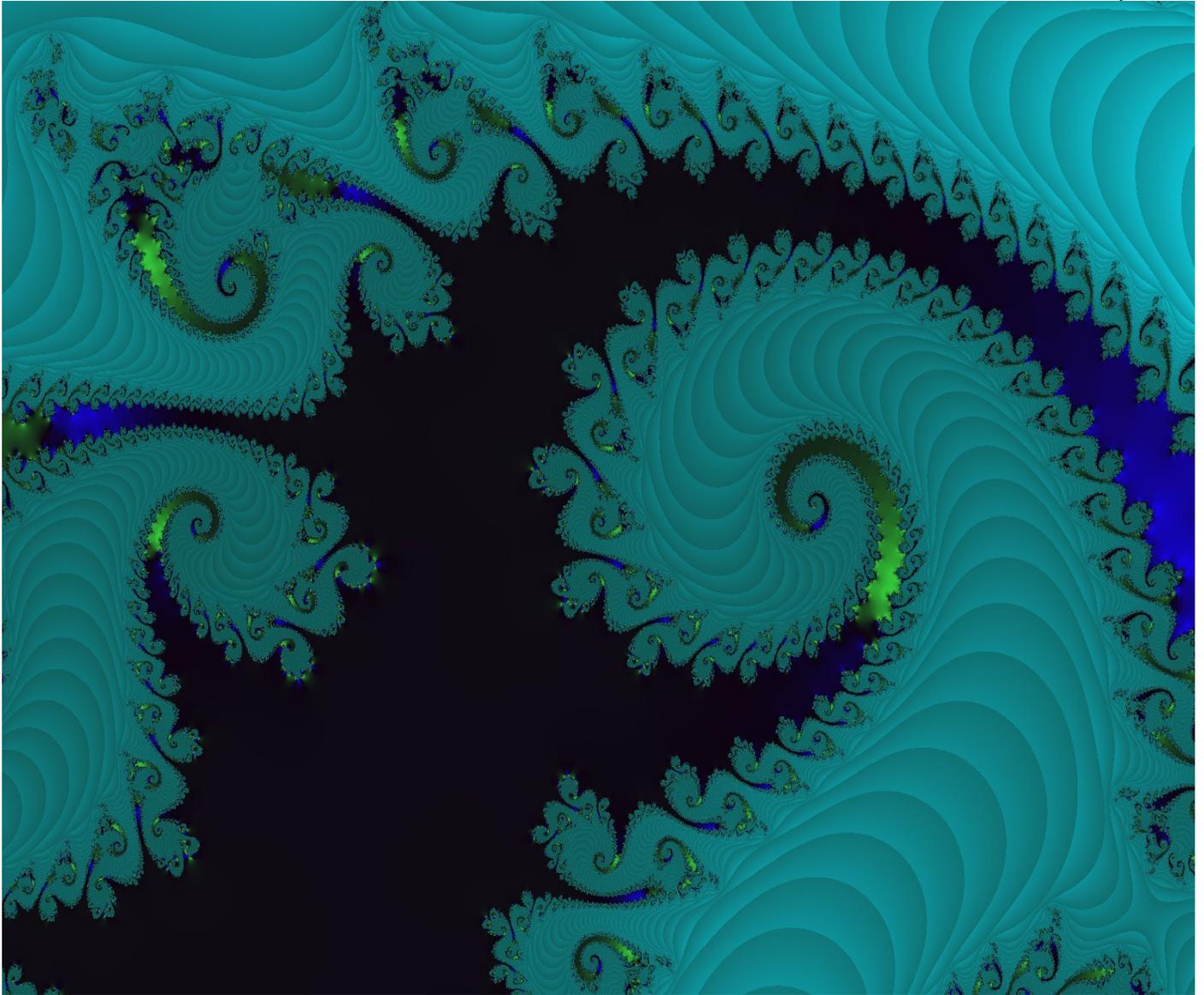


# Radiation Therapy Staffing and Workplace Survey 2014

A Nationwide Survey of Radiation Therapy Managers  
Conducted by the American Society of Radiologic Technologists

May 2014



American Society of Radiologic Technologists

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## Executive Summary

The Radiation Therapy Staffing and Workplace Survey 2014 was e-mailed in February, 2014 to 3,524 managers of U.S. radiation therapy facilities. At the close of the survey in March, 2014, a total of 654 completed questionnaires had been submitted resulting in a response rate of 18.6%.

The sample size of 654 yields a margin of error for overall percentages of a maximum  $\pm 3.8\%$  (at the 95% confidence interval).

To keep the report at a minimal length, responses to open-ended questions were not included, but are available upon request.

### Staffing of the Facilities

The mean number of budgeted full-time equivalents (FTEs) across all facilities was:

- 8.2 for radiation therapy.
- 2.5 for medical dosimetry.

An estimation of the overall percentages of unfilled positions was calculated using the number of budgeted FTEs along with figures on vacant and recruiting positions.

- In radiation therapy, an estimated 1.6% of FTE positions are unfilled.
- In medical dosimetry, an estimated 3.6% of FTE positions are unfilled.
- Overall mean percentages of unfilled positions, calculated by combining the figures from both therapy and dosimetry, were highest in the Mountain region (4.5%) and lowest in the Middle Atlantic region (0.2%). Overall, the percent of unfilled positions combining both disciplines was 2.6%.

A majority of respondents (77.9%) described their facility as being appropriately staffed; 62.4% said their department is not currently under a hiring freeze, while 37.6% said their department is currently under a hiring freeze. Only 18.7% of respondents said their departmental budget had increased over the last fiscal year; 41.0% said it had remained the same, and 40.3% said it had decreased.

The survey also tracks longitudinal changes in staffing levels in radiation therapy and medical dosimetry.

- The number of FTE radiation therapists budgeted at each facility rose by 0.8 from 7.4 to 8.2 between 2012, when the last Radiation Therapy Staffing Survey was conducted, and 2014. Overall, the number of FTE therapists

budgeted per facility has increased by 2.2 from 6.0 in 2004 to 8.2 in 2014.

- The number of FTE medical dosimetrists budgeted at each facility remained the same at 2.5 between 2012 and 2014.
- The estimated vacancy rate for FTE positions in therapy dropped by 0.5% from 2.1% in 2012 to 1.6% in 2014. This continues a trend of generally falling vacancy rates since 2004, when the estimated vacancy rate for FTE therapists was 7.9%.
- The estimated vacancy rate for FTE positions in medical dosimetry fell by 1.5% from 5.1% in 2012 to 3.6% in 2014. As in therapy, the vacancy rate in dosimetry is far lower than it was in 2004 (8.0%); however, there has been greater variability in the vacancy rate over the 10-year span from 2004 to 2014, with a high of 9.3% in 2006 and lows of 3.6% in both 2010 and 2014.

### Facility Demographics

The average respondent to the survey works in a facility that offers 12.0 radiation therapy and related services.

The most commonly offered services are:

- Intensity-modulated radiation therapy (IMRT) (95.2% of facilities).
- Conformal radiation therapy delivery (92.9% of facilities).
- CT simulation (92.5% of facilities).

The least commonly offered services are:

- Proton therapy (2.7% of facilities).
- Hyperthermia (2.9% of facilities).
- Dynamic adaptive radiation therapy (4.8% of facilities).

Moreover, according to the responses provided, the average facility sees 52.7 patients each day and uses 2.3 linear accelerators; 95.1% of respondents work in a facility that uses treatment planning stations, and on average, has 3.8 planning stations.

### Personnel Demographics

The vast majority of respondents to the survey (90.7%) are currently working in radiation therapy.

The average respondent works at a facility that schedules 2.5 therapists and 1.0 dosimetrist per linear accelerator. On average, there is only 1.0 hour per day when only one therapist is scheduled per linear accelerator.

The majority of respondents (81.7%) work in a facility with daily on-site physics support. Among those with daily on-site physics support, the mean number of FTE physicists on staff is 3.0. Among those with no FTE physicists on staff, there is a physicist on staff for an average of 19.0 hours per week. However, 7.7% of the facilities with no full-time physicist have a physicist on site for an hour or less per week.

### **Retirement, Turnover and Inactive Demographics**

Relatively few of the respondents (9.3%) are not working in radiation therapy; among those not currently

employed in the field, 29.5% said they are employed outside the profession, 18.0% said they are unemployed and currently seeking employment in radiation therapy, 11.5% said they are retired; 32.8% cited other reasons for their inactive status.

Respondents were also asked a couple of questions pertaining to retirement and workforce turnover. The average age at which employees typically retire from facilities responding to the survey is 63.9. Combining retirements, layoffs, terminations and employees leaving for various reasons, the average facility surveyed saw 0.9 employees in therapy/dosimetry leave in 2012 and 1.0 leave in 2013.

### Calculation of Percent Vacancy Rates

The estimated proportion of unfilled positions for a given specialty for the population of U.S. hospital-based radiology facilities is defined as:

$$\text{(mean number of vacant and recruiting FTEs per facility)} / \text{(mean number of budgeted FTEs per facility)} * 100$$

For example, in radiation therapy the mean vacant and recruiting FTE positions is equal to 0.13. When divided by the mean budgeted FTE of 8.2, this yields a proportion of unfilled FTE positions of 0.0158. Multiplying by 100 to give the percent value, and then rounding to the nearest tenth gives the percent vacancy rate for therapy of 1.6%.

Note that only combinations which included both the number of budgeted FTEs and the number of vacant and recruiting FTEs were used in the calculation of vacancy rates.

## Staffing of the Facilities

Provide the budgeted and vacant full-time employees (FTEs) for your facility. Please use decimals for fractional FTEs.

