Certificate of Public Advantage
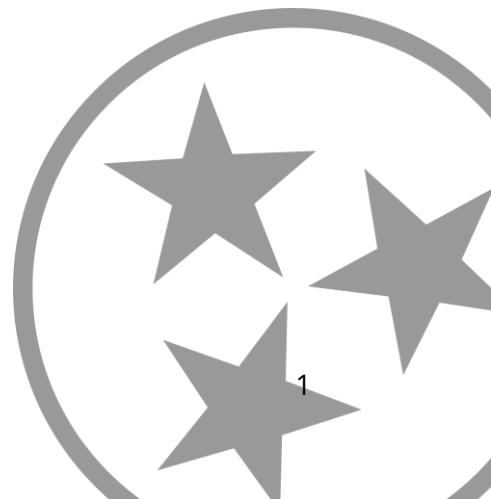
Department Annual Report

Covering Fiscal Year 2023: July 1, 2022-June 30, 2023

Tennessee Department of Health| May 2024

TN Department of Health

1

COPA: Department Annual Report on FY23

Executive Summary

In 2018, the two largest health systems in Northeast Tennessee, Mountain States Health Alliance and Wellmont Health System, were issued a Certificate of Public Advantage (COPA) by the State of Tennessee and allowed to merge under the name, Ballad Health. As part of the COPA, and as a condition of granting the COPA, the Tennessee Department of Health (TDH or the Department) required the new health system to reinvest expected savings from the merger in ways that would substantially benefit residents living in the system's geographic service area.

The State required the formerly competing systems to agree to a number of terms and conditions that were set out in the Terms of Certification (TOC), a document governing the COPA. The State is required to actively supervise the system, and the TOC subjects the system to an annual review. The goal of the COPA process is to protect the interests of the public in the region and the State and to ensure that the benefits of the merger continue to outweigh the risks associated with a reduction in competition.

This Annual Report presents TDH's Annual Review of the Ballad Health COPA for Fiscal Year (FY) 2023 (July 1, 2022 – June 30, 2023) and includes a review of Ballad Health's performance across multiple health measures. With the expiration of the Governor's declared State of Emergency, brought on by the COVID-19 pandemic, all provisions under the TOC previously suspended by the Department were resumed for Ballad Health.

In June of 2023, TDH held a public hearing on the Ballad Health COPA, which was well-attended. TDH heard from 30 speakers at the event and received dozens more written comments and inquiries from the public. The comments consisted of both expressions of appreciation for community improvement initiatives and investments as well as expressions of concerns about quality of care, service line consolidations, and staffing shortages.

Ballad Health submitted an Annual Report for FY23, which can be read here. Highlights from the Ballad Health Fiscal Year 2023 Annual Report, include:

- An active Clinical Council whose nine subcommittees continued to develop policies and promote best-practices across clinical, therapeutic, technological, and system domains.

- The expansion of Ballad Health's Behavioral Health programs that resulted in 3,750 crisis assessments, 3,400 behavioral health transports, and 39,000 substance abuse screenings and referrals to treatment. Additional provisions of behavioral health services resulted from the opening of Woodridge Walk-In Crisis Center, the launch of Iris Telehealth Consults, and the growth of STRONG futures outpatient clinic and living center.

- Ballad Health's population health improvement programs continued to grow, including Appalachian Highlands Care Network, STRONG pregnancies, and STRONG starts. Additionally, implementation of a social care integration platform and community partner referral network enabled providers and partners to address health-related social needs for vulnerable populations.

- Improvement was achieved in 9 of the 17 COPA Index Target Quality Measures over the 2017 baseline values. Over 50% improvement was achieved in Pressure Ulcer, Abdominopelvic Accidental Puncture/Laceration, and C. Diff rates. And, while ED wait times continued to increase in FY23, patient satisfaction scores improved slightly over FY22.

The COPA Monitor's critical investigative work continued throughout FY23. The COPA Monitor Annual Report for FY23, included analysis of Ballad Health's compliance with TOC provisions and recommendations to TDH regarding the Final Score for FY23.

TDH's three Sub-Index reports, with updated values on population health, access, and quality (other) measures, were drafted in accordance with the TOC and are attached to this report as Exhibits 1, 2, and 3, respectively. TDH noted that the COVID-19 pandemic may have had a lingering effect on health behaviors that impacted population health, access to health services, and quality improvement efforts. This may account for some of the increases in reported frequent mental distress, physical distress, and obesity. Further, a nationally reported nursing shortage has impacted Ballad Health, and this shortage likely contributed to decreases in patient satisfaction in Ballad Health's Emergency Departments. Still, despite these headwinds, many prevention measures, such as population with a primary care physician, appropriate use of painkiller prescriptions, and cancer screening rates progressively improved.

Trends for multiple Population Health, Access, and Quality (Other) Sub-Index measures are provided in this Department Annual Report.

TDH concluded by agreeing with the COPA Monitor's Final Score recommendation in the COPA Monitor's Annual Report:

Economic Sub-Index: **Pass**

Final Score: **93.55**

Pursuant to the Terms of Certification, with a Passing score in the Economic Sub-Index, and a Final Score of 93.55, it is TDH's determination that the Ballad Health COPA continues to provide a Public Advantage.

Introduction and Background

The COPA

A COPA is a written approval by TDH that governs a Cooperative Agreement (including a merger) among two or more hospitals. A COPA is intended to provide state action immunity to the hospitals from state and federal antitrust laws by replacing competition with state regulation and active supervision. The goal of the COPA process is to protect the interests of the public in the region and the State and to ensure that the benefits of the merger continue to outweigh the risks associated with a reduction in competition.

TDH, after consultation with and agreement from the Tennessee Attorney General's Office (AG's Office), has the authority to issue a COPA if the applicants pursuing a COPA demonstrate that the likely benefits of the proposed Cooperative Agreement outweigh the likely disadvantages that would result from the loss of competition. Tennessee's Hospital Cooperation Act of 1993, Tenn. Code Ann. §§ 68-11-1301 – 1309 (amended in 2015) gives the State the authority to issue a COPA. Permanent Rules 1200-38-.01 et seq. implement this Act.

In February of 2016, the two largest health systems in Northeast Tennessee, Wellmont Health System and Mountain States Health Alliance, applied for a COPA. The applicants' justification for the merger was realized savings by reducing duplication and improving efficiencies. These savings would allow them to sustain their rural hospitals and reinvest in ways that would substantially benefit those residing in their Geographic Service Area (GSA).

The GSA of the combined systems consists of 10 counties in Northeast Tennessee and 11 counties and two independent cities in Southwest Virginia[1]. This part of the Appalachian Region is largely rural and has a number of health, economic, and other challenges that, when combined, present a unique and difficult environment for improving the quality of and access to health care and for improving health outcomes.

On January 31, 2018, TDH issued a COPA to Mountain States Health Alliance and Wellmont Health System, allowing them to merge under the name Ballad Health. TDH and the AG's Office developed the TOC to govern the COPA. The TOC lays out Ballad Health's obligations and

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[1] Carter, Cocke, Green, Hamblen, Hancock, Hawkins, Johnson, Sullivan, Unicoi, and Washington Counties in Tennessee; Buchanan, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise and Wythe Counties in Virginia; and the independent cities of Bristol City and Norton City in Virginia.

responsibilities and the regulatory role of the Department and Attorney General. The TOC details the conditions required by TDH for Ballad Health to demonstrate ongoing Public Advantage.

Within the TOC is a description of the Index and scoring system that is used to track and evaluate the demonstration of ongoing Public Advantage in four categories (sub-indices):

- Population Health Improvement
- Access to Health Services
- Economic
- Quality of Care (Other)

Via the COPA Index, TDH tracks the system's progress under the Cooperative Agreement and annually determines if a Public Advantage is maintained for the residents of the GSA.

The Department Annual Report

Pursuant to Exhibit F of the TOC, TDH is required to prepare an Annual Report that incorporates findings from (i) Ballad Health's Periodic Reports, (ii) the COPA Compliance Office Annual Report, (ii) the COPA Monitor Annual Report, (iv) the Healthcare Access Report, and (v) the Population Health Report. The Department's Annual Review must also "include determinations of compliance, the Index scores, and trends relevant to the cognizable benefits and demonstration of public advantage for each Fiscal Year that such information is available."

The Department Annual Report is the last in a series of Annual Reports required by the TOC for a given Fiscal Year. Its purpose is to report on the regulated entity's compliance with the terms and conditions under which the COPA was granted and on the Department's determination of whether the COPA continues to provide a Public Advantage.

Annual Review

Section 7.02 of the TOC reads:

> Pursuant to Tenn. Code Ann. §68-11-1303(g), the Department shall review, on at least an annual basis, the COPA to determine Public Advantage (the "Annual Review"). The Department shall review whether Public Advantage is demonstrated or not for each Fiscal Year during the COPA Term, in accordance with the procedures and requirements of the COPA Act and Terms of Certification. This Annual Review shall include, without limitation, the following: (i) the determination of the Final Score and Pass/Fail Grade, (ii) the COPA Parties' degree of compliance with the Terms and Conditions, … and any and all COPA Modifications and Corrective Actions occurring prior to such review, and (iii) trends of (Ballad Health's) performance hereunder since the Issue Date and other factors (which may or may be reflected in the Index) relevant to the Department's determination of the likely benefits and disadvantages of the Affiliation which, as of the time of such determination, can reasonably be expected if the Affiliation is continued.

Because of the pandemic's materially adverse impact on Ballad Health, certain reporting requirements and performance improvement expectations were suspended or modified during FY20-FY22. TDH determined it was not appropriate to score Ballad Health for pre-pandemic performance expectations related to Access, Population Health, and Quality (Other) Sub-Index measures during that extraordinary period. Pursuant to the Pandemic Period Scoring Letter issued by the Department, annual reports on FY21 and FY22 included an Economic Sub-Index Score but not a score on the remaining sub-indices. In the absence of reliable and valid data, only narratives on the remaining Sub-Indices were provided. For FY23, Index Scoring, according to calculation schedules set forth in the TOC, has resumed.

As in all previous Department Annual Reports, this report includes, as a part of its review, comments on things that are working well and concerns regarding non-compliance that either surfaced or persisted in the past year.

Things that are working well.
TDH has identified the following COPA-related successes of the past year (FY23):

- Hospitals that were under threat of closure remained open;

- Ballad Health supported the community by funding and deploying community health improvement projects across its service area;

- Ballad Health expanded its social care integration strategy and developed a community partner referral network to enable Ballad Health as well as independent providers and other regional partners to address health-related social needs for vulnerable populations; and

- Ballad Health's executive staff provided updates on its activities to TDH staff on monthly calls and met with TDH staff each quarter to discuss progress made in implementing the system's six spending plans: the Behavioral Health Plan, Children's Health Plan, Rural Health Plan, HR/GME Plan, Population Health Plan, and HIE Plan.

Resolved Commitments

Section 3.08(b) of the TOC requires Ballad Health to prepare an Equalization Plan in order "to eliminate differences in salary/pay rates and employee benefit structures" among Ballad Health employees. TDH has been informed by the COPA Monitor that salaries and benefits have been equalized between the legacy systems, Wellmont Health System and Mountain States Health Alliance, and TDH has therefore determined that the Employee Pay/Benefits Equalization obligation, under TOC Section 3.08(b), has been met.

Resolved instances of potential non-compliance

The COPA Monitor addressed potential COPA and TOC violations in his COPA Monitor Annual Report. TDH has not found any additional confirmed non-compliance events under the TOC.

Comments on / Summary of Public Input

The Rules (available [here](#)) require the Department to hold a public hearing every three years. Annual public hearings on the COPA had been held from 2019-2021, either in-person or virtually. A public hearing was not held in 2022 due to high COVID-19 rates. The Department resumed public hearings on June 12, 2023.

Commissioner Alvarado attended the Department's 2023 COPA Public Hearing, where 59 members of the public signed up to speak. 30 individuals were able to speak before the allotted 1.5 hours had expired. There was a mixture of positive and negative comments. Some spoke positively to the community benefits provided via funding from and partnerships with Ballad Health. Others spoke about their personal experiences or their concerns regarding 1) quality and safety; 2) consolidation of service lines in the region, 3) wait times (especially in emergency departments), and 4) staffing shortages.

Transcripts from the June 12, 2023 COPA public hearing and copies of written comments submitted to TDH on or about that date have been posted to TDH's COPA webpage, and are available here: https://www.tn.gov/health/health-program-areas/health-planning/certificate-of-public-advantage/redir-copa/copa-announcements.html.

In addition to public hearings, TDH continues to accept and review public comments related to the Ballad Health COPA submitted via an online comment form, as well as via email and mail, throughout the year. Information on how to submit public comments on the impact of the Ballad Health merger can be accessed here: https://www.tn.gov/health/health-program-areas/health-planning/certificate-of-public-advantage/redir-copa/public-input-and-complaints.html. Potential violations of the TOC should be submitted on TDH's COPA complaint intake form, which can be accessed here: https://www.tn.gov/health/health-program-areas/health-planning/certificate-of-public-advantage/redir-copa/public-input-and-complaints.html.

Prior to FY23, TDH's Division of Health Licensure and Regulation was responsible for the licensing and regulation of hospitals in the state. That Division conducted investigations of safety concerns at all Tennessee health care facilities. Beginning July 1, 2022, those responsibilities moved to Tennessee's Health Facilities Commission. Individuals with a personnel or facility concern are encouraged to submit information to the Health Facilities Commission via this website: https://www.tn.gov/health/health-professionals/hcf-main/filing-a-complaint.html.

While it is not the role of TDH under the TOC to assist or track individual patients who had a negative experience at a Ballad Health facility, TDH is tracking Ballad Health's performance on multiple safety and quality measures including timely and effective care, infection rates, and patient satisfaction scores at 1) a system level, 2) a statewide level, and 3) each Ballad Health facility. Data on Ballad Health's total patient population are used to monitor trends and track the demonstration of an overall improvement or decline in care quality subsequent to the issuance of the COPA.

A summary of the complaints TDH received related to the COPA during FY23 is not included in this report as these comments are not subject to public disclosure pursuant to Tenn. Code Ann. § 68-11-1310(a)(7).

TDH's COPA staff reviews and responds to each comment individually. The majority of complaints are forwarded to the COPA Compliance Officer to share with department leaders at Ballad Health who may be able to resolve the complaint, or to the COPA Monitor to review and determine if the complaint should be formally investigated.

Findings from Reports related to Ballad Health's Fiscal Year 2023

The COPA Compliance Office Annual Report

The COPA Compliance Office Annual Report is available <u>here</u>.

Findings:

- The COPA Compliance Office Annual Report was filed in compliance with the Terms of Certification and included required information.

- The list of official correspondence and status of requests listed in the COPA Compliance Office Annual Report seems thorough and accurate.

Ballad Health's Periodic Reports

The Ballad Health Quarterly Reports were filed in compliance with the Terms of Certification and included required information.

The Ballad Health Annual Report on FY23 is available <u>here</u>.

Findings:

- The Ballad Health Annual Report was submitted in compliance with the TOC.

- The report includes sufficient detail on activities as well as narratives about the progress of various undertakings and the challenges associated with a few of them.

- TDH recognizes the work of the Ballad Health Clinical Council and appreciates the description of their work in each Ballad Health Annual Report. TDH is pleased that roughly half of the membership are not employed by Ballad Health but believes further value would be added if future reports included more detailed information on Council membership.

  - FY23 Ballad Health Annual Report described a significant amount of work accomplished by Clinical Informatics, Medical Staff Services, Surgical/Perioperative Services, and Women and Children's Subcommittees.

  - In contrast, accomplishments listed by Family, Patient, and Provider Experience Subcommittee seemed less substantive.

- TDH appreciates the information provided on grants and academic research projects. TDH was most pleased by Ballad Health's leadership and progress on the following programs:

    o Research activities and database development for Ballad Health's STRONG pregnancies and STRONG starts, and STRONG LINK programs: Evaluation of programs designed to positively impact the causal relationships between childhood experiences and life outcomes for generations;

    o Study with Harvard Medical School on the competitive dynamics of small hospital markets; and

    o CMS' Accountable Health Communities: Study on Ballad Health's Medicare and Medicaid patients who are screened for health-related social needs so that high-risk patients are identified and offered either referrals or navigation services.

- The information provided on research goals, progress toward goals, and involvement of academic and community partners was sufficiently detailed. TDH was especially pleased with the following efforts: Continued support of the ETSU Center for Rural Health Research's population health research, collaboration in the area of GME and Nursing, and other joint grant and study opportunities; partnering with middle schools and high schools to promote careers in health care; and developing the Appalachian Highlands Center for Nursing Advancement to address the nursing shortage.

- In addition to Ballad Health's numerous leadership development programs, the system modified nurse training programs to address deficiencies in clinical experiences during the pandemic.

- Ballad Health's FY23 Annual Report included a helpful summary of progress made across its six spending plans. Some of the most notable accomplishments under each plan were:

    o Behavioral Health
        - Completed 3,750 crisis assessments through its Respond program
        - Completed over 3,400 behavioral health transports
        - Completed over 39,000 SBIRT screenings
        - Served 372 families through STRONG futures program since opening

    o Rural Health
        - Hired needed PCPs and specialists in rural areas
        - Implemented a Cardiovascular Navigation Program

    o Children's Health

- - - Enrolled 115 patients in a Pediatric Complex Care Program
  - Expanded neo-natal telehealth to three sites
  - Hired specialists and sub-specialists

  o HIE
    - Conducted geographical service area interoperability research
    - Continued to participate with OnePartner, EpicCare Link, and deployed Epic's Community Connect

  o Population Health
    - Increased the number of social needs referral platform users to 187 organizations – including 432 programs and 1,025 users
    - Built a Comprehensive Contraceptive Health Strategy focused on vulnerable populations
    - Expanded STRONG Pregnancies and STRONG Starts
      - Conducted 5,760 STRONG Pregnancies social needs screenings
      - Enrolled over 2,700 families in STRONG Starts
    - Expanded enrollment in Appalachian Highlands Care Network (a program that connects uninsured patients and their families with free or low-cost clinics, dental services, preventative care services) to 5,698 individuals in FY23
    - Expanded smoking cessation services (enrolled 673 participants); prenatal care services (added 10 referral partners and additional navigator); mobile services to at-risk women and disparate groups (added a mobile women's health site); and Faith Community Nursing (added a site in Virginia)

  o HR/GME
    - Engaged in over 170 research projects in FY23
    - Participated in over 20 recruiting events
- Ballad Health Sponsored Residency Programs
  o The Board passage rates were generally good, except for those in the following ETSU programs: Cardiology (67%), GI (50%), and Pediatrics (57%)
  o Most of the available Accreditation Council for Graduate Medical Education approved positions were filled in FY23, except for those in the following ETSU programs: Internal Medicine (53% unfilled), Infectious Disease (50% unfilled),

Pulmonary Disease and Critical Care (33% unfilled), Psychiatry (24% unfilled). These programs all had a 100% match rate with 2022 class.

  o There were no additions or deletions in residency sots in FY23.

- Findings related to Access:

  o With regard to the Patient Satisfaction Surveys and survey results, TDH noticed that Patient Satisfaction results were mixed across service settings. While Patient Satisfaction in Owned Medical Practices had significantly improved over pre-merger values, Patient Satisfaction in Outpatient Services had declined slightly, and Patient Satisfaction in Emergency Services was down significantly.

  o The percentage of population within 10 miles of an urgent care center that is open nights and weekend declined from 2018 to 2023 (from 70.3-54.7). Ballad Health noted that due to staffing and operational considerations, several centers' closing time changed from 8:00 pm to 7:30 pm, which disqualified them from this designation.

  o Screenings for cancers, diabetes, and hypertension improved significantly over 2017 baselines.

  o Percentages for the two Access Sub-Index measures on follow-up after hospitalization for mental health illness declined significantly from the 2017 baseline, from 33.3 to 21.2 for follow up within 7 days and from 58.6 to 48.1 for follow-up within 30 days. Ballad Health is encouraged to provide an explanation for these marked declines in future Annual Reports.

  o Additional findings on Access Sub-Index measure trending can be found later in this document. Ballad Health's performance across the Access Sub-Index measures was overwhelmingly positive.

- Findings related to Population Health:
  o Ballad Health reported on the two components of the Population Health Sub-Index scoring for FY23:

    1. Regarding Investment in Population Health: Ballad Health reported exceeding its FY23 spending commitment of $11,000,000.

2. Regarding the Achievement of Process Measures identified in the system's Population Health Plan: Ballad Health reported achieving 15 of the 15 Process Measures selected from the FY23 Population Health Plan.

o TDH is pleased with the detailed summary of accomplishments that were reported, especially:

▪ Appalachian Highlands Care Network expanding with 22 new sites and enrollment increasing to 5,698 individuals;

▪ Continued expansion of STRONG pregnancies and STRONG starts to support pregnant women, babies, and young families;

▪ Implementation and usage of Epic's Healthy Planet and Compass Rose for social care integration and improved care management for vulnerable populations; and

▪ Ballad Health's expanded efforts on prevention, early detection, and interventions to reduce leading causes of mortality and morbidity in the region.

o Additional findings on Population Health Sub-Index measures, and trending information can be found later in this document.

• Findings related to Quality:

o Ballad Health showed improvement in 9 of the 17 Target Quality Measures over 2017 baseline rates. Over 50% improvement was achieved in Pressure Ulcer, Abdominopelvic Accidental Puncture/Laceration, and C. Diff rates.

o Of the 83 monitoring measures, Ballad Health showed improvement over baseline in these eight measures: Average Risk Polyp Surveillance; Head CT Stroke Patients; Hip and Knee Complications; 30-Day Mortality Rate for Heart Failure; 30-Day Mortality Rate for Stroke; medical imaging for Lumbar Spine for Lower Back Pain; Use of Contrast Material; and Outpatients who got Cardiac Imaging Stress Test before Low-Risk Outpatient Surgery.

o All eight of the 30-day readmission rates that are monitored were above baseline in FY23. Higher readmissions rates are often associated with lower quality and increased health care costs.

o Ballad Health's performance steeply declined in Emergency Department Wait Times and in Elective Delivery rates compared to baselines. TDH is most closely watching these monitoring measures as prolonged waiting times are associated with increased morbidity, decreased patient satisfaction, and patients leaving the

hospital before getting care, while elective deliveries are associated with higher costs and higher rates of complications for newborns.

- o Ballad Health's FY23 HCAHPS scores were below baselines but slightly above FY22 scores in every category except the summary categories. While survey results provide that rooms were cleaner and nurses and doctors were communicating better, patients reported that they were less inclined to recommend the hospital and gave their hospital a slightly lower overall score.

- o TDH remains pleased with and supportive of the work undertaken by the Clinical Council and the majority of its subcommittees as described in Ballad Health's report. TDH requests more detail in future reports on the efforts and accomplishments of the Patient, Family, and Provider Experience Subcommittee.

- Findings related to Economic factors:
  - o In FY23 Ballad Health spent over $74M on charity care.
  - o Ballad Health achieved over $11.5 million in *new* cost-efficiency savings in FY23.
  - o Inpatient charges increased by 2.9% in FY23.
  - o According to the financial ratios reported
    - Ballad Health's Operating Margin fell from 1.1% in FY22 to -1.7% in FY23
    - Ballad Health's Current Ratio fell slightly from 1.2 in FY22 to 1.1 in FY23
    - Total Days Cash on Hand fell from 231.4 in FY22 to 217.6 in FY23
    - Ballad Health's Debt Service Coverage Ratio fell from 4.6 in FY22 to 2.9 in FY23

The COPA Monitor Annual Report

TDH appreciates the diligent work of the COPA Monitor in auditing, investigating, and reporting on his findings regularly to TDH and in making written recommendations to TDH.

Findings:

The COPA Monitor Annual Report finds that Ballad Health complied with the pricing limits of Addendum One for FY23 (Section III, page 5) and recommends Ballad Health receive a *pass score* for the Economic Sub-Index (Attachment A, page 13) and a Final Score of 93.55 (Attachment A, page 14). He further reports that complaints alleging the COPA or the TOC were not being followed by Ballad Health were unsubstantiated (Section III, page 2) and that the charity care commitment was satisfied by waiver from the COPA Monitor (Attachment B). Finally, the Annual Report finds that the plan spending obligation was not met for the Behavioral Health Services and Region-wide Health Information Exchange for FY23 and lists several options for TDH to respond to this shortfall (Section III, page 4).

COPA Monitor Follow-up Recommendations and TDH Responses:

- **Reduce the TOC charity care minimum requirement and base the new requirement on IRS Form 990 for tax year 2022.**

  TDH agrees with the COPA Monitor's former assessment that the charity care minimum of TOC Section 4.03(f)(ii) should be revised to the new base requirement of the amount reported by Ballad Health on IRS Form 990 for its tax year ending in 2020.

- **TOC Section 3.07, Facility Maintenance and Capital Expenditures, be re-written.**

  TDH appreciates the perspective of the COPA Monitor regarding capital budget and depreciation calculations and will consider upcoming capital budgets in light of those recommendations.

- **TDH and Ballad Health come to agreement about the expectations of the content of spending plans when spending obligations have been met for a plan.**

  TDH agrees with the COPA Monitor on this recommendation.

17

- **Require public hearings be held at a minimum of annually.**

    TDH agrees that the public hearing held in June 2023 was well-attended and a valuable listening vehicle. TDH intends to hold public hearings well within the minimum frequency required by Tenn. Comp. R. & Reg. 1200-38-01-.06(5).

Ballad's Response to the COPA Monitor Annual Report

Ballad has informed the Department that it disputes substantial portions of the COPA Monitor Annual Report, particularly respecting the calculation of Monetary Commitment and capital expenditures.

The Department Population Health Report

Below is a sample of trending graphs and charts that were generated from values provided by Tennessee data stewards and those contained in the Department's Population Health Reports. Prior year's Population Health Reports can be accessed here. The most recent year's data are reported in the Department's 2023 Population Health Report, which is attached as Exhibit 1.

COVID-19's Impact on Population Health in the United States:

Certain data included in the Population Health Sub-Index Report were collected during the COVID-19 pandemic. Hospitals have raised concerns that the pandemic has exacerbated existing disparities related to health outcomes.[2] According to Trust for America's Health, **"**[e]merging data suggests eating habits shifted, physical activity declined, stress and anxiety increased, food insecurity worsened, and many Americans gained weight throughout the pandemic, a sharp reminder of the effects that underlying social, economic, and environmental conditions have on the health and well-being of Americans."[3] The long-term health implications of the pandemic are still being understood, but it is clear the COVID-19 pandemic affected population health on a widespread level.

Findings:

- Compared to peer counties, the COPA region is less healthy in 25 measures and healthier in 22 measures. All differences may not be significant.

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[2] https://oig.hhs.gov/oei/reports/OEI-09-21-00140.pdf

[3] https://www.tfah.org/report-details/state-of-obesity-2021/#:~:text=Trust%20for%20America's%20Health's%20(TFAH,by%20the%20COVID%2D19%20pandemic

- Tennessee State birth and death data for calendar year 2022 were not finalized in time for inclusion in the Department's 2023 Population Health Report, therefore no trend reporting was conducted this year on the following 12 measures: mothers who smoke during pregnancy, breastfeeding initiation, drug deaths, teen births, infant mortality, child mortality, cardiovascular deaths, cancer deaths, diabetes deaths, diabetes adverse events, suicide deaths, and premature death ratio.

- Among the Population Health Sub-Index measures, the greatest improvement for residents of Ballad Health's GSA subsequent to issuance of the COPA was seen for 3rd grade reading, adult painkiller prescriptions, and hospital mPINC scores. mPINC scores (which indicate a hospital's maternity care practices and policies that support optimal infant feeding) in the COPA Counties rose seven points since the COPA as issued (from 74 in 2017 to 81 in 2022), while in Peer Counties the scores declined six points (from 74 in 2017 to 68 in 2022). The state average score remained unchanged during the same period, at 72.

- The percentage of adults and adolescents with obesity, defined as a BMI $\geq$30, have been climbing steadily in the US for decades. The climb has been steeper in Tennessee's rural counties. The estimated percentage of adults with obesity in the COPA Counties rose 8.5 points over the life of the COPA (from 34.1% in 2017 to 42.6% in 2022). For adolescents, a 2.9% increase was seen in the COPA Counties (from 41.3% in 2017-18 to 44.2% in 2021-22) outpacing the 0.7% increase in Peer Counties (from 41.5% to -42.2%). This is concerning as obesity is widely recognized as one of America's most serious population health issues. Individuals with obesity face an increased risk of developing type 2 diabetes, heart disease, asthma, and some types of cancer. Moreover, it can adversely affect mental health and has been linked to mental illnesses, such as anxiety and depression.[4]

- Furthermore, many smoking and tobacco use measures have trended higher in the COPA Counties than Peer Counties.

- Third grade reading levels continue to rise in the COPA Counties after a brief dip in the 2020-21 school year. Improved educational performance is a strong indicator of future health improvement.

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[4] Warren, Molly, Madison West, and Stacy Beck. "The State of Obesity 2023: Better Policies for a Healthier America." Trust for America's Health, September 2023. https://www.tfah.org/wp-content/uploads/2023/09/TFAH-2023-ObesityReport-FINAL.pdf.

Population Health Sub-Index trends: **Smoking measures**

Smoking Adults - Percent of Adults Who Are Current Smokers

Adults having smoked at least 100 cigarettes in their entire life and currently smoke every day or some days.
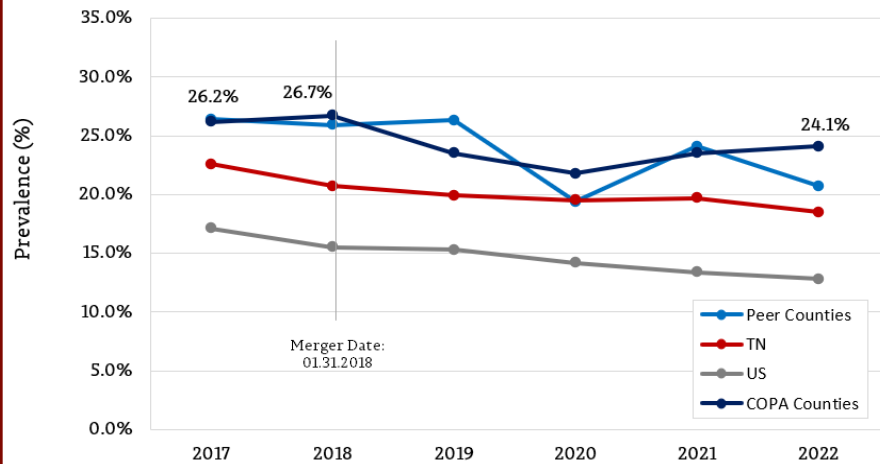

Merger Date: 01.31.2018

Data Sources: Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2015-22; CDC, BRFSS, 2015-22

- **Adult smoking** in the COPA region decreased subsequent to the merger; from an estimated 26.2% in 2017 to 24.1% in 2022.

