

# Ballad Health Cancer Care 2018 Annual Report

January-December 2018



It's your story. We're listening.

This report contains legacy patient data from Bristol Regional Medical Center (BRMC), Holston Valley Medical Center (HVMC), Johnson City Medical Center (JCMC), Laughlin Memorial Hospital (LMH) and the Southwest Virginia Cancer Center (SWVCC).



# Melanoma site study

By Tamara Musgrave, MD



Tamara Musgrave, MD

Melanoma is the fifth most common cancer, accounting for 91,270 cases in 2018 (5.3% all new cancer cases), with 9,320 dying from the disease (1.5% of all cancer deaths). From 2008-2014, 91.8% of patients survived.

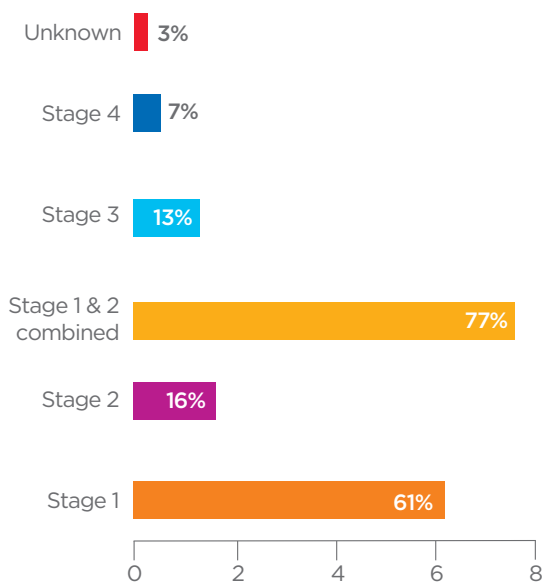
Melanoma predominantly occurs in Caucasian people - men more than women. The median age of diagnosis is 64, while the median age of death is 70.

Tremendous advances have been made in the treatment of regional and metastatic melanoma, with the rapid expanse of immunotherapy, targeted therapy (such as inhibitors for the BRAF gene and MEK enzymes) and surgical metastasectomy, which is the removal of secondary cancerous growths. Continued improvements in treatment will lead to subsequent improvements in survival rates.

We need to continue to educate our patients and their families on the importance of risk reduction (limiting sun exposure and indoor tanning; using sunscreens), as well as the importance of screenings and early detection, which improves the chances for a cure.

## Stage distribution

Table 1 - BRMC, HVMC and SWVCC patients



Source: Cancer Data Services

We also need to increase awareness and screenings and emphasize the lethality of late-stage diagnosis with our primary care providers and hospitalists. Special attention needs to be paid to high-risk groups such as:

- Blistering sunburn in people younger than 30
- Childhood radiotherapy exposure
- Immunosuppressant therapies
- Nevus (atypical mole) count higher than 50
- Red hair phenotype
- White males over age 50 with a family or personal history of melanoma

Clinical team members should remember the ABCDE rule of skin cancer detection (asymmetry, border irregularity, color, diameter and evolution of size, shape and color), as well as the ugly duckling sign, which refers to nevi that deviate from patterns. We also need to remember not to do shave biopsies, but instead perform excisional biopsies on suspicious lesions. Additionally, we should always get second opinions to make sure the margins are adequate, and regional disease patients get offered adjuvant (added) therapy.

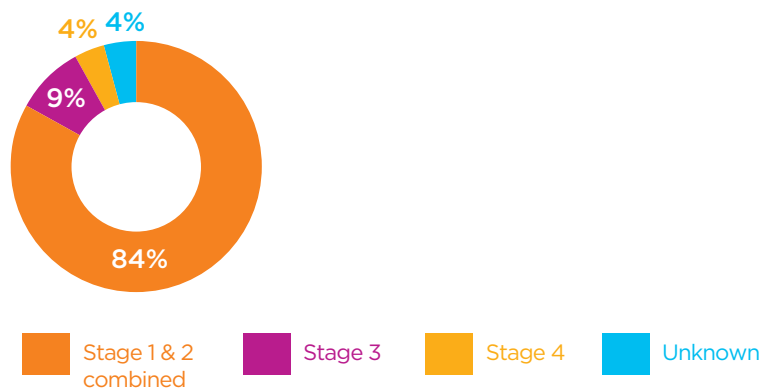
As oncologists, we need to continue to offer regional and metastatic patients the opportunity to participate in clinical trials.