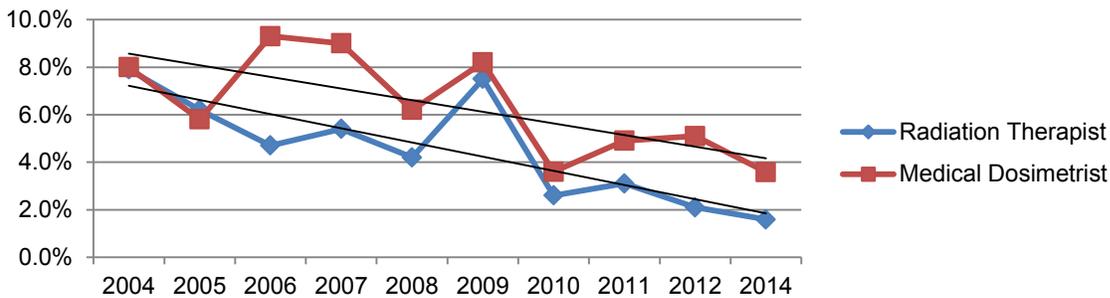
### Radiation Therapist

| Year        | N          | Mean Budgeted FTEs per Facility | Mean Vacant and Recruiting FTEs per Facility | Estimated Percent Unfilled FTE Positions |
|-------------|------------|---------------------------------|--|--|
| 2004        | 360        | 6.0                             | 0.47   | 7.9%                                     |
| 2005        | 352        | 6.4                             | 0.40   | 6.2%                                     |
| 2006        | 522        | 6.8                             | 0.31   | 4.7%                                     |
| 2007        | 549        | 7.1                             | 0.39   | 5.4%                                     |
| 2008        | 476        | 6.8                             | 0.29   | 4.2%                                     |
| 2009        | 448        | 7.2                             | 0.54   | 7.5%                                     |
| 2010        | 484        | 7.2                             | 0.19   | 2.6%                                     |
| 2011        | 460        | 7.4                             | 0.23   | 3.1%                                     |
| 2012        | 439        | 7.4                             | 0.16   | 2.1%                                     |
| <b>2014</b> | <b>575</b> | <b>8.2</b>                      | <b>0.13</b>                                  | <b>1.6%</b>                              |

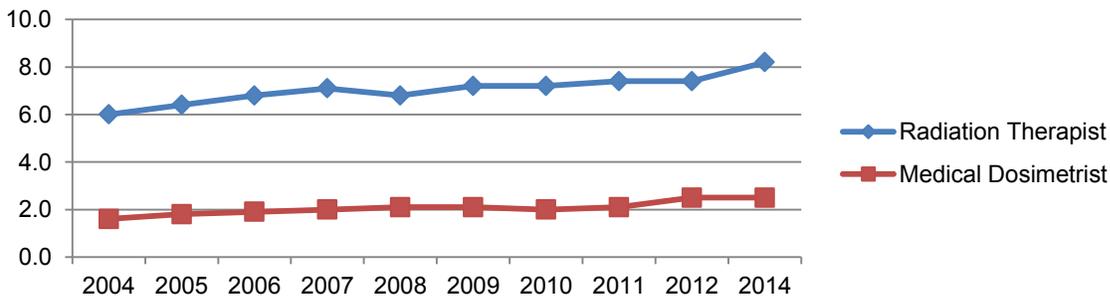
### Medical Dosimetrist

| Year        | N          | Mean Budgeted FTEs per Facility | Mean Vacant and Recruiting FTEs per Facility | Estimated Percent Unfilled FTE Positions |
|-------------|------------|---------------------------------|--|--|
| 2004        | 360        | 1.6                             | 0.13   | 8.0%                                     |
| 2005        | 352        | 1.8                             | 0.11   | 5.8%                                     |
| 2006        | 522        | 1.9                             | 0.18   | 9.3%                                     |
| 2007        | 549        | 2.0                             | 0.18   | 9.0%                                     |
| 2008        | 441        | 2.1                             | 0.13   | 6.2%                                     |
| 2009        | 409        | 2.1                             | 0.17   | 8.2%                                     |
| 2010        | 432        | 2.0                             | 0.07   | 3.6%                                     |
| 2011        | 411        | 2.1                             | 0.10   | 4.9%                                     |
| 2012        | 406        | 2.5                             | 0.12   | 5.1%                                     |
| <b>2014</b> | <b>544</b> | <b>2.5</b>                      | <b>0.09</b>                                  | <b>3.6%</b>                              |

Estimated Percent Unfilled FTE Positions



Mean Budgeted FTEs per facility



### 2014 Estimated Percent of Unfilled FTE Positions by Geographic Region

| Discipline          | Statistic | East North Central | Pacific | Mid-Atlantic | East South Central | South Atlantic | West South Central | Mountain | West North Central | New England |
|---------------------|-----------|--------------------|---------|--------------|--------------------|----------------|--------------------|----------|--------------------|-------------|
| Radiation Therapist | N         | 99                 | 82      | 26           | 102                | 78             | 61                 | 33       | 38                 | 42          |
|                     | %         | 1.7%               | 2.4%    | 3.0%         | 1.5%               | 2.4%           | 0.6%               | 1.3%     | 0.8%               | 0.4%        |
| Medical Dosimetrist | N         | 89                 | 76      | 25           | 99                 | 74             | 61                 | 31       | 33                 | 42          |
|                     | %         | 7.6%               | 5.1%    | 4.0%         | 4.6%               | 2.7%           | 2.6%               | 1.8%     | 1.0%               | 0.0%        |

| Overall Mean | 4.5% | 3.7% | 3.5% | 3.1% | 2.6% | 1.6% | 1.5% | 0.9% | 0.2% |
|--------------|------|------|------|------|------|------|------|------|------|
|--------------|------|------|------|------|------|------|------|------|------|

<sup>a</sup> Mountain: Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona and New Mexico

Pacific: Alaska, Washington, Oregon, California and Hawaii

West North Central: Missouri, North Dakota, South Dakota, Nebraska, Kansas, Minnesota and Iowa

South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina and Georgia

West South Central: Oklahoma, Texas, Arkansas and Louisiana

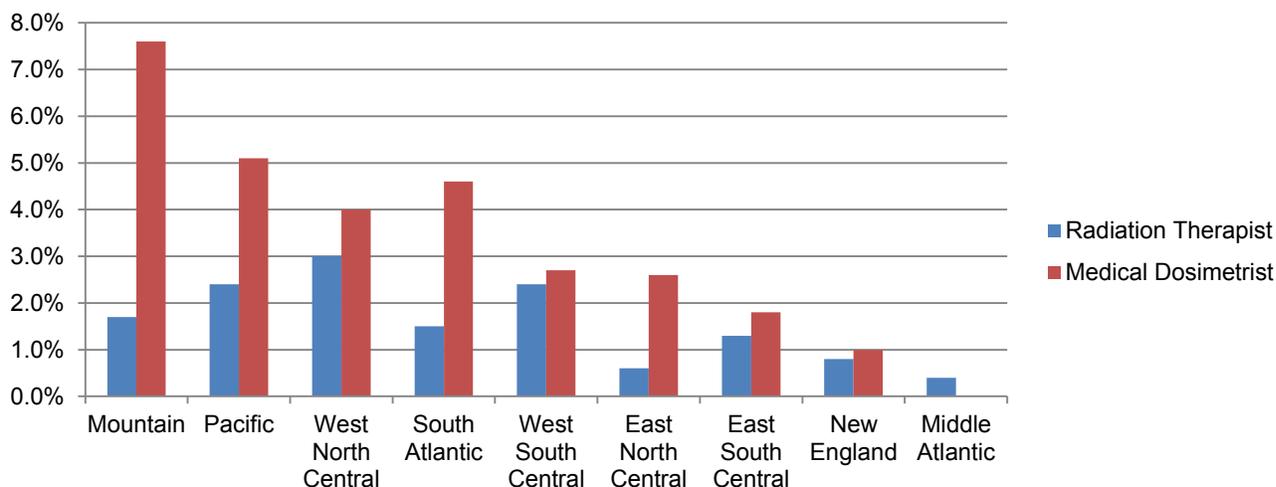
East North Central: Wisconsin, Michigan, Illinois, Indiana and Ohio

East South Central: Kentucky, Tennessee, Mississippi and Alabama

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut

Mid-Atlantic: New York, Pennsylvania and New Jersey

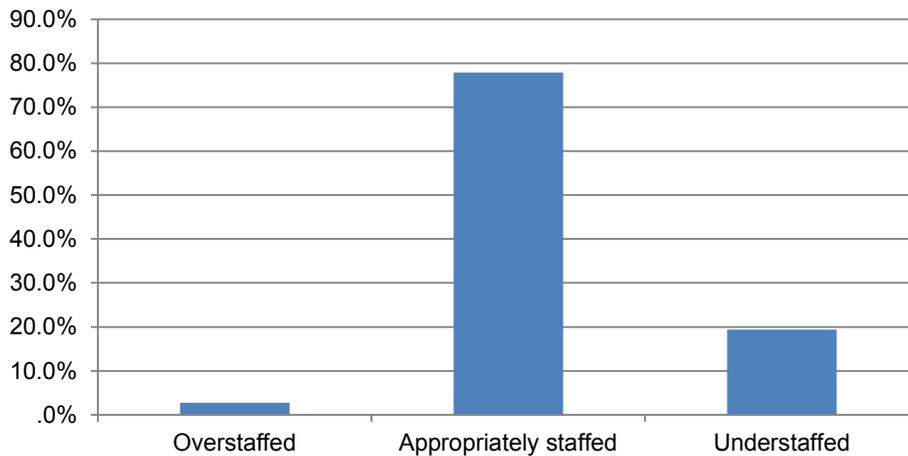
### 2014 Estimated Percent of Unfilled FTE Positions by Geographic Region



