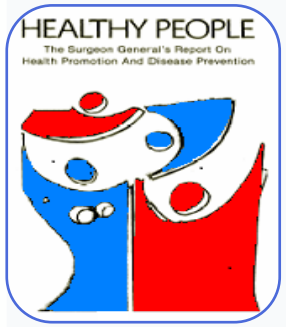
Carter Blakey, Deputy Director, Office of Disease Prevention and Health Promotion, HHS

What is Healthy People?

- Provides a strategic framework for a **national prevention agenda** that communicates a vision for improving health and achieving health equity
- Identifies science-based, **measurable objectives with targets** to be achieved by the end of the decade
- Requires tracking of **data-driven outcomes** to monitor progress and to motivate, guide, and focus action
- Offers model for international, state, and local **program planning**
- Represents **collective input** from federal, state, local, public, private stakeholders.

Evolution of Healthy People Objectives

Healthy People 1990	Healthy People 2000	Healthy People 2010	Healthy People 2020	Healthy People 2030
				
~200 objectives	*~300 objectives*	*~1,000 objectives*	*~1,300 objectives*	**355 objectives**

Healthy People 2030 Objectives and Measures

Vision

A society in which all people can achieve their full potential for health and well-being across the lifespan

8 Overall Health and Well-Being Measures

355 Core Objectives

Measurable objectives that have 10-year targets and evidence-based interventions

23 Leading Health Indicators

A small subset of high-priority core objectives

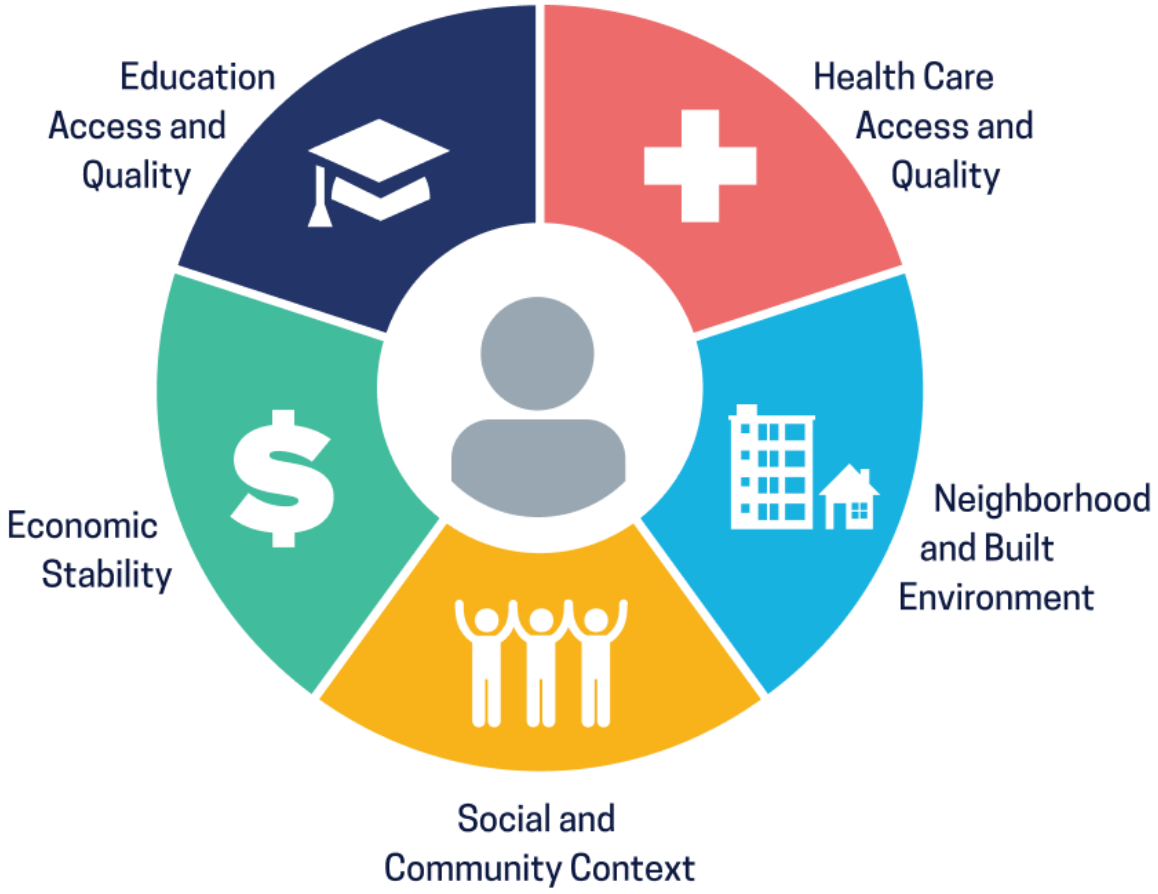
Developmental Objectives

Objectives with evidence-based interventions but lacking reliable data

Research Objectives

Objectives without evidence-based interventions

Social Determinants of Health



Using Healthy People 2030 in a COVID-19 Environment

1. Identify needs and priority populations

- Identify populations most vulnerable to COVID-19 and other health conditions
- Stay current on the latest data in your community

2. Set your own targets

- Find HP measures and data related to your work
- Set local targets that contribute to national goals