- In 2022, the estimate of adult smokers in the COPA region was 3.4% higher than the 20.7% estimate in the Peer Counties.

- The percentages of youth in the COPA region who reported they were **current smokers** or had **ever smoked a cigarette** were below baselines.

- The Peer Counties out-performed the COPA Counties in these youth smoking measures between 2021-22 and 2022-23 school years.
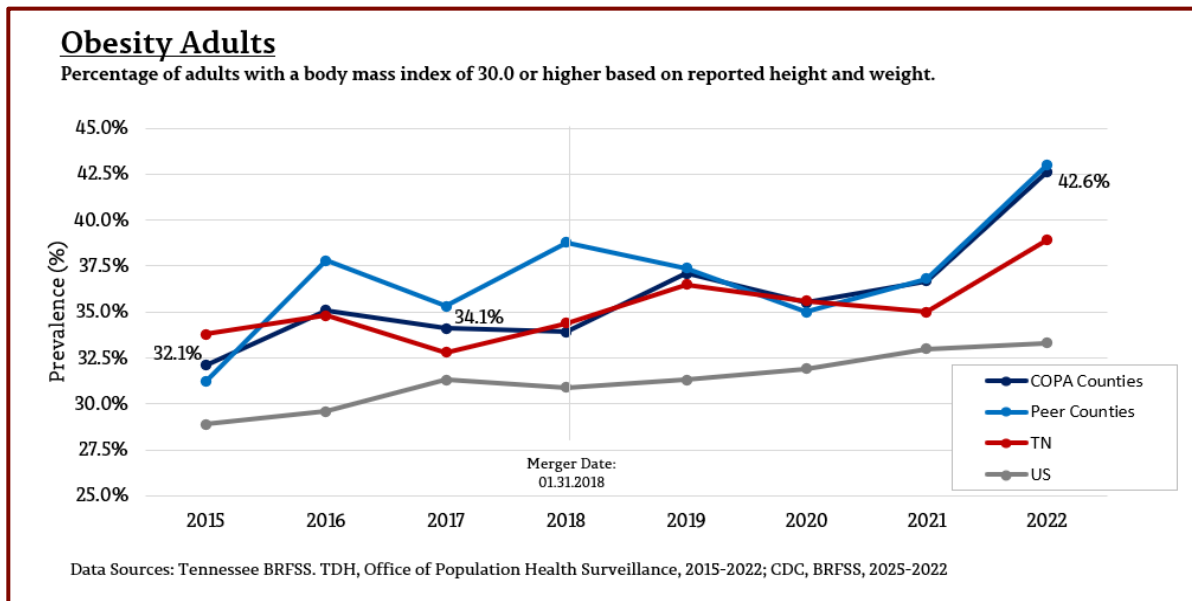
Youth Tobacco Use - Current and Ever

— Current is defined as the percentage of high school students who smoked cigarettes within the last the 30 days.
- - Ever is defined as the percentage of high school students who ever smoked a cigarette
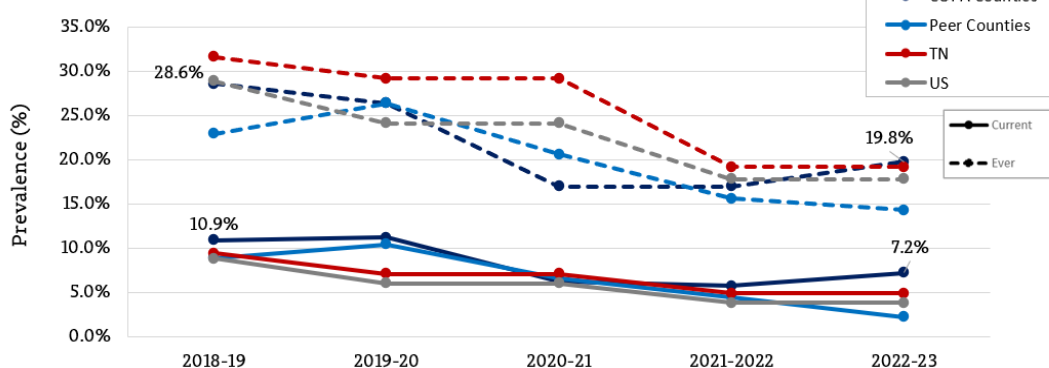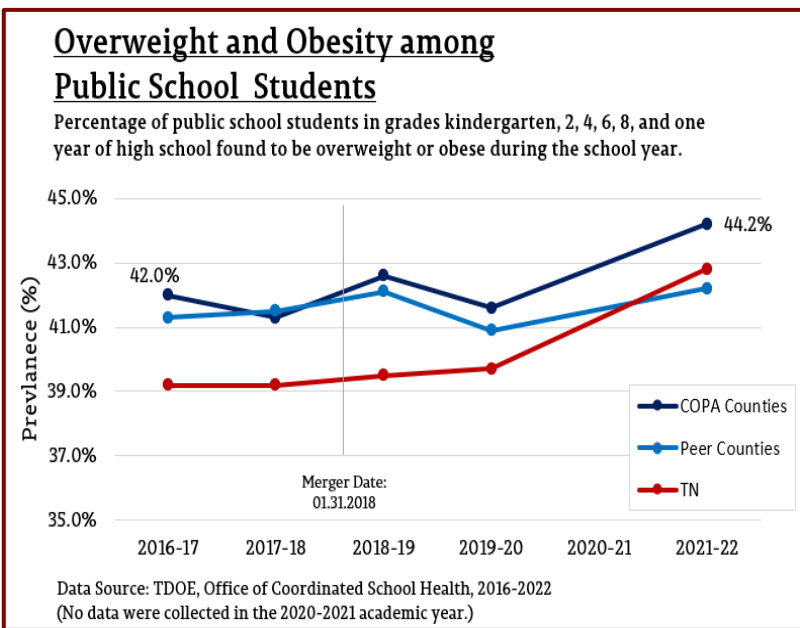

Data Source: Tennessee Department of Education (TDOE), Office of Coordinated School Health, Youth Wellness Survey, 2018-23 / YRBS, 2018-23; CDC, Youth Risk Behavior Survey (YRBS), 2018-23.

Note: In any instance where a value is not indicated, it is because the verified value was not available at the time of publication.

Population Health Sub-Index trends: Obesity measures

Obesity Adults
Percentage of adults with a body mass index of 30.0 or higher based on reported height and weight.

Data Sources: Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2015-2022; CDC, BRFSS, 2025-2022

- While estimates of **obesity among adults** in the COPA Counties increased over the past four years, increases were also seen in Peer Counties and the state as a whole.

- **Adult obesity** estimates in the COPA and peer Counties increased in the last year, from 36.7% to 42.6% and from 36.8% to 43.0%, respectively.

Overweight and Obesity among 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.

Data Source: TDOE, Office of Coordinated School Health, 2016-2022
(No data were collected in the 2020-2021 academic year.)

- The estimated percentage of **youth obesity** in the COPA region fluctuated greatly over the four years before COVID-19, while the state's percentage climbed steadily.

- Subsequent to COVID-19, estimates for all three tracked groups rose above their 2016-17 baseline estimates.

Population Health Sub-Index trends: Substance Use

Neonatal Abstinence Syndrome (NAS) Births
Number of reported cases with clinical signs of withdrawal per 1,000 live births.
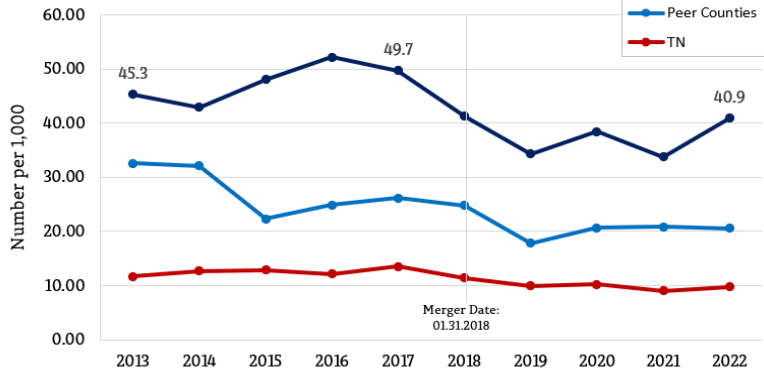

Data Source: TDH, Neonatal Abstinence Syndrome Surveillance, 2013-22

- The rate of **Neonatal Abstinence Syndrome births** in the COPA region fell significantly from its premerger rate of 49.7 per 1,000 in 2017 to 40.9 per 1,000 in 2022. This rate of improvement exceeds that of the Peer Counties, whose rates fell from 26.2 to 20.6 per 1,000.

- **Painkiller Prescription** rates dropped consistently over the past four years in the COPA and Peer Counties.
- Rates of **MME opioids for pain** fell in the COPA region, from 1211.2 per capita in 2017 to 663.3 in 2022. The Peer Counties MMEs per capita fell, from 1316.9 to 615.7 in the same years.

Prescription Rates: Painkiller and MME for Pain
Number of opioid prescriptions for pain per 1,000 population.
Total morphine milligram equivalents (MME) opioids for pain per capita.
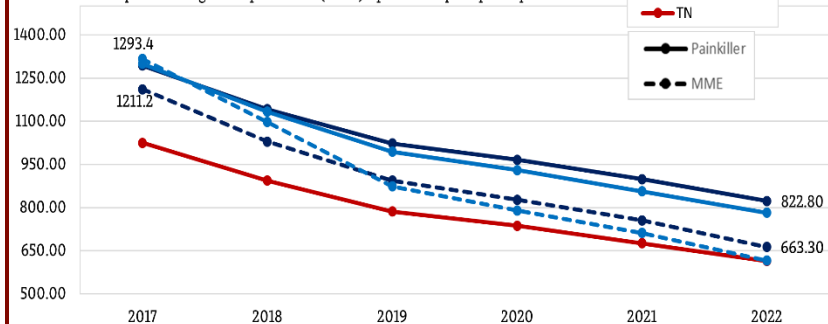
Data Sources: TDH, Office of Informatics and Analytics, Controlled Substance Monitoring Database (CSMD), 2017-22

Prescription Drugs among High School Students
Percent of high school students who report ever taking prescription drugs without a doctor's prescription (such as codeine, Vicodin, OxyContin, Hydrocodone, and Percocet) one or more times during their life.
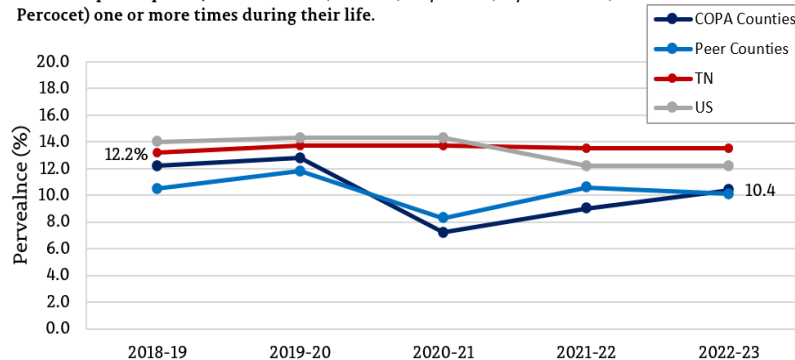

Data Sources: TDOE, Office of Coordinated School Health, Youth Wellness Survey, 2017-23

- The percentage of **high school students who reported taking prescription drugs** without a doctor's prescription declined at a greater rate than in Peer Counties subsequent to the Ballad Health merger.

Population Health Sub-Index trends: Vaccination measures

On-Time Vaccinations for Children

Percentage of children that are up to date on state-required vaccines at the time of kindergarten entry.

Merger Date: 01.31.2018

Legend: COPA Counties, Peer Counties, TN
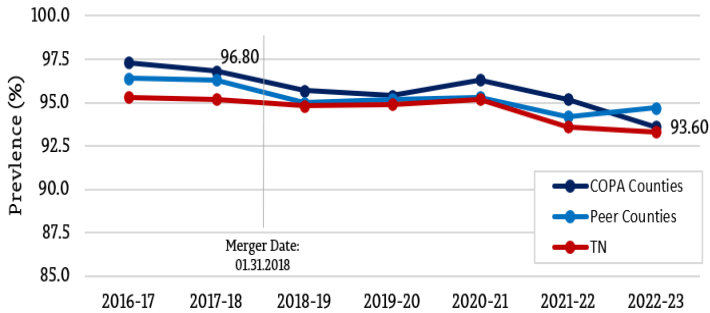
Data Sources: Kindergarten Immunization Compliance Assessment, 2016-22

- The percentage of **on-time vaccinations for children entering Kindergarten** has remained fairly stable since the COPA was issued, with a slight decline occurring after the 2020-21 school year.
- **Vaccinations for children** continued to decline in the COPA Counties, while numbers improved for the Peer Counties.

- The percentage of **Flu vaccinations in adults and in Older Adults** followed similar patterns over the past six years for all regions until 2022, when only the COPA Counties' numbers improved.

- It is unclear why all geographies, including Tennessee and the US, saw a drop in Flu vaccinations in 2018.

- **Flu vaccinations among adult and older adults** in the COPA Counties peaked in 2020.

- The 2021 flu vaccination percentages were higher for both age groups in the COPA region subsequent to the merger.
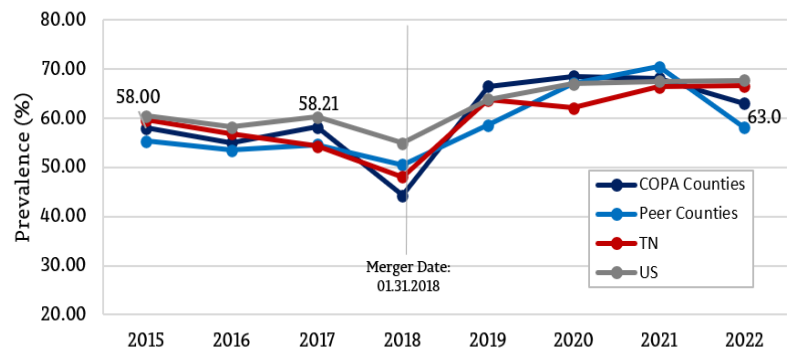
Flu Vaccinations in Adults

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.

Merger Date: 01.31.2018

Legend: COPA Counties, Peer Counties, TN, US
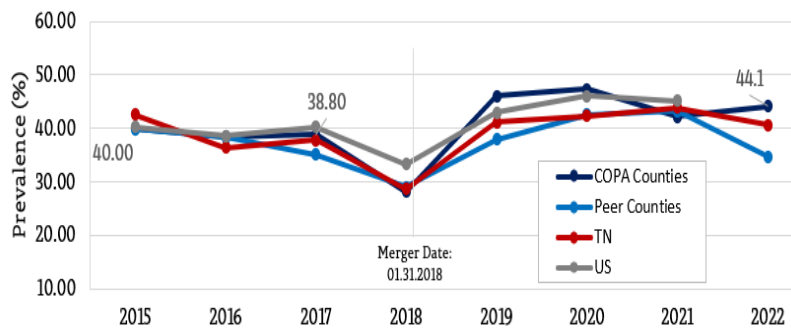
Data Sources: Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2015-22; CDC, BRFSS, 2015-22
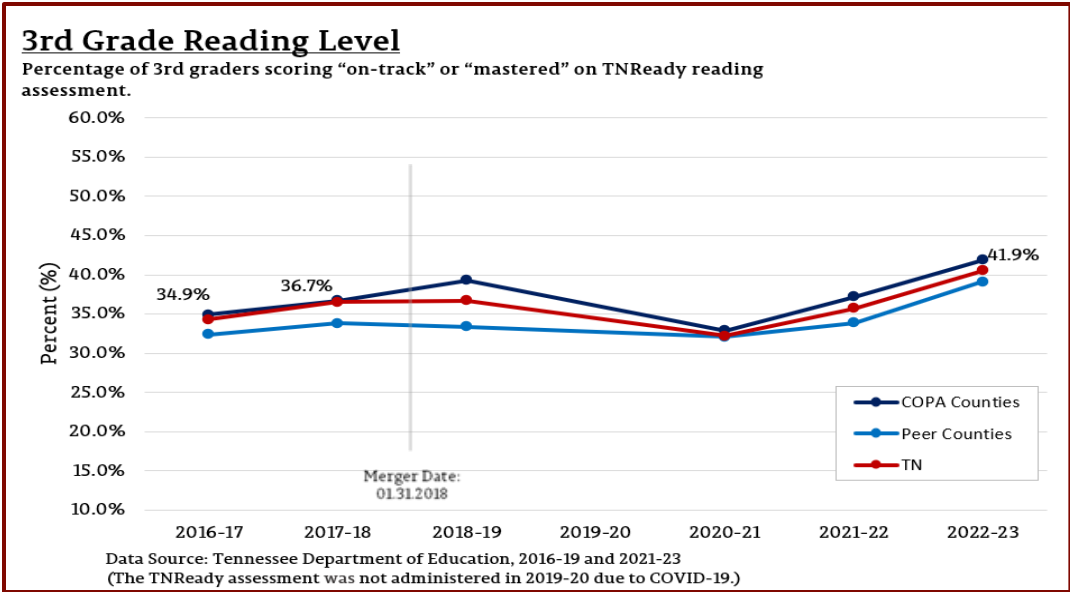
Flu Vaccinations in Older Adults

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.
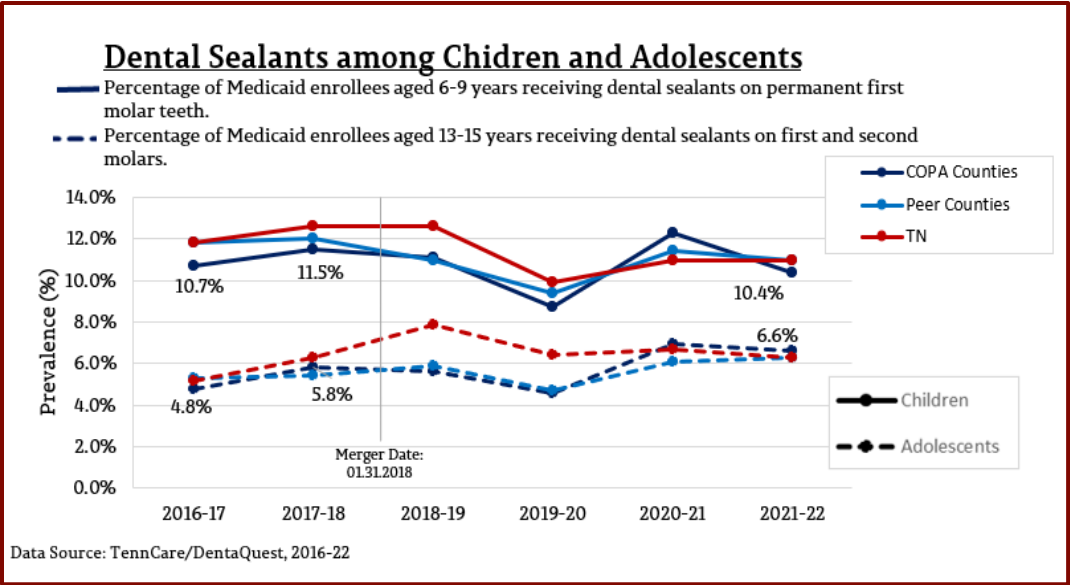

Merger Date: 01.31.2018

Legend: COPA Counties, Peer Counties, TN, US

Data Sources: Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2015-22; CDC, BRFSS, 2015-22

23

Population Health Sub-Index trends: **Community measures**

3rd Grade Reading Level
Percentage of 3rd graders scoring "on-track" or "mastered" on TNReady reading assessment.

Data Source: Tennessee Department of Education, 2016-19 and 2021-23
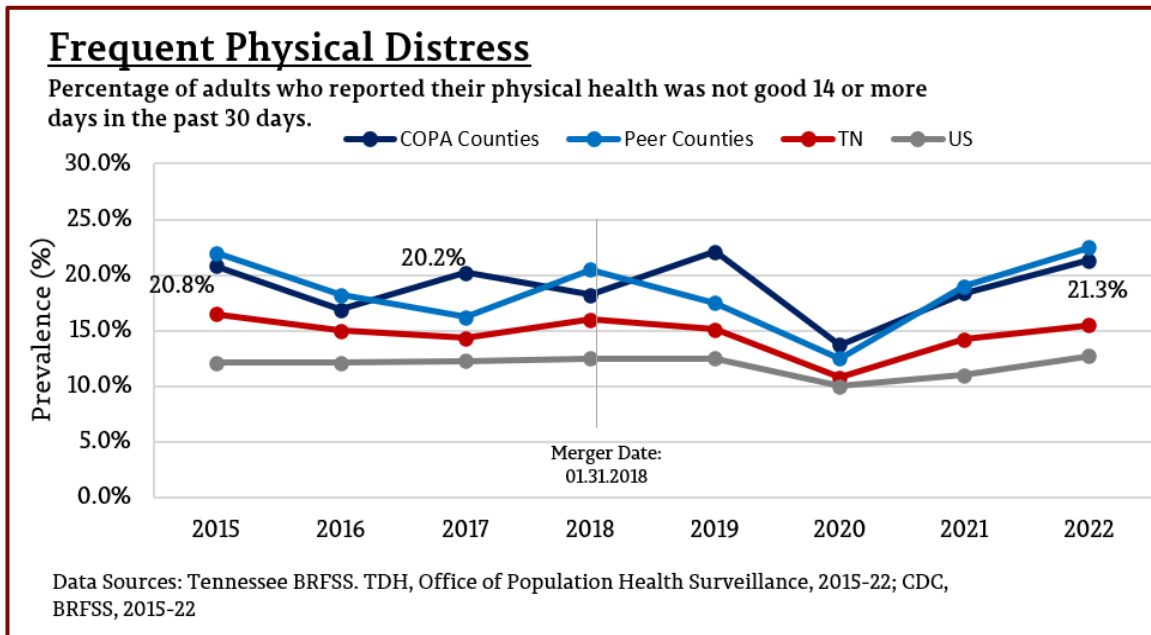(The TNReady assessment was not administered in 2019-20 due to COVID-19.)

- **The percentage of 3rd graders reading at or above** their grade level in the COPA region was up substantially in 2022-23 at 41.9% from the premerger's 34.9%.
- **The scores among 3rd graders** in the COPA Counties continued to exceed the scores of their Peer counterparts and of the state as a whole.

Dental Sealants among Chidren and Adolescents
— Percentage of Medicaid enrollees aged 6-9 years receiving dental sealants on permanent first molar teeth.
- - - Percentage of Medicaid enrollees aged 13-15 years receiving dental sealants on first and second molars.
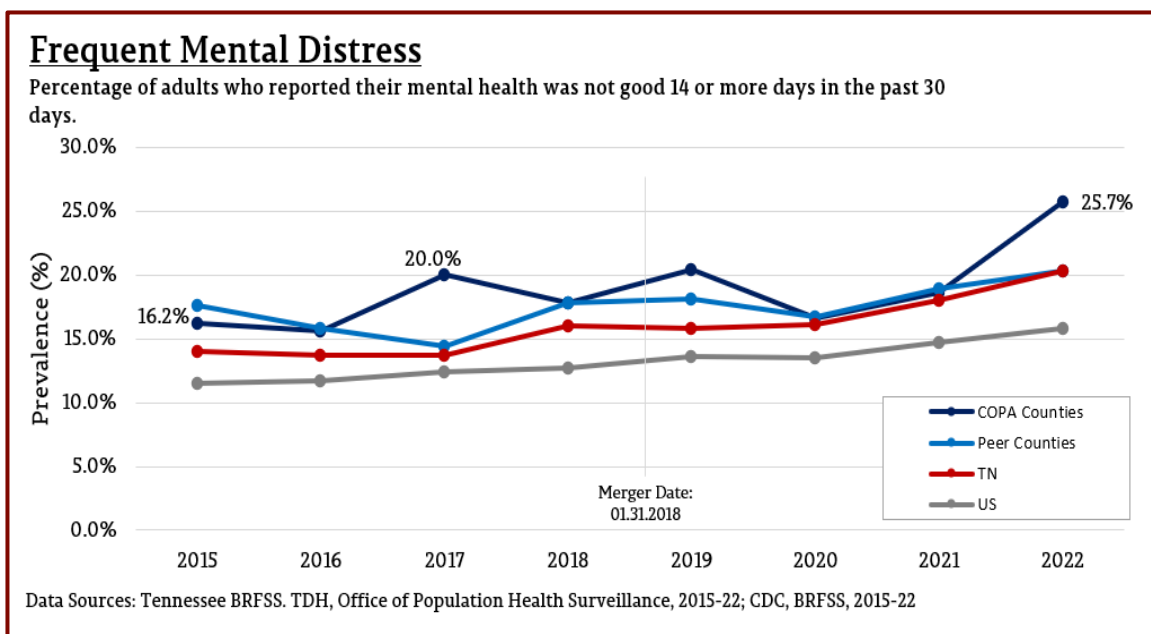

Data Source: TennCare/DentaQuest, 2016-22

- The percentage of **children 6-9 years receiving Dental Sealants** increased in the COPA Counties. It was the only geography tracked that exceeded its pre-merger 2017-18 value.
- **Dental Sealants among children aged 13-15 years** also increased in the COPA Counties from 5.8% in 2017-18 to 6.6% in 2021-22. The COPA Counties exceeded the Peer Counties in the most recently reported year.

24

Population Health Sub-Index trends: Outcome measures

Frequent Physical Distress

Percentage of adults who reported their physical health was not good 14 or more days in the past 30 days.

Legend: COPA Counties — Peer Counties — TN — US

Y-axis: Prevalence (%) from 0.0% to 30.0%

Data points labeled: 20.8% (2015), 20.2% (2017), 21.3% (2022)

Merger Date: 01.31.2018

X-axis: 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

Data Sources: Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2015-22; CDC, BRFSS, 2015-22

- For both **Frequent Physical Distress** and **Frequent Mental Distress** percentages in the COPA Counties were highest in 2019 but fell in 2020, which was counter to expectations that COVID-19 would increase mental distress. The increase occurred in the two years immediately following the pandemic's onset.

- Estimates of **Physical** and **Mental Distress** increased for all regions the years following the pandemic. This increase was most acute in the COPA Counties' estimates of Frequent Mental Distress.

Frequent Mental Distress

Percentage of adults who reported their mental health was not good 14 or more days in the past 30 days.

Y-axis: Prevalence (%) from 0.0% to 30.0%

Data points labeled: 16.2% (2015), 20.0% (2017), 25.7% (2022)

Legend: COPA Counties, Peer Counties, TN, US

Merger Date: 01.31.2018

X-axis: 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

Data Sources: Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2015-22; CDC, BRFSS, 2015-22

Fiscal Year 2023 Population Health Sub-Index scoring:

- According to the TOC, "data reported in the Department Population Health Reports and Ballad Health Annual Reports and other sources as deemed appropriate by the Department will be used to calculate the Sub-Index Score, Index Score … and trends that will be" a part of TDH's Annual Review and determination of continuing Public Advantage.

- The Population Health Sub-Index scoring schedule was adjusted in the 4th Amended and Restated TOC, in acknowledgement of the negative population health impacts of the COVID-19 pandemic. For FY23, the Population Health Sub-Index score is based on investments and achievement of Process Measures.

The following table (Table 1) shows the FY23 calculation for the Population Health Sub-Index Score for the Ballad Health COPA:

Population Health Sub-Index Data Table – for FY23
TABLE 1

FY23 Requirement	FY23 Goal	Status	Percentage weight
Investment in Population Health (incremental spending commitment)	$11,000,000 Commitment	Ballad Health exceeded the $11,000,000 incremental spending commitment for Fiscal Year 2023	25 (out of 25%)
Achievement of Process Measures identified in the Population Health Plan and augmentation of the Population Health Plan	Achieve 15 of the Process Measures identified in the Fiscal Year 2023 Approved Process measures	15 of the 15 process measures were achieved	75 (out of 75%)
FY23 Population Health Sub-Index score			**100**

The Department Access to Health Services Report

Below is a sample of trending graphs and charts that were generated from values provided by Tennessee data stewards, Ballad Health's Data Dictionaries and those contained in the Department's Access to Health Services Reports. Prior year's Access to Health Services Reports can be accessed here. The most recent year's values are reported in the Department's 2023 Access to Health Services Report, which is attached as Exhibit 2.

COVID-19's Impact on Access to Health Services in the United States**:**

Certain data included in the Access Sub-Index Report were collected during the COVID-19 pandemic. COVID-19 has exacerbated existing disparities in access to care according to hospitals across the United States.[5] As precautions were taken to limit the spread of COVID-19, 20% of adults in the US reported putting off seeking medical care.[6] As a result of delaying medical care, 57% of those surveyed reported experiencing further negative health consequences.[5] An example is cancer screenings and treatment, which were often delayed during the pandemic, risking disease progression and cancer related mortality.[7] The pandemic has also been associated with statistically significant decreases in preventable hospitalizations, particularly respiratory-related preventable hospitalizations such as asthma.[8] Despite these seemingly positive decreases in preventable hospitalizations, the pandemic impacted both patient decision making as well as hospital capacity.[7] Values based on data collected during the COVID-19 pandemic should be interpreted with caution.

Findings:

- The values for Access Sub-Index measures were reported by Fiscal Year or Calendar Year. Notations are provided at the bottom of each chart indicating if values are based on fiscal year or calendar year data.

- Over the life of the COPA, improvement was seen in Ballad Health's service area for most of the Access Sub-Index measures.

