



February 22, 2019

Todd Norris
Ballad Health
400 N. State of Franklin Road
Johnson City, TN 37604

Subject: Population Health Sub-Index Measurement Revisions

Dear Mr. Norris,

The Terms of Certification (TOC) contain the Access to Health Services, Population Health, and Other Sub-Index measures, measure descriptions, and data sources that will be used by the Tennessee Department of Health (TDH) to track the progress of the COPA over time.

Subsequent to the execution of the TOC, Ballad Health and the department's Division of Health Planning engaged in in-depth data discussions, several of which included the department's data stewards, program directors, and epidemiologists, to better understand the state's data collection methods, capabilities, and limitations for the Population Health and Access to Health Services Sub-Index measures.

Through the course of these conversations, opportunities were identified to refine descriptions and, in a few cases, to change data sources for various measures from those that were agreed to in the TOC.

Accordingly, the department has decided to revise a number of Population Health measures, measure descriptions, and data sources from those listed in the TOC. We believe these changes will improve our ability to objectively evaluate Public Advantage in this Sub-Index.

Attached is a list of the department's Population Health Sub-Index measure changes. These changes are made in accordance with Section 3.04(e) of the Terms of Certification, which states that the Population Health measures in Exhibit D "may be revised by the Department from time to time in its discretion after consultation with the New Health System." The changes are a result of careful consideration of concerns raised by Ballad Health regarding the validity and reliability of proposed data, of proposed measurement revisions submitted by Ballad Health, and numerous subsequent consultations with internal and external data experts as well as with Ballad Health. They reflect the Division of Health Planning's thorough research of data alternatives and engagement in data discussions with TDH's sister agencies, including TennCare, Department of Mental Health and Substance Abuse Services, and the Department of Education.

TDH is proud of the open dialogue we have maintained with Ballad on this subject and appreciates the health system's suggestions and proposals. We believe we have addressed many concerns regarding data limitations to the extent possible without compromising our commitment to track the progress of population health improvement in Ballad Health's Geographic Service Area.

We are optimistic that these improved metrics will help focus efforts on improving health outcomes in the region.

Sincerely,



Jeff Ockerman
Director | Division of Health Planning

cc: Tim Belisle, General Counsel
Ballad Health

Claire C. Haltom
Baker Donelson PC

Paula Masters, Vice President
Ballad Health

Larry Fitzgerald
COPA Monitor

Janet M. Kleinfelter, Deputy Attorney General
State of Tennessee

Population Health Measures

	Measure	Description	Source
1	Smoking	Percentage of adults who are self-reported smokers (smoked at least 100 cigarettes in their lifetime and currently smoke).	Behavioral Risk Factor Surveillance System
2	Smoking in higher density counties	<u>TN COPA Value</u> : Percentage of adults in Hamblen, Sullivan, and Washington counties who are self-reported smokers (smoked at least 100 cigarettes in their lifetime and currently smoke); <u>TN & U.S. Values</u> : Not stratified by population density.	Behavioral Risk Factor Surveillance System
3	Smoking in lower density counties	<u>TN COPA Value</u> : Percentage of adults in Carter, Cocke, Greene, Hancock, Hawkins, Johnson, and Unicoi counties who are self-reported smokers (smoked at least 100 cigarettes in their lifetime and currently smoke); <u>TN & U.S. Values</u> : Not stratified by population density.	Behavioral Risk Factor Surveillance System
4	Smoking among those with less than a high school education	Percentage of adults with less than a high school education who are self-reported smokers (smoked at least 100 cigarettes in their lifetime and currently smoke).	Behavioral Risk Factor Surveillance System
5	Smoking among those with a high school education or more	Percentage of adults with high school education or more who are self-reported smokers (smoked at least 100 cigarettes in their lifetime and currently smoke).	Behavioral Risk Factor Surveillance System
6	Mothers who smoke during pregnancy	Percentage of mothers who report smoking during pregnancy (%).	Birth Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
7	Youth Tobacco Use	Percentage of High School Students who self-reported currently using tobacco (used cigarettes, cigars, chewing tobacco, snuff, or pipe tobacco within the 30 days before the survey).	National Survey on Drug Use and Health
7	Youth Tobacco Use	Percentage of high school students who self-reported currently using tobacco (current cigarette, smokeless tobacco, cigar, or electronic vapor products use on at least 1 day during the 30 days before the survey).	Tennessee Youth Wellness Survey / Tennessee Youth Risk Behavior Survey
8	Youth - Ever Tried Cigarette Smoking	Percentage of High School Students who self-reported ever trying cigarette smoking, even one or two puffs.	Tennessee Youth Risk Behavior Survey
8	Youth - Ever Tried Cigarette Smoking	Percentage of high school students who self-reported ever trying cigarette smoking, even one or two puffs.	Tennessee Youth Wellness Survey / Tennessee Youth Risk Behavior Survey

