTS*
- Students within 1 mile x weather permitting school days

*Complete Streets*
- Locally active commuters x capacity/length of modified street x type of improvement x weather permitting days x weekday & weekend factors
Which scores best on the most impactful, cost effective, strongest evidence interventions criteria?

- Scientifically Supported/Strong Evidence
- Comparatively higher impact
- Clearly defined intervention/components
- Ability to easily measure/calculate “actual” reach
- Published positive cost evaluations
- No or easily addressed harms
REACH & PICH PSE for Voluntary Smoke Free Multi-unit Housing Protections

Yr 1 & Yr 2 Projected Data

- **Actual Reach = 470,286 residents**
  - 182,000 children, 180,000 minority & 88,000 low income residents

- **Short-term Public Health Impacts**
  - > 9,800 residents quit smoking*
  - > 167 hospitalizations prevented**

- **$53.6 Million Annual Cost Savings**
  - $48.7 M healthcare savings
  - $1.14 M renovation
  - $3.79 M fire loss

*Community Guide 2012  *King et al. 2013
Year 1 Impacts: PICH & REACH PSE for School-Based Physical Activity Programs

18 PICH and REACH Awardees

- > 2.5 million students
  - 60 minutes physical activity/day

- Health Benefits
  - Achieve & maintain healthy weight
  - Strong bone & muscle development
  - Increased academic achievement

- Cost Savings
  - Each $1 generates $33.54 savings**
    - Health care costs
    - Increased future earnings
    - Reduced crime & justice system costs

Economic Impact Statements

**Intervention Criteria**
- Scientifically Supported/Strong Evidence
- Comparatively higher impact
- Clearly defined intervention/components
- Available data to easily measure/calculate "actual" reach
- Published positive cost evaluations
- No or easily addressed potential harms
<table>
<thead>
<tr>
<th>Intervention Title</th>
<th>Strength of Evidence of Effectiveness</th>
<th>Higher Impact</th>
<th># Awardees</th>
<th>Std. Definition</th>
<th>Easy to Measure Actual Reach</th>
<th>Cost Studies</th>
<th>Address Disparities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breastfeeding promotion programs - Baby Friendly Hospitals</td>
<td>SS</td>
<td>X</td>
<td>7</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Worksite obesity prevention interventions</td>
<td>SS</td>
<td>X</td>
<td>29</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Multi-component school-based obesity prevention interventions</td>
<td>SS</td>
<td>X</td>
<td>15</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Enhanced School-Based Physical Education PSE</td>
<td>SS</td>
<td>X</td>
<td>18</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Smoke-free policies for indoor areas</td>
<td>SS</td>
<td>X</td>
<td>46</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Nutrition and physical activity interventions in preschool &amp; child care</td>
<td>SS</td>
<td></td>
<td>11</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Safe Routes to Schools</td>
<td>SS</td>
<td></td>
<td>11</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
BRIEF INTRODUCTION TO MONITORING AND EVALUATION
Your plan
The “M” of M&E: Monitoring

“Quantitative indicators of various aspects of the performance of public or nonprofit programs, agencies, or other entities that can be observed on a regular basis.”*

• Might include indicators of:
  • Outputs
  • Efficiency
  • Outcomes (short, intermediate, long)
  • Cost effectiveness
  • Customer satisfaction

• Monitoring is closely related to Actual Use
Evaluation solutions for change makers.

Remember, more information is useful only if it is used!
Filling in the Blanks…

"I think you should be more explicit here in step two!"

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The “E” of M&E: Evaluation

“Evaluation refers to the process of determining the merit, worth, or value of something, or the product of that process.”*  

“Program evaluation is the systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future programming.”**

*Scriven, 1991  **Patton, 1997
CDC Evaluation Framework

Recommended Framework for Program Evaluation

Steps
- Engage Stakeholders
- Describe the Program
- Focus the Evaluation Design
- Gather Credible Evidence
- Justify Conclusions
- Ensure Use and Share Lessons Learned

Standards
- Utility
- Feasibility
- Propriety
- Accuracy


http://www.cdc.gov/eval/framework/
TABLETOP EXERCISE 2: PRIORITIZING INTERVENTIONS
Tabletop Exercise 2 (20 minutes)

1. Identify a recorder and someone to report out

2. For each of 3 interventions provided to your table
   a) Access www.countyhealthrankings.com
      a) Read description (group)
      b) Identify evidence level (group)

   b) For any “Scientifically Supported” interventions
      a) Access http://www.wsipp.wa.gov/BenefitCost (group)
      b) Record Benefit to Cost Ratio, if available (group)

   c) Complete Worksheet using Key Table (individually)
      a) Based on their organization’s resources, expertise, culture
Tabletop Exercise 2 (cont’d)

3. Table participants share prioritized list & scores

4. Answer the following questions (group)
   a) Does the prioritized list seem reasonable?
      a) Was there reasonable consistency among participant?
   b) Which of the three interventions
      a) Do most table participants think they would consider suggesting?
      b) Would likely not consider suggesting, if any? Why?

5. Report outs (25 minutes)
   a) Identify 3 interventions
   b) Briefly answer questions