- In 2023, improvement or maintenance was seen in all but one of the 'distance to facility' measures. The percentage of population within 10 miles of an urgent care center that is
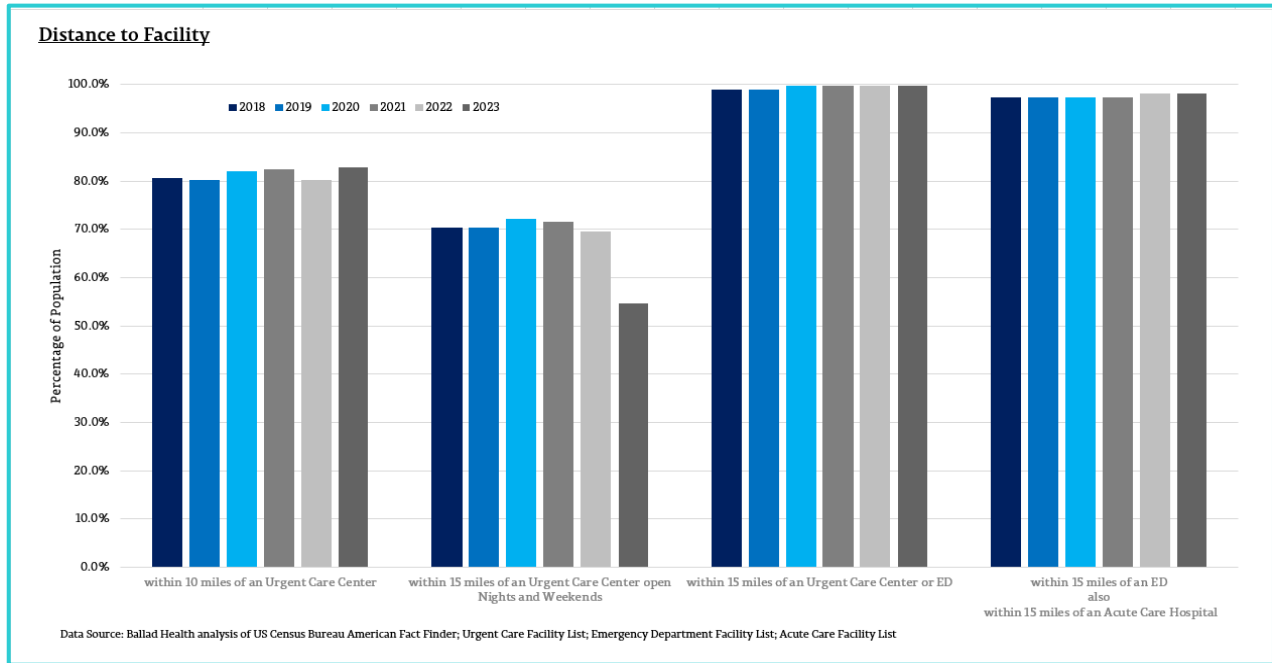
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[5] https://oig.hhs.gov/oei/reports/OEI-09-21-00140.pdf

[6] https://jamanetwork.com/journals/jama-health-forum/fullarticle/2774358

[7] https://www.sciencedirect.com/science/article/abs/pii/S1040842821000615?via%3Dihub

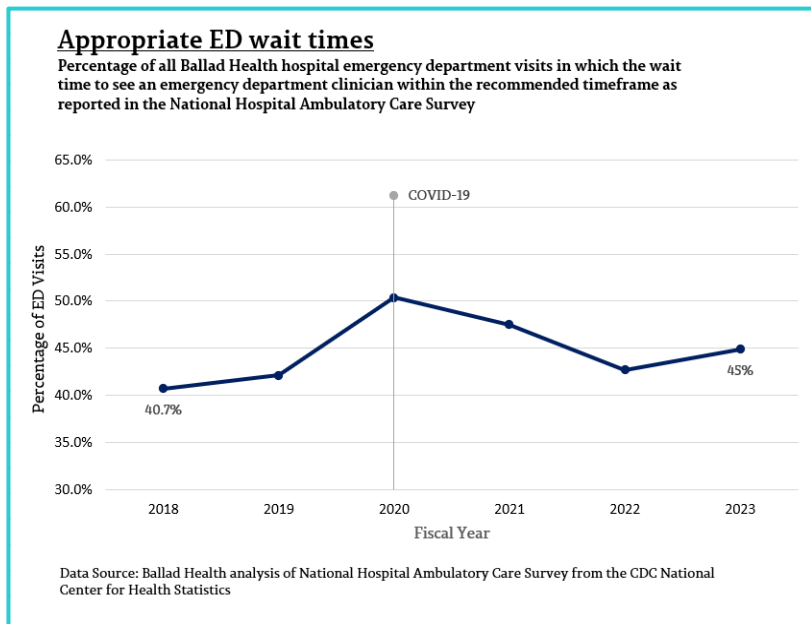[8] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8931555/

open nights and weekend declined significantly from 2018-2023 (from 70.3%-54.7%). According to the Ballad Health Report, this was due to staffing and operational considerations that resulted in several centers changing their closing time from 7:30 pm to 8:00 pm.

- Improvement was achieved by Ballad Health in all five screening measures, with the most significant improvement occurring in rates of Colorectal Cancer Screenings, which increased from the baseline of 46.4% in FY18, to 67.3% in FY23.

- Preventable hospitalizations continued their decline for both age classifications, all adults (18+) and older adults (65+).

- Among the behavioral health measures, the greatest improvement, a 5X improvement (from 1.9% in 2017 to 10.1% in 2022), was seen in patients who initiated treatment within 30 days of receiving a diagnosis for alcohol or other drug dependence.

- Two of the three Patient Satisfaction with Access to Care Surveys administered in FY23 resulted in lower scores than the baseline year. The percentage of patients who reported being satisfied with access to care in owned medical practices was above the baseline for the fifth year in a row, at 92.7, while emergency services and outpatient services scores were 68.05 and 88.45 respectively. Per TOC Exhibit G, such "patient satisfaction survey shall be approved by TDH." However, TDH has not yet seen the survey(s).

Access Sub-Index trends: Health Delivery System

Distance to Facility

Data Source: Ballad Health analysis of US Census Bureau American Fact Finder; Urgent Care Facility List; Emergency Department Facility List; Acute Care Facility List

- While the percentage of population within 10 miles of an urgent care center increased in FY23, the percentage that are open nights and weekends declined significantly in the last year. Ballad reports that several centers closing time changed from 7:30 pm to 8:00 pm "due to staffing and operational considerations." The closing time change meant those urgent care centers were no longer considered "open nights."

- The percentage of the population within 15 miles of an ED and Acute Care Hospital increased for FY22 and FY23 due to Ballad Health opening a hospital in Lee County, VA, in 2021.

Appropriate ED wait times

Percentage of all Ballad Health hospital emergency department visits in which the wait time to see an emergency department clinician within the recommended timeframe as reported in the National Hospital Ambulatory Care Survey

Data Source: Ballad Health analysis of National Hospital Ambulatory Care Survey from the CDC National Center for Health Statistics

- The percentage of **ED visits in which the door to clinician time was under 15 minutes** improved for the first two years of the merger.

- The percentage of **patients seen in the ED within appropriate timeframes** declined to near pre-merger values during the COVID-19 public health emergency but began improving again in FY23. The net result was an improvement in appropriate wait times.

Access Sub-Index trends: Children's Health measures

- The **Pediatric Readiness scores** of Ballad Health's Emergency Departments have risen subsequent to the merger, with more than a 10% increase between FY18 and FY23.
- The net difference between premerger and FY23 scores is significantly positive.

Pediatric Readiness
Average score of Ballad Health Emergency Departments on the National Pediatric Readiness Project Survey from the National EMSC Data Analysis Resource Center
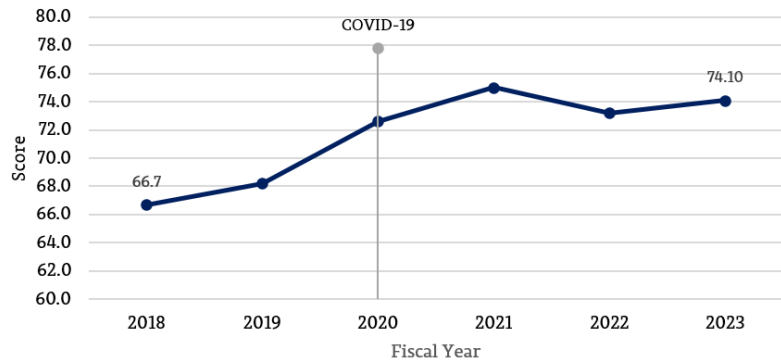
Data Source: Ballad Health analysis of a survey tool created by NEDARC

Primary Care - Percent of Population with a Personal Care Provider
Percentage of adults who reported having one person they think of as a personal doctor or health care provider
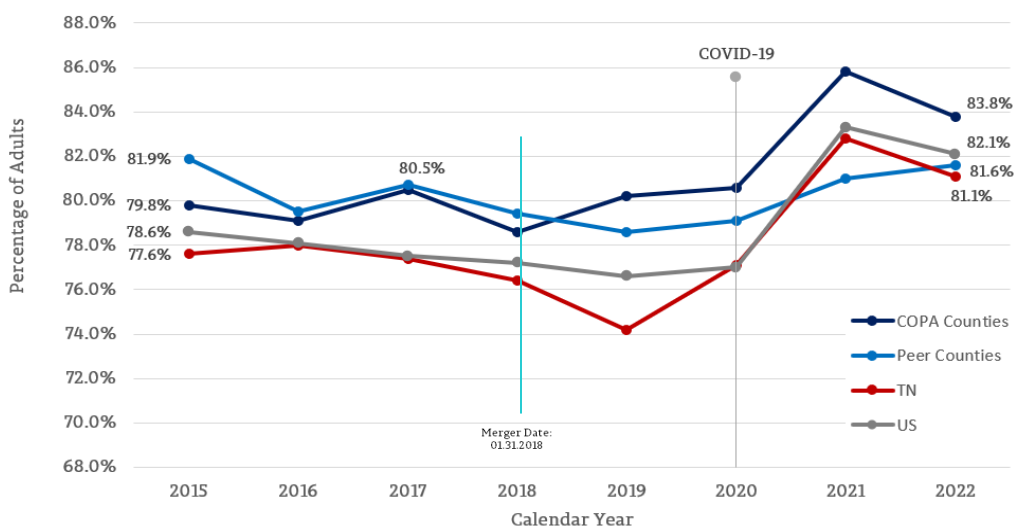
Data Source: Behavioral Risk Factor Surveillance System

- The percentage of residents who reported they had a **Personal Care Provider** (or Primary Care provider) increased in the COPA Counties subsequent to the merger, from 80.5% in 2017 to 83.8% in 2022.
- The rate of improvement seen in the COPA Counties since 2017 was greater than that in the Peer Counties.

30

Access Sub-Index trends: Prevention measures

Breast Cancer Screenings
Percentage of women Ballad Health Medical Associate patient residents aged 50-74 who reported having a mammogram within the past two years

Data Source: Ballad Health analysis of Ballad Health Medical Associates data

Cervical Cancer Screenings:
Percentage of women patients aged 21-65 who had a pap test within the last three years

Data Source: Ballad Health analysis of Ballad Health Medical Associates data

Colorectal Cancer Screenings
Percentage of patients screened for colorectal cancer according to USPSTF recommendation

Data Source: Ballad Health analysis of Ballad Health Medical Associates data

- The percentage of patients **screened for breast cancer** improved significantly over the life of the COPA. That improvement trend was slightly interrupted in 2020 with the onset of COVID-19.
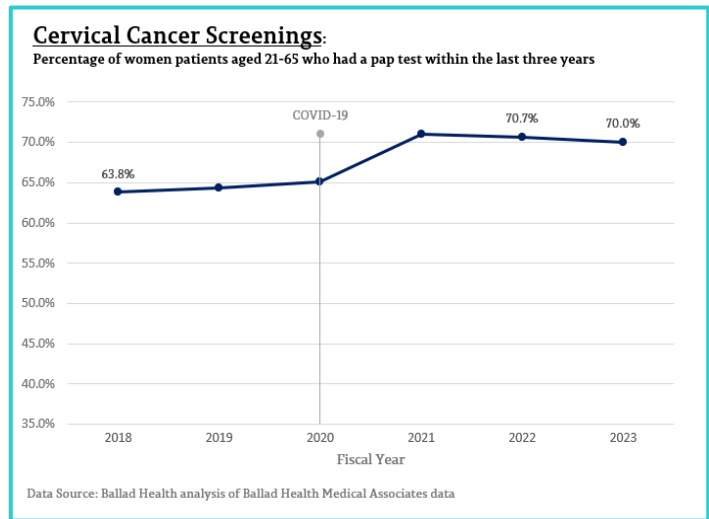
- Ballad Health achieved a net increase in appropriate **Cervical Cancer Screenings** over the life of the COPA. The percentage of patients screening increased from 63.8% in FY18 to 70.0% in FY23.
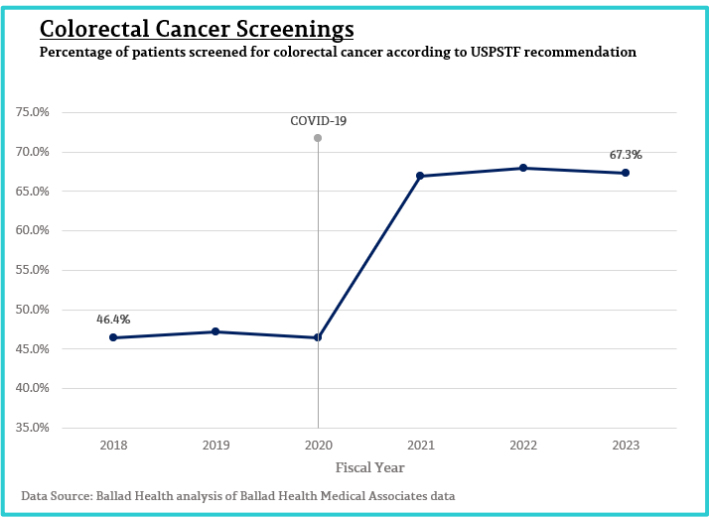
- **Screenings for Colorectal Cancer** improved dramatically over baseline. The percentage of patients screened increased by more than twenty percentage points, from 46.4% in FY18 to 67.3% in FY23.

31

Access Sub-Index trends: Prevention measures

Diabetes Screenings
Percentage of overweight or obese patients aged 40-70 who are screened for prediabetes and diabetes.
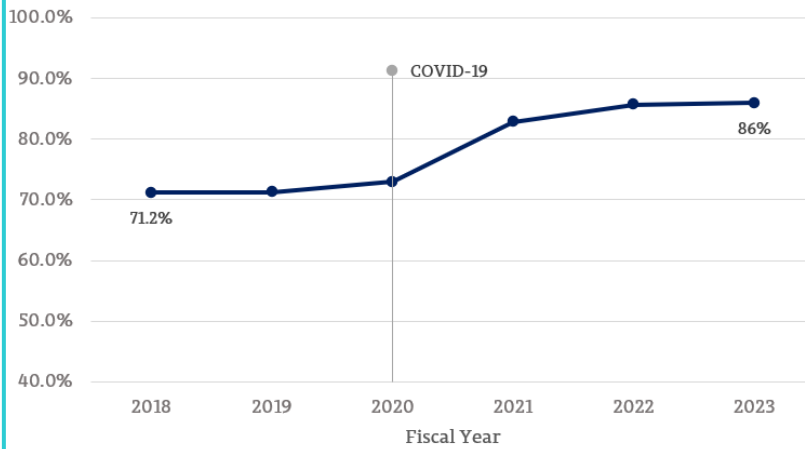
Data Source: Ballad Health analysis of Ballad Health Medical Associates data

- The percentage of patients **screened for Diabetes** increased year over year for the past four years, with a total improvement of 14.8 percentage points.

- **Hypertension screenings** among patients, claimed and remained above their baseline rate of 97%, in the years subsequent to the merger.

Hypertension Screenings
Percentage of patients aged 18+ who are screened for hypertension
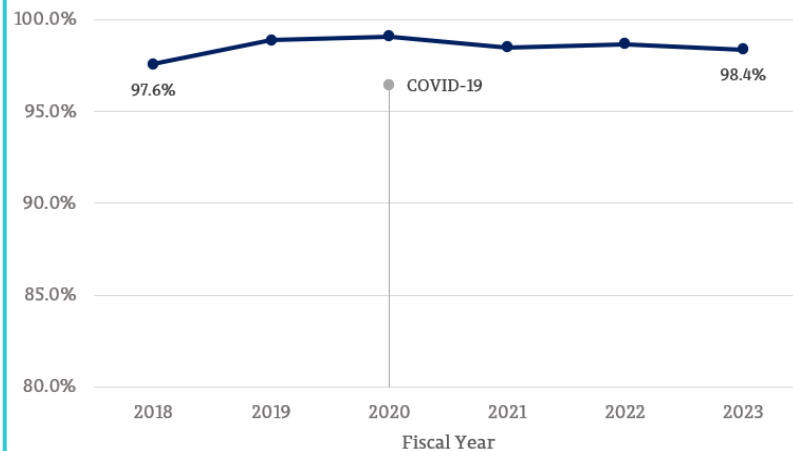
Data Source: Ballad Health analysis of Ballad Health Medical Associates data

Access Sub-Index trends: Prevention measures

Preventable Hospitalizations
Number of discharges for ambulatory care-sensitive conditions per 1,000 adults aged 18 years and older

Data Source: Hospital Discharge Data System: Tennessee Hospital Association (THA) and Virginia Hospital and Healthcare Association (VHHA) Inpatient Dataset
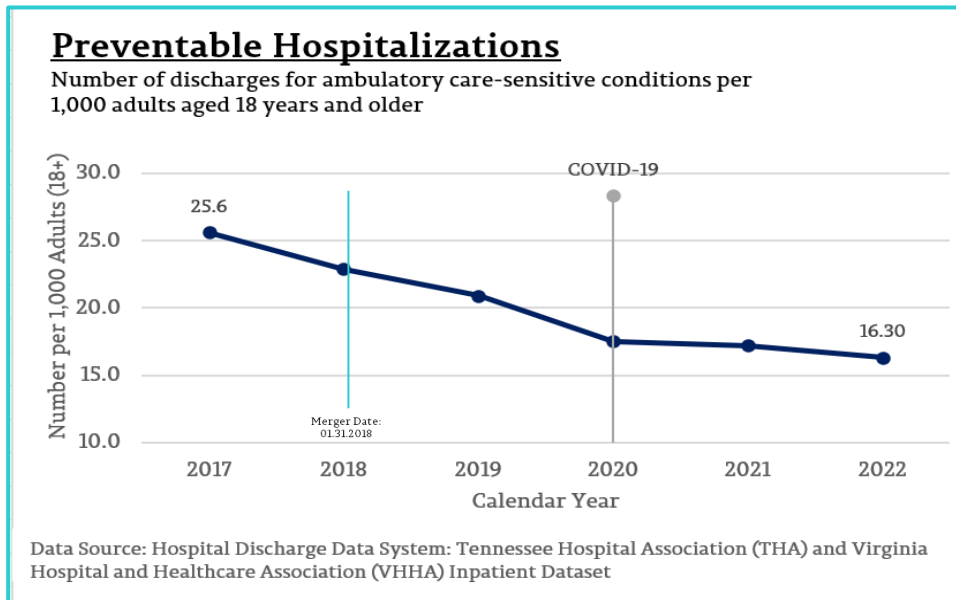
- The rate of Ballad Health's **preventable hospitalizations** dropped precipitously subsequent to the merger for both older adults and all adult patients.

- While COVID-19 impacted the 2020 and 2021 **preventable hospitalization** rates across the county, a decrease was seen in the COPA region prior to and following the years most impacted by the pandemic.

Preventable Hospitalizations in Older Adults
Number of discharges for ambulatory care-sensitive conditions per 1,000 Medicare enrollees aged 65 and older

Data Source: Hospital Discharge Data System: Tennessee Hospital Association (THA) and Virginia Hospital and Healthcare Association (VHHA) Inpatient Dataset
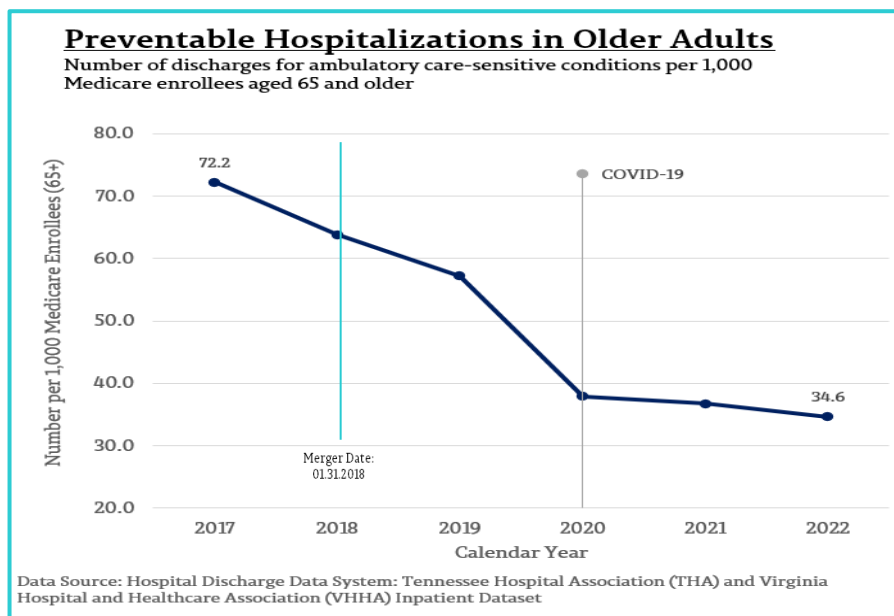
NOTE: Ambulatory Care-Sensitive Conditions are health conditions for which adequate management, treatment, and interventions delivered in the ambulatory care setting can potentially prevent hospitalization.

Access Sub-Index trends: Behavioral Health measures

Antidepressant Medication Management

Percentage of adults with a diagnosis of major depression, who were newly treated with antidepressant medication and remained on an antidepressant medication for at least 84 days (12 weeks) or for 180 days (6 months)
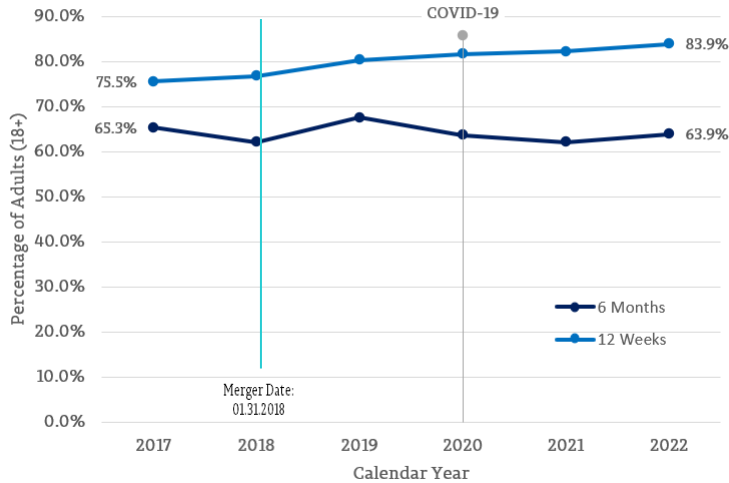
Data Source: Ballad Health analysis of MSSP and Team Member Claims data

- The percentage of Ballad Health patients whose **Antidepressant Medication** was well **managed over 12 weeks** increased consistently over the last five years.

- However, the percentage of patients whose **Antidepressant Medication is well managed over 6 weeks** decreased slightly from the pre-merger value.

- The percentage of patients who received **follow up care for a mental health** illness declined since the merger at both the seven day and 30-day follow-up periods.

Mental Illness Follow-Up

Percentage of individuals aged 6 years+ who are hospitalized for treatment of selected mental health disorders and who were subsequently seen by a mental health provider within a certain number of days
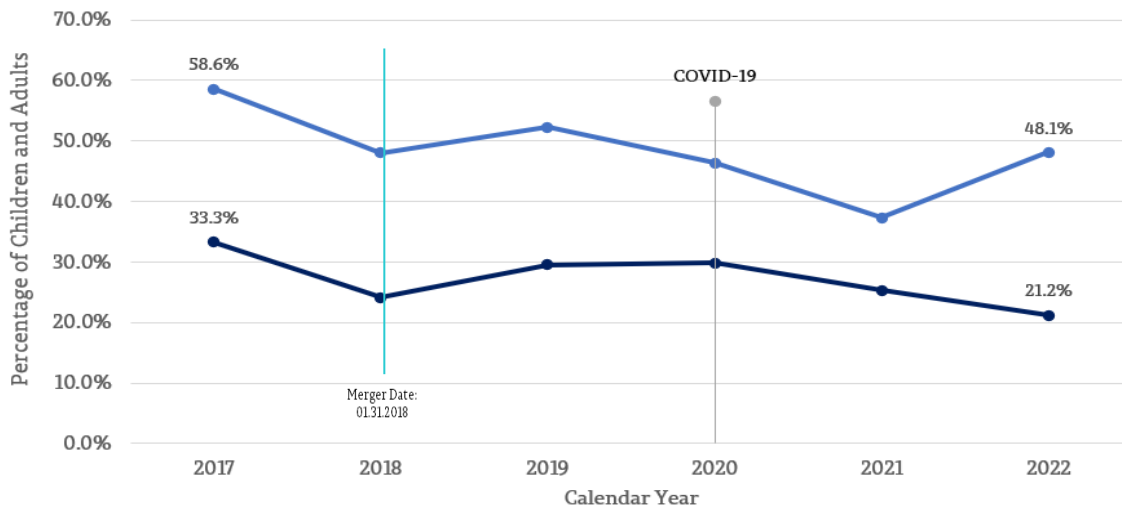
Data Source: Ballad Health analysis of MSSP and Team Member Claims data

34

Access Sub-Index trends: Behavioral Health measures

Engagement of Drug or Alcohol Treatment

Adolescents and adults who initiated treatment and who had two or more additional services with a diagnosis of alcohol or other drug dependence within 30 days of the initiation visit
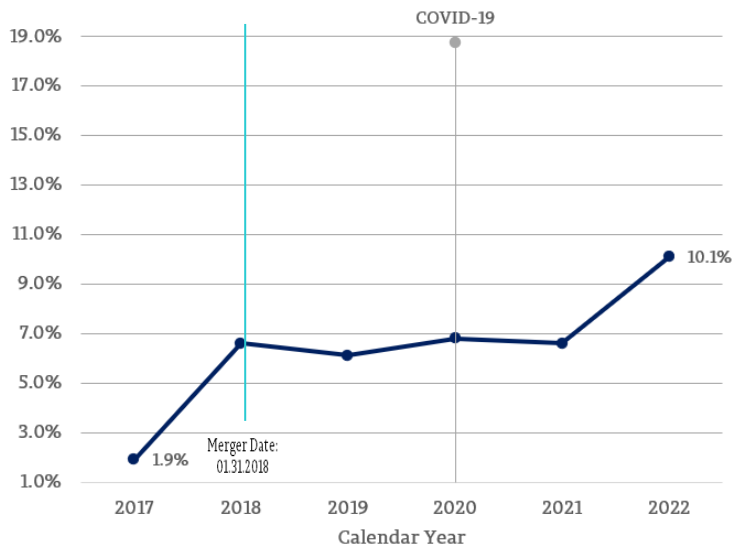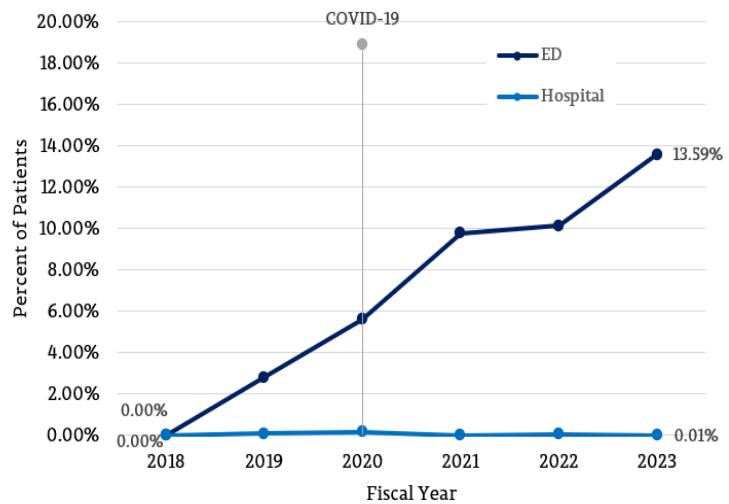

Data Source: Ballad Health analysis of Team Member Claims data

- The percentage of Ballad Health patients who **initiated treatment within 30 days of receiving a diagnosis for alcohol or other drug dependence** increased by more than 5x, from 1.9% in 2017 to 10.1% in 2022.

- The greatest gains on this measure achieved by Ballad Health were in the first year of the merger and in the most recent year for which data are available.

- Ballad Health's legacy systems did not administer screenings for alcohol and substance abuse, with a brief intervention and referral to treatment (SBIRTs).

- Ballad Health's **ED administration of SBIRTs** climbed to 13.59% over the life of the COPA.

- Ballad Health administered 11 SBIRTs outside of the ED in 2021, which constitutes improvement over baseline. Continuing gains were not seen in **SBIRT administration percentages among acute inpatients**.

SBIRT Administration

Percentage of patients admitted to a Ballad Health hospital or emergency department who are screened for alcohol and substance abuse, provided a brief intervention, and referred to treatment (SBIRT)

Data Source: Ballad Health analysis of Ballad Health Social Needs Screening Tool database

Fiscal Year 2023 Access Sub-Index scoring:

- Achievement in each Access Sub-Index measure is based on the differences in raw baseline values compared to the raw Fiscal Year 2023 values. Analyses on statistically significant or meaningful differences were not conducted.

- According to the TOC, "data reported in the Department Access to Health Services Report and the New Health System Annual Report and other sources as deemed appropriate by the Department will be used to calculate the Sub-Index Score."