	Measure	Description	Source
9	Smoker in the household	Percent of children who live in a household in which someone uses cigarettes, cigars, or pipe tobacco.	Behavioral Risk Factor Surveillance System
9	Youth Electronic Vapor Product Use	Percentage of high school students who self-reported using an electronic vapor product within the 30 days before the survey.	Tennessee Youth Wellness Survey / Tennessee Youth Risk Behavior Survey
10	Physically Active Adults	Adults who reported participating in physical activity such as running, calisthenics, golf, gardening, or walking for exercise over the past month.	Behavioral Risk Factor Surveillance System
10	Physically Active Adults	Percentage of Adults who reported participating in physical activity such as running, calisthenics, golf, gardening, or walking for exercise over the past month.	Behavioral Risk Factor Surveillance System
11	Physically Active Students	Percentage of High School Students who were not physically active 60+ minutes per day for 5 or more days in last 7 days.	Tennessee Youth Risk Behavior Survey
11	Physically Active Students	Percentage of high school students who were physically active 60+ minutes per day for 5 or more days in last 7 days.	Tennessee Youth Wellness Survey / Tennessee Youth Risk Behavior Survey
12	Adult Obesity	Percentage of adults with a body mass index of 30.0 or higher based on reported height and weight.	Behavioral Risk Factor Surveillance System
13	Obesity in higher density counties	<u>TN COPA Value</u> : Percentage of adults in Hamblen, Sullivan, and Washington counties with a body mass index of 30.0 or higher based on reported height and weight; <u>TN & U.S. Values</u> : Not stratified by population density.	Behavioral Risk Factor Surveillance System
14	Obesity in lower density counties	<u>TN COPA Value</u> : Percentage of adults in Carter, Cocke, Greene, Hancock, Hawkins, Johnson, and Unicoi counties with a body mass index of 30.0 or higher based on reported height and weight; <u>TN & U.S. Values</u> : Not stratified by population density.	Behavioral Risk Factor Surveillance System
15	Obesity among those with less than a high school education	Percentage of adults with less than a high school education with a body mass index of 30.0 or higher based on reported height and weight.	Behavioral Risk Factor Surveillance System
16	Obesity among those with a high school education or more	Percentage of adults with a high school education or more with a body mass index of 30.0 or higher based on reported height and weight.	Behavioral Risk Factor Surveillance System
17	Obesity Subpopulation Measure	Increase the proportion of physician office visits that include counseling or education related to weight and physical activity.	Data Collection to be led by the New Health System