3. Find inspiration and practical tools

- Leverage existing resources (i.e., framework, models)
- Look for evidence-based resources and tools

4. Monitor national progress

- Use HP data as a benchmark
- Use HP data to inform policy & program planning
- Monitor how your progress compares to national data

Target Setting in Healthy People 2030

David T. Huang, PhD, MPH, CPH
CDR, USPHS
Chief, Health Promotion Statistics Branch

Kate Hubbard, MS
Health Statistician

February 26, 2021

History of Targets in Healthy People

- The inclusion of quantifiable targets distinguishes Healthy People (HP) from the many Federal health indicator efforts that have been developed in past 40 years.
- The usage was inspired in the 1970s by the Management by Objectives movement which emphasized setting of organizational goals and objectives.
- Timeline:
  - HP1990: No systematic process
  - HP2000: No systematic process, but some separate targets for high-risk groups
  - HP2010: A variety of methods to choose from, including better than the best
  - HP2020: A variety of methods to choose from, including 10% improvement

Usefulness of Targets in Healthy People

The examination of data relative to targets is considered critical to the usefulness of Healthy People:

- Targets communicate policy expectations and expert or evidence-based recommendations to a wide range of stakeholders
- Targets offer a marker for assessing progress
  - for each objective
  - for the initiative as a whole

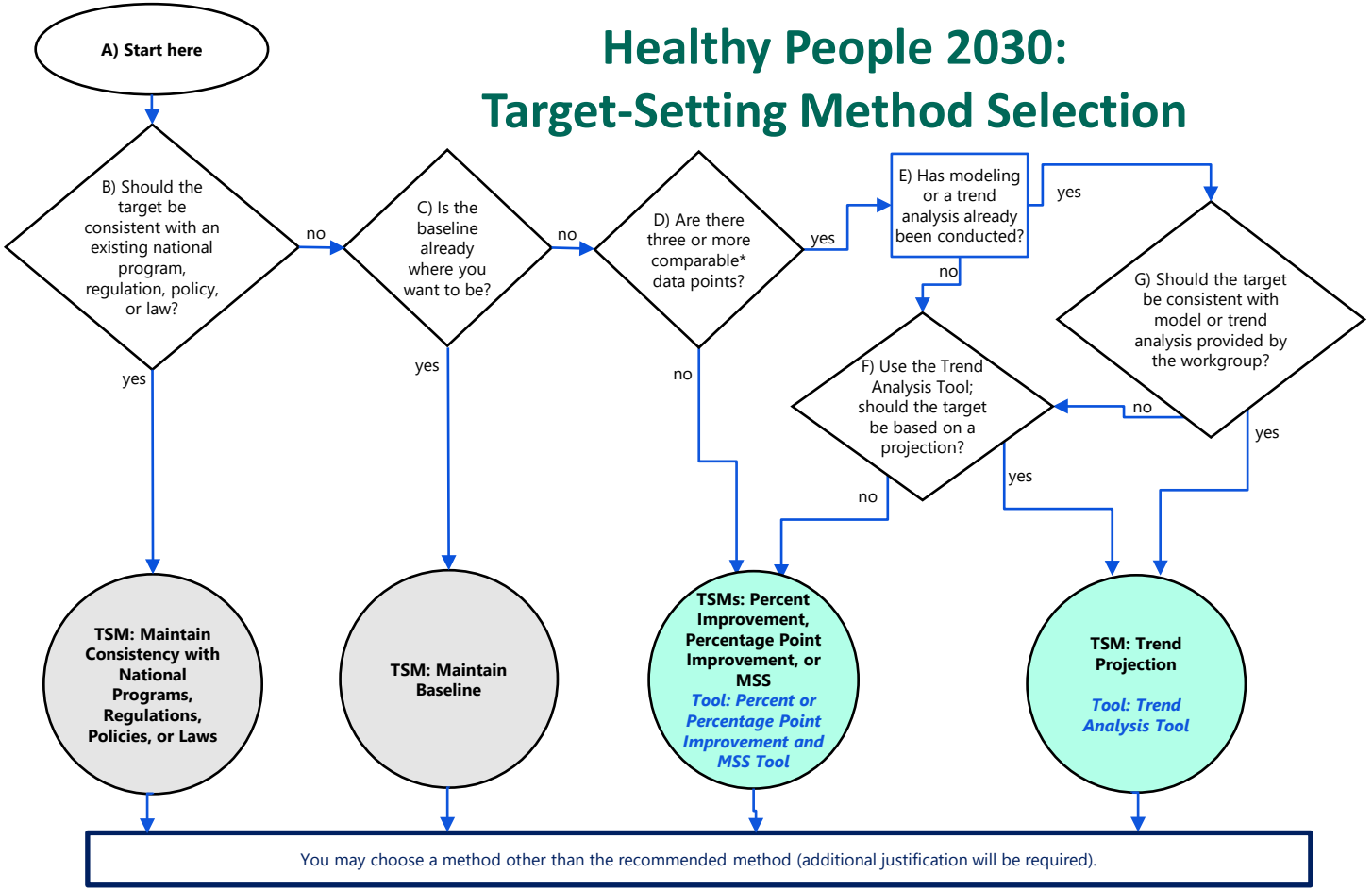
HP2030 Targets: Background

- HP2030 aims for a more transparent, systematic approach to target setting.
  - Allows for replication of TSMs.
  - Allows for targets to be considered using data-driven tools.
- Continuing the vision of HP2020, HP2030 targets are meant to be challenging, yet achievable.
- A target should be a statistically significant improvement from baseline, when possible.
- A targeted change from baseline should be in the desired direction.
  - For example, even if the obesity rate is expected to worsen, the target should be to improve or maintain baseline.