The following table (Table 2) shows the FY23 calculation of the Access Sub-Index Score for the Ballad Health COPA:

Access Sub-Index Data Table – for FY23

TABLE 2

	Measure	Baseline GSA Value	FY23 GSA Value	Achieved (Weight)
CHARACTERISTICS OF HEALTH DELIVERY SYSTEM				
1	Population within 10 miles of an urgent care center	80.5%	82.9%	**Y** (4.0%)
2	Population within 10 miles of an urgent care center open nights & weekends	70.3%	54.7%	**N** (4.0%)
3	Population within 10 miles of Urgent Care Facility or Emergency Department	98.9%	99.7%	**Y** (4.0%)
4	Population within 15 miles of an Emergency Department	97.3%	98.1%	**Y** (4.0%)
5	Population within 15 miles of an acute care hospital	97.3%	98.1%	**Y** (4.0%)
6	Pediatric Readiness of Emergency Department	67.0%	74.1%	**Y** (4.0%)
7	Appropriate Emergency Department Wait Times	40.7%	44.9%	**Y** (3.0%)
8	Specialist Recruitment and Retention †	n/a	n/a	n/a
UTILIZATION OF HEALTH SERVICES				
	Primary Care			
9	Personal Care Provider	80.5%	83.8%	**Y** (3.5%)
	Appropriate Use of Care			
10	Preventable Hospitalizations – Older Adults (discharges per 1,000 people 65+)	72.2*	34.6	**Y** (2.5%)
11	Preventable Hospitalizations-Adults (discharges per 1,000 people 18+)	25.6*	16.3	**Y** (3.5%)
	Secondary Prevention (Screenings)			
12	Screening - Breast Cancer	74.1%*	82.4%	**Y** (2.0%)
13	Screening - Cervical Cancer	63.8%*	70.0%	**Y** (2.0%)
14	Screening - Colorectal Cancer	46.4%*	67.3%	**Y** (2.0%)
15	Screening - Diabetes	71.2%	*86.0%*	**Y** (3.0%)
16	Screening - Hypertension	97.6%	98.4%	**Y** (4.0%)
	Infant and Children			

17	Asthma Emergency Department Visits Per 10,000 (Age 0-4)**	60.4*	42.7	Y (2.5%)
18	Asthma Emergency Department Visits Per 10,000 (Age 5-14)**	41.5*	28.4	Y (2.5%)
19	Prenatal care in the first trimester	66.8	83.9%	Y (2.0%)
Mental Health & Substance Abuse				
20	Follow-Up After Hospitalization for Mental Illness (% Within 7 Days Post-Discharge)	33.3%	*21.2%*	N (3.5%)
21	Follow-Up After Hospitalization for Mental Illness (% Within 30 Days Post-Discharge)	58.6%	*48.1%*	N (3.5%)
Antidepressant Medication Management				
22	Effective Acute Phase Treatment (84 days)	75.5%	83.9%	Y (1.5%)
23	Effective Continuation Phase Treatment (180 days)	65.3%	63.9%	Y (1.5%)
24	Engagement of AOD (Alcohol or Drug) Treatment	1.9%	10.1%	Y (3.5%)
25	Rate of SBIRT administration - hospital admissions	0.0%	0.01%	Y (3.5%)
26	Rate of SBIRT administration - ED visits	0.0%	13.59%	Y (3.5%)
CONSUMER SATISFACTION				
27	Patient Satisfaction and Access Surveys	n/a	100%	Y (10.0%)
28	Patient Satisfaction and Access Survey - Response Report	n/a	100%	Y (10.0%)
	The raw sum of achieved weights before adjusting for the removal of measure #8:			86.0%
	Adjusted FY23 Access Sub-Index Score *(86 ÷ 97 = 88.7%)*			**88.7%**

† = There was no agreed upon definition by Ballad Health and TDH for Access measure 8, Specialist Recruitment and Retention. Therefore, this measure will not be included in the FY23 Access Sub-Index Score calculation. The 3.0% weight originally assigned to this measure is being removed from both the numerator and denominator to proportionately distribute the missing 3.0% across the remaining measures.

* = Revised baseline data were submitted by Ballad Health and approved by TDH on 12/26/2023.

** = Measures 17 and 18, on Asthma Emergency Department Visits, utilize data from the state discharge databases. Because the Virginia hospital discharge database does not currently provide emergency department discharge activity, only TN GSA patients are included in vales reported for these two measures.

The Department Quality (Other) Report.

Below is a sample of trending graphs and charts that were generated from values contained in the Department's Quality (Other) Reports. Prior year's Quality (Other) Reports can be accessed here. The most recent year's values are reported in the Department's 2023 Quality (Other) Report, which is attached as Exhibit 3.

COVID-19's Impact on Quality Improvement Efforts and Hospital-Associated Infections:

Certain data for this Quality (Other) Report were collected during the COVID-19 pandemic. Hospitals have described difficulty balancing the complex and resource-intensive care needed for COVID-19 patients with efforts to resume routine hospital care.[9] According to the Centers for Disease Control and Prevention (CDC), there were significant increases in 2020 for most hospital-associated infections in the US compared to 2019 due to the COVID-19 pandemic.[10] Those increases continued in 2021 compared to pre-pandemic years.[11] Hospitals also reported that staffing shortages have affected patient care, and that exhaustion and trauma have taken a toll on staff's mental health.[8] Administrators detailed challenges associated with vaccine distribution efforts and concerns about vaccine hesitancy among staff and members of their communities.[8] Hospitals indicated that many of the challenges were more severe for rural hospitals. The current hospital quality programs and measures were not designed to contend with pandemics or public health emergencies of the magnitude experienced.[12] Nor are they equipped to manage the degree of aberration now being encountered in the underlying data.[11] The COVID-19 pandemic disrupted the health care system in ways that have affected patient, provider, and hospital-level decisions, behavior, and performance.[11]

Findings:

- Ballad Health showed improvement in 9 of the 17 Target Quality Measures over 2017 baseline rates. Greater than 50% improvement over baseline was achieved in Pressure Ulcer, Abdominopelvic Accidental Puncture/Laceration, and C. Diff rates.

- Consistent with national trends related to the pandemic, Ballad Health experienced an increase in some healthcare-associated infections in FY21 and FY22. The biggest increases were seen in rates of CAUTI, CLABSI, and surgical site infections after hysterectomies. Rates

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[9] https://oig.hhs.gov/oei/reports/OEI-09-21-00140.pdf

[10] https://www.cdc.gov/hai/data/portal/covid-impact-hai.html

[11] https://www.cdc.gov/hai/data/portal/progress-report.html

[12] https://www.healthaffairs.org/do/10.1377/forefront.20210520.815024/full/

improved dramatically in FY23 for these three measures, though they did not reach premerger lows.

- In FY23, Ballad Health's performance continued to decline in both Emergency Department Wait Times and in Elective Delivery rates. For both measures values in FY23 were steeply above baselines.

- Ballad Health's FY23 HCAHPS scores were below baselines but slightly above FY22 scores in every category except the summary categories. While survey results provide that rooms are cleaner and nurses and doctors were communicating better, patients reported they were less inclined to recommend the hospital and gave their hospital a slightly lower overall score.

- All eight of Ballad Health's 30-day readmission rates that are monitored were above the baseline rate in FY23.

- Mortality rates for two of the six monitored measures improved in FY23. Heart Failure 30-day mortality rate was 3.6 for FY23, below the 3.9 baseline rate, and the Stroke 30-day mortality rate was 5.5 in FY23, below the 8.2 baseline rate.

- Ballad Health's performance also improved in FY23 over premerger values in Average Risk Polyp Surveillance, Head CT scans on stroke patients, and Hip and Knee complication rates.

Quality (Other) Sub-Index trends: Patient safety indicators

Pressure Ulcer Rate
Pressure ulcer events per 1,000 hospital discharges
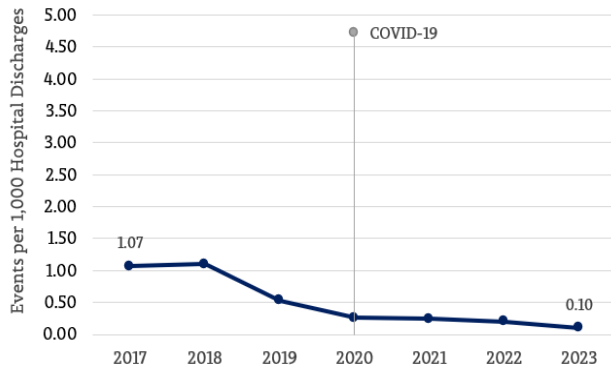
Data Source: Ballad Health (Premier)

- **Pressure Ulcer Rates** fell precipitously from the 2017 baseline rate of 1.07 per 1,000 discharges to 0.10 per 1,000 discharges in 2023.

- Moderate fluctuations were seen in the rate of **In-Hospital Fall with Fracture** since the COPA was issued in early 2018 with no clear positive or negative trend.

In-Hospital Fall with Fracture Rate
In hospital fall with hip fracture (secondary diagnosis) per 1,000 discharges for patients ages 18 years and older.
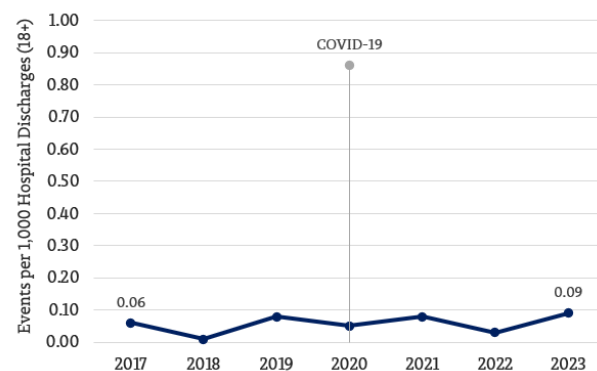
Data Source: Ballad Health (Premier)

Iatrogenic Pneumothorax Rate
Iatrogenic Penumothorax events per 1,000 hospital discharges
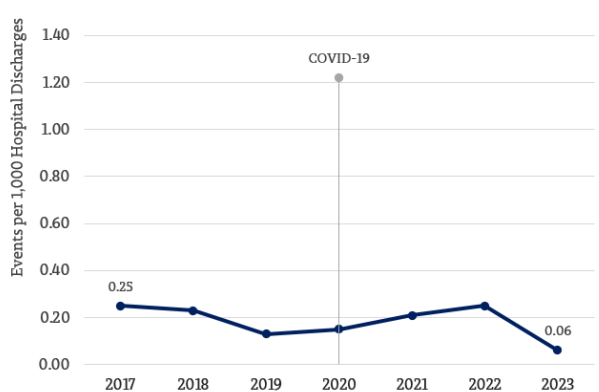
Data Source: Ballad Health (Premier)

- The rate of **Iatrogenic Pneumothorax** events declined subsequent to the merger but ticked back up with the onset of COVID-19.

- The 2023 rate of 0.06 per 1,000 discharges represented an improvement of over 75% over the baseline rate of 0.25 per 1,000.

Quality (Other) Sub-Index trends: Patient safety indicators

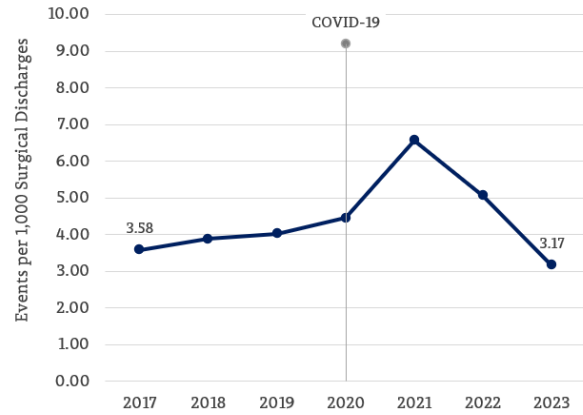### Postoperative Hemorrhage or Hematoma Rate
Postoperative Hemorrhage or Hematoma events per 1,000 hospital discharges.
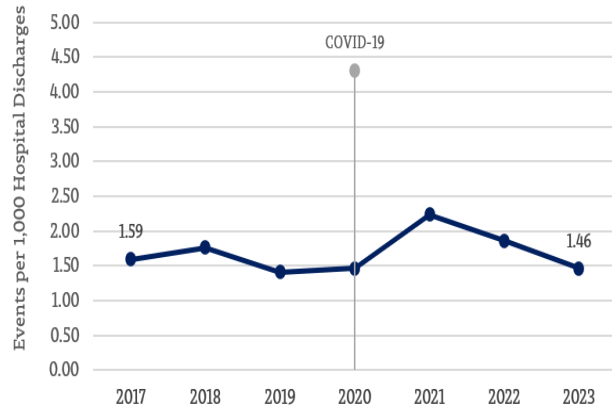
Data Source: Ballad Health (Premier)

Postoperative Sepsis Rate
Rate of postoperative sepsis events per 1,000 surgical discharges.

Data Source: Ballad Health (Premier)

- The rate of **Postoperative Hemorrhage or Hematoma** events and **Postoperative Sepsis** events increased markedly in 2021, after the onset of COVID-19. Rates for both types of events declined in 2022 and 2023 and are below baseline.

- **Postoperative Respiratory Failure** rate and **Perioperative Pulmonary Embolism or DVT** rates rose in the two years after COVID-19 but declined markedly in 2023. The 2023 rates for both types of events were below baseline rates.

Postoperative Respiratory Failure Rate
Postoperative respiratory failure (secondary diagnosis), prolonged mechanical ventilation, or reintubation cases per 1,000 elective surgical discharges for patients ages 18 years and older.
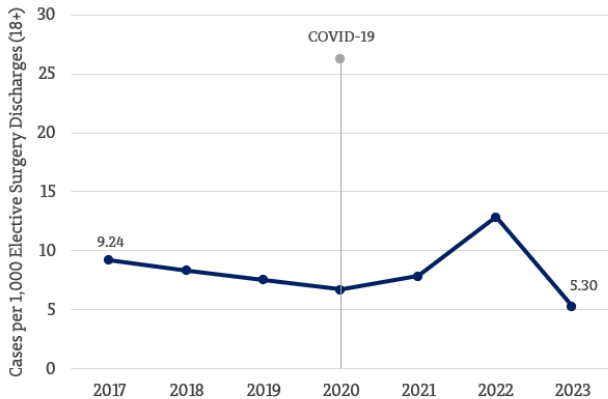
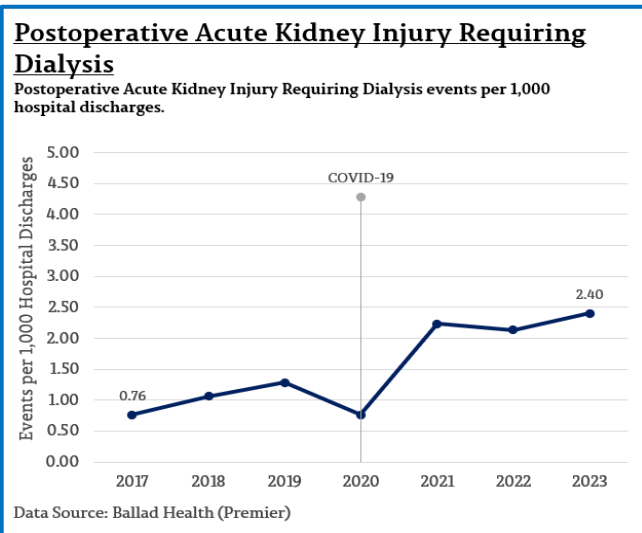
Data Source: Ballad Health (Premier)

Perioperative Pumonary Embolism or DVT Rate
Perioperative pulmonary embolism or proximal deep vein thrombosis (secondary diagnosis) events per 1,000 surgical discharges for patients ages 18 years and older.
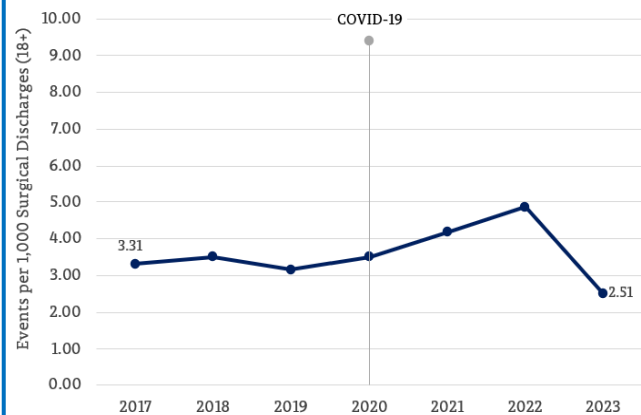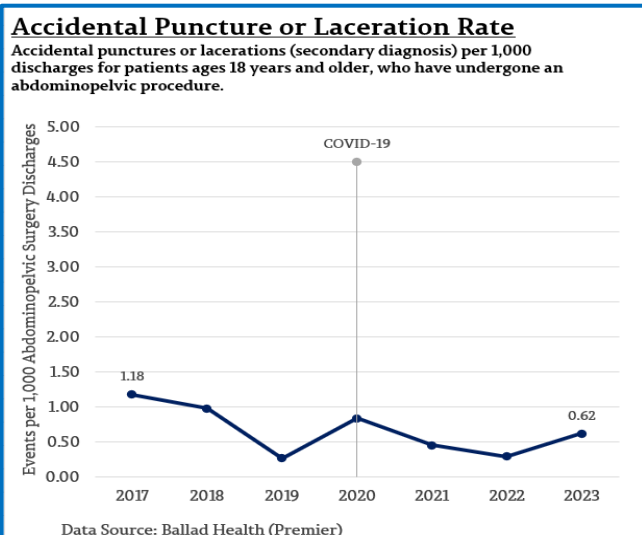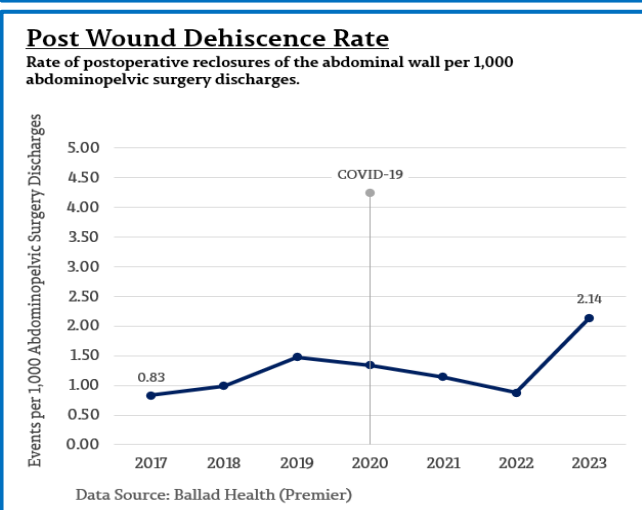

Data Source: Ballad Health (Premier)

41

Quality (Other) Sub-Index trends: Patient safety indicators

Postoperative Acute Kidney Injury Requiring Dialysis
Postoperative Acute Kidney Injury Requiring Dialysis events per 1,000 hospital discharges.

Data Source: Ballad Health (Premier)

- Rates of **Postoperative Acute Kidney Injury Requiring Dialysis** events increased at Ballad Health facilities prior to the pandemic and dropped with the onset of the pandemic. The drop may have been a result of the suspension of elective surgeries in 2020. After the pandemic's initial onset, rates resumed their elevated trend.

Accidental Puncture or Laceration Rate
Accidental punctures or lacerations (secondary diagnosis) per 1,000 discharges for patients ages 18 years and older, who have undergone an abdominopelvic procedure.
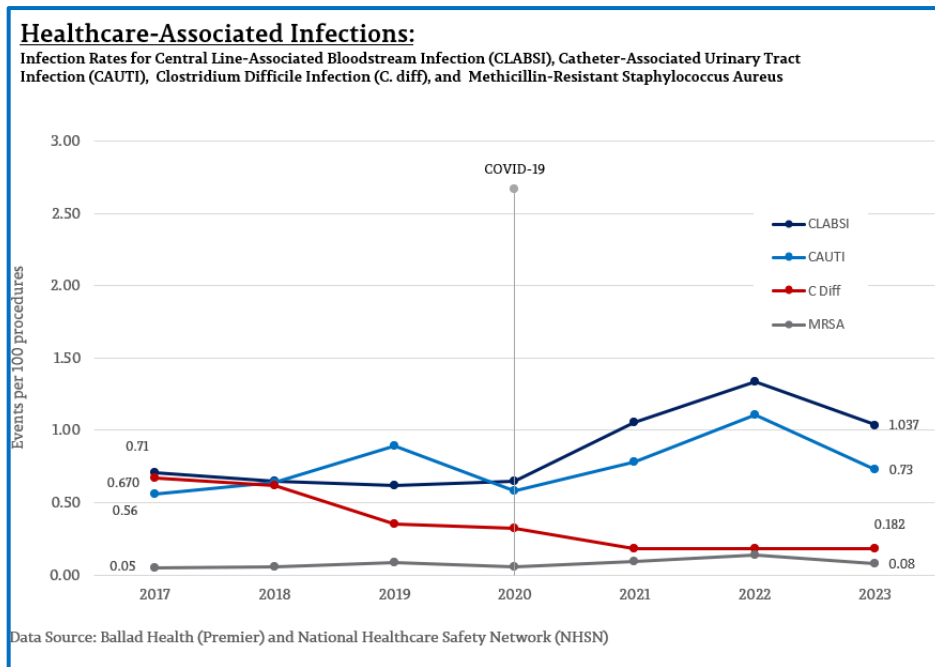

Data Source: Ballad Health (Premier)

- **Accidental Puncture or Laceration** rates at Ballad Health facilities declined significantly after the merger, interrupted only by a brief rise in 2020.The 2023 rate of 0.62 is well below the baseline rate of 1.18.

Post Wound Dehiscence Rate
Rate of postoperative reclosures of the abdominal wall per 1,000 abdominopelvic surgery discharges.
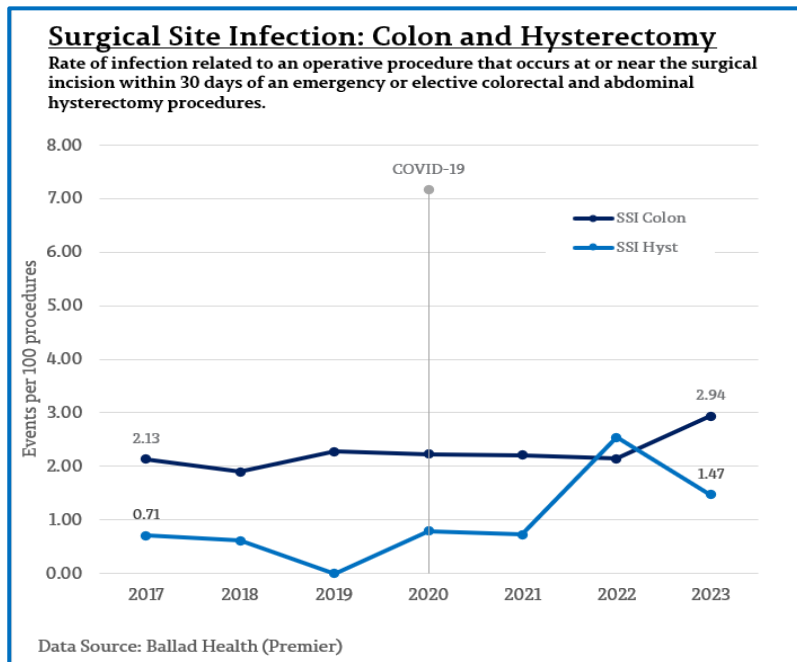

Data Source: Ballad Health (Premier)

- The rate of **Post Wound Dehiscences** in Ballad Health facilities remained fairly stable until 2023. After a 5 year low of 0.88 rates rose sharply in 2023 to 2.14.

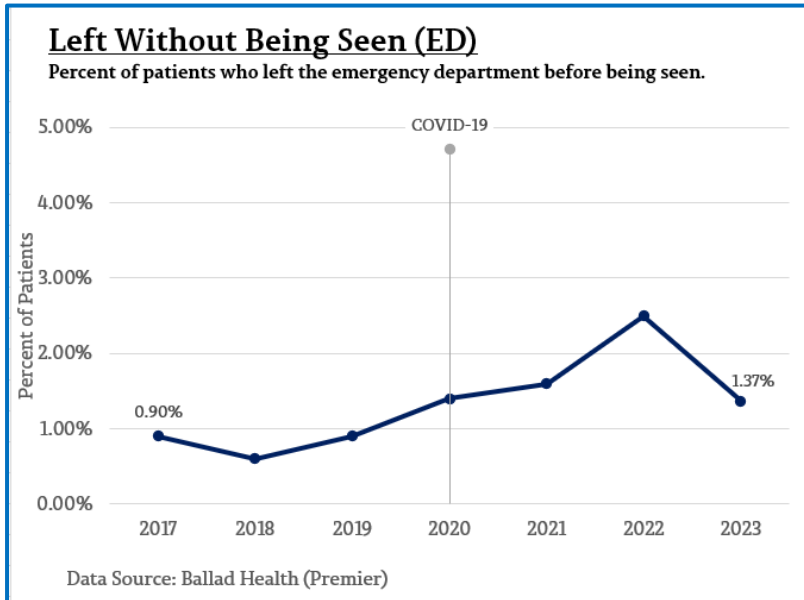# Quality (Other) Sub-Index trends: **Patient safety indicators**

Healthcare-Associated Infections:
Infection Rates for Central Line-Associated Bloodstream Infection (CLABSI), Catheter-Associated Urinary Tract Infection (CAUTI), Clostridium Difficile Infection (C. diff), and Methicillin-Resistant Staphylococcus Aureus

Data Source: Ballad Health (Premier) and National Healthcare Safety Network (NHSN)

- **CLABSI** and **CAUTI** rates rose in the two years following the onset of COVID-19 but improved markedly from 2022 to 2023.

- **C. Diff** rates declined by more than 70% subsequent to the merger, whereas **MRSA** rates had little change. Rates for both did not appear to be impacted by COVID-19.

- **Colon Surgical Sight Infection** rates appear to have remained flat over the past six years, with no discernable impact from the merger or COVID-19. In contrast, **Hysterectomy Surgical Sight Infection** rates dropped for two consecutive periods after the merger but began climbing at the onset of COVID-19. The most recent Hysterectomy SSI rate is well above the premerger rate.
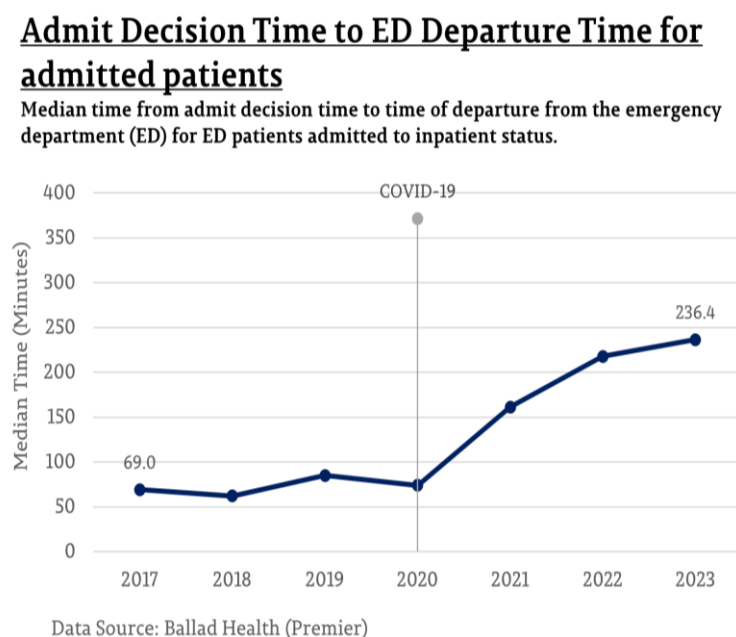

Surgical Site Infection: Colon and Hysterectomy
Rate of infection related to an operative procedure that occurs at or near the surgical incision within 30 days of an emergency or elective colorectal and abdominal hysterectomy procedures.

Data Source: Ballad Health (Premier)

Quality (Other) Sub-Index trends: Emergency Department

Left Without Being Seen (ED)
Percent of patients who left the emergency department before being seen.

Data Source: Ballad Health (Premier)

- The percentage of patients who **left the ED without being seen** increased in the years subsequent to the merger, with the greatest increase occurring in 2022. The percentage dropped sharply in 2023.

- **ED Wait Times**, defined as Admit Decision Time to ED Departure Time for Admitted Patients at Ballad Health facilities, rose in the years following the merger, likely exacerbated by COVID-19 and continuing staffing challenges. The median time in 2023 was more than three times longer than it was pre-merger.

Admit Decision Time to ED Departure Time for admitted patients
Median time from admit decision time to time of departure from the emergency department (ED) for ED patients admitted to inpatient status.

Data Source: Ballad Health (Premier)

44

Quality (Other) Sub-Index trends: Patient Satisfaction

- Trend lines are similar for these four metrics on patients' perceptions of their hospital experience.

- The percentage of patients' who reported a **Willingness to Recommend** the hospital, experience of **nurses and doctors communicating well** with them and who reported **understanding their care** when they left the Ballad Health facility, declined at a similar rate from 2018 to 2022.

- The declining trend ended in 2023, with most categories seeing a modest year over year improvement.