	Measure	Description	Source
18	Overweight and obesity prevalence among TN public school students	Proportion of public school students in grades kindergarten, 2, 4, 6, 8, and one year of high school found to be overweight or obese during the school year.	Coordinated School Health Annual Report
18	Overweight and obesity prevalence among TN public school students	Percentage of public school students in grades kindergarten, 2, 4, 6, 8, and one year of high school found to be overweight or obese during the school year.	Coordinated School Health Annual Report
19	Average mPINC Score	Maternity Practices in Infant and Nutrition Care survey score based on seven birth facility policies and practices with higher scores denoting better maternity care practices and policies.	CDC Survey of Maternity Practices in Infant Nutrition and Care (mPINC)
20	Breastfeeding Initiation	TN COPA, Peer, and TN Values: Percent of live births whose birth certificates report that baby is breastfed.	Birth Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
20	Breastfeeding Initiation	TN COPA, Peer, and TN Values: Percentage of live births whose birth certificates report that baby is breastfed. US Value: Percentage of infants who are ever breastfed.	Birth Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment CDC National Immunization Survey
24	Infants breastfed at six (6) months	Percent of infants aged six (6) months whose guardians report at well-child visits they continue to be breastfed.	Data Collection to be led by the New Health System
21	Infants breastfed at six (6) months	Percentage of infants aged six (6) months whose guardians report at well-child visits they continue to be breastfed.	Data Collection to be led by the New Health System
22	High School Students – Fruit	Percent of high school students who reported not eating fruit or drinking 100% fruit juice during the past 7 days.	Tennessee Youth Risk Behavior Survey
22	High School Students - Fruit	Percentage of high school students who reported eating fruit during the past 7 days.	Tennessee Youth Wellness Survey / Tennessee Youth Risk Behavior Survey
23	High School Students – Vegetables	Percent of high school students who reported not eating vegetables during the past 7 days.	Tennessee Youth Risk Behavior Survey
23	High School Students – Vegetables	Percentage of high school students who reported eating vegetables during the past 7 days.	Tennessee Youth Wellness Survey / Tennessee Youth Risk Behavior Survey
24	High School Students – Soda	Percent of high school students who report drinking one or more sodas per day for the past 7 days.	Tennessee Youth Risk Behavior Survey

	Measure	Description	Source
24	High School Students – Soda	Percentage of high school students who report drinking one or more sodas per day for the past 7 days.	Tennessee Youth Wellness Survey / Tennessee Youth Risk Behavior Survey
25	NAS (Neonatal Abstinence Syndrome) Births	Number of reported cases with clinical signs of withdrawal per 1,000 TN resident live births.	Tennessee Neonatal Abstinence Syndrome Surveillance System
26	Drug Deaths	All drug overdose deaths of Tennessee residents caused by acute poisonings, regardless of intent.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
26	Drug Deaths	All drug overdose deaths of Tennessee residents caused by acute poisonings, regardless of intent per 100,000 individuals in the population.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
27	Drug Overdoses	Non-fatal overdoses of Tennessee residents caused by acute poisonings, regardless of intent.	Hospital Discharge Database System, Tennessee Department of Health, Division of Policy, Planning, and Assessment
27	Drug Overdoses	Non-fatal overdoses of Tennessee residents caused by acute poisonings, regardless of intent per 100,000 individuals in the population.	Hospital Discharge Database System, Tennessee Department of Health, Division of Policy, Planning, and Assessment
28	Painkiller Prescriptions	Opioid prescriptions for pain to patients in Tennessee.	Controlled Substance Monitoring Database
28	Painkiller Prescriptions	Number of opioid prescriptions for pain to patients in Tennessee per 1,000 individuals in the population.	Controlled Substance Monitoring Database
29	High School Students – Prescription Drugs	Percent of high school students who report ever taking prescription drugs without a doctor's prescription (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax, one or more times during their life).	National Survey on Drug Use and Health
29	High School Students – Prescription Drugs	Percentage of high school students who report ever taking prescription drugs without a doctor's prescription (such as codeine, Vicodin, OxyContin, Hydrocodone or Percocet one or more times during their life).	Tennessee Youth Wellness Survey / Tennessee Youth Risk Behavior Survey
30	Adults – Prescription Drugs	Adults who report using prescription drugs not prescribed by the doctor during the past 30 days.	National Survey on Drug Use and Health