HP2030 Targets: Process

- Targets are set by Topic Area workgroups comprised of subject matter experts and are approved by a Federal Interagency Workgroup.
- The TSM flowchart helped Topic Area subject matter experts use an explicit process to arrive at a recommended target-setting method.
- HP2030 Target-Setting Methods include:
  - Maintain consistency with national programs, regulations, policies, or laws
  - Maintain baseline
  - Percent improvement
  - Percentage point improvement
  - Minimal statistical significance
  - Trend projection
- New tools were created by NCHS to help workgroups select from candidate targets generated using the last four methods and have been released online.
- An NCHS Statistical Note documenting methods and tools, *Target-Setting Methods in Healthy People 2030*, was released in September 2020.

Healthy People 2030: Target-Setting Method Selection



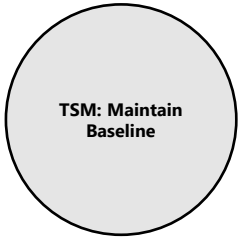
*Data points are considered comparable if the data were collected using the same data system, methods, and question(s). See Trend Analysis Tool and Trend Analysis Tool Instructions for more information.

TSM: Maintain Consistency with National Programs, Regulations, Policies, or Laws

- Used when there is an existing national recommendation, policy or program goal; or where the target is in regulation or statute.

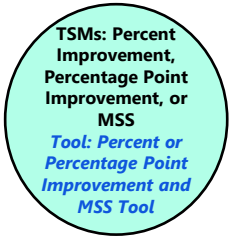
- **Example**:
  - **CKD-07**: Reduce the rate of new cases of end-stage kidney disease (ESKD)
  - **Baseline**: 358.1 new cases of ESKD per 1,000,000 population occurred in 2016 (adjusted for age, sex, and race)
  - **Target**: 268.6 new cases of ESKD per 1,000,000 population
  - **Justification**: The target was selected to align with the Department of Health and Human Services' (HHS) initiative, Advancing American Kidney Health, which used a target-setting method of 25 percent improvement.

TSM: Maintain Baseline



- Used if the goal is to maintain a current level and that level is the baseline.
- **Example**:
  - **IID–03**: Maintain the vaccination coverage level of 1 dose of the MMR vaccine among children by age 2 years
  - **Baseline**: 90.8 percent of children born in 2015
  - **Target**: 90.8 percent
  - **Justification**: Maintain baseline was selected because the data were currently at the desired point. Maintaining the baseline is the desired target because vaccination coverage was not expected to change significantly in the next decade. Sustaining 90 percent vaccination coverage has been sufficient to prevent measles outbreaks in the United States.

TSMs: Percent Improvement, Percentage Point Improvement, or Minimal Statistical Significance (MSS)



The NCHS tool calculates candidate targets based on the baseline value and SE, if available:

1. **Percent Improvement (for rates and other quantities)***
   - Two candidate targets are calculated, based on either 10 or 20 percent improvement from the baseline value.
2. **Percentage Point Improvement (for percentages only)***
   - Two candidate targets are calculated, based on either 1–5 or 1–10 percentage points improvement from the baseline value.
     - *Tool calculates exact value for targeted change using Cohen's h effect size.*
3. **Minimal Statistical Significance (MSS)**
   - Candidate target is calculated based on MSS criterion:

$$\text{Baseline } \pm 1.96\sqrt{2} * SE$$

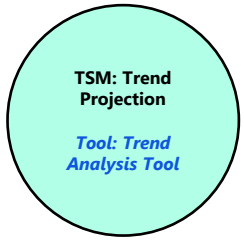
     - *Used when baseline SE is available*
     - *Assumes SE at target is equal to baseline SE*

**In general, candidate target values that are not statistically significantly different from baseline should not be used.*

Example of a Percentage Point Improvement TSM

- **TU-01**: Reduce current use of any tobacco products by adults
- **Baseline**: 20.1 percent of adults aged 18 years and over in 2018 (age adjusted to the year 2000 standard population)
- **Target**: 16.2 percent
- **Justification**: Trend data were evaluated for this objective, but it was not possible to project a target because the slope was not reliable. A percentage point improvement was calculated using Cohen's h effect size of 0.1. This method was used because the Healthy People 2030 Workgroup Subject Matter Experts viewed this as an ambitious yet achievable target and expected there to be continued efforts in the field to reduce tobacco use by adults.

