Performance and Outcome Measurement: Strategies for Target Setting
Friday, June 3 8:30

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Develop a Framework for Target-Setting

Targets are short-term,
rather than long-term objectives

The expectation is that targets can be met
given appropriate programmatic effort
and resource allocation

Develop a Framework for Target-Setting

Define the Landscape

1. What factors mitigate for or against improving performance?

2. Are current programs population-wide or designed for high risk groups?

3. How much control / flexibility does the agency have over resource allocation?

4. Apart from the health agency, what other activities, if any, are addressing particular issues?

Develop a Framework for Target-Setting

Strategic choices:

1. How will targets be linked to effort?

  ⤣ Targets will reflect past and current programmatic effort
    or
  ⤣ Targets will influence future programmatic effort

**Develop a Framework
for Target-Setting**

Strategic Choices

2. How will "success" or "good performance" be defined?

- Meeting a target

  or

- Making meaningful progress
  toward a target

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**Develop a Framework
for Target-Setting**

Strategic Choices

3. Which types and sources of data will be used?

✓ Professional input ✓ Community input
✓ Population data ✓ Program data
✓ Current data ✓ Trend data
✓ National objectives / data ✓ Cost data

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**Build an Analytic Strategy
for Target-Setting**

Example Logic statements:

If data exist from all sources
    and data from all sources agree,
    then the target will be set as …

If data exist from all sources
    but data do not agree across all sources,
    then the target will be set as …

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**Build an Analytic Strategy
for Target-Setting**

Example Logic statements:

If data exist from only some sources
    and data from those sources agree,
    then the target will be set as …

If data exist from only some sources
    but data from those sources do not agree,
    then the target will be set as …

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Build an Analytic Strategy for Target-Setting

How will data from different sources be integrated?

Targets may depend on the intersection of trend data and the distance from a standard or longer-term goal.

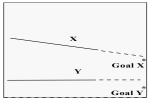| Trend	Standard / Goal		
	Surpassed	Close	Far
Improving			
No Change			
Deteriorating			

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Build an Analytic Strategy for Target-Setting

What should the targets be?

Different patterns over time and different distance from long-term goals

Assume being <u>below</u> the goal is desirable

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Build an Analytic Strategy for Target-Setting

Example Logic Statements:

➢ If trend data show improvement
    and the current value is far from the goal
    then targets will be set as …
        else if the current value is close to the goal
        then targets will be set as …
            else if the current value meets the goal
            then targets will be set as …

➢ If trend data show no change, then etc.
➢ If trend data show deterioration, then etc.
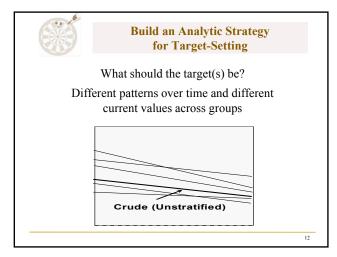
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Build an Analytic Strategy for Target-Setting

How will data for
different population groups be integrated?

Targets may depend on whether there are disparities across groups.

- Crude (unstratified)?
- Stratified by medical risk status?
- Stratified by geography?
- Stratified by race/ethnicity?
- Stratified by income?
- Stratified by income and geography?
  - Etc., etc., etc.?

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Build an Analytic Strategy for Target-Setting

What should the target(s) be?

Different patterns over time and different current values across groups

Crude (Unstratified)

Build an Analytic Strategy for Target-Setting

Example Logic Statements

If current values vary across groups
then targets will be set as…

If trends over time vary across groups
then targets will be set as…

Build an Analytic Strategy for Target-Setting

If stratification is used, how will data availability and small numbers be addressed?

- Collapsing strata?
- Indirect standardization?
- Synthetic estimation?

Build an Analytic Strategy for Target-Setting

Example Logic Statements

If numbers are small within strata
then multiple years of data will be combined…
or
then national rates will be applied to create SMRs…

If small area data is not available
then synthetic estimates may be used…
or
then a proxy variable will be used…

**Example Approaches
for Target-Setting
National Performance Measure 8**

Birth rate (per 1,000)
for teens aged 15-17 years.

Possible Targets

Crude, Unstratified Data

State	# Females 15-17	# Births	Teen Birth Rate per 1,000
X	16,556	622	37.6

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**Example Approaches
for Target-Setting
National Performance Measure 8**
Possible Targets

1. No Change $\qquad$ =37.6 $\qquad \longleftarrow$

2. % Decrease according to past trend
    Assume an average annual decrease of 2%

$$\text{Target} = (\%\,\text{chge} \times \text{CurrVal}) + \text{CurrVal}$$
$$\text{Target} = (-0.02 \times 37.6) + 37.6$$
$$= 36.8 \qquad \longleftarrow$$

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**Example Approaches
for Target-Setting
National Performance Measure 8**
Possible Targets

3. % Decrease to meet a long-term goal
    Assume the goal is 30 per 1,000 in 5 years

$$\frac{\dfrac{30.0 - 37.6}{37.6}}{5} = -0.04$$
$$\text{Target} = (-0.04 \times 37.6) + 37.6$$
$$= 36.1 \qquad \longleftarrow$$

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**Example Approaches
for Target-Setting
National Performance Measure 8**
Possible Targets