	Measure	Description	Source
30	MME for pain	Total morphine milligram equivalents (MME) opioids for pain per capita.	Controlled Substance Monitoring Database
31	Children – On-time Vaccinations	Children receiving on-time vaccinations (% of children aged 24 months receiving 4:3:1:1:FS:3:1:4-series).	Tennessee Immunization Status Survey
31	Children - On-time Vaccinations	Percentage of children that are up to date on state-required vaccines at the time of kindergarten entry.	Kindergarten Immunization Compliance Assessment
32	Facility OR Population participation in TennIIS	By the end of the first year, link 90% of New Health System facilities in Tennessee to TennIIS.	New Health System and Department Records
32	NHS Entity Participation in the Tennessee Immunization Information System (TennIIS)	Percentage of NHS Entities in Tennessee participating in TennIIS.	New Health System and Department Records
33	Vaccinations – HPV Females	Percentage of females aged 13 to 17 years who received ≥3 doses of human papillomavirus (HPV) vaccine, either quadrivalent or bivalent.	Data Collection to be led by the New Health System
33	Entity Participation in the Tennessee Immunization Information System (TennIIS)	Number of Entities participating in TennIIS.	Tennessee Immunization Information System (TennIIS)
34	Vaccinations – HPV Males	Percentage of males aged 13 to 17 years who received ≥3 doses of human papillomavirus (HPV) vaccine, either quadrivalent or bivalent.	Data Collection to be led by the New Health System
34	Vaccinations - HPV Females	Percentage of human papillomavirus (HPV) vaccine shots administered to females aged 11 to 17 years, either quadrivalent or bivalent.	Tennessee Immunization Information System (TennIIS)
35	Vaccinations – Meningococcal	Percentage of adolescents aged 13 to 17 years who received ≥1 dose of meningococcal conjugate vaccine (MenACWY).	Data Collection to be led by the New Health System
35	Vaccinations – HPV Males	Percentage of human papillomavirus (HPV) vaccine shots administered to males aged 11 to 17 years, either quadrivalent or bivalent.	Tennessee Immunization Information System (TennIIS)
36	Vaccinations – Tdap	Percentage of adolescents aged 13 to 17 years who received ≥1 dose of tetanus-diphtheria-acellular pertussis (Tdap) vaccine since age 10 years.	Data Collection to be led by the New Health System
36	Vaccinations - Tdap	Percentage of tetanus-diphtheria-acellular pertussis (Tdap) vaccine shots administered to adolescents aged 11 to 17 years.	Tennessee Immunization Information System (TennIIS)

	Measure	Description	Source
37	Vaccinations – Flu Vaccine, Older Adults	Percent of adults aged 65 and over who self-reported receiving a flu shot or flu vaccine sprayed in nose in the past 12 months.	Behavioral Risk Factor Surveillance System
37	Vaccinations - Flu Vaccine, Older Adults	Rate of Medicare fee-for-service beneficiaries aged 65 and over with a flu vaccine claim.	Medicare Claims Data
38	Vaccinations – Flu Vaccine, Adults	Percent of adults aged 18 and over who self-reported receiving a flu shot or flu vaccine sprayed in nose in the past 12 months.	Behavioral Risk Factor Surveillance System
39	Teen Pregnancy Rate	Rate of pregnancies per 1,000 females aged 15-19 years.	Birth Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
39	Teen Birth Rate	Rate of births per 1,000 females aged 15-19 years.	Birth Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
40	Third Grade Reading Level	3rd graders scoring “proficient” or “advanced” on TCAP reading assessment (%).	Tennessee Department of Education Base Accountability Files
40	Third Grade Reading Level	Percentage of 3rd graders scoring “on-track” or “mastered” on the TNReady reading assessment.	Tennessee Department of Education Base Accountability Files
41	Third Grade Reading Level – Higher Density Counties	<u>TN COPA Value:</u> 3rd graders in Hamblen, Sullivan, and Washington counties who score “proficient” or “advanced” on TCAP reading assessment (%); <u>TN & U.S. Values:</u> Not stratified by population density	Tennessee Department of Education Base Accountability Files
41	Third Grade Reading Level – Higher Density Counties	<u>TN COPA Value:</u> Percentage of 3rd graders in Hamblen, Sullivan, and Washington counties scoring “on-track” or “mastered” on the TNReady reading assessment; <u>TN & U.S. Values:</u> Not stratified by population density	Tennessee Department of Education Base Accountability Files
42	Third Grade Reading Level – Lower Density Counties	<u>TN COPA Value:</u> 3rd graders in Carter, Cocke, Greene, Hancock, Hawkins, Johnson, and Unicoi counties who score “proficient” or “advanced” on TCAP reading assessment (%); <u>TN & U.S. Values:</u> Not stratified by population density.	Tennessee Department of Education Base Accountability Files