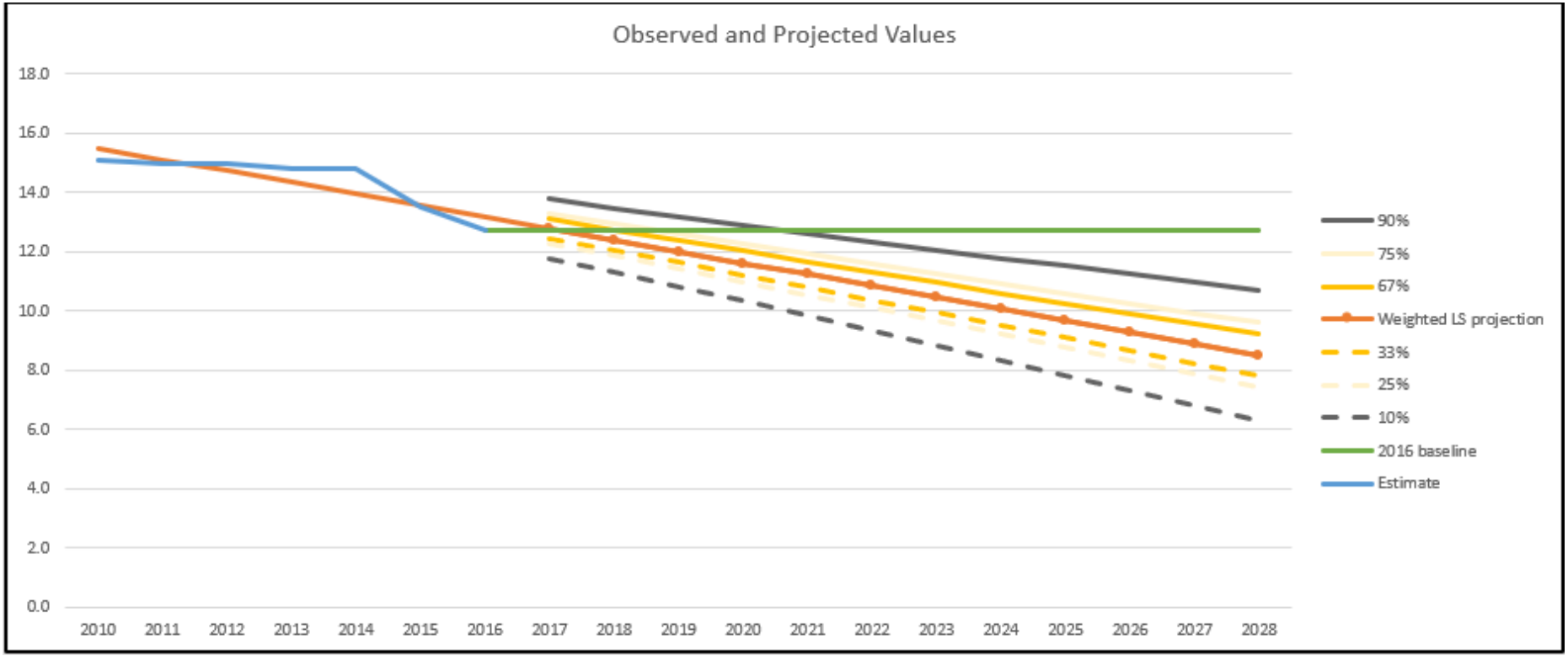
TSM: Trend Projection



- The NCHS **Trend Analysis Tool** helps workgroups analyze historical data to determine if a trend is present and can be used to set a target.
  - Fits a weighted least squares (LS) trend line based on the historical data provided by the workgroup (when SEs are not available, ordinary LS is used).
  - Up to five **candidate target values** are calculated from the 25%, 33%, 50%, 67%, and 75% one-sided prediction intervals for the desired target year(s).

- **Considerations**
  - Is there evidence to support any of the proposed candidate targets?
  - Does the historical data have a change in trend?
  - Workgroup should consider other target-setting methods whenever:
    - Tool fails to find a suitable candidate target value (e.g., trend is not statistically significant or candidate values out of bound), or
    - Trend is opposite to the desired direction.

Example Graph from Trend Analysis Tool



Trend Analysis Tool Example

- **SDOH-01**: Reduce the proportion of persons living in poverty
- **Baseline**: 11.8 percent of persons were living below the poverty threshold in 2018
- **Target**: 8.0 percent
- **Justification**: Trend data were evaluated for this objective. Using historical data points, a trend line was fitted using weighted least squares and the trend was projected into the next decade. This method was used because three or more comparable data points were available, the projected value was within the range of possible values, and a projection at the 67 percent prediction interval was selected because it was a statistically significant improvement from the baseline. Economic growth contributes to the reduction of poverty in the United States.

Home » Objectives and Data » Browse Objectives » Tobacco Use » **Reduce current use of smokeless tobacco products among adolescents — TU-08**

Reduce current use of smokeless tobacco products among adolescents — TU-08

- Objective Overview
- Data Methodology and Measurement
- Evidence-Based Resources

Status: Baseline only

Learn more about our data release schedule

Reduce current use of smokeless tobacco products among adolescents

Baseline: 4.1 percent of students in grades 6 through 12 used smokeless tobacco products in the past 30 days in 2018

Target: 2.3 percent

Target Setting Method: Percentage point improvement

Data Source: National Youth Tobacco Survey (NYTS)

Learn more about data measurement for this objective

Target and target-setting method

More about how the data are measured

Summary

Smokeless tobacco products, like chewing tobacco, are not a safe alternative to cigarettes. They cause cancer, oral health problems, and nicotine addiction. Population-level interventions to reduce tobacco use include price increases, mass media campaigns, and smoke-free policies.