## Site study

Eighty-three cases total - 34% female, 66% male (This is similar to the national average of 36% female and 64% male.)

## Stage distribution nationally

Table 2

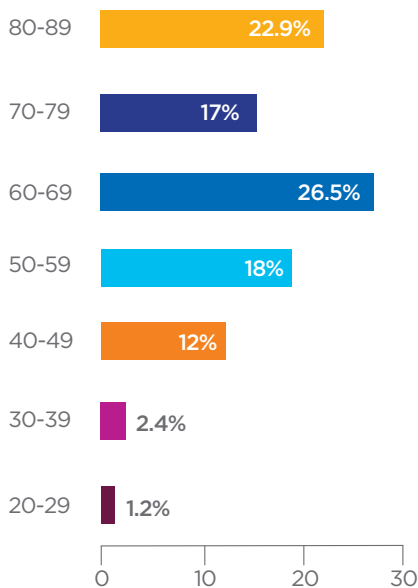


Source: Cancer Data Services

# Melanoma site study

## Age of diagnosis

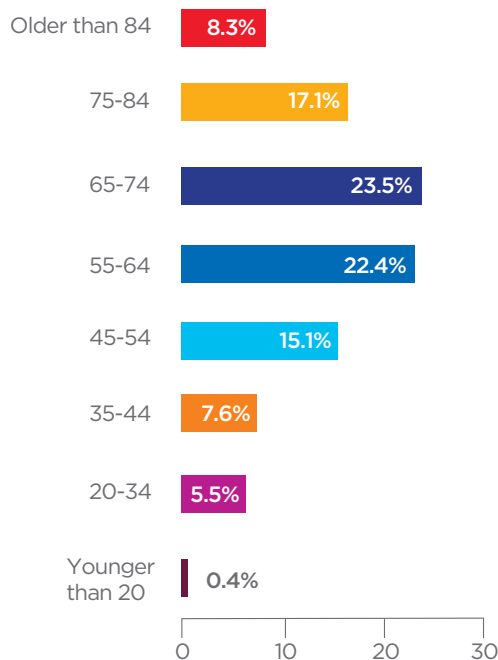
Table 3 – BRMC, HVMC and SWVCC patients



Source: Cancer Data Services

## Age of diagnosis nationally

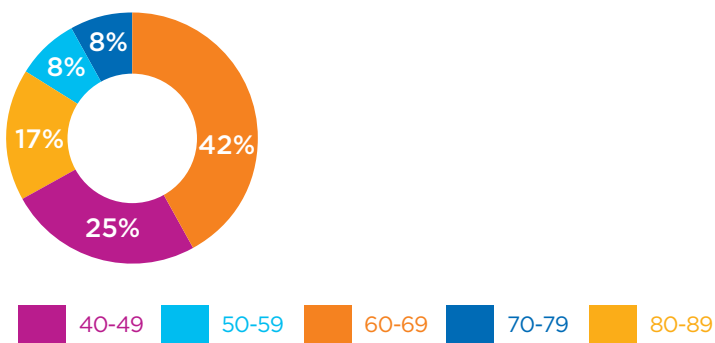
Table 4



Source: Cancer Data Services

## Age of diagnosis, Stage 3

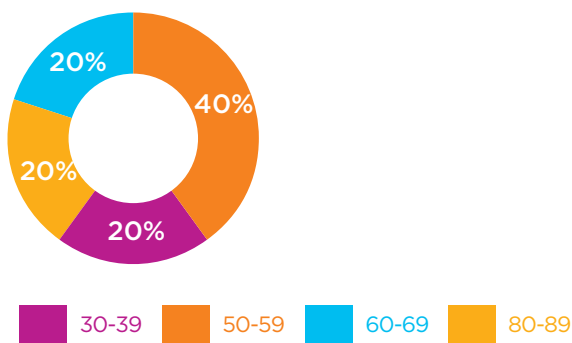
Table 5



Source: Cancer Data Services

## Age of diagnosis, Stage 4

Table 6 – BRMC, HVMC and SWVCC patients



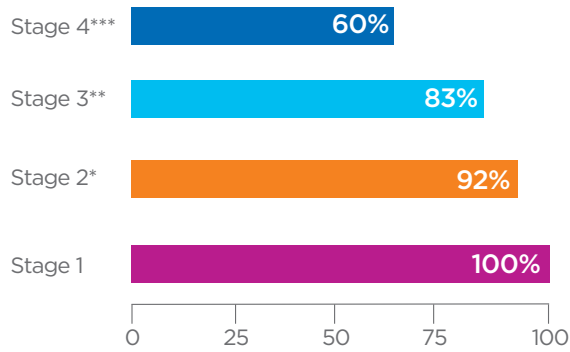
Source: Cancer Data Services

All patients with Stage 2-4 disease were self-reported – none were picked up by screenings from a healthcare provider.

# Melanoma site study

## One-year survival by stage

Table 7 - BRMC, HVMC and SWVCC patients