**In terms of staffing levels, how would you describe your facility?**

|                       | <b>N</b> | <b>Valid Percent</b> |
|-----------------------|----------|----------------------|
| Overstaffed           | 16       | 2.7%                 |
| Appropriately staffed | 454      | 77.9%                |
| Understaffed          | 113      | 19.4%                |
| Total                 | 583      | 100.0%               |

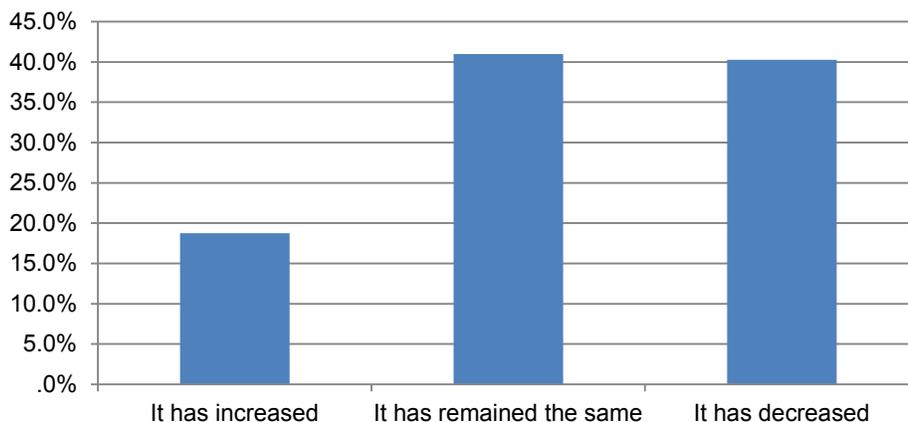
**In terms of staffing levels, how would you describe your facility?**



**Which of the following options best describes your department's operating budget over the last fiscal year?**

|                          | <b>N</b> | <b>Valid Percent</b> |
|--------------------------|----------|----------------------|
| It has increased         | 107      | 18.7%                |
| It has remained the same | 234      | 41.0%                |
| It has decreased         | 230      | 40.3%                |
| Total                    | 571      | 100.0%               |

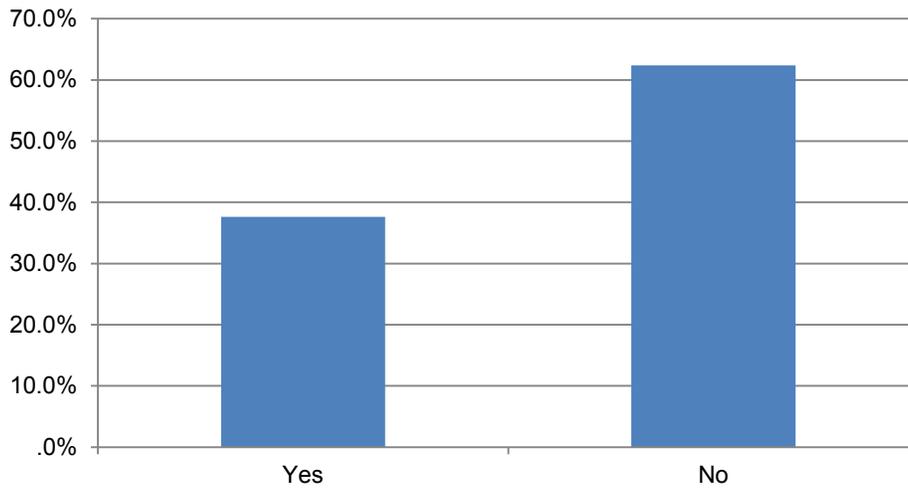
**Which of the following options best describes your department's operating budget over the last fiscal year?**



**Is your department currently under a hiring freeze?**

|       | <b>N</b> | <b>Valid Percent</b> |
|-------|----------|----------------------|
| Yes   | 217      | 37.6%                |
| No    | 360      | 62.4%                |
| Total | 577      | 100.0%               |

**Is your department currently under a hiring freeze?**



## Facility Demographics

### State

| State | N  |
|-------|----|
| AK    | 1  |
| AL    | 11 |
| AR    | 6  |
| AZ    | 20 |
| CA    | 50 |
| CO    | 10 |
| CT    | 4  |
| DE    | 1  |
| FL    | 31 |
| GA    | 15 |

| State | N  |
|-------|----|
| HI    | 1  |
| IA    | 8  |
| ID    | 1  |
| IL    | 24 |
| IN    | 18 |
| KS    | 7  |
| KY    | 10 |
| LA    | 6  |
| MA    | 18 |
| MD/DC | 16 |

| State | N  |
|-------|----|
| ME    | 2  |
| MI    | 19 |
| MN    | 10 |
| MO    | 13 |
| MS    | 5  |
| MT    | 2  |
| NC    | 19 |
| ND    | 2  |
| NE    | 5  |
| NH    | 1  |

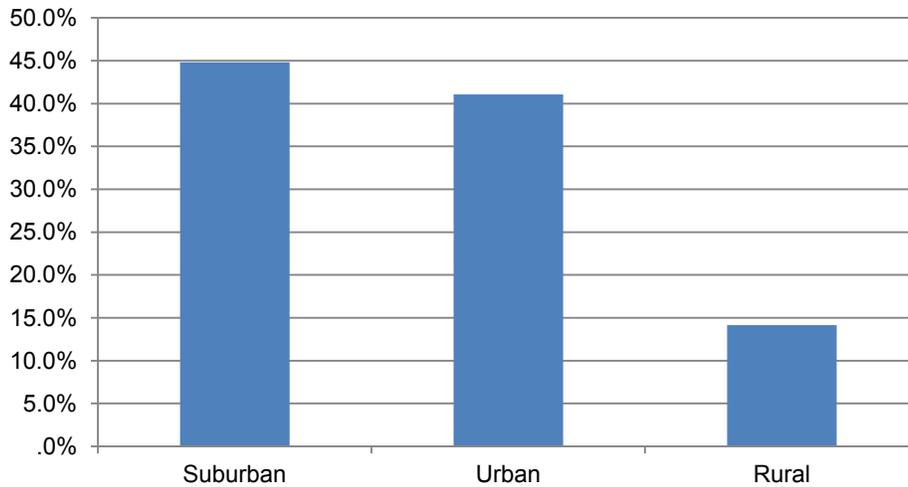
| State | N  |
|-------|----|
| NJ    | 14 |
| NM    | 4  |
| NV    | 2  |
| NY    | 37 |
| OH    | 16 |
| OK    | 8  |
| OR    | 6  |
| PA    | 39 |
| RI    | 0  |
| SC    | 6  |

| State | N  |
|-------|----|
| SD    | 1  |
| TN    | 9  |
| TX    | 44 |
| UT    | 5  |
| VA    | 14 |
| VT    | 0  |
| WA    | 17 |
| WI    | 16 |
| WV    | 4  |
| WY    | 1  |

### Location of facility:

|          | N   | Valid Percent |
|----------|-----|---------------|
| Suburban | 263 | 44.8%         |
| Urban    | 241 | 41.1%         |
| Rural    | 83  | 14.1%         |
| Total    | 587 | 100.0%        |

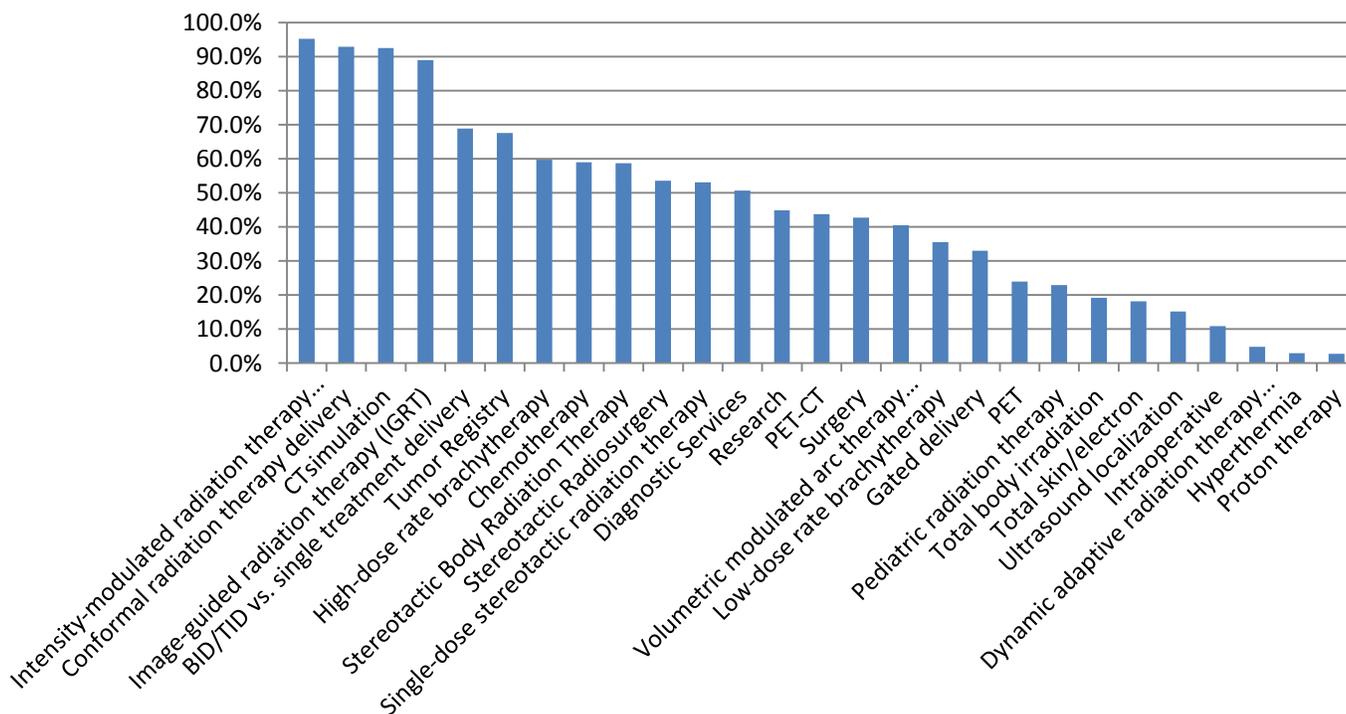
### Location of facility:



### Which of the following services does your facility provide?

|  | N   | Valid Percent |
|--|-----|---------------|
| Intensity-modulated radiation therapy (IMRT) | 560 | 95.2%         |
| Conformal radiation therapy delivery         | 546 | 92.9%         |
| CT simulation                                | 544 | 92.5%         |
| Image-guided radiation therapy (IGRT)        | 523 | 88.9%         |
| BID/TID vs. single treatment delivery        | 405 | 68.9%         |
| Tumor Registry                               | 397 | 67.5%         |
| High-dose rate brachytherapy                 | 351 | 59.7%         |
| Chemotherapy                                 | 347 | 59.0%         |
| Stereotactic Body Radiation Therapy          | 345 | 58.7%         |
| Stereotactic Radiosurgery                    | 315 | 53.6%         |
| Single-dose stereotactic radiation therapy   | 312 | 53.1%         |
| Diagnostic Services                          | 298 | 50.7%         |
| Research                                     | 264 | 44.9%         |
| PET-CT                                       | 257 | 43.7%         |
| Surgery                                      | 251 | 42.7%         |
| Volumetric modulated arc therapy (VMAT)      | 238 | 40.5%         |
| Low-dose rate brachytherapy                  | 209 | 35.5%         |
| Gated delivery                               | 194 | 33.0%         |
| PET  | 141 | 24.0%         |
| Pediatric radiation therapy                  | 135 | 23.0%         |
| Total body irradiation                       | 113 | 19.2%         |
| Total skin/electron                          | 107 | 18.2%         |
| Ultrasound localization                      | 89  | 15.1%         |
| Intraoperative                               | 64  | 10.9%         |
| Dynamic adaptive radiation therapy (DART)    | 28  | 4.8%          |
| Hyperthermia                                 | 17  | 2.9%          |
| Proton therapy                               | 16  | 2.7%          |

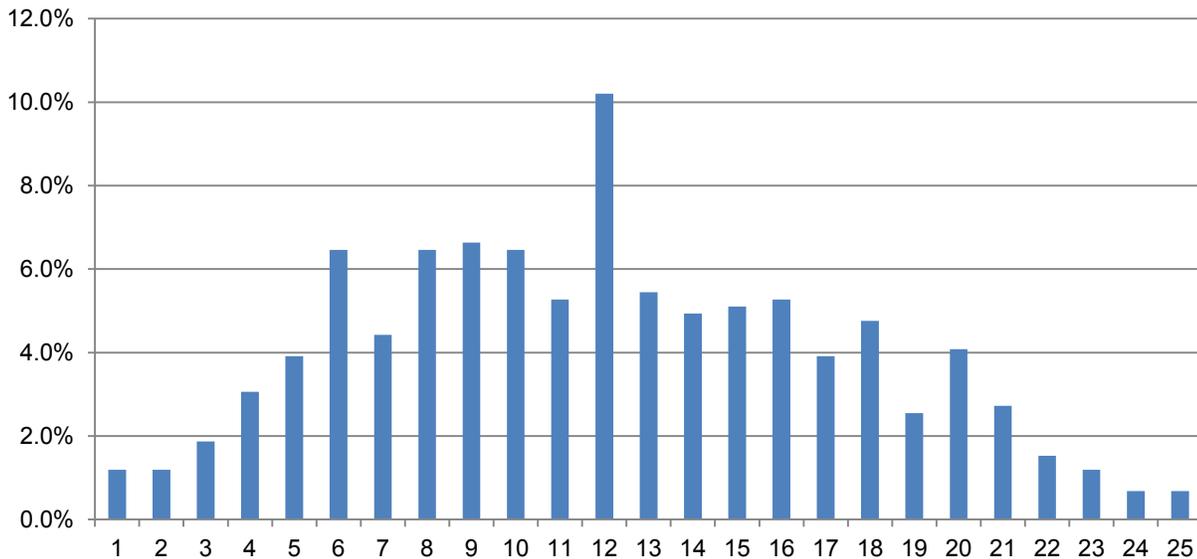
### Which of the following services does your facility provide?



### Number of services provided by each facility

|             | Frequency  | Valid Percent | Cumulative Percent |
|-------------|--|---------------|--------------------|
| 1           | 7  | 1.2%          | 1.2%               |
| 2           | 7  | 1.2%          | 2.4%               |
| 3           | 11   | 1.9%          | 4.3%               |
| 4           | 18   | 3.1%          | 7.3%               |
| 5           | 23   | 3.9%          | 11.2%              |
| 6           | 38   | 6.5%          | 17.7%              |
| 7           | 26   | 4.4%          | 22.1%              |
| 8           | 38   | 6.5%          | 28.6%              |
| 9           | 39   | 6.6%          | 35.2%              |
| 10          | 38   | 6.5%          | 41.7%              |
| 11          | 31   | 5.3%          | 46.9%              |
| 12          | 60   | 10.2%         | 57.1%              |
| 13          | 32   | 5.4%          | 62.6%              |
| 14          | 29   | 4.9%          | 67.5%              |
| 15          | 30   | 5.1%          | 72.6%              |
| 16          | 31   | 5.3%          | 77.9%              |
| 17          | 23   | 3.9%          | 81.8%              |
| 18          | 28   | 4.8%          | 86.6%              |
| 19          | 15   | 2.6%          | 89.1%              |
| 20          | 24   | 4.1%          | 93.2%              |
| 21          | 16   | 2.7%          | 95.9%              |
| 22          | 9  | 1.5%          | 97.4%              |
| 23          | 7  | 1.2%          | 98.6%              |
| 24          | 4  | 0.7%          | 99.3%              |
| 25          | 4  | 0.7%          | 100.0%             |
| Total       | 588  | 100.0%        |                    |
| Mean        | 12.0 (SD=5.4)                                    |               |                    |
| Percentiles | 5th=3.7, 25=7.9, 50th=11.7, 75th=16.0, 95th=21.2 |               |                    |

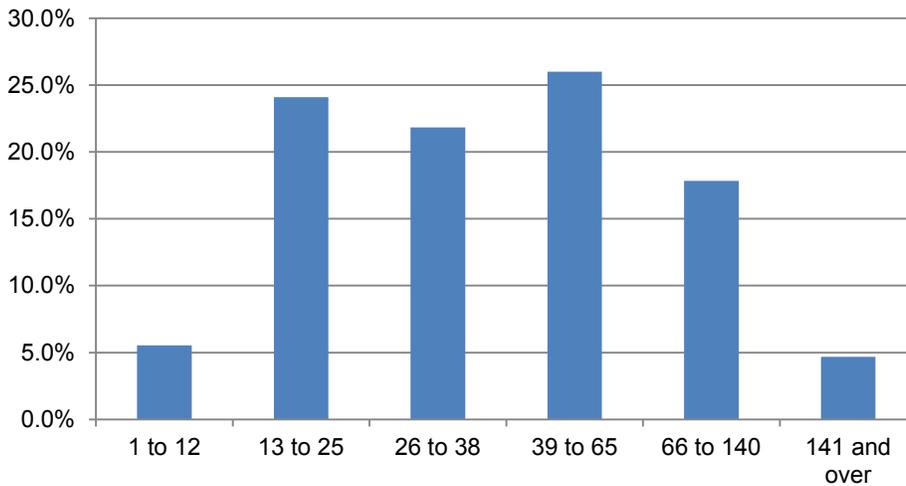
Number of services provided by each facility



### Number of patients receiving treatment per day

|              | Frequency                                 | Valid Percent | Cumulative Percent |
|--------------|---|---------------|--------------------|
| 1 to 12      | 30  | 5.2%          | 5.2%               |
| 13 to 25     | 139                                       | 24.3%         | 29.5%              |
| 26 to 38     | 126                                       | 22.0%         | 51.5%              |
| 39 to 65     | 150                                       | 26.2%         | 77.7%              |
| 66 to 140    | 103                                       | 18.0%         | 95.6%              |
| 141 and over | 25  | 4.4%          | 100.0%             |
| Total        | 573                                       | 100.0%        |                    |
| Mean         | 52.7 (SD= 54.8)                           |               |                    |
| Percentiles  | 5th=13, 25th=25, 50th=38, 75=63, 95th=139 |               |                    |

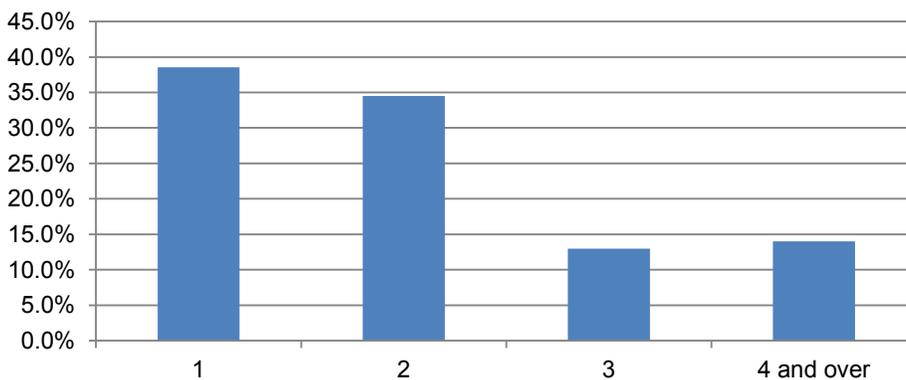
### Number of patients receiving treatment per day