Willingness to Recommend
Percentage of patients who reported that they "would definitely recommend" the hospital to their friends and family.
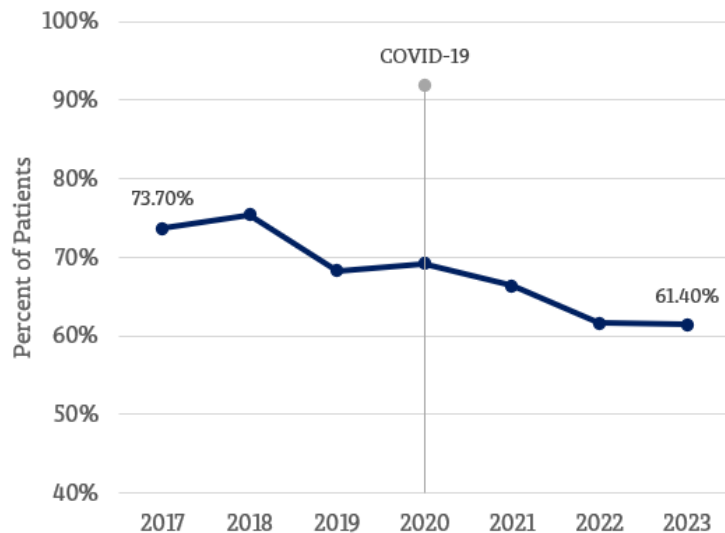
Data Source: Ballad Health (Press Ganey)

Communication: Nurses and Doctors
Percentage of patients who reported that their nurses and doctors "always" communicated well.
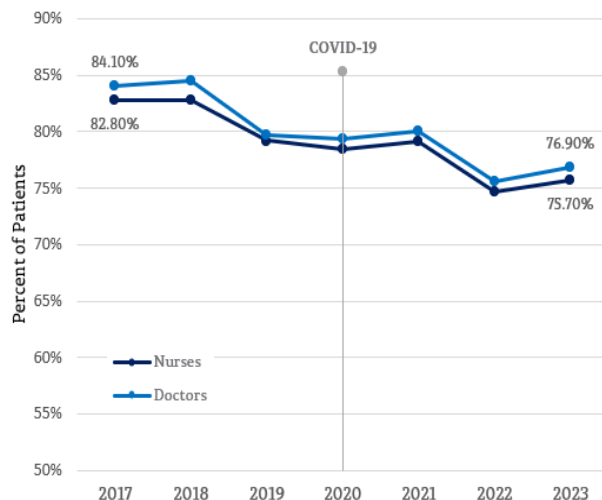
Data Source: National Healthcare Safety Network (NHSN)

Understood Care
Percentage of patients who reported that they "strongly agree" that they understood their care when they left the hospital.
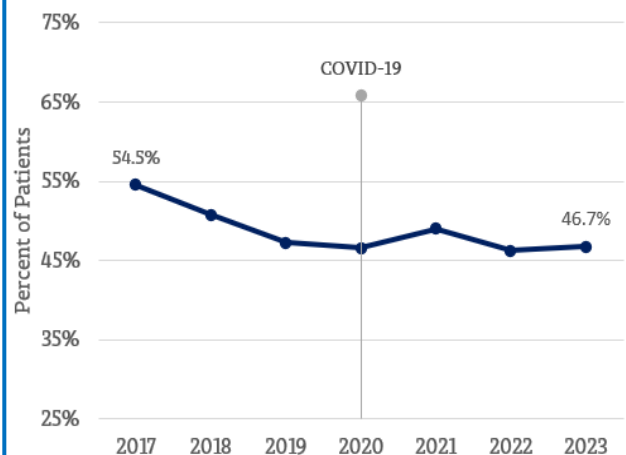
Data Source: Ballad Health (Press Ganey)

Fiscal Year 2023 Quality (Other) Sub-Index scoring:

- There are two components of the Quality (Other) Sub-Index Score:

  1. The **Target Quality Measures** account for 25% of the Quality (Other) Sub-Index Score. Improvement in each Target Quality Measure is determined by comparing the raw baseline values to the raw FY23 values. Table 3 below shows the FY23 determination of achievement for each Target Quality Measure.

  2. The **Quality Monitoring Measures** account for 75% of the Quality (Other) Sub-Index Score. For scoring purposes, Ballad Health was only required to timely submit data on the Quality Monitoring Measures.

Values for all quality measures at the system level, state level, and facility level were provided in the Fiscal Year 2023 Ballad Health Annual Report and in the Department's 2023 Quality (Other) Report, which is attached as Exhibit 3.

Target Quality Measures Table – for Fiscal Year 2023

TABLE 3

Target Quality Measures	Ballad Health Baseline[1] (All patients)	Ballad Health 2023[2] (All patients)	
PSI 3 Pressure Ulcer Rate	1.07	0.10	Achieved
PSI 6 Iatrogenic Pneumothorax Rate	0.25	0.06	Achieved
PSI 8 In Hospital Fall with Hip Fracture Rate	0.06	0.09	Not achieved
PSI 9 Perioperative Hemorrhage or Hematoma Rate	1.59	1.46	Achieved
PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis	0.76	2.40	Not achieved
PSI 11 Postoperative Respiratory Failure Rate	9.24	5.30	Achieved
PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	3.31	2.51	Achieved
PSI 13 Postoperative Sepsis Rate	3.58	3.17	Achieved
PSI 14 Postoperative Wound Dehiscence Rate	0.83	2.14	Not achieved
PSI 15 Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate	1.18	0.62	Achieved
CLABSI	0.711	1.037	Not achieved
CAUTI	0.558	0.729	Not achieved
SSI COLON Surgical Site Infection	2.13	2.94	Not achieved
SSI HYST Surgical Site Infection	0.71	1.47	Not achieved
MRSA	0.047	0.080	Not achieved
C. Diff	0.671	0.182	Achieved
SMB: Sepsis Management Bundle	56.9%	59.2%	Achieved

The following table (Table 4) shows the FY23 calculation of the Quality (Other) Sub-Index for the Ballad Health COPA:

Quality (Other) Sub-Index Score Table – for Fiscal Year 2023

TABLE 4

	Determination	**Status**	**Maximum possible Percentage weight**	**FY23 Percentage weight** (calculation)
Target Quality Measures Achieved	9 out of 17 improved	53% achieved	25	**13.25** (53 x .25)
Quality Monitoring Measures Achieved	Data submitted timely	100% achieved	75	**75** (100 x .75)
FY23 Quality (Other) Sub-Index score				**88.25** (13.25+75)

Department's Recommendations

- Based on community input and in response to the public hearing, TDH encourages Ballad Health to engage the community and local stakeholders in a public input process. TDH believes that if Ballad Health increased its engagement with the community, the system would demonstrate a commitment to improving community satisfaction, to increasing transparency and accountability, and to effectively addressing the needs and concerns of its customers.

- TDH acknowledges the negative impact of COVID-19 on hospital quality measures across the country and, indeed, observed a decline in quality performance for Ballad Health as it faced the direct consequences of the pandemic. At this point, TDH expects quality protocols to be fully reinstated and values on quality performance measures to improve. While some improvement was seen in FY23, the Department encourages Ballad Health to continue to prioritize quality of care and improve performance on quality metrics.

- In order to drive quality and improve patient satisfaction, the Department encourages Ballad Health to continue to invest in recruitment and retention of staff and the patient environment, with a particular focus on nurses and physicians.

- Ballad has informed the Department that the nationally reported nursing shortage impacted its quality and patient satisfaction scores. Ballad has informed the Department that it limited its operational and capital expenditures in order to preserve funds to meet staffing demands, with the intent of increasing capitalization in FY24. TDH encourages Ballad to return these expenditures to appropriate levels as promptly as staffing demands permit.

- TDH encourages Ballad Health to continue to increase enrollment in Appalachian Highlands Care Network to ensure uninsured and underinsured patients in Ballad Health's service area have access to quality care.

Conclusion

In considering whether to grant the COPA, TDH conducted a thorough assessment of the likely benefits to the community against the potential disadvantages from losing competition. The Department found that the region faced unique and persistent economic, geographic, and health challenges that contributed to significant disparities. The Department was also keenly aware that smaller, independent rural hospitals often face closure due to lower volume, lower reimbursement rates, and recruitment challenges.

The Department's goals in granting the COPA, more than six years ago, were to see improvement in the health and well-being of the region and to maintain access to high-quality health care. These goals have served and will continue to serve as a guide to TDH's data-centered approach to evaluating any plans proposed by Ballad Health and annually evaluating Public Advantage.

Current (FY23) Findings:

TDH accepts the COPA Monitor's calculations and recommendations related to the Sub-Index and Final Score. The recommendations set forth in the COPA Monitor Annual Report for the Index score for the year ending June 30, 2023, are as follows:

Economic Sub-Index: **Pass**

Sub-Index	Sub-Index Score	Percentage Weight For each Sub-Index	Weighted scores
Population Health	100	50%	50.0
Access to Care	86.3	30%	25.9
Other	88.25	20%	17.65
TOTAL			**93.55**

Therefore, pursuant to the Terms of Certification, with a Passing score in the Economic Sub-Index and a Final Score of 93.55:

> **It is the Tennessee Department of Health's determination that the Ballad Health COPA continues to provide a Public Advantage.**

Exhibit 1

2023 Population Health Report

Certificate of Public Advantage Population Health Sub-Index Measures for Ballad Health

Tennessee Department of Health| COPA Report |March 2024

Table of Contents

Population Health Sub-Index

Introduction

The Population Health Sub-Index is one set of measures that the State uses to objectively track changes in population health outcomes for those residing in Ballad Health's Tennessee Geographic Service Area (TN GSA). The following 10 counties comprise the TN GSA: Carter, Cocke, Greene, Hamblen, Hancock, Hawkins, Johnson, Sullivan, Unicoi, and Washington.
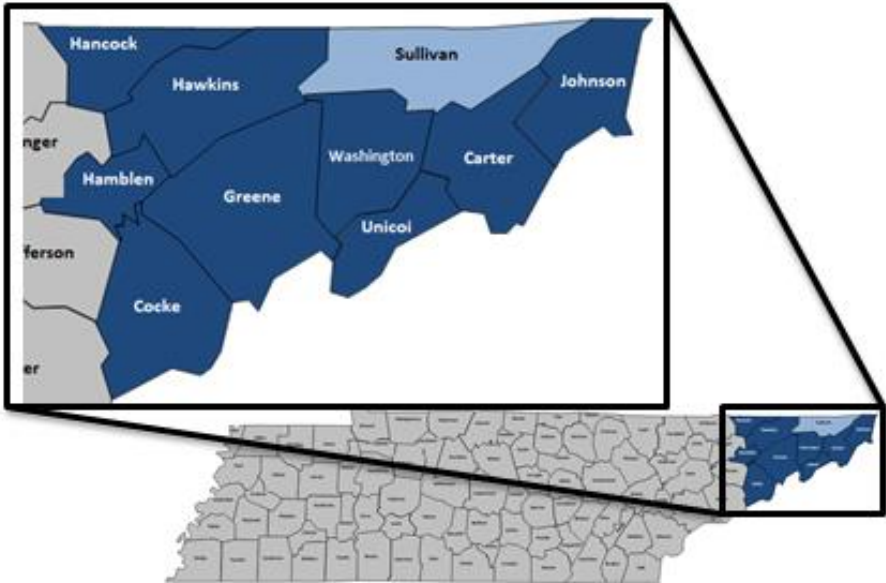
The 10 counties highlighted above comprise the Tennessee Geographic Service Area for Ballad Health.

Population Health Sub-Index Design

The Population Health Sub-Index consists of measures informed by the Tennessee State Health Plan[1] objectives, the National Academy of Medicine's population health efforts[2], the models of health used in United Health Foundation's America's Health Rankings[3] (AHR), and the Robert Wood Johnson Foundation's County Health Rankings[4] (CHR). AHR has been published since 1990 and CHR since 2010; both are widely recognized as providing fair assessments of the overall health of a population. Measure recommendations were originally provided to the Tennessee Commissioner of Health by an Index Advisory Workgroup comprised of residents and stakeholders from the TN GSA.

Table 1 of this 2023 COPA Population Health Report displays the most recent values available to TDH, as of January 2024, on the Population Health Sub-Index measures.

Data definitions, data sources, and data collection timeframes are listed in Appendix 1. Additional details on data sources, timeframes, and methodologies are listed in Appendix 2.

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[1] State of Tennessee, 2015 Edition of the State Health Plan, Division of Health Planning, Tennessee Department of Health, 2015

[2] National Academies of Sciences, Engineering, and Medicine. 2016. Metrics that matter for population health action: Workshop summary. Washington, DC: The National Academies Press. doi: 10.17226/21899.

[3] United Health Foundation. America's Health Rankings. https://www.americashealthrankings.org

[4] University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps. www.countyhealthrankings.org.

2023 updated Population Health Data Table

TABLE 1

		TN COPA Counties Value	TN Peer Counties† Value	TN Value	US Value
BIG FOUR / Behaviors					
	Tobacco Use	COPA	PEER	TN	US
1*	Smoking (*% of adults*)	24.1%	20.7%	18.5%	12.8%
2	Smoking in higher density counties (*% of adults*)	n/a	n/a	n/a	n/a
3	Smoking in lower density counties (*% of adults*)	n/a	n/a	n/a	n/a
4	Smoking among those with less than a high school education (*% of adults*)	n/a	n/a	38.0%	23.3%
5	Smoking among those with a high school education or more *(%)*	20.0%	17.3%	16.0%	11.5%
6*	Mothers who smoke during pregnancy (*% of live births*)	17.7%	15.9%	9.1%	3.7%
7*	Youth tobacco use (*% of high school students*)	7.2%	2.2%	4.9%	3.8%
8	Youth -ever tried cigarette smoking (*% of high school students*)	19.8%	14.3%	19.2%	17.8%
9	Youth electronic vapor product use (*% of high school students*)	12.2%	9.5%	19.0%	18.0%
	Physical Activity	COPA	PEER	TN	US
10*	Physically active adults (*% of adults*)	66.0%	70.1%	72.3%	76.1%
11*	Physically active students (*% of high school students*)	47.2%	49.3%	40.3%	45.3%
	Obesity	COPA	PEER	TN	US
12	Obesity (*% of adults*)	42.6%	43.0%	38.9%	33.3%
13	Obesity in higher density counties (*% of adults*)	n/a	n/a	n/a	n/a
14	Obesity in lower density counties (*% of adults*)	n/a	n/a	n/a	n/a
15	Obesity among those with less than a high school education (*% of adults*)	n/a	n/a	40.7%	37.4%
16	Obesity among those with a high school education or more (*% of adults*)	43.4%	41.2%	*38.6%*	32.8%
17*	Obesity counseling and education (*% of physician office visits*)	*New*	*n/a*	*n/a*	*n/a*
18*	Overweight and obesity among TN public school students (*% of students in grades kindergarten, 2, 4, 6, 8, and one year of high school*)	44.2%	42.2%	42.8%	n/a
	Breastfeeding Measures	COPA	PEER	TN	US
19*	Average mPINC (Maternal Practices in Infant Nutrition and Care) score	81	68	72	81
20*	Breastfeeding initiation (*% of live births*)	74.0%	75.8%	81.1%	83.3%
21*	Infants breastfed at six (6) months (*% of 6-month olds*)	*New*	*New*	22.6%	25.4%
	High School Student Healthy Eating	COPA	PEER	TN	US
22	Fruit consumption among high school students (*% of high school students*)	85.5%	85.2%	87.6%	92.3%
23	Vegetable consumption among high school students (*% of high school students*)	84.3%	89.3%	89.5%	90.7%
24	Soda consumption among high school students (*% high school students*)	84.4%	82.5%	74.5%	69.0%
	Substance Abuse	COPA	PEER	TN	US
25*	NAS (Neonatal Abstinence Syndrome) births (cases *per 1,000 live births*)	40.9	20.6	9.8	n/a
26*	Drug deaths (*deaths per 100,000 population*)	51.0	65.3	54.7	33.5

		COPA	PEER	TN	US
27	Drug overdoses *(non-fatal overdoses per 100,000 population)*	321.9	420.8	394.2	n/a
28	Painkiller prescriptions (prescriptions *per 1,000 population*)	822.8	782.0	614.2	395
29	Prescription drugs among high school students *(% of high school students using prescription pain relievers not prescribed by the doctor)*	10.4%	10.1%	13.5%	12.2%
30*	MME for Pain *(Total morphine milligram equivalents (MME) opioids for pain per capita)*	663.3	615.7	437.7	n/a

IMMUNIZATIONS

		COPA	PEER	TN	US
31*	On-time vaccinations – children *(% of children that are up-to-date on immunizations at the time of kindergarten entry).*	93.6%	94.7%	93.3%	92.7%
32*	Ballad Entity participation in TennIIS *(# of active Ballad entities in Tennessee)*	73	n/a	n/a	n/a
33	Entity participation in TennIIS *(# of active TennIIS entities)*	391	350	3598	n/a
34	Vaccinations – HPV Females *(# of HPV shots administered for females aged 11 to 17 years, either quadrivalent or bivalent)*	5048	4141	52,484	n/a
35	Vaccinations – HPV Males *(# of HPV shots administered for males aged 11 to 17 years, either quadrivalent or bivalent)*	5197	4124	52552	n/a
36*	Vaccinations – Tdap *(# of Tdap shots administered for patients aged 11 to 17 years)*	6763	6298	75852	n/a
37*	Vaccination - Flu, Older Adults *(% adults aged 65+)*	63.0%	58.1%	66.6%	67.7%
38	Vaccinations - Flu, Adults *(% of adults)*	44.1%	34.7 %	40.6%	45.0%

COMMUNITY / ENVIRONMENT

		COPA	PEER	TN	US
39*	Teen births (births *per 1,000 females aged 15-19 years*)	22.3	24.8	21.5	13.9
	Third Grade Reading	COPA	PEER	TN	US
40*	Third grade reading level (% of *3rd graders who score "on-track" or "mastered" on TNReady reading assessment*)	41.9%	39.1%	40.5%	n/a
41	Third grade reading level - Higher density counties *(% of students)*	47.9%	42.4%	n/a	n/a
42	Third grade reading level - Lower density counties *(% of students)*	34.0%	35.6%	n/a	n/a
	Oral Health	COPA	PEER	TN	US
43	Fluoridated water *(% of population on community water systems receiving fluoridated water)*	92.1%	93.8%	88.7%	72.7%
44*	Dental sealants – children *(% Medicaid enrollees aged 6–9 years)*	10.4%	11.0%	11.0%	n/a
45	Dental sealants - adolescents *(% Medicaid enrollees aged 13-15 years)*	6.6%	6.3%	6.3%	n/a

OUTCOMES

		COPA	PEER	TN	US
46*	Frequent mental distress *(% of adults)*	25.7%	20.3%	20.3%	15.8%
47	Frequent physical distress *(% of adults)*	21.3%	22.5%	15.5%	12.5%
48*	Infant mortality *(deaths per 1,000 live births)*	6.2	4.3	7.3	5.44
49*	Low birthweight *(% of live births)*	8.3%	8.5%	9.3%	8.6%
50	Child mortality *(deaths per 100,000 population for children aged 1-19 years)*	36.0	32.5	39.8	29.5
51	Cardiovascular deaths *(deaths per100,000 population)*	385.3	385.9	264.7	209.6
52	Cancer deaths *(deaths per 100,000 population)*	269.6	268.1	207.6	182.4
53	Diabetes deaths *(deaths per 100,000 population)*	42.8	51.5	38.4	31.1
54*	Diabetes adverse events *(% of adults identified with prediabetes who are referred to a qualifying diabetes prevention program)*	New	n/a	n/a	n/a
55	Suicide deaths *(deaths per 100,000 population)*	19.8	20.2	17.5	14.5
56*	Premature death ratio *(ratio of deaths before age 75 per 100,000 population for higher to lower density counties)*	0.842	0.794	n/a	n/a

The most recent calendar, fiscal year, seasonal, or school year data available as of January 2024were used for this report.

General notes regarding missing data in this report:

- Ballad Health is responsible for data collection on the following measures: Physician Office Visits that include counseling or education related to weight and physical activity (measure #17), Infants Breastfed at 6 months (measure #21), and Diabetes Adverse Events (measure # 54). Conversations between TDH and Ballad Health regarding these metrics and technical definitions paused are under discussion. Definitions and data collection issues were not resolved before this report was issued.

Appendix 1:

Population Health Sub-Index Data Source Table

TABLE 2

Measure Definition	TN Data Source	US Data Source
BEHAVIORS		
Tobacco Use		
1* Smoking (*Percentage of adults who are self-reported smokers (smoked at least 100 cigarettes in their lifetime and currently smoke).*)	Tennessee Behavioral Risk Factor Surveillance System (BRFSS). Tennessee Department of Health (TDH), Office of Population Health Surveillance, 2022	Centers for Disease Control (CDC), Behavioral Risk Factor Surveillance System (BRFSS), 2022
2 Smoking in higher density counties (*TN COPA Value: 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); TN & US Values: Not stratified by population density.*)	n/a	n/a
3 Smoking in lower density counties (*TN COPA Value: 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); TN & US Values: Not stratified by population density.*)	n/a	n/a
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).*)	n/a	CDC, BRFSS, 2022
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).*)	Tennessee BRFSS. TDH, Office of Population Health Surveillance, 202	n/a
6* Mothers who smoke during pregnancy (*Percentage of mothers with live birth who report smoking during pregnancy.*)	TDH, Division of Vital Records and Statistics, Birth Statistical File, 2021	CDC WONDER, Natality Public Use Files 2022
7* Youth tobacco use (*Percentage of high school students who self-reported having smoked cigarettes during the 30 days before the survey.*)	Tennessee Department of Education (TDOE), Office of Coordinated School Health, Youth Wellness Survey, 2022-23/ YRBS, 2021	CDC, Youth Risk Behavior Survey (YRBS), 2021,
8 Youth ever tried cigarette smoking (*Percentage of high school students who self-reported ever trying cigarette smoking, even one or two puffs.*)	TDOE, Office of Coordinated School Health, Youth Wellness Survey, 2022-23 / YRBS, 2021	CDC, YRBS, 2021
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.*)	TDOE, Office of Coordinated School Health, Youth Wellness Survey, 2022-23 / YRBS, 2021	CDC, YRBS, 2021
Physical Activity		
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.*)	Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2022	CDC, BRFSS, 2022

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.*)	TDOE, Office of Coordinated School Health, Youth Wellness Survey, 2022-23 / YRBS, 2021	CDC, YRBS, 2021

Obesity

12	Obesity (*Percentage of adults with a body mass index of 30.0 or higher based on reported height and weight.*)	Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2022	CDC, BRFSS, 2022
13	Obesity in higher density counties (*TN COPA Value: 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; TN & US Values: Not stratified by population density.*)	n/a	n/a
14	Obesity in lower density counties (*TN COPA Value: 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; TN & US Values: Not stratified by population density*.)	n/a	n/a
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.*)	n/a	CDC, BRFSS, 2022
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.*)	Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2022	CDC, BRFSS, 2022
17*	Obesity counseling and education (*Percentage of physician office visits that include counseling or education related to weight and physical activity.*)	(Data collection to be led by Ballad Health)	n/a
18*	Overweight and obesity 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*.)	TDOE, Office of Coordinated School Health, 2021-22	n/a

Breastfeeding Measures

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 Maternal Practices in Infant & Nutrition & Care (mPINC), 2022	CDC Survey of Maternal Practices in Infant & Nutrition & Care (mPINC), 2022
20*	Breastfeeding Initiation (*TN COPA, Peer, and TN Values: Percentage of live births whose birth certificates report that baby is breastfed. US Value: Proportion of infants who are ever breastfed.*)	TDH, Division of Vital Records and Vital Statistics, Birth Statistical File, 2021	CDC National Vital Statistics Report, 2021
21*	Infants breastfed at six (6) months (*Percentage of infants aged six (6) months who were exclusively breastfed as reported by their guardians.*)	(Data collection to be led by Ballad Health) / CDC, National Immunization Survey, among 2020 births	CDC, National Immunization Survey, among 2020 births

High School Student Healthy Eating

22	Fruit consumption among high school students – (*Percentage of high school students who reported eating fruit during the past 7 days.*)	TDOE, Office of Coordinated School Health, Youth Wellness Survey, 2022-23 / YRBS, 2021	CDC, YRBS, 2021

23	Vegetable consumption among high school students – (*Percentage of high school students who reported eating vegetables during the past 7 days.*)	TDOE, Office of Coordinated School Health, Youth Wellness Survey, 2022-23 / YRBS, 2021	CDC, YRBS, 2021
24	Soda consumption among high school students – (*Percentage of high school students who reported drinking soda or pop during the past 7 days.*)	TDOE, Office of Coordinated School Health, Youth Wellness Survey, 2022-23 / YRBS, 2021	CDC, YRBS, 2021

Substance Abuse

25*	NAS (Neonatal Abstinence Syndrome) Births (*Number of reported cases with clinical signs of withdrawal per 1,000 live births*.)	TDH, Neonatal Abstinence Syndrome Surveillance, 2022	n/a
26*	Drug deaths (*All drug overdose deaths caused by acute poisonings, regardless of intent per 100,000 population.*)	TDH, Division of Vital Records and Statistics, Death Statistical File, 2021	CDC WONDER, Underlying Cause of Death Files, 2021
27	Drug overdoses (*Non-fatal overdoses caused by acute poisonings, regardless of intent per 100,000 population.*)	TDH, Division of Population Health Assessment, Office of Health Statistics, Hospital Discharge Data System, 2021	n/a
28	Painkiller prescriptions (*Number of opioid prescriptions for pain per 1,000 population*)	TDH, Office of Informatics and Analytics, Controlled Substance Monitoring Database (CSMD), 2022	CDC, National Center for Injury Prevention and Control, 2022
29	Prescription drugs among high school students (*Percent of high school students who report ever taking prescription drugs without a doctor's prescription (such as codeine, Vicodin, OxyContin, Hydrocodone, and Percocet one or more times during their life.*)	TDOE, Office of Coordinated School Health, Youth Wellness Survey, 2022-23 / YRBS, 2021	CDC, YRBS, 2021
30*	MME for Pain (*Total morphine milligram equivalents (MME) opioids for pain per capita*)	TDH, Office of Informatics and Analytics, CSMD, 2022	n/a

IMMUNIZATIONS

31*	On-time vaccinations – children (*Percentage of children that are up to date on state-required vaccines at the time of kindergarten entry.*)	Kindergarten Immunization Compliance Assessment, 2022	CDC, National Immunization Survey- Child, 2022-23
32*	Ballad entity participation in TennIIS (*Number of Ballad Health entities in Tennessee participating in TennIIS.*)	Ballad Health / Tennessee Immunization Information System (TennIIS), 2022	n/a
33	Entity participation in TennIIS (*Number of entities in Tennessee participating in TennIIS.*)	TennIIS, 2022	n/a
34	Vaccinations - HPV females (*Number of human papillomavirus (HPV) vaccine shots administered to females aged 11 to 17 years, either quadrivalent or bivalent.*)	TennIIS, 2022	n/a
35	Vaccinations - HPV males (*Number of human papillomavirus (HPV) vaccine shots administered to males aged 11 to 17 years, either quadrivalent or bivalent.*)	TennIIS, 2022	n/a

36*	Vaccinations - Tdap (*Number of tetanus-diphtheria-acellular pertussis (Tdap) vaccine shots administered to males aged 11 to 17 years.*)	TennIIS, 2022	n/a
37*	Vaccination Rate - Flu, Older (*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.*)	Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2022	CDC, BRFSS, 2021
38	Vaccinations - Flu, 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.*)	Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2022	CDC, BRFSS, 2021

COMMUNITY / ENVIRONMENT

39*	Teen births (*Rate of births per 1,000 females aged 15-19 years.*)	TDH, Division of Vital Records and Statistics, Birth Statistical File, 2021	CDC National Vital Statistics Report, 2021

Third Grade Reading

40*	Third grade reading level (*Percentage of 3rd graders scoring "on-track" or "mastered" on TNReady reading assessment.*)	TDOE, 2022-23	n/a
41	Third grade reading level - Higher density counties (*TN COPA Value: Percentage of 3rd graders in Hamblen, Sullivan, and Washington counties scoring "on-track" or "mastered" on TNReady reading assessment; TN & US Values: Not stratified by population density.*)	TDOE, 2022-23	n/a
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 TNReady reading assessment; TN & US Values: Not stratified by population density.*)	TDOE, 2022-23	n/a

Oral Health

43	Fluoridated water (*Percent of population on community water systems receiving fluoridated water.*)	CDC, My Water's Fluoride, 2023	CDC, Water Fluoridation Reporting System, 2020
44*	Children receiving dental sealants (*Percentage of Medicaid enrollees aged 6-9 years receiving dental sealants on permanent first molar teeth.*)	TennCare/DentaQuest, 2021-22	n/a
45	Adolescents receiving dental sealants (*Percentage of Medicaid enrollees aged 13-15 years receiving dental sealants on their first and second molar teeth.*)	TennCare/DentaQuest, 2021-22	n/a

OUTCOMES

46*	Frequent mental distress (*Percentage of adults who reported their mental health was not good 14 or more days in the past 30 days.*)	Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2022	CDC, BRFSS, 2022
47	Frequent physical distress (*Percentage of adults who reported their physical health was not good 14 or more days in the past 30 days.*)	Tennessee BRFSS. TDH, Office of Population Health Surveillance, 2022	CDC, BRFSS, 2022

48*	Infant mortality (*Number of infant deaths (before age 1) per 1,000 live births*.)	TDH, Division of Vital Records and Statistics, Death Statistical File, 2021	CDC WONDER, 2021
49*	Low birthweight (*Percentage of infants weighing less than 2,500 grams (5 pounds, 8 ounces) at birth*.)	TDH, Division of Vital Records and Statistics, Birth Statistical File, 2021	CDC WONDER, Natality Public Use Files, 2022
50	Child mortality (*Number of deaths per 100,000 children aged 1 to 18 years*.)	TDH, Division of Vital Records and Statistics, Death Statistical File, 2021	CDC WONDER, Underlying Cause of Death Files, 2021
51	Cardiovascular deaths (*Number of deaths due to diseases of the heart per 100,000 population*.)	TDH, Division of Vital Records and Statistics, Death Statistical File, 2021	CDC WONDER, Underlying Cause of Death Files, 2021
52	Cancer deaths (*Number of deaths due to all causes of cancer per 100,000 population*.)	TDH, Division of Vital Records and Statistics, Death Statistical File, 2021	CDC WONDER, Underlying Cause of Death Files, 2021
53	Diabetes deaths (*Number of deaths due to diabetes per 100,000 population.*)	TDH, Division of Vital Records and Statistics, Death Statistical File, 2021	CDC WONDER, Underlying Cause of Death Files, 2021
54*	Diabetes adverse events (*Percentage of adults identified with prediabetes who are referred to a qualifying diabetes prevention program*.)	(Data collection to be led by Ballad Health)	n/a
55	Suicide deaths (*Number of deaths due to intentional self-harm per 100,000 population*.)	TDH, Division of Vital Records and Statistics, Death Statistical File, 2021	CDC WONDER, Underlying Cause of Death Files, 2021
56*	Premature death ratio (*Ratio of deaths before age 75 per 100,000 population for higher density counties to lower density counties*.)	TDH, Division of Vital Records and Statistics, Death Statistical File, 2021	n/a

* These measures are the Priority Population Health Measures as defined in the TOC.

n/a – Data will not be compared at this level.

Appendix 2:
Population Health Sub-Index Data Notes

Notes on Tennessee-sourced values:

DentaQuest data:

Dental sealant 2021-22 data were collected from 10/1/2021- 9/30/2022.

Fluoridated water data:

2022 Values on each of the three geographies: 1) The TN COPA Counties; 2) TN Peer Counties region; and 3) the state of Tennessee are based on TDH's analysis of CDC's My Water's Fluoride online data, accessed via https://nccd.cdc.gov/doh_mwf/default/default.aspx.

Hospital Discharge Data System data:

Crude rates were used for the TN COPA Counties, TN Peer Counties region, and the state of Tennessee.