Source: Cancer Data Services

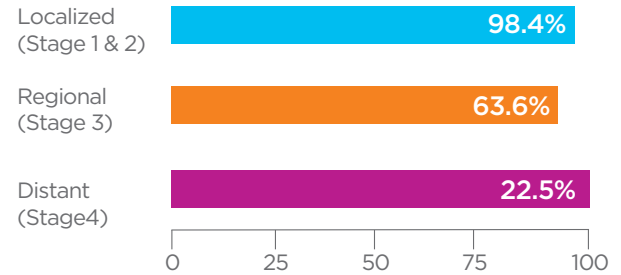
\*Died from second cancer

\*\*All who died declined adjuvant therapy

\*\*\*Twenty percent who died were not receiving medication, while 20% who died were on immunotherapy

## Five-year survival, by stage

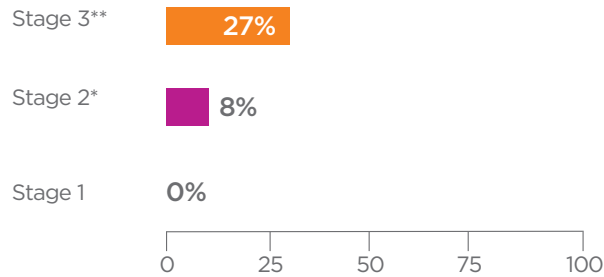
Table 8 - Nationally



Source: Cancer Data Services

## One-year recurrence, by stage

Table 9 - BRMC, HVMC and SWVCC patients



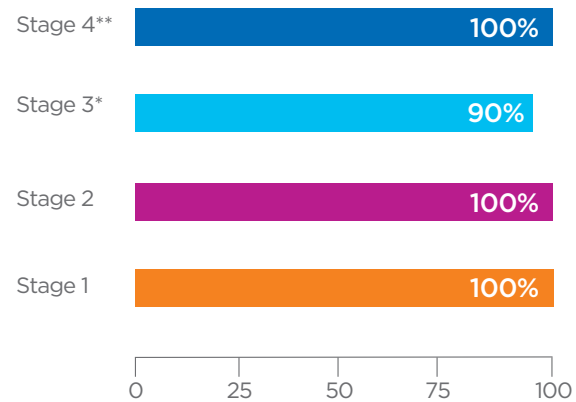
Source: Cancer Data Services

\*Received incomplete course of interferon with secondary toxicities

\*\*All didn't receive adjuvant therapy: two declined, while one held secondary comorbidities

## National Comprehensive Cancer Network guidelines followed

Table 10



Source: Cancer Data Services

\*Not referred for adjuvant therapy

\*\*Of patients treated

# Melanoma site study

## Sought care elsewhere

Stage 3 - two patients: Veterans Affairs Medical Center and Duke University Medical Center