Data Methodology and Measurement

- Objective Overview
- Data Methodology and Measurement
- Evidence-Based Resources

Target-setting method, details, and justification

About the National Data

Data

Data Source: National Youth Tobacco Survey (NYTS), CDC/NCCDPHP

Baseline: 4.1 percent of students in grades 6 through 12 used smokeless tobacco products in the past 30 days in 2018

Target: 2.3 percent

Numerator: Number of students in grades 6 through 12 who report having used smokeless tobacco products (chewing tobacco/snuff/dip, snus, and dissolvable tobacco), on 1 or more of the past 30 days.

Denominator: Number of students in grades 6 through 12.

Target-setting method: Percentage point improvement

Target-setting method details: Percentage point improvement from the baseline using Cohen's h effect size of 0.10.

Target-setting method justification: Trend data were evaluated for this objective, but it was not possible to project a target because the slope was not reliable. A percentage point improvement was calculated using Cohen's h effect size of 0.1. This method was used because of new policies and regulations that are aimed to reduce tobacco use among youth.

Target-Setting Methods

The National Center for Health Statistics (NCHS) developed statistical methods and analytic tools to help with the selection of targets for Healthy People 2030. Federal subject matter experts serving on the Healthy People 2030 workgroups were responsible for selecting targets. These experts used data-driven approaches whenever possible, but they also considered subject matter expertise, public health policies, and agency or national priorities.

The process for setting Healthy People 2030 targets is intended to be transparent and replicable. A target-setting method justification is required for every core Healthy People 2030 objective and will be available on the Data Methodology and Measurement page for each objective in the coming months.

To learn more about the history of target setting in Healthy People and the technical details behind the percent improvement, percentage point improvement, projection, and minimal statistical significance methods for Healthy People 2030, check out the NCHS Statistical Note on Target-Setting Methods in Healthy People 2030 [PDF - 479 KB] . To access the tools and learn how to use them, check out the NCHS Target Setting page .

Additional information and TSM tools are available on the NCHS site

Healthy People
Healthy People 2030
Data Sources
Target Setting
Healthy People 2020
Progress Reviews
Healthy People 2010
Healthy People 2000
Publications

Related Sites
Healthy People 2030
Healthy People 2020
DATA2010

Target Setting

The National Center for Health Statistics (NCHS) developed statistical methods and analytic tools to help with the selection of targets for Healthy People 2030. Federal subject matter experts serving on the Healthy People 2030 workgroups were responsible for selecting targets. These experts used data-driven approaches whenever possible, but they also considered subject matter expertise, public health policies, and agency or national priorities.

To learn more about the statistical methods and analytical tools refer to: Hubbard K, Talih M, Klein RJ, and Huang DT. Target-Setting Methods in Healthy People 2030. Healthy People Statistical Notes, no 28. Hyattsville, MD: National Center for Health Statistics. 2020. Available from: https://www.cdc.gov/nchs/products/hp_pubs.htm#notes

Target Setting Tools

Trend Analysis Tool

The purpose of this tool is to provide candidate targets using a projection based on linear trend analysis. Specifically, weighted or ordinary least squares is used to fit a trend line based on historical data, resulting in predicted values (that can be used as candidate targets) using up to seven confidence levels. Trend-Analysis-Tool [XLS – 141 KB]

Percent Improvement and Minimal Statistical Significance Tool

The purpose of this tool is to provide up to two candidate targets using the baseline (initial) value only to calculate a percent or percentage point improvement. If the standard error is available, an additional candidate target, based on minimal statistical significance, is also provided. Percent-Improvement-and-MSS-Tool [XLS – 39 KB]

Page last reviewed: December 21, 2020, 10:40 AM
Content source: National Center for Health Statistics

Conclusion

- Target setting has been a central feature of Healthy People since its inception.
- Over the decades, the target-setting methods have become more systematic and consistent.
- HP2030 aims for a more transparent, systematic approach to target setting.
- HP2030 provides an opportunity to make HP more relevant to stakeholders through improved documentation and tools on topics like target setting.

Thank You!

Healthy People Site:

https://health.gov/healthypeople

NCHS Healthy People Site:

http://www.cdc.gov/nchs/healthy_people.htm

NCHS Healthy People Publications:

http://www.cdc.gov/nchs/products/hp_pubs.htm

Appendix

TSM: Percentage Point Improvement

- The percentage point improvement for percentages is determined using a directional effect size calculation.
  - Targets for percentages are calculated using Cohen's h effect size.
- NCHS provided two effect size values, h = 0.1 and h = 0.2.
  - These two effect size values were chosen to correspond with 10% and 20% improvement from a baseline of 50%.