Hospital discharge data acknowledgement: Hospital discharge data were provided by the TDH, Division of Population Health Assessment, Office of Health Statistics.

Tennessee Immunization Information System (TennIIS) data:

- A participating facility is an entity in TennIIS production that has submitted or entered an administered and/or historical vaccination during the calendar year.

- Vaccinations are evaluated as being administered by the entities in each county group (the TN COPA Region, TN Peer Counties region, and the state of Tennessee) during the calendar year.

- The entity can report administered and/or historical vaccinations and the entity can submit these vaccines manually or electronically. The numbers of participating entities were summed for: 1) Ballad Health, 2) the TN COPA Counties, 3) TN Peer Counties region.[5]

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[5] The TennIIS values was incorrectly labeled as a percentage in prior reports. The values calculated and reported have in fact always been a simple count and are labeled correctly in this report.

- Vaccination CVX codes (codes developed and maintained by the CDC's National Center of Immunization and Respiratory Diseases for administered vaccine) were pulled for each county group; these may not include all CVX codes associated with those vaccination families as some CVX codes are not relevant.

- Historical and deleted vaccines were omitted from all counts.

- Population data source: 2021 Population Data Files, Division of Population Health Assessment, TDH.

IMMUNIZATION	VACCINATION CVX CODES EVALUATED
HPV	HPV, quadrivalent - CVX CODE 62; HPV, bivalent - CVX CODE 118; Human Papillomavirus 9-valent vaccine - CVX CODE 165; HPV, uncertain formulation - CVX CODE 137
TDAP	Tdap - CVX CODE 115

Vital Statistics – Death data:

Crude rates were used for the TN COPA Region, TN Peer Counties region, and the state of Tennessee.

Rates calculated based on total population counts from the Tennessee Population Estimates Program, 2021, TDH, Division of Population Health Assessment.

ICD-10 Coding for Tennessee Mortality Data, 2021

Underlying Cause of Death	ICD-10 Codes or UCD Group Codes Used
Diseases of the Heart	UCD Group Codes 049-059
Cancer	UCD Group Codes 018-040
Diabetes	UCD Group Code 043
Suicide	UCD Group Codes 105 and 106
All Drug Overdoses	ICD-10 codes for underlying cause of death: X40-X44, X60-X64, X85, Y10-Y14

Premature deaths are deaths occurring before age 75. Rate is the death rate per 100,000 people for the population age 0 to 74 years old.

Death Data acknowledgment: Death data were provided by TDH, Division of Vital Records and Statistics.

Vital Statistics – Birth data:

Birth Data acknowledgement: Birth data were provided by TDH, Division of Vital Records and Statistics.

Youth Wellness Survey data:

- The Youth Wellness Survey is an online survey on health behaviors administered annually in Tennessee's public high schools.
- Schools are selected with probability proportional to the size of student enrollment in grades 9-12 and then a specific period of the school day (e.g., 2nd period) is randomly selected to participate. Within selected classes, all students are eligible to participate.
- The Youth Wellness Survey consists of a limited number of Youth Risk Behavior Survey (YRBS) questions and follows the same sampling methodology used for the YRBS.
- Per YRBS guidelines, no weighting was performed on this year's survey as overall participation levels were less than 60%.
- Only respondents with a valid grade level (9, 10, 11 or 12) were used in the analysis.
- Participation level:
  - COPA: 5/10 counties participated = 50.0%; remaining students: 347/455* = 76.29%; Overall particpation = 38.15%Peer: 6/12 counties = 50.0%; remaining students: 358/749** = 47.80%; Overall participation = 23.9%

*Sample size necessary for 100% participation for remaining COPA counties
**Sample size necessary for 100% participation for remaining Peer counties

Overweight and obesity prevalence among students:

- Body Mass Index (BMI) is calculated based on the height and weight measurements collected during screening in the current school year. BMI measurements are age and sex specific for children and teens. Some counties and school districts require an active opt-in informed consent for BMI student data collection. This requirement can have a significant impact on the number of students screened.
- Overweight/obese was defined as body mass index greater than or equal to the 85th percentile for children of the same age and sex. Data were collected by the Tennessee Department of Education's Office of Coordinated School Health in partnership with TDH.
- Children screened were selected from grades Kindergarten, 2, 4, 6, 8, and any one year of high school throughout the 2021-22 school year.

Neonatal Abstinence Syndrome:

Rates are expressed as numbers of Neonatal Abstinence Syndrome (NAS) cases divided by Live Births in COPA, PEER Counties, or Tennessee statewide counts.

NAS Data acknowledgment: Neonatal Abstinence Syndrome Surveillance System, Division of Family Health and Wellness, TDH.

Drug overdose (on-fatal):

- All drug overdose *inpatient* hospitalizations of Tennessee residents caused by non-fatal acute poisonings due to the effects of drugs, regardless of intent.
- All drug overdose *outpatient* visits by Tennessee residents caused by non-fatal acute poisonings due to the effects of drugs, regardless of intent.
- Count/rate suppressed in accordance with TDH Data Suppression Guidelines.
- Additional Notes, inclusions, and exclusion:
  - Counties determined by numeric county of residence code in HDDS data (tn_co_res).
  - Rates are calculated using the county population for a given year per 100,000 residents. [i.e., (count/population)*100,000] For county populations by year. Population data is obtained from CDC WONDER bridged race populations estimates. The vintage year of the populations corresponds to the year of the indicator. Additional details can be accessed here.
  - Primary Inclusion/Exclusion Criteria: Only Tennessee Residents; Excludes patients discharged as dead/deceased; Limited to non-federal acute care-affiliated facilities. Excludes VA and other federal hospitals, rehabilitation centers, and psychiatric hospitals.
  - Outpatient Visit Inclusion Criteria: Flagged as an outpatient record by THA.
  - Inpatient Hospitalization Inclusion Criteria: Flagged as an inpatient record by THA.
  - All Drug Overdose Inclusion Criteria: First 3 characters of Principal Diagnosis ICD-10 code falls in the range T36-T50 (Poisoning by drugs, medicaments, and biological substances); AND the intent is accidental/unintentional, intentional self-harm, assault, or undetermined intent (not adverse effects or underdosing) ; AND it is the initial or a subsequent encounter (not sequela).
  - Non-fatal drug overdose data acknowledgment: data were provided by TDH, Division of population Health Assessment, Hospital Discharge Data System

Painkiller prescriptions:

Prescription rate per 1,000 residents who filled opioid for pain and benzodiazepine prescriptions in TN.

- The numerator is the number of prescriptions filled by level of stratification and the denominator is the yearly population by level of stratification in 1,000s.
- Count of unique patients who filled at least one prescription for opioids for pain and benzodiazepines.
- Prescriptions that were written but not filled by the patient are not tracked in the CSMD. The CSMD provides a reasonably accurate measure of the amount of controlled substances dispensed in TN, but may not capture the full extent of prescribing practices.
- The CSMD does not have information on patient behavior beyond filling prescriptions. Measures are calculated with the assumption patients take their medications as prescribed. Patients may choose not to take their medication or may share medications with others.
- A small proportion of prescriptions reported to the CSMD are for veterinary patients. These patients are not explicitly excluded from calculations and may have small impacts on the data presented here. It is estimated that around 1% of all prescriptions reported to the CSMD are written for veterinary patients in any given year.
- Additional inclusions, and exclusion:
  - Only Tennessee residents were considered
  - Only opioids for pain and benzodiazepines in DEA schedules II,III, IV were included
  - Buprenorphine products that are FDA-indicated for the treatment of opioid use disorder are excluded
  - Only opioids for pain and benzodiazepines identified in the CDC's MME Conversion table were considered for opioid for pain and benzodiazepine indicators.
  - Prescriptions with zero or implausibly high quantities were excluded
  - Prescriptions with zero or implausibly high days supply were excluded
- Additional Notes:
  - After exclusions, a count of all prescriptions filled in each category as identified by the CDC's MME Conversion Table or IBM Micromedex RED BOOK data. Visit https://www.cdc.gov/opioids/data-resources/index.html for more details.
  - Yearly population data for calculation of rates was obtained from CDC Wonder bridged race population estimates. Visit https://wonder.cdc.gov/bridged-race-population.html for more details.
  - Controlled Substance Monitoring Database Data acknowledgment: Controlled Substance Monitoring Database, Office of Informatics and Analytics, TDH.

MME opioids for pain:

Morphine milligram equivalents or MME are calculated as the quantity multiplied by the strength of the drug per unit multiplied by a conversion factor provided to TDH by the CDC. Values reported are the count of number of prescriptions, by county, divided by county population in thousands.

Additional notes and exclusions:
- Rates were calculated using 2021 county population. Population data were obtained from vintage year CDC WONDER database bridged race populations estimates.
- Only Tennessee residents were considered. Counties determined by patient county of residence. Counties are assigned to patients after geocoding based on street address. Where street address is not available, counties are assigned based on patient's reported zip code.
- Only drug schedules II, III and IV were included.
- Prescriptions with implausible days supply (<1 or greater than 180) were excluded.
- Prescriptions with implausible quantities (<1 or greater than 100,000 doses) were excluded.
- Controlled Substance Monitoring Database Data acknowledgment: Controlled Substance Monitoring Database, Office of Informatics and Analytics, TDH.

Third Grade Reading Level:

- Reflects proficiency TNReady ELA, English I, and English II.
- Results are suppressed where the number of valid test scores is less than 10. In these files, suppression also occurs where any individual proficiency level is less than 1% or greater than 99% at the state and district level, or less than 5% or greater than 95% at the school level.

Notes on values from Tennessee and US joint source:

Behavioral Risk Factor Surveillance System data:

- All estimates are weighted using demographic information from each of the four geographies: 1) The TN COPA Region; 2) TN Peer Counties region; 2) the state of Tennessee; and 4) the US.
- Prevalence estimates with a numerator or denominator less than 50 were suppressed.

- Sampling frame deviations and anomalies in the BRFSS 2022 US data are detailed in a CDC BRFSS report that can be accessed here:
- https://www.cdc.gov/brfss/annual_data/2022/pdf/Compare_2022-508.pdf .

Notes on US values:

Mothers who smoke during pregnancy:

US values on Mothers who smoke during pregnancy were calculated by

dividing the number of mothers who reported smoking during pregnancy by the number of live births occurring within the United States to U.S. residents.

Data acknowledgment: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Natality on CDC WONDER Online Database. Data are from the Natality Records 2016-2022, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/natality-expanded-current.html on Jan 10, 2024 11:53:25 AM

Breastfeeding initiation:

Breastfeeding Initiation data acknowledgement: Osterman MJK, Hamilton BE, Martin JA, Driscoll AK, Valenzuela CP. Births: Final data for 2021. National Vital Statistics Reports; vol 72, no 1. Hyattsville, MD: National Center for Health Statistics. 2023, accessed at https://www.cdc.gov/nchs/data/nvsr/nvsr72/nvsr72-01.pdf on January 16, 2024.

Breastfeeding at six months:

The US and TN *Breastfeeding at Six Months* values come from the annual National Immunization Survey (NIS). The NIS uses random-digit dialing to survey households with children and teens.

- Survey results are based on cellular telephone sampling only.
- The telephone survey asks questions to respondents with children aged 19 to 35 months to determine whether at six months old their child was exclusively breastfed.
- A detailed description of the methods can be found at the National Immunization Survey Website that can be accessed here:
  https://www.cdc.gov/breastfeeding/data/nis_data/results.html

US Breastfeeding at six months data acknowledgement: National Immunization Survey-Child, Centers for Disease Control and Prevention, Department of Health and Human Services, accessed at https://www.cdc.gov/breastfeeding/data/nis_data/rates-any-exclusive-bf-state-2020.htm on January 15, 2024.

Painkiller prescription:

US values on painkiller prescriptions were calculated using data from the National Center for Injury Prevention and Control.
US Painkiller prescription data acknowledgement: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control 2019-2022 CDC's US dispensing rates, accessed at https://www.cdc.gov/drugoverdose/rxrate-maps/index.html on January 15, 2024 and analyzed by TDH.

On-time vaccinations for children:

The US on-time vaccination value is the lowest of the seven vaccines percentages reported by the national vaccination coverage among kindergartners for the 2022-23 school year.

US on-time vaccination data acknowledgement: National Center for Immunization and Respiratory Diseases 2011-2020, data accessed at https://www.cdc.gov/vaccines/imz-managers/coverage/schoolvaxview/data-reports/index.html on January 15, 2024.

Fluoridated water data:

US fluoridated water data acknowledgement: CDC, Division of Oral Health, National Center for Chronic Disease Prevention and Health Promotion, accessed at https://www.cdc.gov/fluoridation/statistics/2020stats.htm on January 15, 2024.
Note: All data are subject to limitations as explained in the data source.

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Exhibit 2

2023 Access to Health Services Report

Certificate of Public Advantage Access Sub-Index Measures for Ballad Health

Tennessee Department of Health | COPA Report | March 2024

TN Department of **Health**

Table of Contents

Access Sub-Index

Introduction

This department report contains updated values on the Access Sub-Index Measures. Measures were selected to objectively track changes and evaluate the impact of the Ballad Health merger.

The Tennessee Department of Health believes all Tennesseans should have reasonable access to health services. Access to health care is vital to overall physical, social, and mental health; prevention of disease; detection and treatment of illnesses; quality of life; preventable death and life expectancy.

The Access Sub-Index monitors changes in access to and utilization of health services by tracking several measures throughout Ballad Health's 21 county Geographic Service Area (GSA). The following counties comprise Ballad Health's GSA: Carter, Cocke, Greene, Hamblen, Hancock, Hawkins, Johnson, Sullivan, Unicoi, and Washington County, Tennessee and Buchanan, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe County, Virginia.
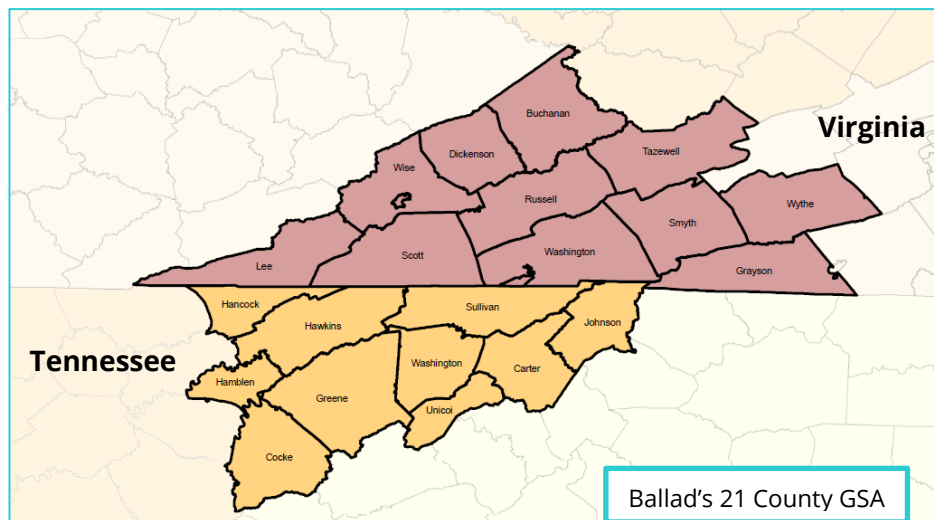
Note: For measures where only data on the Tennessee Counties are available, the TN GSA (the 10 counties in the Tennessee portion of Ballad's GSA) values are provided.

Access Sub-Index Design

 The Access Sub-Index was designed to measure health care access within three domains:

- Characteristics of Health Delivery System

- Utilization of Health Services, and

- Consumer Satisfaction.

These domains each address a different question. The Characteristics of Health Delivery System domain seeks to address the question, "Is care available?" Measures for urgent care hours, the distance to urgent care, emergency departments, and hospitals, as well as specialist recruitment and retention are within this domain.

Utilization of Health Services measures aim to answer, "Is the right care being delivered at the right time and in the right place?" Within the utilization of health services domain, six priority areas were identified. Those priority areas are: primary care; appropriate use of care; secondary prevention (screenings); infants and children; mental health and substance abuse; and antidepressant medication management.

The Consumer Satisfaction domain addresses the question, "Are people satisfied with the availability of care?" The measures within this domain require Ballad Health to administer patient satisfaction and access surveys and create and implement plans to address identified deficiencies.

By measuring access in these three ways, we gain a broad understanding of the current level of access. Maintaining or improving access according to these Sub-Index measures, is a component of the annual evaluation and determination of the COPA's ongoing public benefits.

Table 1 of this 2023 COPA Access to Health Services Report displays the most recent values available to TDH, as of January 2024, on the Access Sub-Index measures.

Appendix 1 contains Table 2, which lists data definitions, data sources, and data collection timeframes. Additional details on data sources and methodologies are listed in Appendix 2.

2023 Access Sub-Index Data Table

TABLE 1

	Measure	Baseline GSA Value	FY22 GSA Value	FY23 GSA Value
CHARACTERISTICS OF HEALTH DELIVERY SYSTEM				
1	Population within 10 miles of an urgent care center	80.5%	80.1%	82.9%
2	Population within 10 miles of an urgent care center open nights & weekends	70.3%	69.4%	54.7%
3	Population within 10 miles of Urgent Care Facility or Emergency Department	98.9%	99.7%	99.7%
4	Population within 15 miles of an Emergency Department	97.3%	98.1%	98.1%
5	Population within 15 miles of an acute care hospital	97.3%	98.1%	98.1%
6	Pediatric Readiness of Emergency Department	67.0%	73.0%	74.1%
7	Appropriate Emergency Department Wait Times	40.7%	42.7%	44.9%
8	Specialist Recruitment and Retention †	n/a	n/a	n/a
UTILIZATION OF HEALTH SERVICES				
	Primary Care			
9	Personal Care Provider	80.5%	80.6%	83.8%
	Appropriate Use of Care			
10	Preventable Hospitalizations – Older Adults (discharges per 1,000 people 65+)	72.2*	36.7	34.6
11	Preventable Hospitalizations-Adults (discharges per 1,000 people 18+)	25.6*	17.2	16.3
	Secondary Prevention (Screenings)			
12	Screening - Breast Cancer	74.1%*	81.1%	82.4%
13	Screening - Cervical Cancer	63.8%*	70.7%	70.0%
14	Screening - Colorectal Cancer	46.4%*	67.9%	67.3%
15	Screening - Diabetes	71.2%	85.7%	*86.0%*
16	Screening - Hypertension	97.6%	98.7%	98.4%
	Infant and Children			
17	Asthma Emergency Department Visits Per 10,000 (Age 0-4)	60.4*	34.2	42.7
18	Asthma Emergency Department Visits Per 10,000 (Age 5-14)	41.5*	25.5	28.4
19	Prenatal care in the first trimester	66.8	83.9%	83.9%
	Mental Health & Substance Abuse			
20	Follow-Up After Hospitalization for Mental Illness (% Within 7 Days Post-Discharge)	33.3%	25.3%	*21.2%*
21	Follow-Up After Hospitalization for Mental Illness (% Within 30 Days Post-Discharge)	58.6%	37.3%	*48.1%*

	Antidepressant Medication Management			
22	Effective Acute Phase Treatment (84 days)	75.5%	82.2%	83.9%
23	Effective Continuation Phase Treatment (180 days)	65.3%	62.1%	63.9%
24	Engagement of AOD (Alcohol or Drug) Treatment	1.9%	6.6%	10.1%
25	Rate of SBIRT administration - hospital admissions	0.0%	0.05%	0.01%
26	Rate of SBIRT administration - ED visits	0.0%	10.14%	13.59%
CONSUMER SATISFACTION				
27	Patient Satisfaction and Access Surveys	*n/a*	*complete*	*complete*
28	Patient Satisfaction and Access Survey - Response Report	*n/a*	*complete*	*complete*

† = There was no agreed upon definition by Ballad Health and TDH for Access measure 8, Specialist Recruitment and Retention.

Appendix 1:

Access Sub-Index Data Source Table

TABLE 2 (Data descriptions and data sources were updated in 2019 for clarification and consistency.)

	Measure	Description	Source[†]
1	Population within 10 miles of an urgent care center (%)	Population within 10 miles of any urgent care center; urgent care centers may be owned by Ballad Health or a competitor and may or may not be located in the geographic service area	Ballad Health analysis of US Census Bureau American Fact Finder; Urgent Care Facility List, 2023 [F]
2	Population within 10 miles of an urgent care center open nights and weekends (%)	Population within ten (10) miles of any urgent care center open at least three (3) hours after 5pm Monday to Friday and open at least five (5) hours on Saturday and Sunday; urgent care center may be owned by Ballad Health or a competitor and may or may not be located in the geographic service area	Ballad Health analysis of US Census Bureau American Fact Finder; Urgent Care Facility List, 2023 [F]
3	Population within 10 miles of an urgent care facility or emergency department (%)	Population within 10 miles of any urgent care center or emergency room; urgent care centers and emergency rooms may be owned by Ballad Health or a competitor and may or may not be located in the geographic service area	Ballad Health analysis of US Census Bureau American Fact Finder; Emergency Department Facility List, 2023 [F]
4	Population within 15 miles of an emergency department (%)	Population within 15 miles of any emergency room; emergency rooms may be owned by Ballad Health or a competitor and may or may not be located in the geographic service area	Ballad Health analysis of US Census Bureau American Fact Finder; Emergency Department Facility List, 2023 [F]
5	Population within 15 miles of an acute care hospital (%)	Population within 15 miles of any acute care hospital; acute care hospital may be owned by Ballad Health or a competitor and may or may not be located in the geographic service area	Ballad Health analysis of US Census Bureau American Fact Finder; Acute Care Facility List, 2023
6	Pediatric Readiness of Emergency Department	Average score of Ballad Health Emergency Departments on the National Pediatric Readiness Project Survey from the National EMSC Data Analysis Resource Center	Ballad Health analysis of a survey tool created by NEDARC, 2023[F]
7	Appropriate Emergency Department Wait Times	Percentage of all Ballad Health hospital emergency department visits in which the wait time to see an emergency department clinician is within the recommended timeframe as reported in the National Hospital Ambulatory Care Survey from the CDC National Center for Health Statistics. [††]	Ballad Health analysis of National Hospital Ambulatory Care Survey from the CDC National Center for Health Statistics, 2023[F]

8	Specialist Recruitment and Retention	Percentage of recruitment and retention targets set in the Physician Needs Assessment for specialists and subspecialists to address identified regional shortages	N/A
9	Personal Care Provider	Percentage of adults who reported having one person they think of as a personal doctor or health care provider	Behavioral Risk Factor Surveillance System, 2022
10	Preventable Hospitalizations – Older Adults	Number of discharges for ambulatory care-sensitive conditions per 1,000 Medicare enrollees aged 65 years and older	Ballad Health analysis of Hospital Discharge Data System, Tennessee Hospital Association and Virginia Hospital and Healthcare Association Inpatient Dataset and Medicare Enrollment Dashboard Data File, 2022
11	Preventable Hospitalizations – Adults	Number of discharges for ambulatory care-sensitive conditions per 1,000 adults aged 18 years and older	Ballad Health analysis of Hospital Discharge Data System, Tennessee Hospital Association and Virginia Hospital and Healthcare Association Inpatient Dataset and US Census Bureau, 2022
12	Screening – Breast Cancer	Percentage of women Ballad Health Medical Associate patient residents aged 50-74 who reported having a mammogram within the past two years	Ballad Health analysis of Ballad Health Medical Associates data[†††,] 2023[F]
13	Screening – Cervical Cancer	Percentage of women Ballad Health Medical Associate patient residents aged 21-65 who had a pap test at a Ballad facility or reported having had a pap test, within the past three years	Ballad Health analysis of Ballad Health Medical Associates data[†††,] 2023[F]
14	Screening - Colorectal Cancer	Percentage of adult Ballad Health Medical Associate patient residents who meet U.S. Preventive Services Task Force recommendations for colorectal cancer screening	Ballad Health analysis of Ballad Health Medical Associates data[†††,] 2023[F]
15	Screening – Diabetes	Percentage of overweight or obese Ballad Health Medical Associate patient residents aged 40-70 who are screened for prediabetes and diabetes.	Ballad Health analysis of Ballad Health Medical Associates data, 2023[F]
16	Screening – Hypertension	Percentage of Ballad Health Medical Associate patient residents aged 18+ screened for hypertension by Ballad Health.	Ballad Health analysis of Ballad Health Medical Associates data, 2023[F]
17	Asthma ED Visits – Age 0-4	Number of Asthma Emergency Department Visits Per 10,000 of those aged 0-4	Ballad Health analysis of Hospital Discharge Data System, Tennessee Hospital Association and US Census Bureau, 2022[**]

18 Asthma ED Visits – Age 5-14	Asthma Emergency Department Visits Per 10,000 of those aged 5-14	Ballad Health analysis of Hospital Discharge Data System, Tennessee Hospital Association and US Census Bureau, 2022 **
19 Prenatal care in the first trimester	Percentage of live births in which the mother received prenatal care in the first trimester	Tennessee Birth Statistical File, TDH, Division of Vital Statistics, 2021
20 Follow-Up After Hospitalization for Mental Illness - 7 days	Percentage of adults and children aged 6 years and older who are hospitalized for treatment of selected mental health disorders and had an outpatient visit, and intensive outpatient encounter or a partial hospitalization with a mental health practitioner within seven (7) days post-discharge as reported in the State of Health Care Quality Report from the National Committee for Quality Assurance (NCQA).	Ballad Health analysis of MSSP and Team Member Claims data, 2022
21 Follow-Up After Hospitalization for Mental Illness – 30 days	Percentage of adults and children aged 6 years and older who are hospitalized for treatment of selected mental health disorders and had an outpatient visit, and intensive outpatient encounter or a partial hospitalization with a mental health practitioner within thirty (30) days post-discharge as reported in the State of Health Care Quality Report from the NCQA.	Ballad Health analysis of MSSP and Team Member Claims data, 2022
22 Antidepressant Medication Management – Effective Acute Phase Treatment	Percentage of adults aged 18 years and older with a diagnosis of major depression, who were newly treated with antidepressant medication and remained on an antidepressant medication for at least 84 days (12 weeks) as reported in the State of Health Care Quality Report from the NCQA.	Ballad Health analysis of MSSP and Team Member Claims data, 2022
23 Antidepressant Medication Management – Effective Continuation Phase Treatment	Percentage of adults aged 18 years and older with a diagnosis of major depression, who were newly treated with antidepressant medication and remained on an antidepressant medication for at least 180 days (6 months) as reported in the State of Health Care Quality Report from the NCQA.	Ballad Health analysis of MSSP and Team Member Claims data, 2022
24 Engagement of Alcohol or Drug Treatment	Adolescents and adults who initiated treatment and who had two or more additional services with a diagnosis of alcohol or other drug dependence within 30 days of the initiation visit as reported in the State of Health Care Quality Report from the NCQA.	Ballad Health analysis of MSSP and Team Member Claims data, 2022

25	SBIRT administration - hospital admissions	Percentage of patients admitted to a Ballad Health hospital who are screened for alcohol and substance abuse, provided a brief intervention, and referred to treatment (SBIRT)	Ballad Health analysis of Ballad Health Social Needs Screening Tool database, Ballad Health Electronic Medical Records, 2023[F]
26	Rate of SBIRT administration - ED visits	Percentage of patients admitted to a Ballad Health emergency department who are screened for alcohol and substance abuse, provided a brief intervention, and referred to treatment (SBIRT)	Ballad Health analysis of Ballad Health Social Needs Screening Tool database, Ballad Health Electronic Medical Records, 2023[F]
27	Patient Satisfaction and Access Surveys	Successful completion of patient satisfaction and access surveys, according to Section 4.02(c)(iii)	Ballad Health analysis of Press Ganey Patient Satisfaction Surveys, 2022
28	Patient Satisfaction and Access Survey – Response Report	Report documents a satisfactory plan for the Ballad Health to address deficiencies and opportunities for improvement related to perceived access to care services and documents satisfactory progress towards the plan.	Ballad Health Report, 2022

† = Source data for values provided by Ballad Health are available to the State. Methodologies used in calculating values for each measure are described in Ballad Health's Access Measure Data Dictionary, which was submitted to TDH 12/7/2023.

F = Values reported on these measures are based on Fiscal Year data (July 1, 2022-June 30, 2023). For all other measures, the values reported are on Calendar Year data.

†† = TDH approved a change from "excessive" emergency department wait times, to "appropriate" emergency department wait times (February 2020).

††† = TDH approved a data source change for measures related to health screenings (measures 12-14) from the Behavioral Risk Factor Surveillance System (BRFSS) to Ballad Health Medical Associates data (February 2020).

** = Measures 17 and 18, on Asthma Emergency Department Visits, utilize data from the state discharge databases. Because the Virginia hospital discharge database does not currently provide emergency department discharge activity, only TN GSA patients are included in values reported for these two measures.

Appendix 2:

Access Sub-Index Data Notes

Preventable Hospitalizations:

The Prevention Quality Overall Composite is an aggregate measure of Prevention Quality Indicators (PQIs) described by the Agency for Healthcare Research and Quality (AHRQ). The composite score (rate) is used to identify quality of care for "ambulatory care-sensitive conditions." These are conditions for which early intervention and good outpatient care can potentially prevent complications and severity of disease resulting in hospitalizations. For example, patients with diabetes may be hospitalized for diabetic complications if their conditions are not adequately monitored or if they do not receive the patient education needed for appropriate self-management.

The preventable Hospitalization data in this report are based on AHRQ v2018 definition of Prevention Quality Index - 90. The methodology for calculating this measure is defined in the 2023 Access Measures Data Dictionary developed by Ballad Health. TDH and Ballad Health agreed this measure would exclude those on Medicare who are under 65 years of age.

Asthma

Asthma was identified as a primary diagnosis of ICD-10 J4521, J4522, J4531, J4532, J4541, J4542, J4551, J4552, J45901, J45902, J45990, J45991 or J45998.

Prenatal Care in the First Trimester

The 2021 Birth Statistical File follows NCHS guidelines in using the obstetric estimate of gestational age as the primary source of gestational age rather than the date of last normal menses.

Behavioral Risk Factor Surveillance System

All estimates are weighted using demographic information from the 10 Tennessee counties that comprise the TN Geographic Service Area.