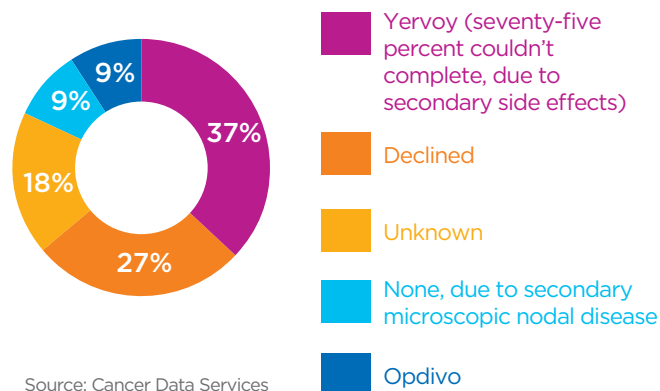
Stage 4 - one patient: Vanderbilt University Medical Center

## Clinical trials offered

- Stage 3 - 27% (all declined)
- Stage 4 - 20% (declined)

## Stage 3 treatments

Table 11



Source: Cancer Data Services

## Insurance denials

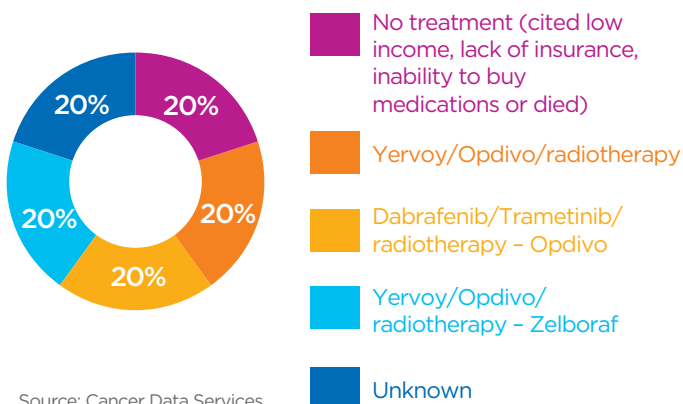
- Patient with local recurrence and positive margins; received radiotherapy but was denied adjuvant Opdivo
- Patient with Stage 3 disease who was unable to complete adjuvant therapy due to secondary side effects; denied surveillance CT scans

## Case presentation

- Female, 85 years old
- July 2016 - suspicious skin lesion on her back. Biopsy was inconclusive.
- February 2017 - re-excision performed. Wide local excision concluded it was a T4a melanoma, with .6-centimeter deep resection margin. No nodes checked.
- April 2018 - in hospital; exam reports all nodes negative
- May-June 2018 scans - hospitalized with hypotension, and scans incidentally done. Reported a 5.2x3.3-centimeter supraclavicular node, lung nodules and a T3/4 lesion. Supraclavicular node biopsies determined a metastatic melanoma.
- Patient subsequently died.

## Stage 4 treatments

Table 12



Source: Cancer Data Services

# Patient assistance fund

## How was it spent?

Imagine undergoing cancer treatment – you’re sick, scared and fighting for your life. Now imagine, in the middle of treatment, the financial toll has become so extreme you can no longer afford gas, electricity or car payments.

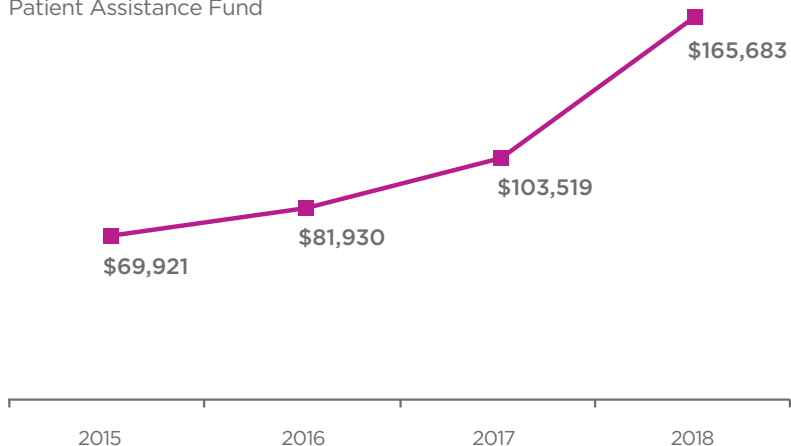
Far too many people in our region don’t have to imagine. For them, this is a frightening reality, which is why the Cancer Patient Assistance Fund is so important.