Step 1. The baseline percent value is divided by 100 to obtain a proportion p_B and converted to the arcsine square root scale using:

$$\varphi_B = 2\arcsin\sqrt{p_B}$$

Step 2. Cohen's h directional effect size is a change from the baseline value on this arcsine square root scale. The transformed target value Φ_T is calculated using:

$$\varphi_T = \varphi_B + h, \text{ if desired direction is an increase}$$

$$\varphi_T = \varphi_B - h, \text{ if desired direction is a decrease}$$

Step 3. The target proportion p_T is obtained by reverse transformation and multiplied by 100 to express it as a percentage:

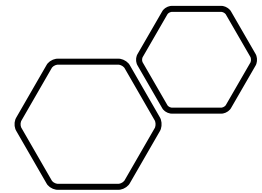
$$p_T = \left(\sin\left(\frac{\varphi_T}{2}\right)\right)^2$$

Target Setting: Experience of Nutrition and Weight Status Workgroup

Outline

- Getting started
- Examples
- Setting your own targets

Getting started



Four questions

- Is there an existing target?
- Is there consistent historical data available?
- What is the baseline number and standard error?
- What interventions will be planned?

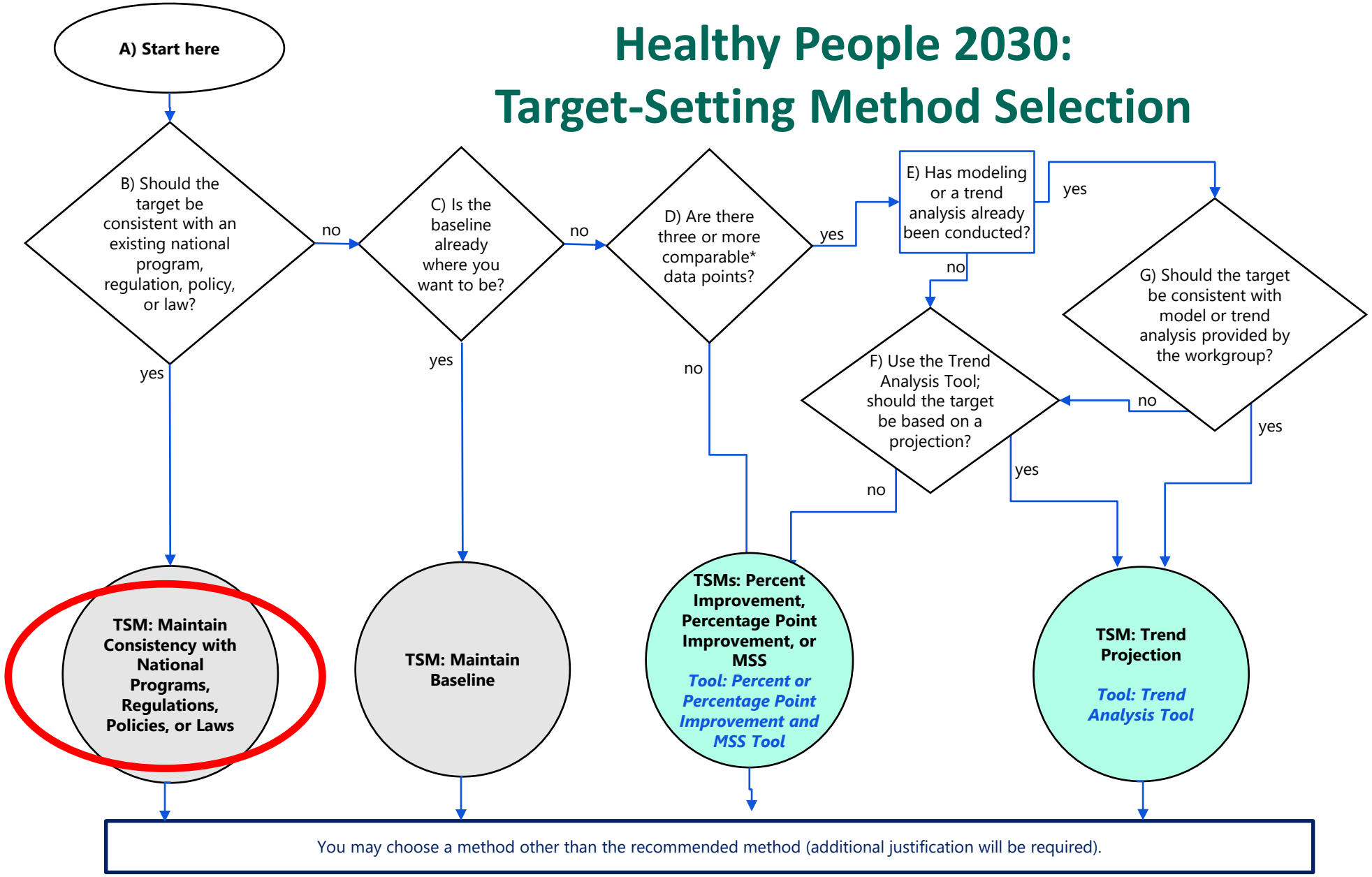
Examples: Leading Health Indicators

Maintain consistency with national programs/policy

Objective NWS-01:

Reduce household food insecurity from 11.1% to 6.0%

Healthy People 2030: Target-Setting Method Selection



*Data points are considered comparable if the data were collected using the same data system, methods, and question(s). See Trend Analysis Tool and Trend Analysis Tool Instructions for more information.