### Number of linear accelerators in use at your facility

|             | Frequency                                      | Valid Percent | Cumulative Percent |
|-------------|--|---------------|--------------------|
| 1           | 219  | 38.6%         | 38.6%              |
| 2           | 197  | 34.7%         | 73.2%              |
| 3           | 74   | 13.0%         | 86.3%              |
| 4 and over  | 78   | 13.7%         | 100.0%             |
| Total       | 568  | 100.0%        |                    |
| Mean        | 2.3 (SD=2.4)                                   |               |                    |
| Percentiles | 5th .22, 25th=1.2 50th=1.8, 75th=2.7, 95th=5.7 |               |                    |

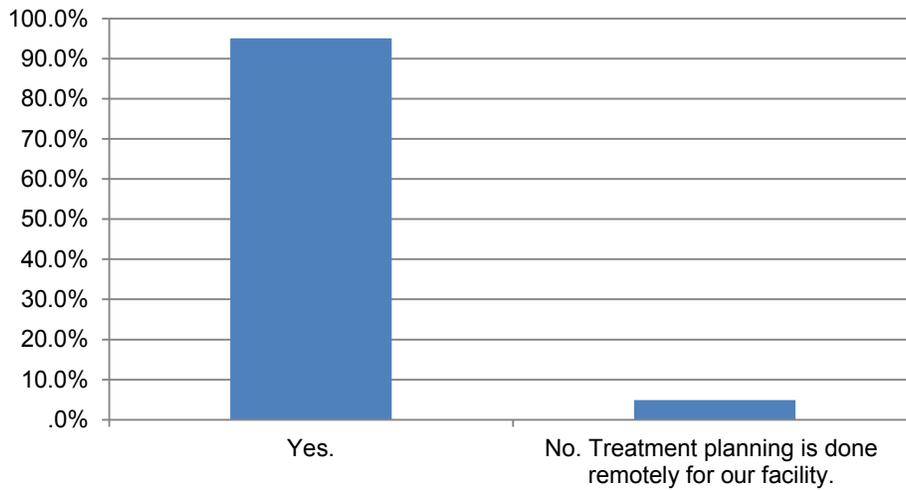
### Number of linear accelerators in use at your facility



**Are there treatment planning stations at your facility?**

|   | <b>N</b>   | <b>Valid Percent</b> |
|---|------------|----------------------|
| Yes.  | 546        | 95.1%                |
| No. Treatment planning is done remotely for our facility. | 28         | 4.9%                 |
| <b>Total</b>  | <b>574</b> | <b>100.0%</b>        |

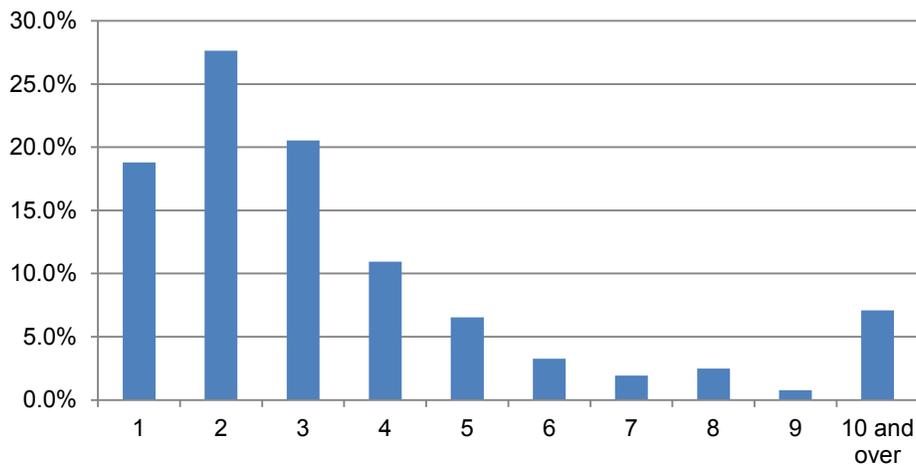
**Are there treatment planning stations at your facility?**



If you selected "yes" to the previous question, how many treatment planning stations do you have at your facility?

|             | Frequency                                  | Valid Percent | Cumulative Percent |
|-------------|--|---------------|--------------------|
| 1           | 98   | 18.8%         | 18.8%              |
| 2           | 144  | 27.6%         | 46.4%              |
| 3           | 107  | 20.5%         | 67.0%              |
| 4           | 57   | 10.9%         | 77.9%              |
| 5           | 34   | 6.5%          | 84.5%              |
| 6           | 17   | 3.3%          | 87.7%              |
| 7           | 10   | 1.9%          | 89.6%              |
| 8           | 13   | 2.5%          | 92.1%              |
| 9           | 4  | 0.8%          | 92.9%              |
| 10 and over | 37   | 7.1%          | 100.0%             |
| Total       | 521  | 100.0%        |                    |
| Mean        | 3.8 (SD=4.0)                               |               |                    |
| Percentiles | 5th=-, 25th=1.7, 50th=2.7, 75=4.3, 95=11.7 |               |                    |

If you selected "yes" to the previous question, how many treatment planning stations do you have at your facility?

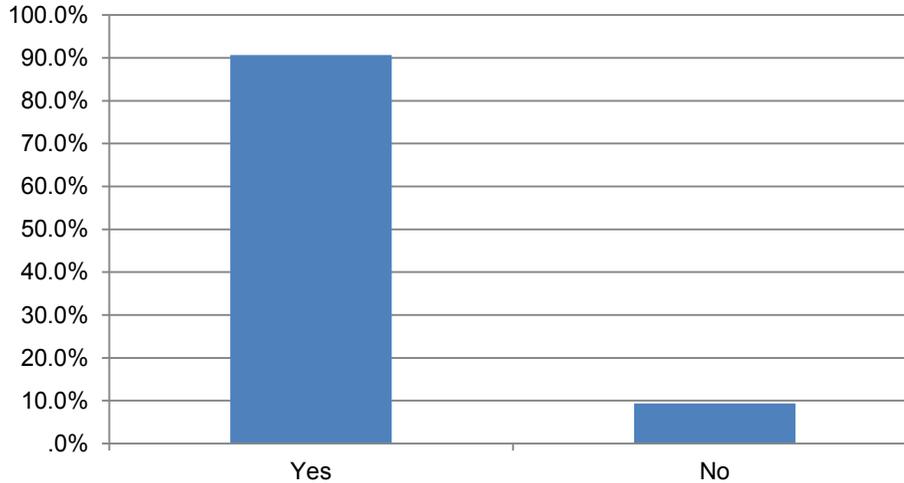


## Personnel Demographics

### Are you currently working in radiation therapy?

|       | N   | Valid Percent |
|-------|-----|---------------|
| Yes   | 593 | 90.7%         |
| No    | 61  | 9.3%          |
| Total | 654 | 100.0%        |

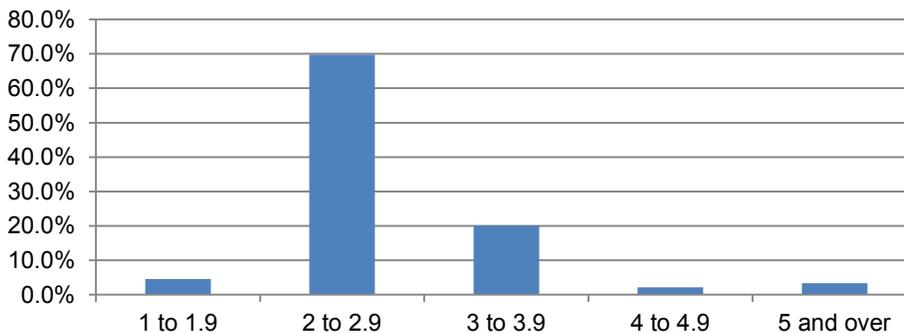
### Are you currently working in radiation therapy?



### On average, how many therapists per linear accelerator are scheduled at your facility?

|             | Frequency                                       | Valid Percent | Cumulative Percent |
|-------------|---|---------------|--------------------|
| 1 to 1.9    | 27  | 4.6%          | 4.6%               |
| 2 to 2.9    | 410   | 69.7%         | 74.3%              |
| 3 to 3.9    | 118   | 20.1%         | 94.4%              |
| 4 to 4.9    | 13  | 2.2%          | 96.6%              |
| 5 and over  | 20  | 3.4%          | 100.0%             |
| Total       | 588   | 100.0%        |                    |
| Mean        | 2.5 (SD=2.4)                                    |               |                    |
| Percentiles | 5th=1.5, 25th=1.8, 50th=2.2, 75th=2.8, 95th=3.9 |               |                    |

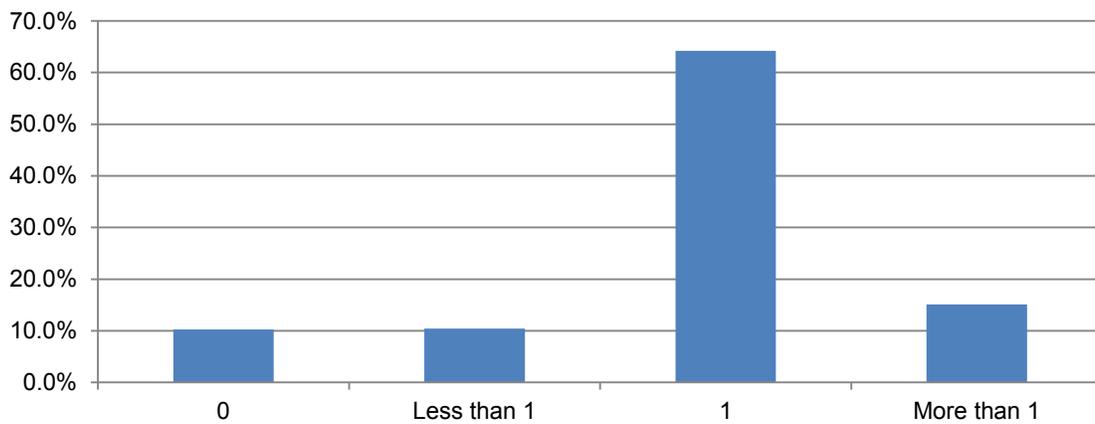
### On average, how many therapists per linear accelerator are scheduled at your facility?