### Patient Assistance Fund spend detail 2015-2018

|                                                  | 2015                                      |                 | 2016                                      |                 | 2017                                      |                 | 2018                                      |                 |
|--------------------------------------------------|-------------------------------------------|-----------------|-------------------------------------------|-----------------|-------------------------------------------|-----------------|-------------------------------------------|-----------------|
|                                                  | Bristol/<br>Kingsport/<br>Johnson<br>City | Norton          | Bristol/<br>Kingsport/<br>Johnson<br>City | Norton          | Bristol/<br>Kingsport/<br>Johnson<br>City | Norton          | Bristol/<br>Kingsport/<br>Johnson<br>City | Norton          |
| Mortgage/<br>rent                                | \$4,120                                   | \$0             | \$3,993                                   | \$1,307         | \$8,004                                   | \$989           | \$17,271                                  | \$1,333         |
| Medications                                      | \$8,356                                   | \$4,321         | \$13,331                                  | \$2,652         | \$16,121                                  | \$2,074         | \$31,273                                  | \$701           |
| Utilities<br>(includes<br>electricity,<br>phone) | \$20,927                                  | \$4,298         | \$32,642                                  | \$2,371         | \$34,690                                  | \$4,532         | \$58,883                                  | \$7,174         |
| Gas cards                                        | \$0                                       | \$10,960        | \$7,600                                   | \$9,695         | \$3,876                                   | \$0             | \$10,133                                  | \$0             |
| Food City<br>cards                               | \$14,250                                  | \$0             | \$4,000                                   | \$2,985         | \$11,400                                  | \$19,945        | \$5,067                                   | \$21,467        |
| Other                                            | \$2,358                                   | \$331           | \$1,292                                   | \$62            | \$1,335                                   | \$554           | \$11,439                                  | \$943           |
| <b>Total</b>                                     | <b>\$50,011</b>                           | <b>\$19,910</b> | <b>\$62,858</b>                           | <b>\$19,072</b> | <b>\$75,425</b>                           | <b>\$28,094</b> | <b>\$134,066</b>                          | <b>\$31,617</b> |

## Total spend

Patient Assistance Fund



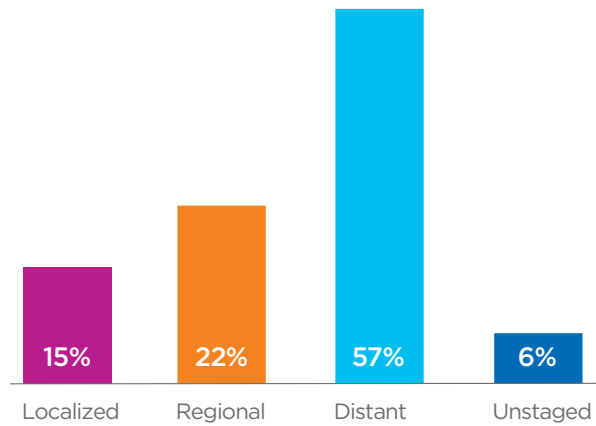
Source: Cancer Data Services

# Low-dose computed tomography outcomes

Improved survival is the primary motivation for lung cancer screenings — after all, the best opportunity for effective treatment is with early detection. Since introducing low-dose CT lung cancer screenings, the former Mountain States Health Alliance and Wellmont Health System (now Ballad Health) have surpassed national averages and uncovered lung cancers sooner, as demonstrated by percent localized vs. distant (below).