Continue the past trend or
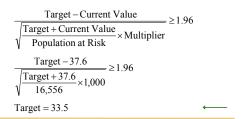adjust the slope of the trend to meet a long-term goal.
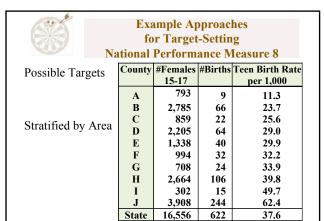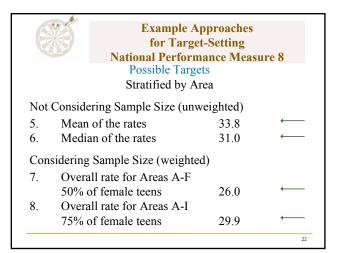Refer to targets 2. And 3. on previous slides

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Example Approaches for Target-Setting
National Performance Measure 8
Possible Targets

4. Statistically significant decrease

Set a z-test equal to 1.96

$$\frac{\text{Target} - \text{Current Value}}{\sqrt{\dfrac{\text{Target} + \text{Current Value}}{\text{Population at Risk}}} \times \text{Multiplier}} \geq 1.96$$

$$\frac{\text{Target} - 37.6}{\sqrt{\dfrac{\text{Target} + 37.6}{16,556}} \times 1,000} \geq 1.96$$

$$\text{Target} = 33.5 \qquad \longleftarrow$$

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Example Approaches for Target-Setting
National Performance Measure 8

Possible Targets

Stratified by Area

County	#Females 15-17	#Births	Teen Birth Rate per 1,000
A	793	9	11.3
B	2,785	66	23.7
C	859	22	25.6
D	2,205	64	29.0
E	1,338	40	29.9
F	994	32	32.2
G	708	24	33.9
H	2,664	106	39.8
I	302	15	49.7
J	3,908	244	62.4
State	16,556	622	37.6

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Example Approaches for Target-Setting
National Performance Measure 8
Possible Targets
Stratified by Area

Not Considering Sample Size (unweighted)

| 5. | Mean of the rates | 33.8 | $\longleftarrow$ |
| 6. | Median of the rates | 31.0 | $\longleftarrow$ |

Considering Sample Size (weighted)

7. Overall rate for Areas A-F
   50% of female teens   26.0 $\longleftarrow$

8. Overall rate for Areas A-I
   75% of female teens   29.9 $\longleftarrow$

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Example Approaches for Target-Setting
National Performance Measure 8
Possible Targets
Stratified by Area

8. Overall Rate for Areas A-I

Rate for 75% of Female Teens in State X

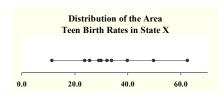$$\frac{9+66+22+64+40+32+24+106+15}{793+2,785+859+2,205+1,338+994+708+2,664+302}$$

$$= \frac{378}{12,648} \cong 29.9 \text{ per } 1,000 \qquad \longleftarrow$$

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Example Approaches
for Target-Setting
National Performance Measure 8

Possible Targets

With many strata, the range in the indicator values and the shape of the distribution will influence the choice of targets.

Distribution of the Area
Teen Birth Rates in State X

| 0.0 | 20.0 | 40.0 | 60.0 |

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Example Approaches
for Target-Setting
National Performance Measure 8

Possible Targets
Stratified by Poverty Status

Poverty Status	#Females 15-17	#Births	Teen Birth Rate per 1,000
Yes	2,533	148	58.4
No	14,023	474	33.8
State	16,556	622	37.6

% of teens 15-17 below the poverty level:

$$\frac{2,533}{16,556} \times 100 \cong 15$$

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Example Approaches
for Target-Setting
National Performance Measure 8

Possible Targets
Stratified by Poverty Status

9. The value for female teens at or above the poverty level—85% of all female teens aged 15-17

33.8 ⟵

With few strata, it may be reasonable to choose the value of the "best" stratum as the target if that stratum includes a large proportion of the population at risk.

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Example Approaches
for Target-Setting
National Performance Measure 8

Possible Targets
Stratified by Poverty Status

10. Stratum-Specific Targets

$\text{Target}_{\text{Poverty}} = (-0.10 \times 58.4) + 58.4 = 52.6$ ⟵

$\text{Target}_{\text{No Poverty}} = (-0.02 \times 33.8) + 33.8 = 33.1$ ⟵

Then the overall target is the weighted average of the stratum specific targets:

$\text{Target}_{\text{Overall}} = 0.15 \times 52.6 + 0.85 \times 33.1 = 36.0$ ⟵

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**Example Approaches
for Target-Setting
National Performance Measure 8**

Which should be the annual target?

Unstratified:	1. No Change	37.6
	2. 2% decrease	36.8
	3. 4% decrease	36.1
	4. Statistical significance	33.5
Stratified by Area:	5. Mean of the rates	33.8
	6. Median of the rates	31.0
	7. Overall rate for "best" 50%	26.0
	8. Overall rate for "best" 75%	29.9
Stratified by Poverty:	9. Rate for "best" stratum	33.8
	10. Weighted Rate—stratum-specific targets	36.0

Final Comments on Target Setting

Possible Targets

- Many different stratification schemes could be used. Each will give rise to another set of possible targets.

- Other numerical approaches, such as regression modeling, can be used as well.

- The conceptual framework which was developed first must be brought to bear in making final choices for targets.

Final Comments on Target Setting

Each performance measure and outcome indicator may require a different approach.

Each may exhibit different patterns of change and disparity, both in magnitude and kind.

Final Comments on Target Setting

When setting targets for more than one indicator, the relative performance across indicators may influence the target setting process.

For example, you may want to set more challenging targets for indicators farther from a long term goal as an added incentive to make that issue a programmatic priority.

Final Comments on Target Setting

Long term targets, such as the Healthy People Objectives might be set to challenge levels: the 2010 objectives used a method called "better than the best".

For short-term targets, we need to identify values that are attainable, but still challenge us to critically evaluate programmatic and budgetary decisions.