Data Note 1) *All data are subject to limitations as explained in the data source.*

Data Note 2) *Data notes for the measures where Ballad Health is listed as the data source are detailed in the* 2023 Access Measures Data Dictionary, *developed by Ballad Health for TDH's understanding and review of the methodology used in calculating the values.*

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Exhibit 3
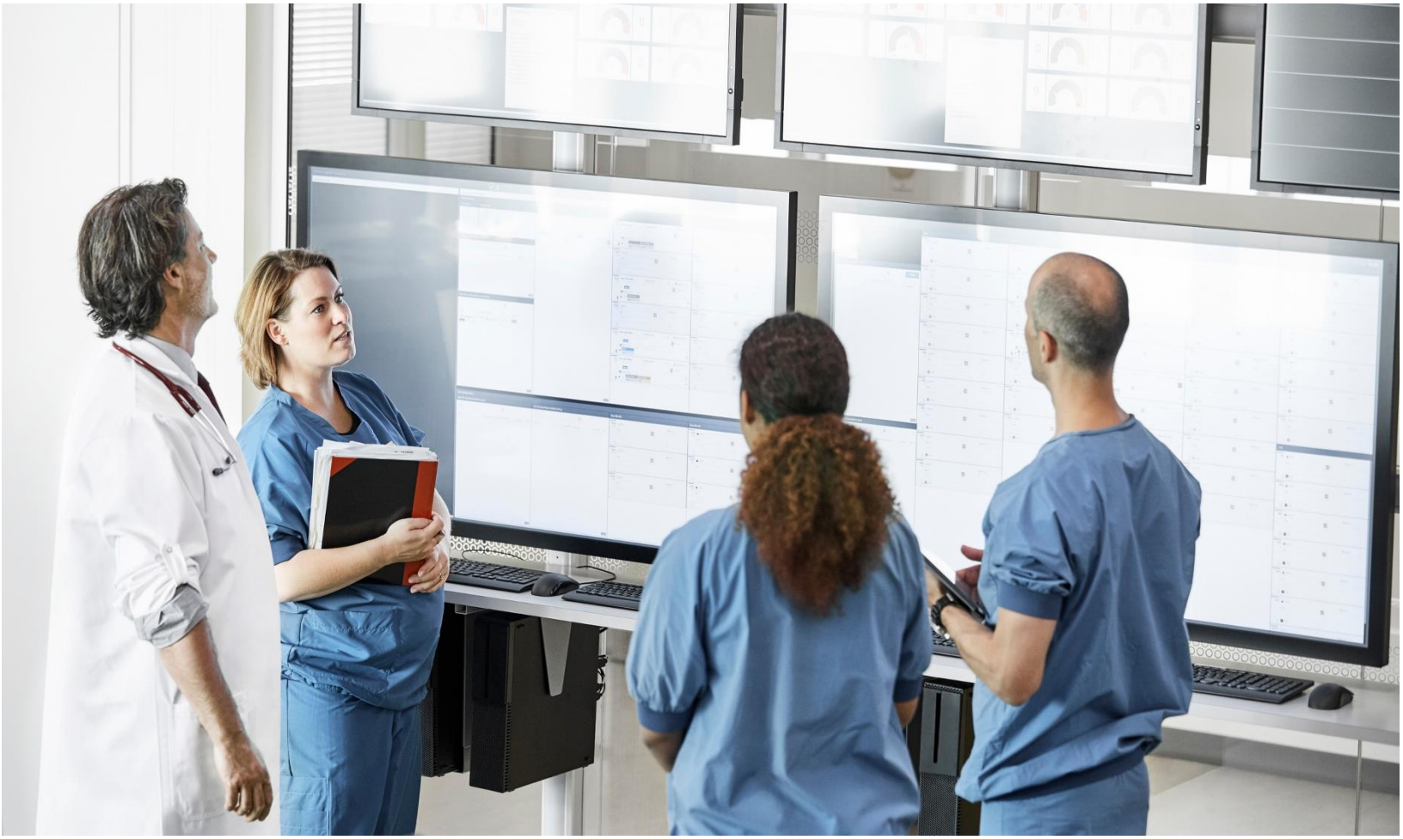
2023 Quality (Other) Report

Certificate of Public Advantage Quality (Other) Sub-Index Measures for Ballad Health

Tennessee Department of Health| COPA Report | March 2024

Table of Contents

Quality (Other) Sub-Index

Introduction

The Other Sub-Index is comprised of measures to evaluate the quality of hospital and hospital-related care provided to residents at three levels: throughout Ballad Health's entire system, throughout Ballad Health's TN Geographic Service Area, and at the individual facility level.

The Institute of Medicine has defined the quality of healthcare as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge'.[1]

Hospital quality is important for:

- Individual and population health: Measuring and monitoring hospital quality is essential to improving health outcomes and service delivery;[2]

- Business: Positive feedback from consumers leads to the goodwill of service providers in the market, which indirectly expands their business;[3]

- Cost-effectiveness: Poor quality of care, measured by medical errors in the hospital setting, account for approximately $20B each year. [4]

---

[1] Institute of Medicine. Medicare: a strategy for quality assurance. 1. Washington, DC: National Academy Press; 1990.

[2] Lieberthal RD, Comer DM. What are the characteristics that explain hospital quality? A longitudinal pridit approach. *Risk Manag Insur Rev.* 2013;17(1):17-35.

[3] Gupta KS, Rokade V. Importance of quality in health care sector: A review. *J Health Manag.* 2016;18(1):84-94.

[4] Rodziewicz TL, Houseman B, Hipskind JE. Medical Error Reduction and Prevention. 2022 Dec 4. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan–. PMID: 29763131.

Quality (Other) Sub-Index Design

The purpose of the Quality (Other) Sub-Index is to evaluate the quality of hospital and hospital-related care provided to patients.

The first Department Quality (Other) Report stated the baseline values for the Sub-Index measures and each subsequent annual reports contains updated values on each measure to track changes over time in healthcare quality at Ballad Health facilities.

In 2022, TDH and Ballad agreed to restate the baselines so that these values were based on the events experienced by any patient at any Ballad facility and not merely on patients enrolled in a Medicare fee for service plan. These new values are set forth in the Ballad Health FY22 Annual Report and are restated in this report.

The Quality (Other) Sub-Index measures include the following nationally established quality and consumer satisfaction measures and measure categories:

- Centers for Medicare and Medicaid Services' Patient Safety Indicators
- Healthcare Associated Infections
- Hospital Consumer Assessment of Healthcare Providers and System's Patient Satisfaction
- Timely and Effective Care
- Surgical Complications, Readmission, and Mortality
- Medical Imaging

There are two sets of Quality Measures in the Quality (Other) Sub-Index. They are Target Quality Measures and Quality Monitoring Measures.

Target Quality Measures are those for which Ballad Health was expected to show improvement in quality outcomes. Table 1 of this Quality (Other) Sub-Index Report displays the Target Quality Measures at the System- and State-level for FY22.

The Quality Monitoring Measures provide a broad overview of system quality. The goal of these measures is to continually monitor Ballad Health's performance with regard to quality. The Quality Monitoring Measures at the System- and State-level for FY22 are shown on Table 2.

Details on the methodology used for calculating the values shown in this Quality (Other) Sub-Index Report are provided in Appendix 1.

Fiscal Year 2023 Quality (Other) Sub-Index Data Tables

Ballad Health submitted FY23 values for the Quality (Other) Sub-Index to TDH in October of 2023.

The values are presented in the first three tables below at the system-, state-, and individual facility-level. These tables display most recent fiscal year values (based on FY23 all-patient data) and baseline values. (The baseline values in Table 1 were restated in 2022 and are based on CY17 all-patient data. Baseline vales on all subsequent tables are based on FY18 Medicare data, as originally submitted by reported by Ballad Health and TDH.)

Table 1 FY23 data for Target Quality Measures at System- and State-level

Desired Performance	Measures	Ballad Health Baseline	Ballad Health		TN Ballad Health	
		Baseline	FY22	FY23	FY22	FY23
	Quality Target Measures					
↓	PSI 3 Pressure Ulcer Rate	1.07	0.02	0.10	0.21	0.12
↓	PSI 6 Iatrogenic Pneumothorax Rate	0.25	0.24	0.06	0.28	0.07
↓	PSI 7 Central Venous Catheter-Related Blood Stream Infection Rate - Retired	0.15	--	--	--	--
↓	PSI 8 In Hospital Fall with Hip Fracture Rate	0.06	0.03	0.09	0.03	0.10
↓	PSI 9 Perioperative Hemorrhage or Hematoma Rate	1.59	1.86	1.46	1.87	1.61
↓	PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis	0.76	2.13	2.40	2.24	2.53
↓	PSI 11 Postoperative Respiratory Failure Rate	9.24	12.88	5.30	12.41	5.61
↓	PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	3.31	4.86	2.51	5.10	2.26
↓	PSI 13 Postoperative Sepsis Rate	3.58	5.06	3.17	4.82	3.33
↓	PSI 14 Postoperative Wound Dehiscence Rate	0.83	0.88	2.14	1.01	2.10
↓	PSI 15 Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate	1.18	0.29	0.62	0.33	0.71
↓	CLABSI	0.71	1.34	1.04	1.24	1.08
↓	CAUTI	0.56	1.11	0.73	1.26	0.71
↓	SSI COLON Surgical Site Infection	2.13	2.14	2.94	2.25	2.46
↓	SSI HYST Surgical Site Infection	0.71	2.54	1.47	2.51	1.66
↓	MRSA	0.047	0.140	0.080	0.140	0.089
↓	CDIFF	0.671	0.180	0.182	0.200	0.196
↑	SMB: Sepsis Management Bundle	56.9%	53.8%	59.2%	50.3%	56.8%

Ex 3-5

Table 2 FY23 data for Monitoring Measures at System- and State-level

Desired Performance	Measures	Ballad Health Baseline	Ballad Health		TN Ballad Health	
		Baseline	FY22	FY23	FY22	FY23
	General Information-Structural Measures					
YES	ACS REGISTRY - Retired	YES	--	--	--	--
YES	SMPART GENSURG General Surgery Registry - Retired	YES	--	--	--	--
YES	SMPART NURSE Nursing Care Registry - Retired	YES	--	--	--	--
YES	**SMSSCHECK Safe Surgery Checklist**	YES	YES	YES	YES	YES
YES	**OP12 HIT Ability electronically receive lab results**	YES	YES	YES	YES	YES
YES	**OP17 Tracking Clinical Results Between Visits**	YES	YES	YES	YES	YES
YES	**OP25 Outpatient Safe Surgery Checklist**	YES	YES	YES	YES	YES
	Survey of Patient's Experience* *Data had adjustments enabled, phone calibration, and skip logic applied*					
⬆	**HCOMP1A P Patients who reported that their nurses "Always" communicated well**	82.8%	74.7%	75.7%	79.0%	79.3%
⬇	**HCOMP1U P Patients who reported that their nurses "Usually" communicated well**	13.6%	16.1%	16.2%	12.4%	13.3%
⬇	**HCOMP1 SNP Patients who reported that their nurses "Sometimes" or "Never" communicated well**	3.6%	9.1%	8.1%	8.6%	7.4%
⬆	**HCOMP2A P Patients who reported that their doctors "Always" communicated well**	84.1%	75.6%	76.9%	78.4%	79.4%
⬇	**HCOMP2U P Patients who reported that their doctors "Usually" communicated well**	11.9%	15.6%	15.4%	13.8%	13.5%
⬇	**HCOMP2 SNP Patients who reported that their doctors "Sometimes" or "Never" communicated well**	3.9%	8.8%	7.7%	7.9%	7.1%
⬆	**HCOMP3A P Patients who reported that they "Always" received help as soon as they wanted**	72.8%	59.7%	59.9%	59.7%	62.8%
⬇	**HCOMP3U P Patients who reported that they "Usually" received help as soon as they wanted**	20.6%	25.2%	25.1%	24.9%	21.7%
⬇	**HCOMP3 SNP Patients who reported that they "Sometimes" or "Never" received help as soon as they wanted**	6.6%	15.2%	15.0%	15.4%	14.7%
⬆	HCOMP4A P Patients who reported that their pain was "Always" well controlled - Suspended	74.1%	--	--	--	--
⬇	HCOMP4U P Patients who reported that their pain was "Usually" well controlled - Suspended	19.6%	--	--	--	--
⬇	HCOMP4 SNP Patients who reported that their pain was "Sometimes" or "Never" well controlled - Suspended	6.3%	--	--	--	--
⬆	**HCOMP5A P Patients who reported that staff "Always" explained about medicines before giving it to them**	68.1%	57.9%	58.6%	63.1%	62.6%
⬇	**HCOMP5U P Patients who reported that staff "Usually" explained about medicines before giving it to them**	15.9%	16.7%	16.8%	14.8%	15.5%
⬇	**HCOMP5 SNP Patients who reported that staff "Sometimes" or "Never" explained about medicines before giving it to them**	16.0%	25.4%	24.6%	22.1%	21.9%
⬆	**HCOMP6Y P Patients who reported that YES, they were given information about what to do during their recovery at home**	87.2%	84.4%	85.2%	84.5%	85.5%

Desired Performance	Measures	Ballad Health Baseline	Ballad Health		TN Ballad Health	
		Baseline	FY22	FY23	FY22	FY23
⬇	HCOMP6N P Patients who reported that NO, they were not given information about what to do during their recovery at home	12.8%	15.6%	10.3%	15.5%	13.7%
⬆	HCOMP7SA Patients who "Strongly Agree" they understood their care when they left the hospital	54.5%	46.2%	46.7%	51.4%	48.7%
⬇	HCOMP7A Patients who "Agree" they understood their care when they left the hospital	40.8%	46.5%	45.4%	41.9%	44.2%
⬇	HCOMP7D SD Patients who "Disagree" or "Strongly Disagree" they understood their care when they left the hospital	4.8%	7.4%	7.9%	6.7%	6.9%
⬆	HCLEAN HSPAP Patients who reported that their room and bathroom were "Always" clean	73.9%	61.7%	62.8%	60.2%	68.5%
⬇	HCLEAN HSPUP Patients who reported that their room and bathroom were "Usually" clean	17.2%	19.3%	19.8%	19.2%	17.0%
⬇	HCLEAN HSPSNP Patients who reported that their room and bathroom were "Sometimes" or "Never" clean	8.9%	19.0%	17.4%	20.6%	14.5%
⬆	HQUIETHSP AP Patients who reported that the area around their room was "Always" quiet at night	66.5%	58.6%	59.1%	58.5%	65.7%
⬇	HQUIETHSP UP Patients who reported that the area around their room was "Usually" quiet at night	26.9%	28.6%	27.5%	28.5%	22.6%
⬇	HQUIETHSP SNP Patients who reported that the area around their room was "Sometimes" or "Never" quiet at night	6.6%	12.8%	13.4%	13.0%	11.7%
⬇	HHSP RATING06 Patients who gave their hospital a rating of 6 or lower on a scale from 0 (lowest) to 10 (highest)	7.8%	14.7%	14.7%	15.0%	15.0%
⬇	HHSP RATING78 Patients who gave their hospital a rating of 7 or 8 on a scale from 0 (lowest) to 10 (highest)	18.9%	23.9%	23.0%	24.2%	19.2%
⬆	HHSP RATING910 Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)	73.3%	61.4%	61.4%	60.8%	68.4%
⬆	HRECMND DY Patients who reported YES, they would definitely recommend the hospital	73.7%	61.6%	61.4%	62.0%	67.2%
⬇	HRECMND PY Patients who reported YES, they would probably recommend the hospital	21.5%	28.1%	27.6%	27.8%	23.6%
⬇	HRECMND DN Patients who reported NO, they would probably not or definitely not recommend the hospital	4.8%	10.2%	11.0%	10.2%	6.3%
	Cataract Surgery Outcome %					
	OP31 Cataracts Improvement- Voluntary Reporting	--	--	--	--	--
	Colonoscopy Followup%					
⬆	**OP29 Avg Risk Polyp Surveillance**	76.1%	97.0%	93.0%	96.0%	87.3%
⬆	OP30 High risk Polyp Surveillance - Retired	77.7%	--	--	--	--
	Stroke Care %					
⬆	STK4 Thrombolytic Therapy - Retired	83.0%	--	--	--	--
⬇	*Heart Attack*					
⬇	OP4 Aspirin at Arrival AMI Chest Pain - Retired	0.97	--	--	--	--
⬆	OP3b Median Time to Transfer AMI - Retired	47.50	--	--	--	--
	OP5 Median Time to ECG AMI and Chest Pain - Retired	5.22	--	--	--	--
⬆	OP2 Fibrinolytic Therapy 30 minutes - Retired	--	--	--	--	--

Desired Performance	Measures	Ballad Health Baseline	Ballad Health		TN Ballad Health	
		Baseline	FY22	FY23	FY22	FY23
	Emergency Department Throughput					
	EDV Emergency Department Volume	--	--	--	--	--
↓	**Median Time from ED Arrival to Transport for Admitted Patients (ED1)**	227.3	460.1	644.6	448.5	662.4
↓	**ED2b ED Decision to Transport**	69.0	217.6	236.4	221.6	278.4
↓	**Median Time from ED Arrival to Departure for Outpatients (18b)**	124.5	158.4	159.6	180.0	166.4
↓	OP20 Door to Diagnostic Evaluation - Retired	15.09	--	--	--	--
↓	OP21 Time to pain medicaton for long bone fractures - Retired	37.84	--	--	--	--
↓	**OP22 Left without being seen**	0.9%	2.5%	1.4%	2.6%	1.3%
↑	**OP23 Head CT stroke patients**	84.7%	65.0%	67.9%	63.0%	62.7%
	Preventive Care %					
↑	**IMM3OP27 FACADHPCT HCW Influenza Vaccination – Seasonal**	97.0%	98.5%	98.5%	98.0%	98.0%
↑	IMM2 Immunization for Influenza - Retired	97.4%	--	--	--	--
	Blood Clot Prevention/Treatment					
	VTE5 Warfarin Therapy at Discharge - Voluntary Reporting	--	--	--	--	--
↓	VTE6 HAC VTE - Retired	0.02	--	--	--	--
	Pregnancy and Delivery Care %					
↓	**PC01 Elective Delivery**	0.56%	6.77%	7.25%	4.48%	6.52%
	Surgical Complications Rate					
↓	**Hip and Knee Complications**	0.03	0.00	0.00	0.00	0.00
↓	**PSI4SURG COMP Death rate among surgical patients with serious treatable complications**	140.60	189.70	156.98	201.23	163.89
↓	**PSI90 Complications / patient safety for selected indicators**	0.83	0.95	0.87	0.94	0.86
	Readmissions 30 Days Rate%					
↓	**READM30 AMI Acute myocardial infarction (AMI) 30day readmission rate**	12.9%	13.3%	13.7%	13.3%	13.6%
↓	**READM30 CABG Coronary artery bypass graft (CABG) surgery 30day readmission rate**	8.9%	12.9%	11.3%	12.9%	11.3%
↓	**READM30 COPD Chronic obstructive pulmonary disease 30day readmission rate**	18.2%	19.9%	20.7%	21.6%	20.8%
↓	**READM30HF Heart Failure 30Day readmissions rate**	20.5%	23.9%	24.2%	23.7%	24.0%
↓	**READM30 HIPKNEE 30day readmission rate following elective THA / TKA**	3.8%	5.3%	6.6%	4.8%	6.2%
↓	**READM30 HOSPWIDE 30day hospitalwide allcause unplanned readmission**	12.0%	14.3%	14.5%	14.1%	14.2%
↓	**READM30PN Pneumonia 30day readmission rate**	17.7%	18.0%	18.4%	18.2%	18.7%
↓	**READM30 STK Stroke 30day readmission rate**	9.0%	11.3%	13.2%	11.1%	12.9%

Ex 3-8

Desired Performance	Measures	Ballad Health Baseline	Ballad Health		TN Ballad Health	
		Baseline	FY22	FY23	FY22	FY23
	Mortality 30 Days Death Rate %					
↓	MORT30AMI Acute myocardial infarction (AMI) 30day mortality rate	4.7%	6.6%	6.0%	6.8%	6.0%
↓	MORT30 CABG Coronary artery bypass graft surgery 30day mortality rate	2.0%	2.0%	2.5%	2.0%	2.5%
↓	MORT30 COPD 30day mortality rate COPD patients	1.8%	3.7%	3.0%	4.1%	3.5%
↓	MORT30HF Heart failure 30day mortality rate	3.9%	5.1%	3.6%	4.8%	3.7%
↓	MORT30PN Pneumonia 30day mortality rate	4.7%	7.4%	5.0%	8.0%	5.4%
↓	MORT30STK Stroke 30day mortality rate	8.2%	7.3%	5.5%	0.8%	5.9%
	Use of Medical Imaging Outpatient					
	OP8 MRI Lumbar Spine for Low Back Pain – Annual	0.41	0.53	0.36	0.54	0.10
	OP10 Abdomen CT Use of Contrast Material – Annual	0.06	0.05	0.05	0.06	0.06
	OP13 Outpatients who got cardiac imaging stress tests before lowrisk outpatient surgery – Annual	0.04	0.04	0.03	0.03	0.02
	OP9 Mammography Followup Rates - Retired	0.07	--	--	--	--
	OP11 Thorax CT Use of Contrast Material - Retired	0.01	--	--	--	--
	OP14 Outpatients with brain CT scans who got a sinus CT scan at the same time - Retired	0.02	--	--	--	--

Table 3 FY23 data for the Quality (Other) Sub-Index by individual facility

Desired Performance	Measures	Ballad Health Baseline	Holston Valley Medical Center	Johnson City Medical Center	Bristol Regional Medical Center	Indian Path Community Hospital	Greeneville Community Hospital	Franklin Woods Community Hospital	Sycamore Shoals Hospital	Unicoi County Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
↓	PSI 3 Pressure Ulcer Rate	1.07	0.11	0.14	0.11	0.00	0.00	0.00	0.51	0.00
↓	PSI 6 Iatrogenic Pneumothorax Rate	0.25	0.15	0.00	0.08	0.00	0.25	0.00	0.00	0.00
↓	PSI 7 Central Venous Catheter-Related Blood Stream Infection Rate – Retired	0.15	—	—	—	—	—	—	—	—
↓	PSI 8 In Hospital Fall with Hip Fracture Rate	0.06	0.14	0.05	0.16	0.00	0.00	0.00	0.32	0.00
↓	PSI 9 Perioperative Hemorrhage or Hematoma Rate	1.59	1.16	1.38	2.65	0.00	2.76	2.17	0.00	—
↓	PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis	0.76	4.04	2.25	2.53	0.00	0.00	0.00	—	—
↓	PSI 11 Postoperative Respiratory Failure Rate	9.24	6.65	6.16	2.70	0.00	14.08	4.89	0.00	—
↓	PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	3.31	3.10	2.23	0.81	0.00	3.85	1.02	5.22	—
↓	PSI 13 Postoperative Sepsis Rate	3.58	3.06	2.95	4.13	10.00	7.87	2.55	0.00	—
↓	PSI 14 Postoperative Wound Dehiscence Rate	0.83	0.00	2.59	1.90	0.00	3.51	2.24	10.42	—
↓	PSI 15 Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate	1.18	1.05	0.74	0.91	2.70	0.00	0.00	0.00	0.00
↓	CLABSI	0.711	1.004	1.558	1.029	0.000	1.235	0.000	0.858	0.000
↓	CAUTI	0.558	0.755	1.055	0.838	0.000	0.000	0.000	0.594	0.000
↓	SSI COLON Surgical Site Infection	2.13	2.92	4.11	2.84	4.48	1.03	0.48	5.00	—
↓	SSI HYST Surgical Site Infection	0.71	4.23	0.00	0.00	0.00	0.00	0.00	0.00	—
↓	MRSA	0.047	0.097	0.093	0.121	0.199	0.049	0.000	0.000	0.000
↓	CDIFF	0.671	0.304	0.122	0.188	0.381	0.255	0.080	0.287	0.000
↑	SMB: Sepsis Management Bundle	56.9%	50.8%	51.6%	47.8%	67.8%	59.5%	64.4%	65.2%	50.0%

Johnson City Medical Center values include Woodridge Psychiatric Hospital & Niswonger Children's Hospital

Desired Performance	Measures	Ballad Health Baseline	Holston Valley Medical Center	Johnson City Medical Center	Bristol Regional Medical Center	Indian Path Community Hospital	Greeneville Community Hospital	Franklin Woods Community Hospital	Sycamore Shoals Hospital	Unicoi County Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
	General Information-Structural Measures									
YES	ACS REGISTRY – Retired	YES	—	—	—	—	—	—	—	—
YES	SMPART GENSURG General Surgery Registry – Retired	YES	—	—	—	—	—	—	—	—
YES	SMPART NURSE Nursing Care Registry – Retired	YES	—	—	—	—	—	—	—	—
YES	SMSSCHECK Safe Surgery Checklist	YES	YES	YES	YES	YES	YES	YES	YES	YES
YES	OP12 HIT Ability electronically receive lab results	YES	YES	YES	YES	YES	YES	YES	YES	YES
YES	OP17 Tracking Clinical Results Between Visits	YES	YES	YES	YES	YES	YES	YES	YES	YES
YES	OP25 Outpatient Safe Surgery Checklist	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Survey of Patient's Experience *Data had adjustments enabled, phone calibration, and skip logic applied*									
⬆	HCOMP1A P Patients who reported that their nurses "Always" communicated well	82.8%	74.6%	72.2%	75.8%	80.7%	76.7%	81.5%	74.6%	89.9%
⬇	HCOMP1U P Patients who reported that their nurses "Usually" communicated well	13.6%	15.9%	19.1%	14.0%	14.0%	12.2%	13.8%	17.5%	8.0%
⬇	HCOMP1 SNP Patients who reported that their nurses "Sometimes" or "Never" communicated well	3.6%	9.5%	8.8%	10.2%	5.3%	11.1%	4.7%	7.9%	2.0%
⬆	HCOMP2A P Patients who reported that their doctors "Always" communicated well	84.1%	77.5%	72.3%	77.9%	81.5%	76.4%	82.3%	75.2%	87.3%
⬇	HCOMP2U P Patients who reported that their doctors "Usually" communicated well	11.9%	14.3%	18.7%	12.5%	12.1%	13.3%	13.5%	17.1%	8.9%
⬇	HCOMP2 SNP Patients who reported that their doctors "Sometimes" or "Never" communicated well	3.9%	8.2%	9.0%	9.6%	6.4%	10.3%	4.2%	7.7%	3.9%
⬆	HCOMP3A P Patients who reported that they "Always" received help as soon as they wanted	72.8%	53.9%	57.7%	60.1%	66.3%	64.8%	67.6%	59.8%	66.1%
⬇	HCOMP3U P Patients who reported that they "Usually" received help as soon as they wanted	20.6%	26.4%	27.2%	22.1%	23.2%	22.0%	23.9%	22.9%	16.7%
⬇	HCOMP3 SNP Patients who reported that they "Sometimes" or "Never" received help as soon as they wanted	6.6%	19.7%	15.1%	17.8%	10.5%	13.2%	8.5%	17.3%	13.3%
⬆	HCOMP4A P Patients who reported that their pain was "Always" well controlled – Suspended	74.1%	—	—	—	—	—	—	—	—
⬇	HCOMP4U P Patients who reported that their pain was "Usually" well controlled – Suspended	19.6%	—	—	—	—	—	—	—	—
⬇	HCOMP4 SNP Patients who reported that their pain was "Sometimes" or "Never" well controlled – Suspended	6.3%	—	—	—	—	—	—	—	—
⬆	HCOMP5A P Patients who reported that staff "Always" explained about medicines before giving it to them	68.1%	57.1%	56.1%	63.0%	58.0%	57.0%	63.3%	55.4%	74.5%
⬇	HCOMP5U P Patients who reported that staff "Usually" explained about medicines before giving it to them	15.9%	16.4%	16.5%	12.9%	18.9%	14.4%	17.9%	18.1%	14.3%
⬇	HCOMP5 SNP Patients who reported that staff "Sometimes" or "Never" explained about medicines before giving it to them	16.0%	26.5%	27.4%	24.1%	23.2%	28.6%	18.7%	26.4%	11.2%
⬆	HCOMP6Y P Patients who reported that YES, they were given information about what to do during their recovery at home	87.2%	87.9%	82.4%	88.0%	84.9%	86.1%	86.7%	79.8%	86.5%

Johnson City Medical Center values include Woodridge Psychiatric Hospital & Niswonger Children's Hospital

Ex 3-11

Desired Performance	Measures	Ballad Health Baseline	Holston Valley Medical Center	Johnson City Medical Center	Bristol Regional Medical Center	Indian Path Community Hospital	Greeneville Community Hospital	Franklin Woods Community Hospital	Sycamore Shoals Hospital	Unicoi County Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
⬇	HCOMP6N P Patients who reported that NO, they were not given information about what to do during their recovery at home	12.8%	14.2%	15.4%	15.6%	14.2%	16.7%	16.1%	12.9%	19.4%
⬆	HCOMP7SA Patients who "Strongly Agree" they understood their care when they left the hospital	54.5%	44.9%	44.1%	47.9%	51.9%	43.8%	54.1%	45.6%	60.9%
⬇	HCOMP7A Patients who "Agree" they understood their care when they left the hospital	40.8%	47.8%	45.4%	45.5%	40.5%	49.8%	40.2%	46.3%	33.7%
⬇	HCOMP7D SD Patients who "Disagree" or "Strongly Disagree" they understood their care when they left the hospital	4.8%	7.3%	10.5%	6.6%	7.6%	6.5%	5.7%	8.1%	5.4%
⬆	HCLEAN HSPAP Patients who reported that their room and bathroom were "Always" clean	73.9%	61.9%	56.2%	56.6%	73.1%	63.4%	58.8%	69.5%	88.8%
⬇	HCLEAN HSPUP Patients who reported that their room and bathroom were "Usually" clean	17.2%	19.7%	22.1%	18.0%	16.6%	17.2%	23.7%	18.4%	10.0%
⬇	HCLEAN HSPSNP Patients who reported that their room and bathroom were "Sometimes" or "Never" clean	8.9%	18.3%	21.7%	25.4%	10.3%	19.4%	17.5%	12.1%	1.2%
⬆	HQUIETHSP AP Patients who reported that the area around their room was "Always" quiet at night	66.5%	59.0%	46.0%	62.1%	64.7%	59.5%	70.7%	62.0%	80.4%
⬇	HQUIETHSP UP Patients who reported that the area around their room was "Usually" quiet at night	26.9%	26.2%	33.8%	22.4%	26.1%	22.3%	23.9%	29.6%	15.7%
⬇	HQUIETHSP SNP Patients who reported that the area around their room was "Sometimes" or "Never" quiet at night	6.6%	14.8%	20.1%	15.4%	9.2%	18.1%	5.4%	8.4%	3.9%
⬇	HHSP RATING06 Patients who gave their hospital a rating of 6 or lower on a scale from 0 (lowest) to 10 (highest)	7.8%	15.3%	20.1%	16.2%	10.5%	20.0%	7.7%	11.6%	8.9%
⬇	HHSP RATING78 Patients who gave their hospital a rating of 7 or 8 on a scale from 0 (lowest) to 10 (highest)	18.9%	25.4%	24.3%	26.4%	18.9%	29.2%	19.1%	21.0%	7.4%
⬆	HHSP RATING910 Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)	73.3%	59.3%	51.8%	58.4%	69.2%	55.7%	73.0%	64.6%	86.4%
⬆	HRECMND DY Patients who reported YES, they would definitely recommend the hospital	73.7%	60.4%	51.3%	61.7%	74.5%	55.6%	77.5%	59.0%	85.2%
⬇	HRECMND PY Patients who reported YES, they would probably recommend the hospital	21.5%	27.7%	33.3%	27.6%	18.2%	30.4%	16.5%	31.6%	10.6%
⬇	HRECMND DN Patients who reported NO, they would probably not or definitely not recommend the hospital	4.8%	12.0%	15.4%	10.8%	7.4%	14.0%	6.0%	9.4%	4.2%
	Cataract Surgery Outcome %									
	OP31 Cataracts Improvement– Voluntary Reporting	—	—	—	—	—	—	—	—	—
	Colonoscopy Followup%									
⬆	OP29 Avg Risk Polyp Surveillance	76.1%	100.0%	83.3%	69.2%	—	98.5%	43.8%	97.1%	—
⬆	OP30 High risk Polyp Surveillance - Retired	77.7%	—	—	—	—	—	—	—	—
	Stroke Care %									
⬆	STK4 Thrombolytic Therapy - Retired	83.0%	—	—	—	—	—	—	—	—