## Lung cancer stage at diagnosis

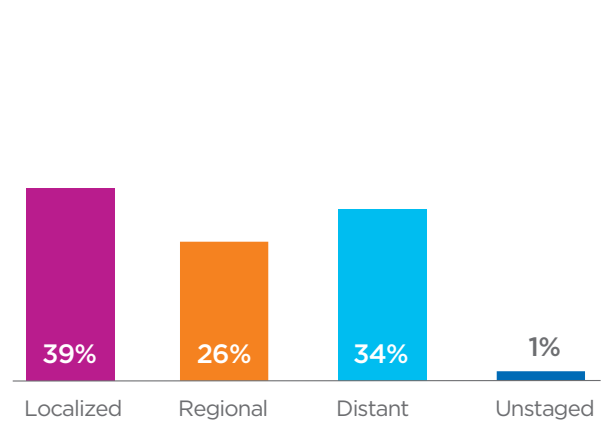
Nationally



Source: Cancer Data Services

## Lung cancer stage at diagnosis

BRMC, HVMC and SWVCC

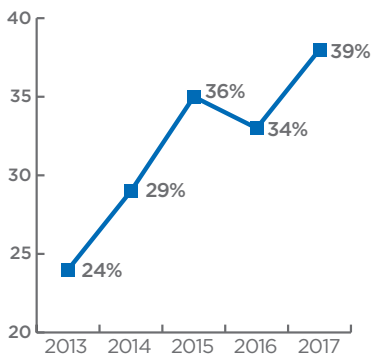


Source: Cancer Data Services

Low-dose CT has not only uncovered more lung cancers, but the early-stage profile has improved year after year. Consequently, late-stage diagnosis is on the decline.

## Localized

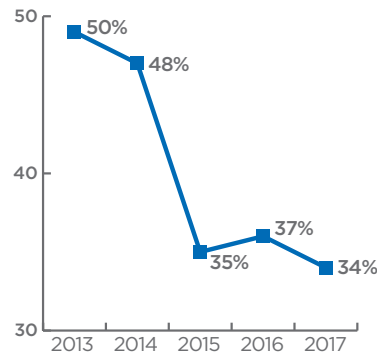
(early-stage trend)



Source: Cancer Data Services

## Distant

(late-stage trend)



Source: Cancer Data Services



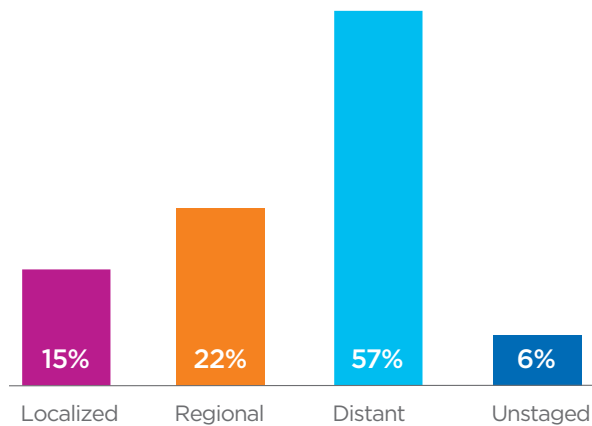
# Low-dose computed tomography outcomes

|           | 2013 | 2014 | 2015 | 2016 | 2017 |
|-----------|------|------|------|------|------|
| Localized | 24%  | 29%  | 36%  | 34%  | 39%  |
| Regional  | 25%  | 22%  | 25%  | 27%  | 26%  |
| Distant   | 50%  | 48%  | 35%  | 37%  | 34%  |
| Unstaged  | 1%   | 1%   | 4%   | 2%   | 1%   |
| Total     | 100% | 100% | 100% | 100% | 100% |

In addition to low-dose CT improving outcomes, we also know early diagnosis can curb costs, as early-stage patients are less expensive to treat than late-stage patients. For every patient we diagnose at an early stage, we save more than \$30,000. For instance, legacy Wellmont Health System averaged 400 lung cases a year, which equates to more than \$2 million.