Criteria

- US Action Plan on Food Security (1999)
  - 50% reduction
- Used in HP 2010 to set 6% target
- Keep same target in 2030

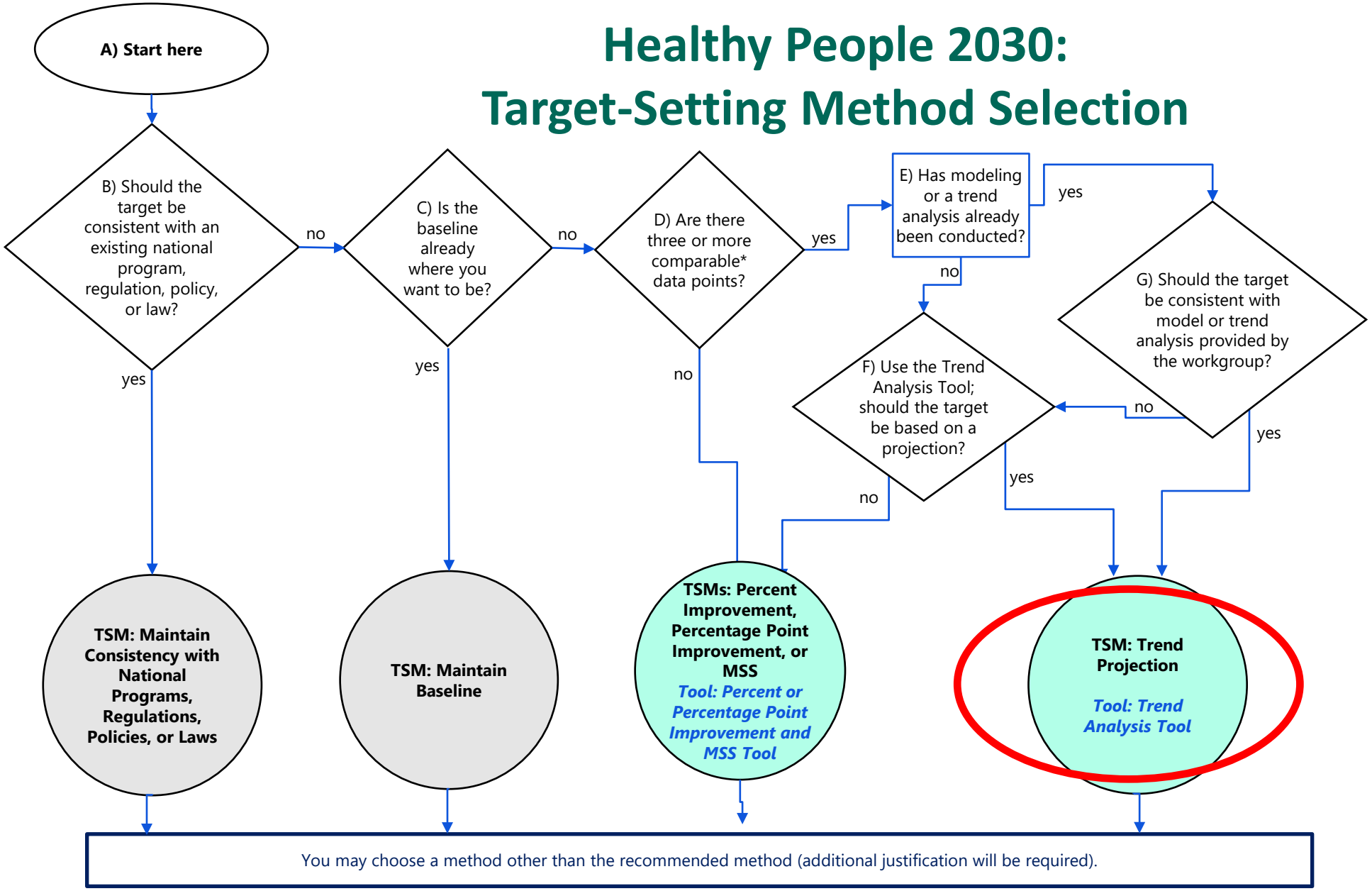
Projection

Objective NWS-10:

Reduce the consumption of calories from added sugars by persons two and over

from 13.5% to 11.5%

Healthy People 2030: Target-Setting Method Selection



*Data points are considered comparable if the data were collected using the same data system, methods, and question(s).
See Trend Analysis Tool and Trend Analysis Tool Instructions for more information.

Criteria

- Had three or more existing data points
- Trends was going in the right direction
  - 15.1% (2005-08) to 13.5% (2013-2016)
- Change between baseline and target statistically significant
- Picked middle value