**On average, how many dosimetrists per linear accelerator are scheduled at your facility?**

|             | Frequency                                     | Valid Percent | Cumulative Percent |
|-------------|---|---------------|--------------------|
| 0           | 57  | 10.3%         | 10.3%              |
| Less than 1 | 58  | 10.4%         | 20.7%              |
| 1           | 357   | 64.2%         | 84.9%              |
| More than 1 | 84  | 15.1%         | 100.0%             |
| Total       | 556   | 100.0%        |                    |
| Mean        | 1.0 (SD=0.7)                                  |               |                    |
| Percentiles | 5th=-, 25th=0.9, 50th=1.0, 75th=1.2, 95th=2.0 |               |                    |

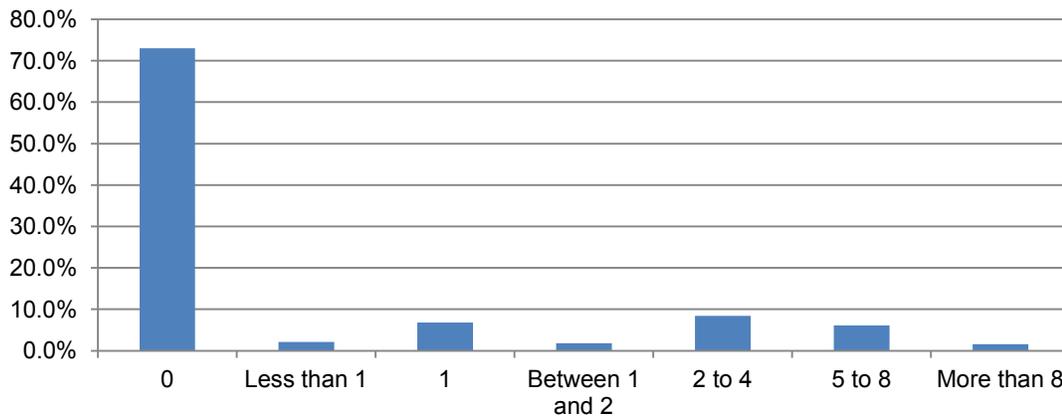
**On average, how many dosimetrists per linear accelerator are scheduled at your facility?**



**How many hours per day does your facility routinely schedule only one radiation therapist per linear accelerator?**

|                       | Frequency   | Valid Percent | Cumulative Percent |
|-----------------------|---|---------------|--------------------|
| 0 hours               | 406   | 73.0%         | 73.0%              |
| Less than 1 hour      | 12  | 2.2%          | 75.2%              |
| 1 hour                | 38  | 6.8%          | 82.0%              |
| Between 1 and 2 hours | 10  | 1.8%          | 83.8%              |
| 2 to 4 hours          | 47  | 8.5%          | 92.3%              |
| 5 to 8 hours          | 34  | 6.1%          | 98.4%              |
| More than 8 hours     | 9   | 1.6%          | 100.0%             |
| Total                 | 556   | 100.0%        |                    |
| Mean                  | 1.0 hour (SD=2.8 hours)   |               |                    |
| Percentiles           | 5th=-, 25th=-, 50th=6 minutes, 75th=43 minutes, 95th=4 hours and 46 minutes |               |                    |

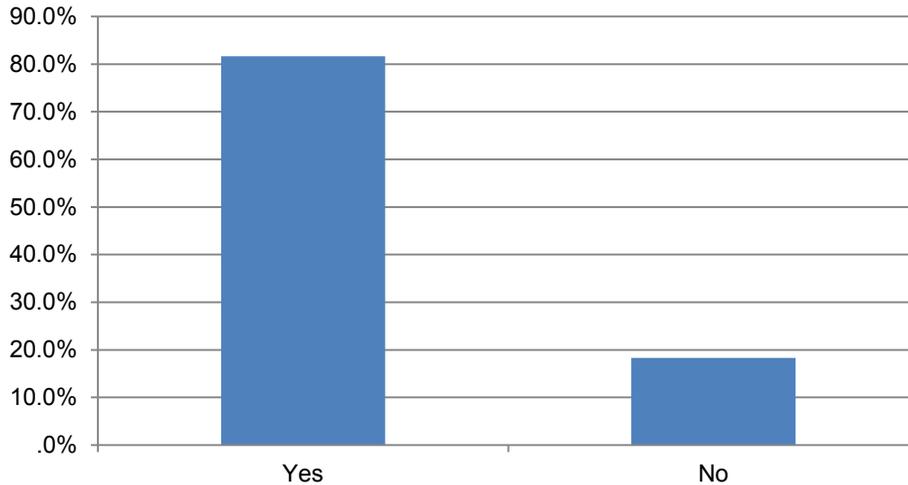
**How many hours per day does your facility routinely schedule only one radiation therapist per linear accelerator?**



**Do you have a physicist at your facility daily?**

|       | <b>N</b> | <b>Valid Percent</b> |
|-------|----------|----------------------|
| Yes   | 468      | 81.7%                |
| No    | 105      | 18.3%                |
| Total | 573      | 100.0%               |

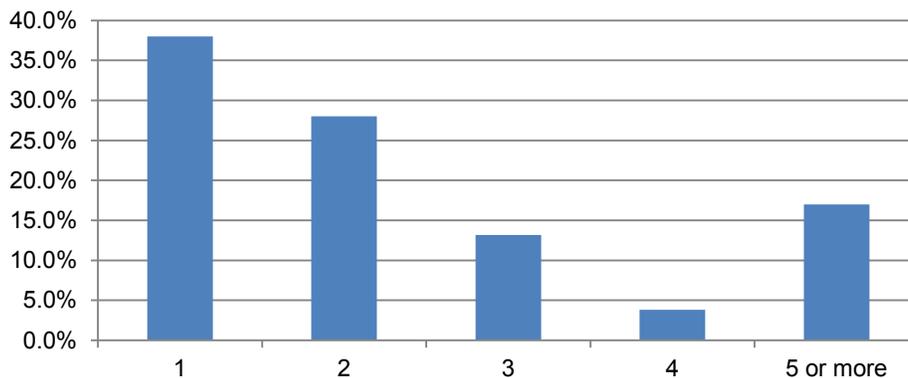
**Do you have a physicist at your facility daily?**



**If you selected “yes” on the previous question, how many FTE physicists do you have on staff? (Rounded to the nearest whole number.)**

|             | <b>Frequency</b>                            | <b>Valid Percent</b> |
|-------------|---|----------------------|
| 1           | 179   | 38.0%                |
| 2           | 132   | 28.0%                |
| 3           | 62  | 13.2%                |
| 4           | 18  | 3.8%                 |
| 5 or more   | 80  | 17.0%                |
| Total       | 471   | 100.0%               |
| Mean        | 3.0 (SD=4.0)                                |                      |
| Percentiles | 5th=0.8 25th=1.1 50th=1.9 75th=3.1 95th=9.5 |                      |

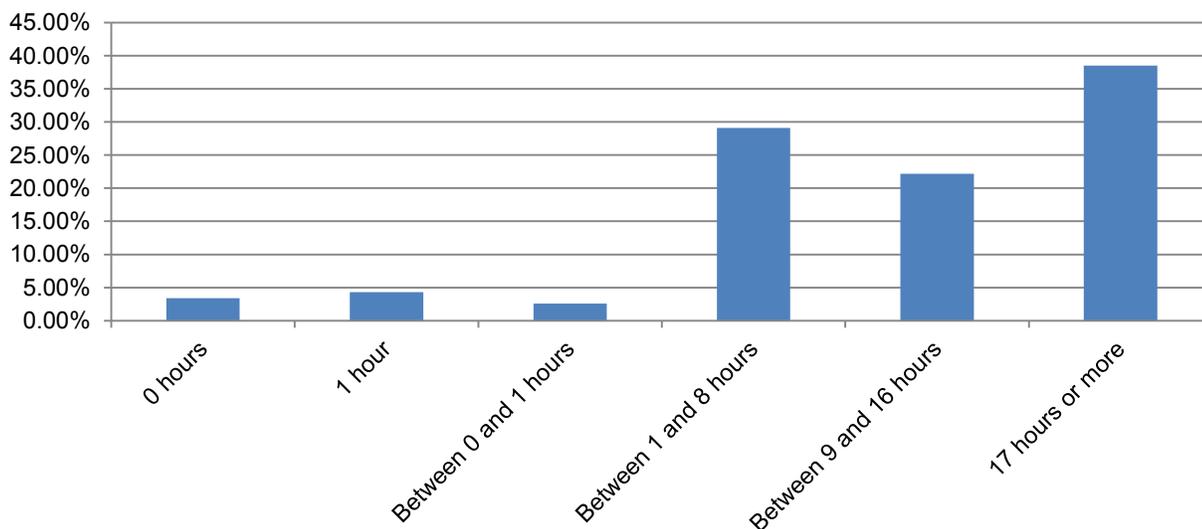
**If you selected “yes” on the previous question, how many FTE physicists do you have on staff?**