Johnson City Medical Center values include Woodridge Psychiatric Hospital & Niswonger Children's Hospital

Ex 3-12

Desired Performance	Measures	Ballad Health Baseline	Holston Valley Medical Center	Johnson City Medical Center	Bristol Regional Medical Center	Indian Path Community Hospital	Greeneville Community Hospital	Franklin Woods Community Hospital	Sycamore Shoals Hospital	Unicoi County Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
⬇	*Heart Attack*									
⬇	OP4 Aspirin at Arrival AMI Chest Pain – Retired	0.97	—	—	—	—	—	—	—	—
⬆	OP3b Median Time to Transfer AMI – Retired	47.50	—	—	—	—	—	—	—	—
	OP5 Median Time to ECG AMI and Chest Pain – Retired	5.22	—	—	—	—	—	—	—	—
⬆	OP2 Fibrinolytic Therapy 30 minutes – Retired	—	—	—	—	—	—	—	—	—
	Emergency Department Throughput									
	EDV Emergency Department Volume	—	High	30	30	20	20	20	10	10
⬇	Median Time from ED Arrival to Transport for Admitted Patients (ED1)	227.3	740.5	489.0	530.0	629.0	717.0	768.0	419.0	774.0
⬇	ED2b ED Decision to Transport	69.0	430.0	245.0	258.0	201.0	439.0	533.0	198.0	432.0
⬇	Median Time from ED Arrival to Departure for Outpatients (18b)	124.5	208.0	198.0	209.0	167.0	182.0	200.0	183.0	143.0
⬇	OP20 Door to Diagnostic Evaluation – Retired	15.09	—	—	—	—	—	—	—	—
⬇	OP21 Time to pain medicaton for long bone fractures – Retired	37.84	—	—	—	—	—	—	—	—
⬇	OP22 Left without being seen	0.9%	0.6%	1.0%	2.1%	1.0%	1.4%	1.7%	2.0%	0.6%
⬆	OP23 Head CT stroke patients	84.7%	93.8%	37.5%	91.7%	75.0%	40.0%	60.0%	57.1%	33.3%
	Preventive Care %									
⬆	IMM3OP27 FACADHPCT HCW Influenza Vaccination – Seasonal	97.0%	98.0%	99.0%	99.0%	98.0%	99.0%	98.0%	100.0%	99.0%
⬆	IMM2 Immunization for Influenza – Retired	97.4%	—	—	—	—	—	—	—	—
	Blood Clot Prevention/Treatment									
	VTE5 Warfarin Therapy at Discharge – Voluntary Reporting	—	—	—	—	—	—	—	—	—
⬇	VTE6 HAC VTE – Retired	0.02	—	—	—	—	—	—	—	—
	Pregnancy and Delivery Care %									
⬇	PC01 Elective Delivery	0.56%	—	0.00%	11.11%	5.26%	0.00%	11.54%	—	—
	Surgical Complications Rate									
⬇	Hip and Knee Complications	0.03	0.00	0.01	0.00	—	0.00	—	0.00	—
⬇	PSI4SURG COMP Death rate among surgical patients with serious treatable complications	140.60	135.29	198.83	179.25	0.00	111.11	64.52	0.00	—
⬇	PSI90 Complications / patient safety for selected indicators	0.83	0.76	0.68	0.63	0.83	0.93	0.67	1.00	0.95

Johnson City Medical Center values include Woodridge Psychiatric Hospital & Niswonger Children's Hospital

Ex 3-13

Desired Performance	Measures	Ballad Health Baseline	Holston Valley Medical Center	Johnson City Medical Center	Bristol Regional Medical Center	Indian Path Community Hospital	Greeneville Community Hospital	Franklin Woods Community Hospital	Sycamore Shoals Hospital	Unicoi County Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
	Readmissions 30 Days Rate%									
↓	READM30 AMI Acute myocardial infarction (AMI) 30day readmission rate	12.9%	12.5%	13.1%	16.2%	—	13.0%	27.3%	13.0%	—
↓	READM30 CABG Coronary artery bypass graft (CABG) surgery 30day readmission rate	8.9%	7.3%	16.2%	11.2%	—	—	—	—	—
↓	READM30 COPD Chronic obstructive pulmonary disease 30day readmission rate	18.2%	22.0%	22.2%	20.0%	26.7%	21.8%	13.8%	21.1%	19.2%
↓	READM30HF Heart Failure 30Day readmissions rate	20.5%	21.5%	26.5%	22.4%	24.4%	27.1%	25.2%	23.6%	25.0%
↓	READM30 HIPKNEE 30day readmission rate following elective THA / TKA	3.8%	4.5%	3.3%	7.6%	—	9.1%	—	9.0%	—
↓	READM30 HOSPWIDE 30day hospitalwide allcause unplanned readmission	12.0%	14.7%	14.1%	15.0%	9.7%	15.0%	11.5%	15.8%	15.3%
↓	READM30PN Pneumonia 30day readmission rate	17.7%	17.9%	18.9%	20.6%	16.8%	17.0%	18.4%	20.9%	19.4%
↓	READM30 STK Stroke 30day readmission rate	9.0%	12.7%	13.3%	13.9%	4.5%	12.1%	3.7%	9.7%	50.0%
	Mortality 30 Days Death Rate %									
↓	MORT30AMI Acute myocardial infarction (AMI) 30day mortality rate	4.7%	5.1%	6.4%	7.5%	—	0.0%	8.3%	0.0%	—
↓	MORT30 CABG Coronary artery bypass graft surgery 30day mortality rate	2.0%	1.4%	1.7%	4.7%	—	—	—	—	—
↓	MORT30 COPD 30day mortality rate COPD patients	1.8%	5.2%	4.8%	3.3%	0.0%	2.0%	0.0%	3.2%	0.0%
↓	MORT30HF Heart failure 30day mortality rate	3.9%	4.6%	3.0%	3.9%	2.4%	2.6%	2.7%	5.2%	4.0%
↓	MORT30PN Pneumonia 30day mortality rate	4.7%	6.9%	8.5%	5.5%	0.0%	2.1%	3.3%	3.8%	4.1%
↓	MORT30STK Stroke 30day mortality rate	8.2%	3.1%	9.4%	3.9%	0.0%	1.5%	3.6%	3.1%	0.0%
	Use of Medical Imaging Outpatient									
↓	OP8 MRI Lumbar Spine for Low Back Pain – Annual	0.41	0.34	0.00	0.34	0.00	0.40	0.00	0.00	0.00
↓	OP10 Abdomen CT Use of Contrast Material – Annual	0.06	0.04	0.04	0.07	0.04	0.08	0.08	0.11	0.04
↓	OP13 Outpatients who got cardiac imaging stress tests before lowrisk outpatient surgery – Annual	0.04	0.03	0.02	0.02	0.00	0.04	0.04	0.03	0.00
↓	OP9 Mammography Followup Rates – Retired	0.07	—	—	—	—	—	—	—	—
↓	OP11 Thorax CT Use of Contrast Material – Retired	0.01	—	—	—	—	—	—	—	—
↓	OP14 Outpatients with brain CT scans who got a sinus CT scan at the same time – Retired	0.02	—	—	—	—	—	—	—	—

Johnson City Medical Center values include Woodridge Psychiatric Hospital & Niswonger Children's Hospital

Ex 3-14

	Measures	Ballad Health Baseline	Hawkins County Memorial Hospital	Johnston Memorial Hospital	Lonesome Pine Hospital	Norton Community Hospital	Smyth County Community Hospital	Russell County Hospital	Hancock County Hospital	Lee County Community Hospital	Johnson County Community Hospital	Dickenson Community Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
⬇	PSI 3 Pressure Ulcer Rate	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
⬇	PSI 6 Iatrogenic Pneumothorax Rate	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
⬇	PSI 7 Central Venous Catheter-Related Blood Stream Infection Rate – Retired	0.15	—	—	—	—	—	—	—	—	—	—
⬇	PSI 8 In Hospital Fall with Hip Fracture Rate	0.06	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
⬇	PSI 9 Perioperative Hemorrhage or Hematoma Rate	1.59	—	0.00	0.00	0.00	0.00	—	—	—	—	—
⬇	PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis	0.76	—	0.00	—	0.00	0.00	—	—	—	—	—
⬇	PSI 11 Postoperative Respiratory Failure Rate	9.24	—	0.00	—	0.00	0.00	—	—	—	—	—
⬇	PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	3.31	—	5.27	0.00	2.54	13.16	—	—	—	—	—
⬇	PSI 13 Postoperative Sepsis Rate	3.58	—	0.00	—	0.00	0.00	—	—	—	—	—
⬇	PSI 14 Postoperative Wound Dehiscence Rate	0.83	—	0.00	0.00	5.46	0.00	—	—	—	—	—
⬇	PSI 15 Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate	1.18	0.00	0.00	0.00	0.00	0.00	0.00	—	—	—	—
⬇	CLABSI	0.711	0.000	0.366	0.000	1.918	0.000	0.000	—	—	—	—
⬇	CAUTI	0.558	0.000	1.162	0.000	0.000	0.000	1.130	—	—	—	—
⬇	SSI COLON Surgical Site Infection	2.13	—	3.49	—	10.42	—	—	—	—	—	—
⬇	SSI HYST Surgical Site Infection	0.71	—	0.00	—	0.00	—	—	—	—	—	—
⬇	MRSA	0.047	0.000	0.035	0.000	0.000	0.000	0.000	—	—	—	—
⬇	CDIFF	0.671	0.000	0.107	0.000	0.087	0.000	0.000	—	—	—	—
⬆	SMB: Sepsis Management Bundle	56.9%	63.0%	58.6%	64.4%	57.1%	84.6%	66.1%	75.0%	57.9%	100.0%	0.0%

Lonesome Pine Hospital vales include Mountain View Regional Hospital

Ex 3-15

Desired Performance	Measures	Ballad Health Baseline	Hawkins County Memorial Hospital	Johnston Memorial Hospital	Lonesome Pine Hospital	Norton Community Hospital	Smyth County Community Hospital	Russell County Hospital	Hancock County Hospital	Lee County Community Hospital	Johnson County Community Hospital	Dickenson Community Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
	General Information-Structural Measures											
YES	ACS REGISTRY – Retired	YES	—	—	—	—	—	—	—	—	—	—
YES	SMPART GENSURG General Surgery Registry – Retired	YES	—	—	—	—	—	—	—	—	—	—
YES	SMPART NURSE Nursing Care Registry – Retired	YES	—	—	—	—	—	—	—	—	—	—
YES	SMSSCHECK Safe Surgery Checklist	YES	YES	YES	YES	YES	YES	YES	YES	YES	—	YES
YES	OP12 HIT Ability electronically receive lab results	YES	—	YES	—	YES	YES	YES	YES	—	YES	—
YES	OP17 Tracking Clinical Results Between Visits	YES	YES	YES	YES	YES	YES	YES	—	—	—	—
YES	OP25 Outpatient Safe Surgery Checklist	YES	YES	YES	YES	YES	YES	YES	—	—	—	—
	Survey of Patient's Experience*											
	Data had adjustments enabled, phone calibration, and skip logic applied											
⬆	HCOMP1A P Patients who reported that their nurses "Always" communicated well	82.8%	86.2%	72.6%	83.2%	70.3%	77.1%	86.1%	76.9%	82.0%	90.7%	33.3%
⬇	HCOMP1U P Patients who reported that their nurses "Usually" communicated well	13.6%	7.7%	19.3%	10.6%	19.2%	18.2%	11.5%	9.5%	15.8%	9.3%	66.7%
⬇	HCOMP1 SNP Patients who reported that their nurses "Sometimes" or "Never" communicated well	3.6%	6.1%	8.1%	6.2%	10.5%	4.6%	2.4%	13.6%	2.2%	0.0%	0.0%
⬆	HCOMP2A P Patients who reported that their doctors "Always" communicated well	84.1%	76.9%	76.3%	77.8%	71.6%	78.1%	86.5%	86.3%	83.2%	86.0%	66.7%
⬇	HCOMP2U P Patients who reported that their doctors "Usually" communicated well	11.9%	12.1%	17.5%	16.9%	17.3%	15.9%	10.1%	13.7%	15.3%	9.3%	33.3%
⬇	HCOMP2 SNP Patients who reported that their doctors "Sometimes" or "Never" communicated well	3.9%	10.9%	6.3%	5.3%	11.0%	5.9%	3.4%	0.0%	1.5%	4.7%	0.0%
⬆	HCOMP3A P Patients who reported that they "Always" received help as soon as they wanted	72.8%	75.2%	54.6%	69.1%	50.6%	65.7%	74.7%	46.4%	48.5%	74.0%	0.0%
⬇	HCOMP3U P Patients who reported that they "Usually" received help as soon as they wanted	20.6%	13.6%	27.0%	25.6%	30.0%	24.8%	19.7%	10.0%	31.6%	26.0%	100.0%
⬇	HCOMP3 SNP Patients who reported that they "Sometimes" or "Never" received help as soon as they wanted	6.6%	11.3%	18.4%	5.3%	19.4%	9.5%	5.6%	35.3%	3.3%	0.0%	0.0%
⬆	HCOMP4A P Patients who reported that their pain was "Always" well controlled – Suspended	74.1%	—	—	—	—	—	—	—	—	—	—
⬇	HCOMP4U P Patients who reported that their pain was "Usually" well controlled – Suspended	19.6%	—	—	—	—	—	—	—	—	—	—
⬇	HCOMP4 SNP Patients who reported that their pain was "Sometimes" or "Never" well controlled – Suspended	6.3%	—	—	—	—	—	—	—	—	—	—
⬆	HCOMP5A P Patients who reported that staff "Always" explained about medicines before giving it to them	68.1%	74.4%	55.1%	62.5%	51.9%	60.4%	77.0%	55.4%	56.7%	100.0%	50.0%
⬇	HCOMP5U P Patients who reported that staff "Usually" explained about medicines before giving it to them	15.9%	21.1%	19.3%	10.3%	20.3%	19.2%	10.4%	5.4%	12.3%	0.0%	0.0%
⬇	HCOMP5 SNP Patients who reported that staff "Sometimes" or "Never" explained about medicines before giving it to them	16.0%	4.6%	25.7%	27.1%	27.8%	20.3%	12.6%	39.3%	31.0%	0.0%	50.0%

Lonesome Pine Hospital vales include Mountain View Regional Hospital

Ex 3-16

Desired Performance	Measures	Ballad Health Baseline	Hawkins County Memorial Hospital	Johnston Memorial Hospital	Lonesome Pine Hospital	Norton Community Hospital	Smyth County Community Hospital	Russell County Hospital	Hancock County Hospital	Lee County Community Hospital	Johnson County Community Hospital	Dickenson Community Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
⬆	HCOMP6Y P Patients who reported that YES, they were given information about what to do during their recovery at home	87.2%	93.2%	85.5%	91.0%	79.6%	86.3%	92.6%	76.0%	88.2%	87.5%	—
⬇	HCOMP6N P Patients who reported that NO, they were not given information about what to do during their recovery at home	12.8%	17.4%	16.9%	13.8%	40.6%	17.2%	11.7%	14.2%	10.0%	13.6%	—
⬆	HCOMP7SA Patients who "Strongly Agree" they understood their care when they left the hospital	54.5%	49.9%	43.8%	50.5%	37.2%	48.8%	55.3%	36.5%	48.2%	54.0%	0.0%
⬇	HCOMP7A Patients who "Agree" they understood their care when they left the hospital	40.8%	42.6%	47.9%	45.1%	51.5%	45.9%	40.4%	58.7%	42.4%	38.0%	100.0%
⬇	HCOMP7D SD Patients who "Disagree" or "Strongly Disagree" they understood their care when they left the hospital	4.8%	7.5%	8.3%	4.4%	11.3%	5.4%	4.3%	0.0%	4.2%	8.0%	0.0%
⬆	HCLEAN HSPAP Patients who reported that their room and bathroom were "Always" clean	73.9%	85.6%	73.1%	65.8%	58.9%	84.5%	75.5%	56.9%	55.8%	100.0%	0.0%
⬇	HCLEAN HSPUP Patients who reported that their room and bathroom were "Usually" clean	17.2%	4.8%	17.7%	23.4%	23.5%	12.5%	19.3%	29.2%	24.6%	0.0%	0.0%
⬇	HCLEAN HSPSNP Patients who reported that their room and bathroom were "Sometimes" or "Never" clean	8.9%	9.6%	9.2%	10.7%	17.6%	3.1%	5.2%	13.9%	19.6%	0.0%	100.0%
⬆	HQUIETHSP AP Patients who reported that the area around their room was "Always" quiet at night	66.5%	76.1%	60.1%	64.4%	50.4%	66.9%	72.7%	72.2%	66.3%	86.0%	0.0%
⬇	HQUIETHSP UP Patients who reported that the area around their room was "Usually" quiet at night	26.9%	16.6%	30.0%	17.7%	34.0%	25.8%	22.3%	13.9%	19.4%	0.0%	0.0%
⬇	HQUIETHSP SNP Patients who reported that the area around their room was "Sometimes" or "Never" quiet at night	6.6%	7.3%	9.9%	17.8%	15.5%	7.3%	5.0%	13.9%	14.3%	14.0%	100.0%
⬇	HHSP RATING06 Patients who gave their hospital a rating of 6 or lower on a scale from 0 (lowest) to 10 (highest)	7.8%	10.3%	15.3%	6.3%	15.7%	6.7%	14.3%	15.4%	0.0%	0.0%	33.3%
⬇	HHSP RATING78 Patients who gave their hospital a rating of 7 or 8 on a scale from 0 (lowest) to 10 (highest)	18.9%	13.4%	21.2%	13.2%	24.2%	16.0%	20.6%	8.7%	32.3%	0.0%	100.0%
⬆	HHSP RATING910 Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)	73.3%	79.3%	63.7%	80.4%	55.3%	75.5%	73.2%	82.5%	57.2%	100.0%	0.0%
⬆	HRECMND DY Patients who reported YES, they would definitely recommend the hospital	73.7%	69.5%	59.1%	73.2%	51.5%	68.7%	72.0%	73.8%	61.3%	86.0%	0.0%
⬇	HRECMND PY Patients who reported YES, they would probably recommend the hospital	21.5%	23.7%	30.7%	23.9%	32.6%	26.7%	23.8%	17.5%	38.7%	14.0%	100.0%
⬇	HRECMND DN Patients who reported NO, they would probably not or definitely not recommend the hospital	4.8%	6.9%	10.2%	2.9%	15.9%	4.5%	4.2%	8.7%	0.0%	0.0%	0.0%
	Cataract Surgery Outcome %											
	OP31 Cataracts Improvement– Voluntary Reporting	—	—	—	—	—	—	—	—	—	—	—
	Colonoscopy Followup%											
⬆	OP29 Avg Risk Polyp Surveillance	76.1%	71.4%	100.0%	100.0%	100.0%	100.0%	—	—	—	—	—
⬆	OP30 High risk Polyp Surveillance – Retired	77.7%	—	—	—	—	—	—	—	—	—	—
	Stroke Care %											
⬆	STK4 Thrombolytic Therapy – Retired	83.0%	—	—	—	—	—	—	—	—	—	—

Lonesome Pine Hospital vales include Mountain View Regional Hospital

Ex 3-17

Desired Performance	Measures	Ballad Health Baseline	Hawkins County Memorial Hospital	Johnston Memorial Hospital	Lonesome Pine Hospital	Norton Community Hospital	Smyth County Community Hospital	Russell County Hospital	Hancock County Hospital	Lee County Community Hospital	Johnson County Community Hospital	Dickenson Community Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
⬇	*Heart Attack*											
⬇	OP4 Aspirin at Arrival AMI Chest Pain – Retired	0.97	—	—	—	—	—	—	—	—	—	—
⬆	OP3b Median Time to Transfer AMI – Retired	47.50	—	—	—	—	—	—	—	—	—	—
	OP5 Median Time to ECG AMI and Chest Pain – Retired	5.22	—	—	—	—	—	—	—	—	—	—
⬆	OP2 Fibrinolytic Therapy 30 minutes – Retired	—	—	—	—	—	—	—	—	—	—	—
	Emergency Department Throughput											
	EDV Emergency Department Volume	—	10	20	10	10	10	10	10	10	10	10
⬇	Median Time from ED Arrival to Transport for Admitted Patients (ED1)	227.3	310.0	474.0	479.0	900.5	371.0	238.0	237.0	1339.0	1673.0	515.5
⬇	ED2b ED Decision to Transport	69.0	76.5	216.0	102.0	547.0	115.0	46.0	35.0	142.5	215.0	25.0
⬇	Median Time from ED Arrival to Departure for Outpatients (18b)	124.5	101.0	217.0	144.0	164.0	140.0	130.5	118.5	118.0	121.0	129.5
⬇	OP20 Door to Diagnostic Evaluation – Retired	15.09	—	—	—	—	—	—	—	—	—	—
⬇	OP21 Time to pain medicaton for long bone fractures – Retired	37.84	—	—	—	—	—	—	—	—	—	—
⬇	OP22 Left without being seen	0.9%	0.5%	1.6%	1.9%	1.8%	1.9%	1.7%	0.1%	1.1%	1.2%	0.9%
⬆	OP23 Head CT stroke patients	84.7%	66.7%	90.0%	33.3%	60.0%	100.0%	100.0%	33.3%	62.5%	20.0%	66.7%
	Preventive Care %											
⬆	IMM3OP27 FACADHPCT HCW Influenza Vaccination – Seasonal	97.0%	98.0%	99.0%	99.0%	98.0%	99.0%	99.0%	98.0%	—	94.0%	100.0%
⬆	IMM2 Immunization for Influenza – Retired	97.4%	—	—	—	—	—	—	—	—	—	—
	Blood Clot Prevention/Treatment											
	VTE5 Warfarin Therapy at Discharge – Voluntary Reporting	—	—	—	—	—	—	—	—	—	—	—
⬇	VTE6 HAC VTE – Retired	0.02	—	—	—	—	—	—	—	—	—	—
	Pregnancy and Delivery Care %											
⬇	PC01 Elective Delivery	0.56%	—	17.39%	—	3.13%	—	—	—	—	—	—
	Surgical Complications Rate											
⬇	Hip and Knee Complications	0.03	—	0.00	—	0.00	0.00	—	—	—	—	—
⬇	PSI4SURG COMP Death rate among surgical patients with serious treatable complications	140.60	—	118.64	—	74.07	0.00	—	—	—	—	—
⬇	PSI90 Complications / patient safety for selected indicators	0.83	0.98	0.74	0.95	0.78	0.90	0.91	0.99	0.98	1.00	0.99
	Readmissions 30 Days Rate%											
⬇	READM30 AMI Acute myocardial infarction (AMI) 30day readmission rate	12.9%	0.0%	14.1%	—	22.2%	0.0%	100.0%	—	0.0%	—	—
⬇	READM30 CABG Coronary artery bypass graft (CABG) surgery 30day readmission rate	8.9%	—	—	—	—	—	—	—	—	—	—
⬇	READM30 COPD Chronic obstructive pulmonary disease 30day readmission rate	18.2%	4.8%	27.0%	4.2%	19.1%	18.0%	13.3%	18.2%	33.3%	100.0%	—
⬇	READM30HF Heart Failure 30Day readmissions rate	20.5%	15.8%	24.7%	19.6%	25.4%	26.7%	32.1%	0.0%	20.0%	—	—

Lonesome Pine Hospital vales include Mountain View Regional Hospital

Ex 3-18

↓	Measures	Ballad Health Baseline	Hawkins County Memorial Hospital	Johnston Memorial Hospital	Lonesome Pine Hospital	Norton Community Hospital	Smyth County Community Hospital	Russell County Hospital	Hancock County Hospital	Lee County Community Hospital	Johnson County Community Hospital	Dickenson Community Hospital
		Baseline	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23	FY23
↓	READM30 HIPKNEE 30day readmission rate following elective THA / TKA	3.8%	—	0.0%	—	23.5%	5.9%	—	—	—	—	—
↓	READM30 HOSPWIDE 30day hospitalwide allcause unplanned readmission	12.0%	12.7%	16.0%	14.3%	17.2%	14.6%	18.2%	11.4%	15.7%	10.7%	10.0%
↓	READM30PN Pneumonia 30day readmission rate	17.7%	10.2%	18.9%	14.0%	17.4%	18.8%	14.4%	18.8%	16.1%	20.0%	0.0%
↓	READM30 STK Stroke 30day readmission rate	9.0%	33.3%	20.3%	9.1%	14.9%	0.0%	16.7%	0.0%	0.0%	0.0%	—
	Mortality 30 Days Death Rate %											
↓	MORT30AMI Acute myocardial infarction (AMI) 30day mortality rate	4.7%	0.0%	6.4%	—	0.0%	0.0%	0.0%	—	0.0%	—	—
↓	MORT30 CABG Coronary artery bypass graft surgery 30day mortality rate	2.0%	—	—	—	—	—	—	—	—	—	—
↓	MORT30 COPD 30day mortality rate COPD patients	1.8%	0.0%	0.8%	0.0%	1.1%	1.6%	2.2%	0.0%	0.0%	0.0%	—
↓	MORT30HF Heart failure 30day mortality rate	3.9%	0.0%	3.1%	0.0%	3.3%	4.3%	5.4%	0.0%	0.0%	—	—
↓	MORT30PN Pneumonia 30day mortality rate	4.7%	0.0%	5.0%	3.1%	3.3%	2.5%	2.6%	0.0%	0.0%	0.0%	0.0%
↓	MORT30STK Stroke 30day mortality rate	8.2%	0.0%	1.3%	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%	0.0%	—
	Use of Medical Imaging Outpatient											
	OP8 MRI Lumbar Spine for Low Back Pain – Annual	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP10 Abdomen CT Use of Contrast Material – Annual	0.06	0.06	0.04	0.08	0.00	0.01	0.03	0.03	0.01	0.07	0.02
	OP13 Outpatients who got cardiac imaging stress tests before lowrisk outpatient surgery – Annual	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP9 Mammography Followup Rates – Retired	0.07	—	—	—	—	—	—	—	—	—	—
	OP11 Thorax CT Use of Contrast Material – Retired	0.01	—	—	—	—	—	—	—	—	—	—
	OP14 Outpatients with brain CT scans who got a sinus CT scan at the same time – Retired	0.02	—	—	—	—	—	—	—	—	—	—

Lonesome Pine Hospital vales include Mountain View Regional Hospital

Ex 3-19

Appendix 1: *Quality (Other) Sub-Index Data Notes*

The COPA Quality **Target** Measures are comprised of the following 17 measures tracked and included in federal incentive programs by Centers for Medicare & Medicaid Services (CMS):

- 10 Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (PSI)
    - These 10 PSI measures make up the Patient Safety and Adverse Events Composite, also known as PSI 90.
    - The AHRQ's PSI 90 Fact Sheet with most recent measure definitions can be accessed here: https://qualityindicators.ahrq.gov/Downloads/Modules/PSI/V2023/PSI_Composite_Measures.pdf
- Five healthcare-associated infection measures were originally part of the COPA's Quality Target Measures list. These five measures, along with the ten PSI 90 measures above, comprise the measures in the CMS Hospital-Acquired Conditions Reduction Program.
    - One of the measures, Surgical Site Infections (SSI), has subsequently been split into two measures for the Quality (Other) Sub-Index: Colon Surgical Site Infection and Hysterectomy Surgical Site Infection.
    - An overview from QualityNet of the Hospital Acquired Condition (HAC) Reduction Program, and links to the data dictionary can be accessed here: https://www.qualitynet.org/inpatient/hac
- One of CMS' critical Hospital Quality Initiative measures, SEP-1 Sepsis Management Bundle, replaced a formerly duplicative Quality Target Measure, Central Venous Catheter-Related Blood Stream Infection Rate (also reported as CLABSI), with the Third Amended and Restated Terms of Certification. Measure details can be accessed here: https://www.cms.gov/files/document/patientsafetysepsistepsumm-508.pdf

The COPA Quality **Monitoring** Measures consist of measures reported on Hospital Compare. Hospital Compare measures were selected by CMS Hospital Quality Initiative as they related to hospital performance and quality of care.

- These 83 measures fall under several performance categories: general/structural, patient experience, timely & effective care, complications, readmission, mortality, and efficient use of medical imaging.
- Hospitals may not be able to report data on all measures, due to the number and types of patients they treat.
- More information on Hospital Compare measures can be accessed here:

    https://www.medicare.gov/hospitalcompare/Data/Measure-groups.htmlb

Credits

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