	Measure	Description	Source
42	Third Grade Reading Level – Lower Density Counties	TN COPA Value: Percentage of 3rd graders in Carter, Cocke, Greene, Hancock, Hawkins, Johnson, and Unicoi counties scoring “ on-track ” or “ mastered ” on the TNReady reading assessment; TN & U.S. Values: Not stratified by population density.	Tennessee Department of Education Base Accountability Files
43	Fluoridated Water	Percent of population on community water systems (CWS) receiving fluoridated water.	CDC, My Water’s Fluoride
44	Children receiving dental sealants	Children receiving dental sealants on permanent first molar teeth (%; 6–9 years).	Data Collection to be led by the New Health System
44	Children receiving dental sealants	Children receiving dental sealants on permanent first molar teeth (%; 6–9 years).	DentaQuest
45	Adolescents receiving dental sealants	Adolescents receiving dental sealants on their first and second permanent molars (%; 13–15 years).	Data Collection to be led by the New Health System
45	Adolescents receiving dental sealants	Adolescents receiving dental sealants on their first and second permanent molars (%; 13–15 years).	DentaQuest
46	Frequent Mental Distress	Percentage of adults who reported their mental health was not good 14 or more days in the past 30 days.	Behavioral Risk Factor Surveillance System
47	Frequent Physical Distress	Percentage of adults who reported their physical health was not good 14 or more days in the past 30 days.	Behavioral Risk Factor Surveillance System
48	Infant Mortality	Number of infant deaths (before age 1) per 1,000 live births.	Birth Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
49	Low Birthweight	Percentage of infants weighing less than 2,500 grams (5 pounds, 8 ounces) at birth.	Birth Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
50	Child Mortality	Number of deaths per 100,000 children aged 1 to 18 years.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
50	Child Mortality	Number of deaths per 100,000 children aged 1 to 19 years.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment

	Measure	Description	Source
51	Deaths from Diseases of the Heart	Number of deaths due to diseases of the heart per 100,000 population.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
51	Cardiovascular Deaths	Number of deaths due to diseases of the heart per 100,000 population.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
52	Cancer Deaths	Number of deaths due to all causes of cancer per 100,000 population.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
53	Diabetes Deaths	Number of deaths due to diabetes per 100,000 population.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
54	Diabetes Adverse Events	Increase the number of people with pre-diabetes who are identified and referred to a prevention program.	Data Collection to be led by the New Health System
55	Suicide Deaths	Number of deaths due to intentional self-harm per 100,000 population.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment
56	Premature Death Ratio	Ratio of years lost before age 75 per 100,000 population for higher density counties to lower density counties.	Death Statistics, Tennessee Department of Health, Division of Policy, Planning, and Assessment

Priority Population Health Measures

	Priority Measure	Weight
1	Smoking	4.0%
2	Mothers who Smoke During Pregnancy	4.0%
3	Youth Tobacco Use	6.0%
4	Physically Active Adults	2.0%
5	Physically Active Students	6.0%
6	Obesity – Counseling & Education	4.0%
7	Overweight and Obesity Prevalence among TN Public School Students	6.0%
8	Average mPINC Score	4.0%
9	Breastfeeding Initiation	4.0%
10	Infants Breastfed at Six (6) Months	4.0%

	Priority Measure	Weight
11	NAS Births	6.0%
12	Drug Deaths	4.0%
13	Adults - Prescription Drugs	4.0%
13	MME for Pain	4.0%
14	Children - On-time vaccinations	4.0%
15	Vaccinations - HPV-Females	2.0%
15	NHS Entity Participation in TennHIS	2.0%
16	Vaccinations - HPV-Males	4.0%
16	Vaccinations - Tdap	4.0%
17	Vaccinations - Flu Vaccine, Older Adults	2.0%
18	Teen Pregnancy Rate	4.0%
18	Teen Birth Rate	4.0%
19	Third Grade Reading Level	6.0%
20	Dental Sealants	4.0%
21	Frequent Mental Distress	2.0%
22	Infant Mortality	4.0%
23	Low Birthweight	4.0%
24	Increase the proportion of adults with pre-diabetes who are identified and referred to a prevention program.	2.0%
25	Ratio of Premature Deaths (Higher Density / Lower Density Counties)	4.0%
	TOTAL	100%