**If you do not have an FTE physicist on staff at your facility, how many hours per week is there a physicist on site?**

|                        | Frequency  | Valid Percent | Cumulative Percent |
|------------------------|--|---------------|--------------------|
| 0 hours                | 4  | 3.4%          | 3.4%               |
| 1 hour                 | 5  | 4.3%          | 7.7%               |
| Between 0 and 1 hours  | 3  | 2.6%          | 10.3%              |
| Between 1 and 8 hours  | 34   | 29.1%         | 39.4%              |
| Between 9 and 16 hours | 26   | 22.2%         | 61.6%              |
| 17 hours or more       | 45   | 38.5%         | 100.0%             |
| Total                  | 117  | 100.0%        |                    |
| Mean                   | 19.0 (SD=18.2)                                     |               |                    |
| Percentiles            | 5th=0.4, 25th=5.6, 50th=15.4, 75th=24.0, 95th=63.6 |               |                    |

**If you do not have an FTE physicist on staff at your facility, how many hours per week is there a physicist on site?**



## Retirement, Turnover and Inactive Demographics

At what age do employees typically retire from your facility?

|               | Age  |
|---------------|------|
| <b>N</b>      | 420  |
| <b>Mean</b>   | 63.9 |
| <b>SD</b>     | 3.3  |
| <b>Median</b> | 65.0 |

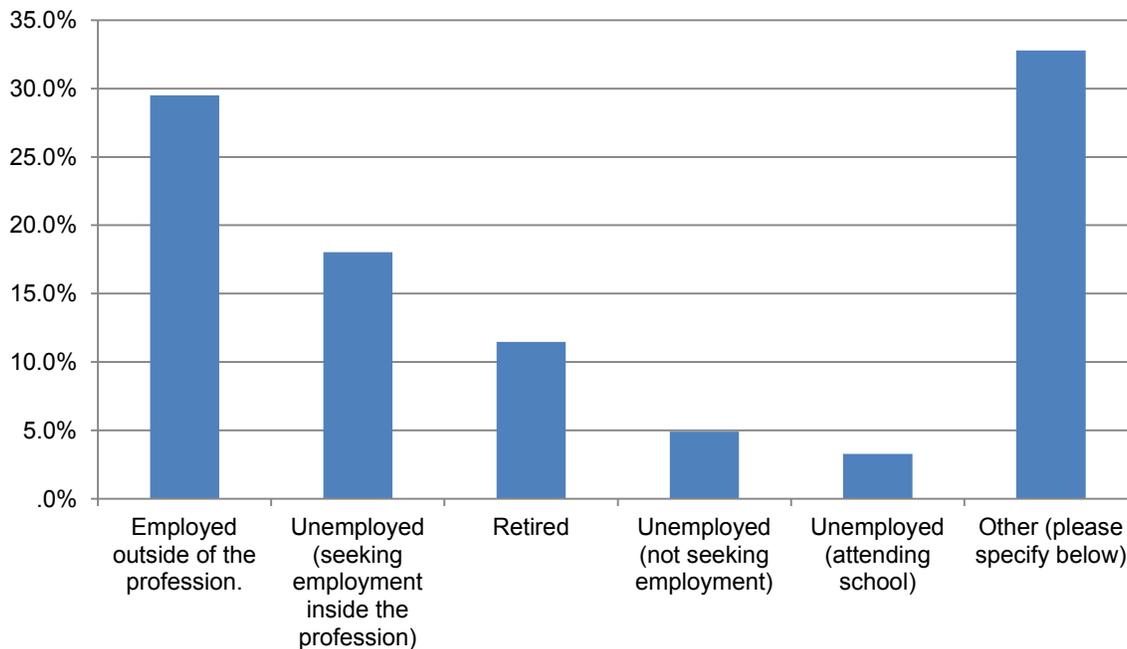
Over the last two years, how many full-time equivalent (FTE) radiation therapists or medical dosimetrists in your department have left for any of the following reasons?

|               | Retirement |      | Layoffs |      | Terminated With Cause |      | Left to Work in Another Profession |      | Personal Reasons (health, family, continuing their education, etc.) |      | Other Reasons |      | Total |      |
|---------------|------------|------|---------|------|-----------------------|------|------------------------------------|------|---|------|---------------|------|-------|------|
|               | 2012       | 2013 | 2012    | 2013 | 2012                  | 2013 | 2012                               | 2013 | 2012  | 2013 | 2012          | 2013 | 2012  | 2013 |
| <b>N</b>      | 416        | 417  | 419     | 417  | 426                   | 428  | 426                                | 426  | 431   | 420  | 398           | 400  | -     | -    |
| <b>Mean</b>   | .08        | .10  | .12     | .15  | .14                   | .19  | .12                                | .14  | .21   | .18  | .18           | .27  | .85   | 1.03 |
| <b>SD</b>     | .29        | .31  | .55     | .57  | .38                   | .56  | .40                                | .44  | .67   | .54  | .54           | .68  | 2.83  | 3.09 |
| <b>Median</b> | .00        | .00  | .00     | .00  | .00                   | .00  | .00                                | .00  | .00   | .00  | .00           | .00  | .00   | .00  |

**Choose the primary reason you are unemployed or employed outside of radiation therapy.**

|   | <b>N</b> | <b>Valid Percent</b> |
|---|----------|----------------------|
| Employed outside of the profession.                   | 18       | 29.5%                |
| Unemployed (seeking employment inside the profession) | 11       | 18.0%                |
| Unemployed (attending school)                         | 7        | 11.5%                |
| Unemployed (not seeking employment)                   | 3        | 4.9%                 |
| Retired   | 2        | 3.3%                 |
| Other (please specify below)                          | 20       | 32.8%                |
| Total   | 61       | 100.0%               |

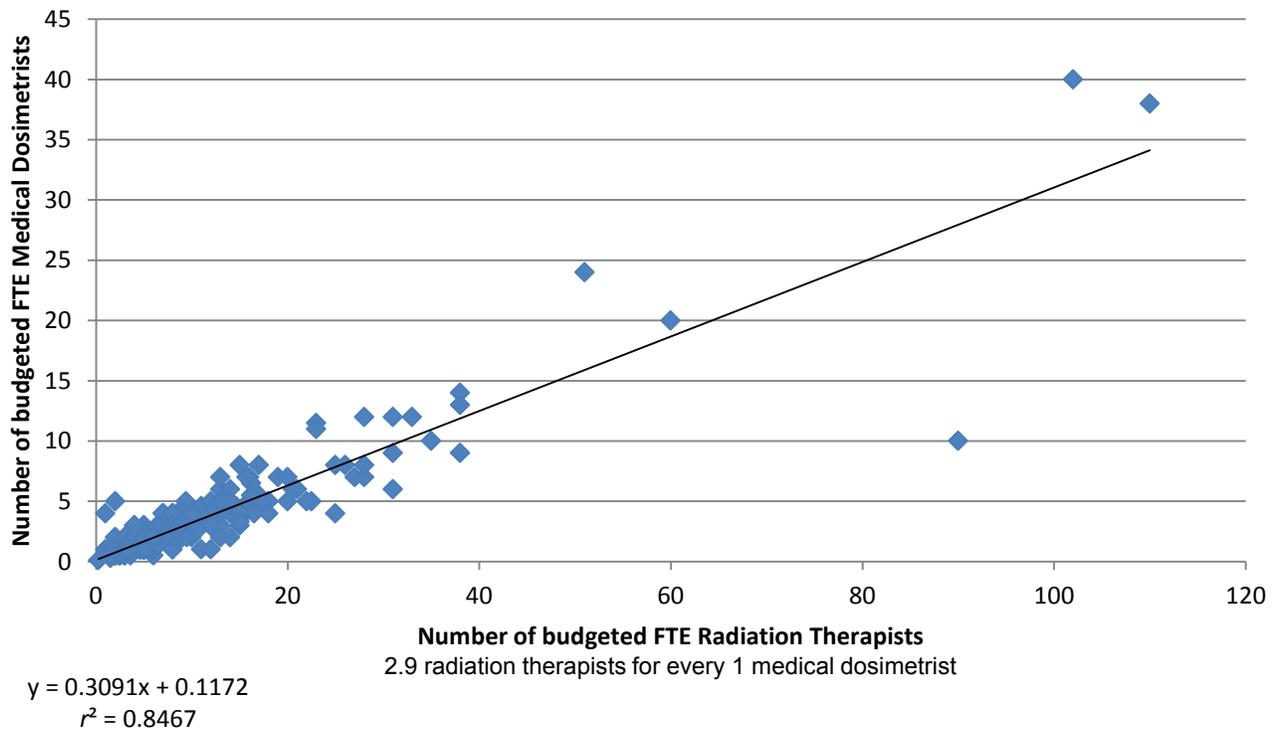
**Choose the primary reason you are unemployed or employed outside of radiation therapy.**