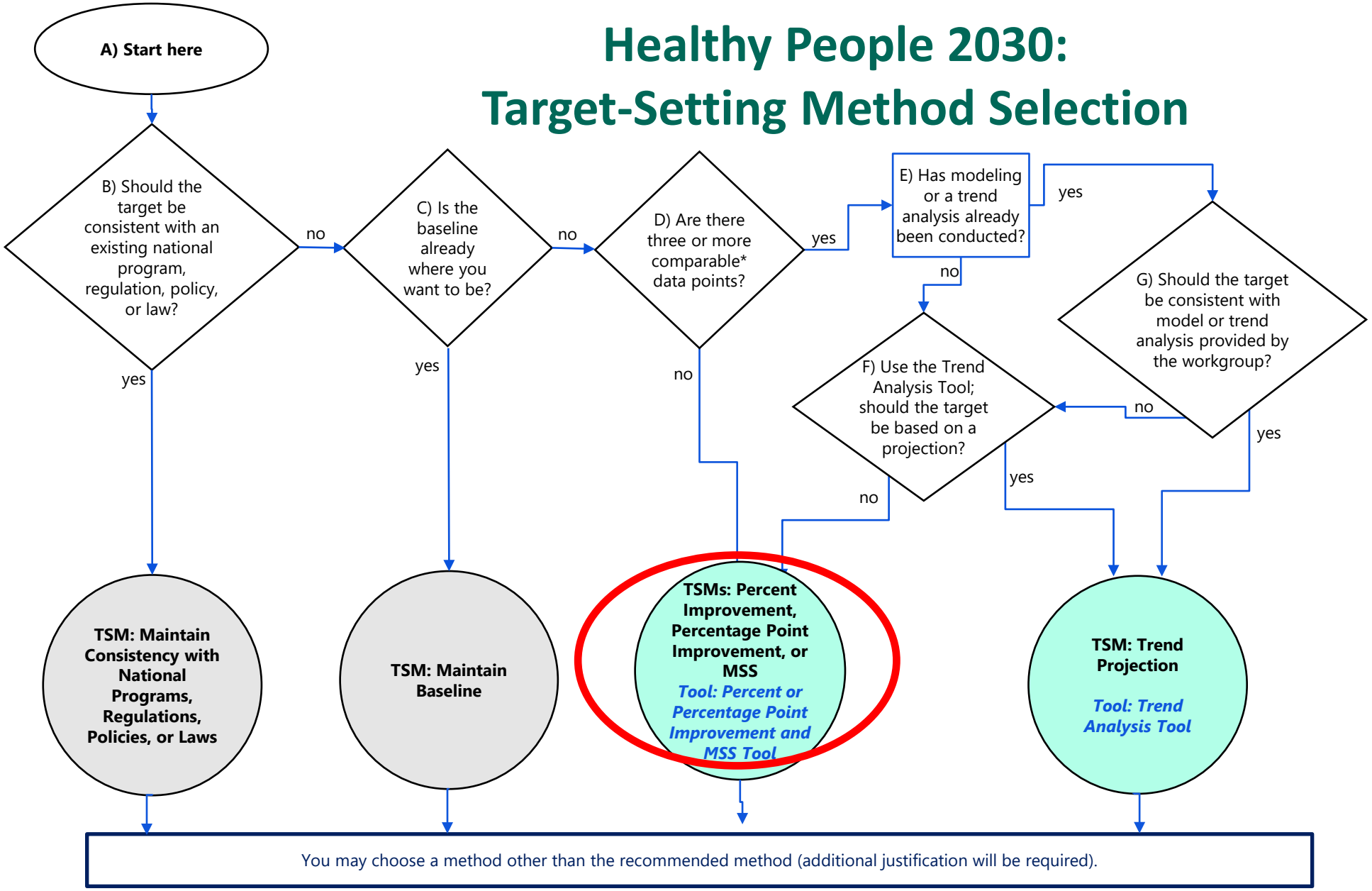
Based on the linear trend from the Weighted LS projection, and using the model assumptions and data provided...	
...there is a 75% chance that 2023-2026 value will meet or exceed (Option 1):	11.7
...there is a 67% chance that 2023-2026 value will meet or exceed (Option 2):	11.6
...there is a 50% chance that 2023-2026 value will meet or exceed (Option 3):	11.5
...there is a 33% chance that 2023-2026 value will meet or exceed (Option 4):	11.3
...there is a 25% chance that 2023-2026 value will meet or exceed (Option 5):	11.3

Minimal statistical significance

Objective NWS-04:

Reduce the proportion of children and adolescents with obesity from 17.8% to 15.5%

Healthy People 2030: Target-Setting Method Selection



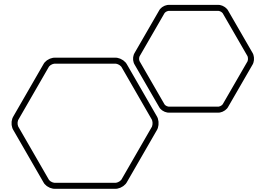
*Data points are considered comparable if the data were collected using the same data system, methods, and question(s). See Trend Analysis Tool and Trend Analysis Tool Instructions for more information.

Criteria

- Had three data points
- Trend going in the wrong direction
- Three options – all statistically significant
- Select smallest change

minimal statistical 15.5	up to 5-point improvement (percentages) 14.1	up to 10-point improvement (percentages) 10.8

Setting your own targets

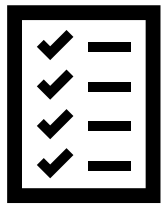


Considerations

- Data
  - Data source
  - Indicator
  - Historical data
  - Statistical significance of change
- Other
  - Planned interventions
  - Realistic vs. aspirational
  - Whole population vs. subgroup

Options for your own target setting using Healthy People

- Use the Healthy People tools and methods



- Follow the magnitude of Healthy People change

  Example:

  If Healthy People reduction is 3% points

  make your objective reduction 3% points

- Use the existing Healthy People target
  - Same data source
  - No data

Summary

- Multiple methods
- Science and art