## Lung cancer stage at diagnosis

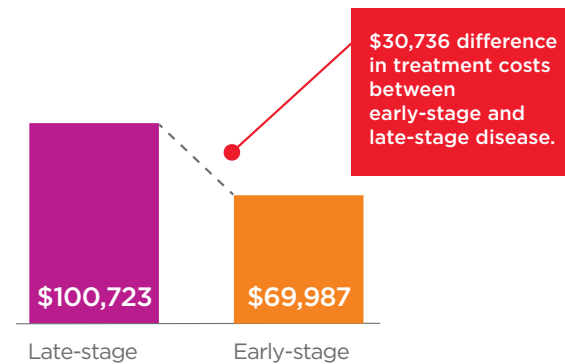
Nationally



Source: Cancer Data Services

## Average cost of lung cancer treatment, by stage

U.S. Dollars



Source: Cancer Data Services

# Low-dose computed tomography outcomes

| Stage at diagnosis, before screening (2014) |          |         |          |
|---------------------------------------------|----------|---------|----------|
| 92                                          | 70       | 152     | 3        |
| Localized                                   | Regional | Distant | Unstaged |

| Stage at diagnosis, after screening (2016) |          |         |          |
|--------------------------------------------|----------|---------|----------|
| 161                                        | 130      | 175     | 11       |
| Localized                                  | Regional | Distant | Unstaged |

The national lung screening trials research team suggests 320 screenings need to be performed to save one life.

| Legacy Wellmont Health System, 2018 |                            |
|-------------------------------------|----------------------------|
| Low-dose CT screenings per month    | Cancers detected per month |
| 113                                 | 2                          |

**Cost-savings opportunity**

**Sixty-nine additional patients diagnosed at an early stage**

**\$2,070,000 total costs saved by diagnosing 69 patients at an early stage versus a late stage**

**Four lives saved per year by low-dose CT screenings**

# Breast cancer screenings

It's no secret - routine mammograms catch breast cancer early and save lives. But for far too many women, the cost of a breast cancer screening is more than they can afford. Thankfully, Ballad Health cancer care offers free screening options throughout the year.

| Date     | Location                | Number performed |
|----------|-------------------------|------------------|
| 10/11/18 | Blountville Food City   | 2                |
| 10/18/18 | Greene County Food City | 2                |
| 10/24/18 | Bristol Healing Hands   | 21               |
| 10/25/18 | Bristol Healing Hands   | 16               |
| 11/2/18  | RAM Gray Fair Grounds   | 10               |
| 11/3/18  | RAM Gray Fair Grounds   | 13               |
| 11/4/18  | RAM Gray Fair Grounds   | 2                |

# Breast cancer accountability report

**Interpreting the report:** The estimated performance rates shown below provide your cancer program with an estimate of the proportion of patients concordant with measure criteria by diagnosis year. If appropriate, the Commission on Cancer standard and benchmark compliance rate is provided. This application provides our cancer programs the opportunity to examine data to determine if performance rates are representative of the care provided at the institution and to review and modify case information using the review function for the measure of interest.

## Bristol Regional Medical Center

| Select measures                                                                                                                                                                                                           | Measure | Commission on Cancer standard / % | Estimated Performance Rates (%) |        |       |        | Review |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------|---------------------------------|--------|-------|--------|--------|
|                                                                                                                                                                                                                           |         |                                   | 2013                            | 2014   | 2015  | 2016   |        |
| Radiation is administered within one year (365 days) of diagnosis for women under the age of 70 receiving breast conservation surgery for breast cancer (accountability)                                                  | BCSRT   | 4.4 / 90%                         | 92.10                           | 89.30  | 96.20 | 97.50  | BCSRT  |
| Tamoxifen or third-generation aromatase inhibitor is recommended or administered within one year (365 days) of diagnosis for women with AJCC T1c or Stage IB-III hormone receptor positive breast cancer (accountability) | HT      | 4.4 / 90%                         | 93.50                           | 94.10  | 86.40 | 96.60  | HT     |
| Radiation therapy is recommended or administered following any mastectomy within one year (365 days) of diagnosis of breast cancer for women with four or more positive regional lymph nodes (accountability)             | MASTRT  | 4.4 / 90%                         | 100.00                          | 100.00 | 85.70 | 100.00 | MASTRT |