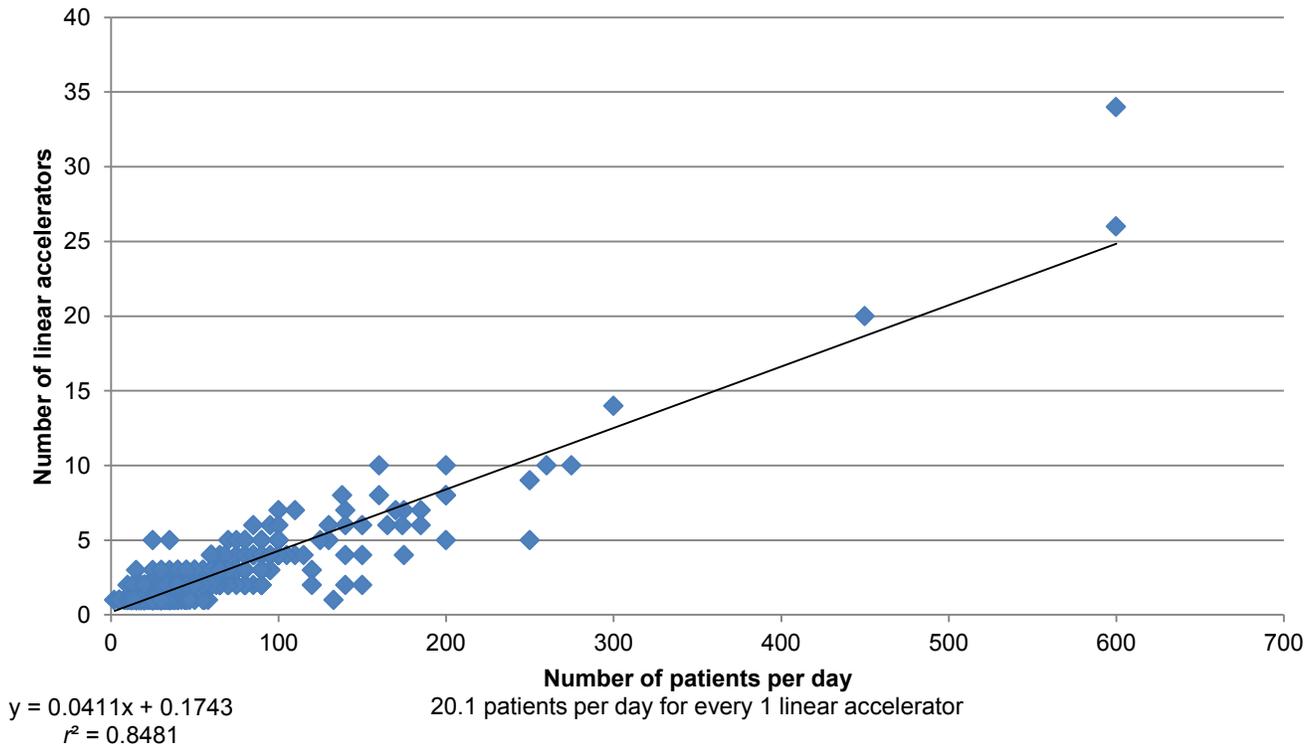
## Appendix A. Scatterplots

Below are scatterplots that demonstrate the observed relation between selected variables from the survey. Please note that these scatterplots do not necessarily demonstrate any causal relation. They merely show how the given factors measured in the survey vary from each other. In each instance below, one variable is treated as independent (charted on the x-axis) and another is treated as dependent (charted on the y-axis). The diamond-shaped points on the chart represent each of the observed data points from the survey. The diagonal line running across the chart represents the best-fit straight line through the observed data points. This is derived from the regression equation in the lower left-hand corner of the chart. The  $r^2$  measures the proportion of variance among the data points accounted for by the regression equation. The closer the  $r^2$  is to 1, the better the line fits the data; the closer the  $r^2$  is to 0, the more poorly the line fits the data. Also listed is the ratio of the variable on the x-axis to the variable on the y-axis.

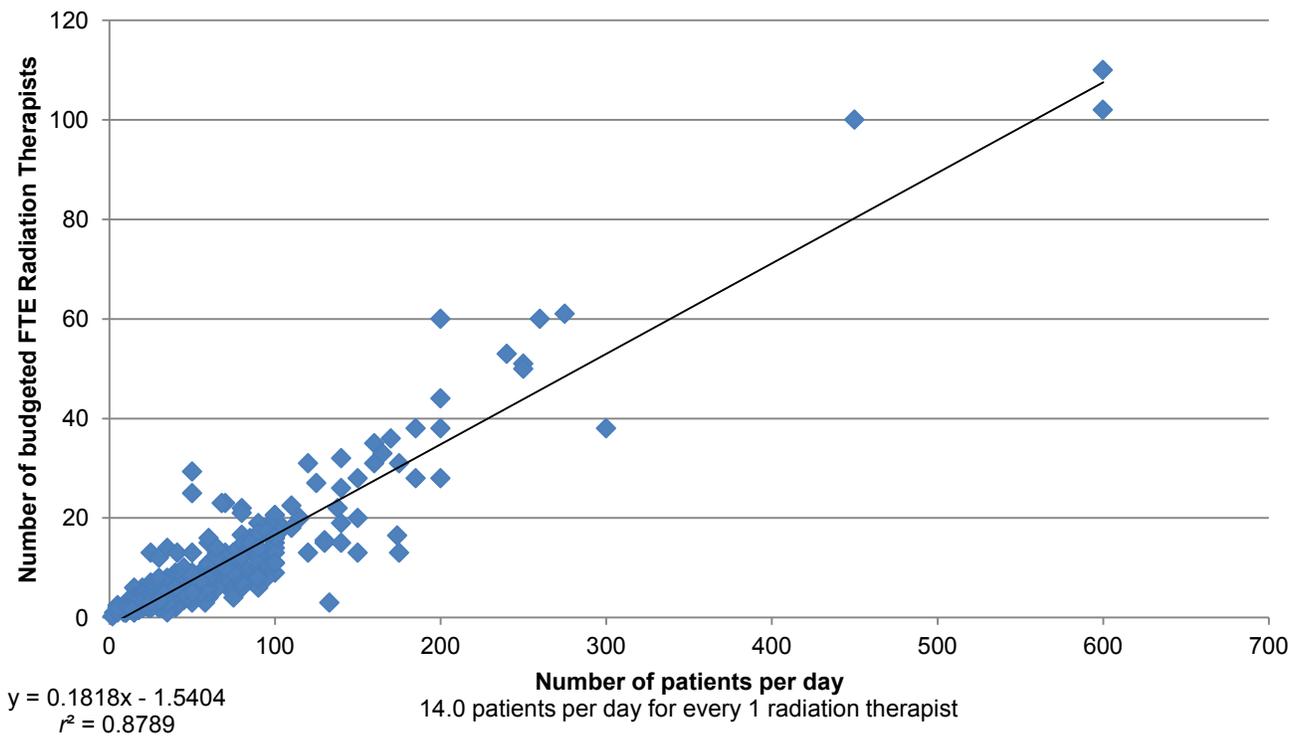
### Number of Budgeted FTE Medical Dosimetrists per Facility by Number of Budgeted FTE Radiation Therapists per Facility



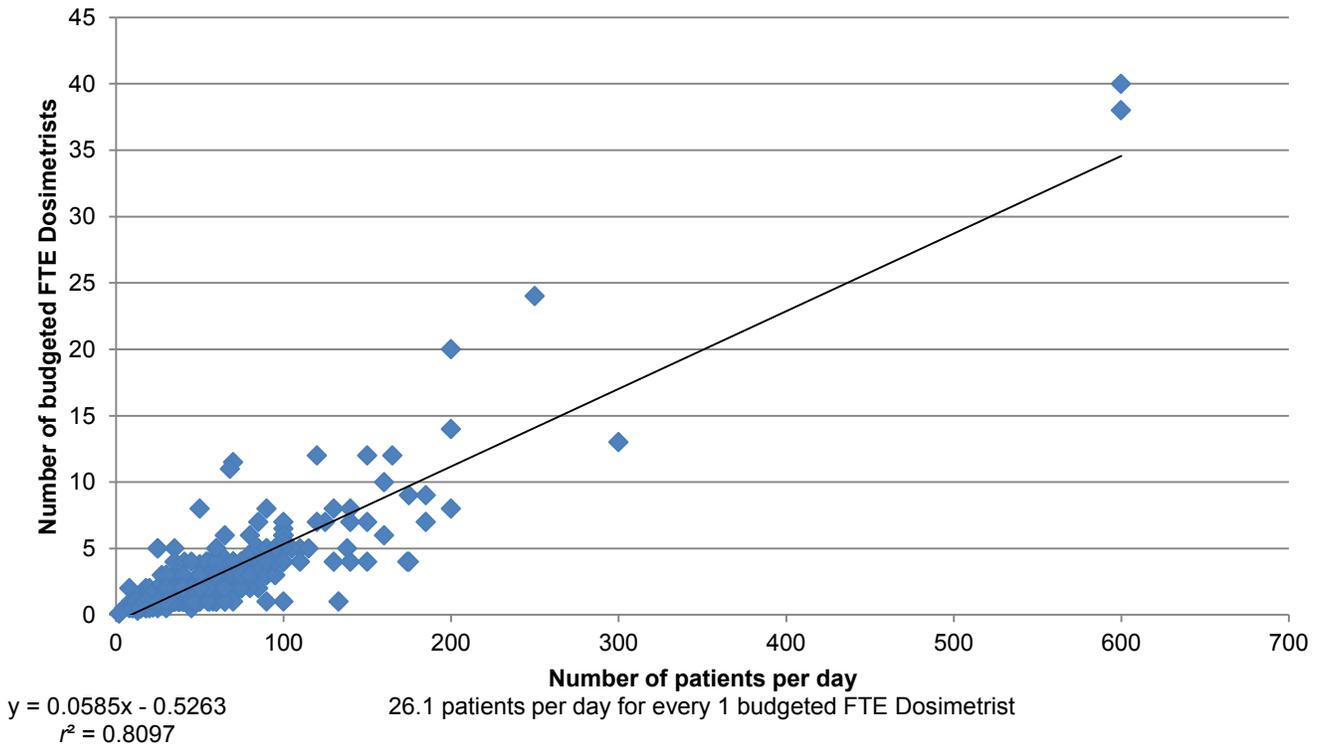
### Number of linear accelerators used at your facility by patients treated per day



### Number of budgeted FTE radiation therapists per facility by patients treated per day



### Number of budgeted FTE dosimetrists per facility by patients treated per day



### Number of budgeted FTE physicists per facility by patients treated per day by