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### Holston Valley Medical Center

| Select measures                                                                                                                                                                                                           | Measure | Commission on Cancer standard / % | Estimated Performance Rates (%) |        |       |        | Review |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------|---------------------------------|--------|-------|--------|--------|
|                                                                                                                                                                                                                           |         |                                   | 2013                            | 2014   | 2015  | 2016   |        |
| Radiation is administered within one year (365 days) of diagnosis for women under the age of 70 receiving breast conservation surgery for breast cancer (accountability)                                                  | BCSRT   | 4.4 / 90%                         | 93.20                           | 90.00  | 93.80 | 100.00 | BCSRT  |
| Tamoxifen or third-generation aromatase inhibitor is recommended or administered within one year (365 days) of diagnosis for women with AJCC T1c or Stage IB-III hormone receptor positive breast cancer (accountability) | HT      | 4.4 / 90%                         | 90.90                           | 92.60  | 90.40 | 93.70  | HT     |
| Radiation therapy is recommended or administered following any mastectomy within one year (365 days) of diagnosis of breast cancer for women with four or more positive regional lymph nodes (accountability)             | MASTRT  | 4.4 / 90%                         | 89.90                           | 100.00 | 90.90 | 100.00 | MASTRT |

# Breast cancer accountability report

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## Johnson City Medical Center

| Select measures                                                                                                                                                                                                           | Measure | Commission on Cancer standard / % | Estimated Performance Rates (%) |       |       |        | Review |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------|---------------------------------|-------|-------|--------|--------|
|                                                                                                                                                                                                                           |         |                                   | 2013                            | 2014  | 2015  | 2016   |        |
| Radiation is administered within one year (365 days) of diagnosis for women under the age of 70 receiving breast conservation surgery for breast cancer (accountability)                                                  | BCSRT   | 4.4 / 90%                         | 95.20                           | 93.50 | 100.0 | 86.50  | BCSRT  |
| Tamoxifen or third-generation aromatase inhibitor is recommended or administered within one year (365 days) of diagnosis for women with AJCC T1c or Stage IB-III hormone receptor positive breast cancer (accountability) | HT      | 4.4 / 90%                         | 90.80                           | 93.20 | 97.20 | 90.40  | HT     |
| Radiation therapy is recommended or administered following any mastectomy within one year (365 days) of diagnosis of breast cancer for women with four or more positive regional lymph nodes (accountability)             | MASTRT  | 4.4 / 90%                         | 100.00                          | 87.50 | 100.0 | 100.00 | MASTRT |

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### Laughlin Memorial Hospital

| Select measures                                                                                                                                                                                                           | Measure | Commission on Cancer standard / % | Estimated Performance Rates (%) |       |       |        | Review |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------|---------------------------------|-------|-------|--------|--------|
|                                                                                                                                                                                                                           |         |                                   | 2013                            | 2014  | 2015  | 2016   |        |
| Radiation is administered within one year (365 days) of diagnosis for women under the age of 70 receiving breast conservation surgery for breast cancer (accountability)                                                  | BCSRT   | 4.4 / 90%                         | 100.0                           | 100.0 | 100.0 | 100.00 | BCSRT  |
| Tamoxifen or third-generation aromatase inhibitor is recommended or administered within one year (365 days) of diagnosis for women with AJCC T1c or Stage IB-III hormone receptor positive breast cancer (accountability) | HT      | 4.4 / 90%                         | 94.10                           | 90.0  | 84.60 | 88.20  | HT     |
| Radiation therapy is recommended or administered following any mastectomy within one year (365 days) of diagnosis of breast cancer for women with four or more positive regional lymph nodes (accountability)             | MASTRT  | 4.4 / 90%                         | 100.0                           | 100.0 | 100.0 | 100.00 | MASTRT |

