

# Overview of All SEER-Medicare Publications Through 2012

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# Overview

- Information was extracted from the National Cancer Institute (NCI) online reference database for “SEER Medicare” publications
  - <http://healthservices.cancer.gov/seermedicare/overview/pubsearch.html>
  - Data accessed May 15, 2012- articles published in 2012 may be underrepresented due to reporting lag.
  - 714 citations retrieved
  - NCI classified all publications according to the following:
    - 14 topic areas (e.g., economics of cancer, outcomes, etc.)
    - 19 tumor types (e.g., breast, prostate, etc.)
- Summary measures were calculated by year, tumor site, topic area, and author
- Exploratory analyses were conducted to assess publication frequency relative to cancer incidence, prevalence, and deaths

# SEER-Medicare Publications Search

## Advanced Search

**Search Criteria**

Data Source/Project/Initiative: SEER-Medicare Linked Database

Topic: *(hold CTRL while clicking to select multiple options, or to de-select an option)*

- Economics of Cancer
- Health Care Systems
- Health Disparities
- Outcomes (All)
  - Clinical Outcomes
- Palliative & End-of-life Care
- Prevention

OR  
 AND

Tumor Site: *(hold CTRL while clicking to select multiple options, or to de-select an option)*

- All sites or no specific site
- Brain & Other Nervous System
- Breast
- Cervical
- Colorectal
- Corpus Uteri
- Esophagus

OR  
 AND

Keywords: *(how this works)*

at least one of these words:

Author: *(how this works)*

at least one of these words:

Title: *(how this works)*

at least one of these words:

Date Published: *(if searching by month, publications without a month will NOT be listed)*

Start Year:  Month:

End Year:  Month:

Search Options: *(how this works)*

All fields must match the search criteria

At least one field must match search criteria

## Topic:

1. Economics of Cancer
2. Health Care Systems
3. Health Disparities
4. Outcomes (All)
5. Clinical Outcomes
6. Palliative & End-of-Life Care
7. Prevention
8. Quality of Care
9. Research Methodology
10. Risk Factors
11. Screening
12. Surveillance
13. Survivorship
14. Treatment

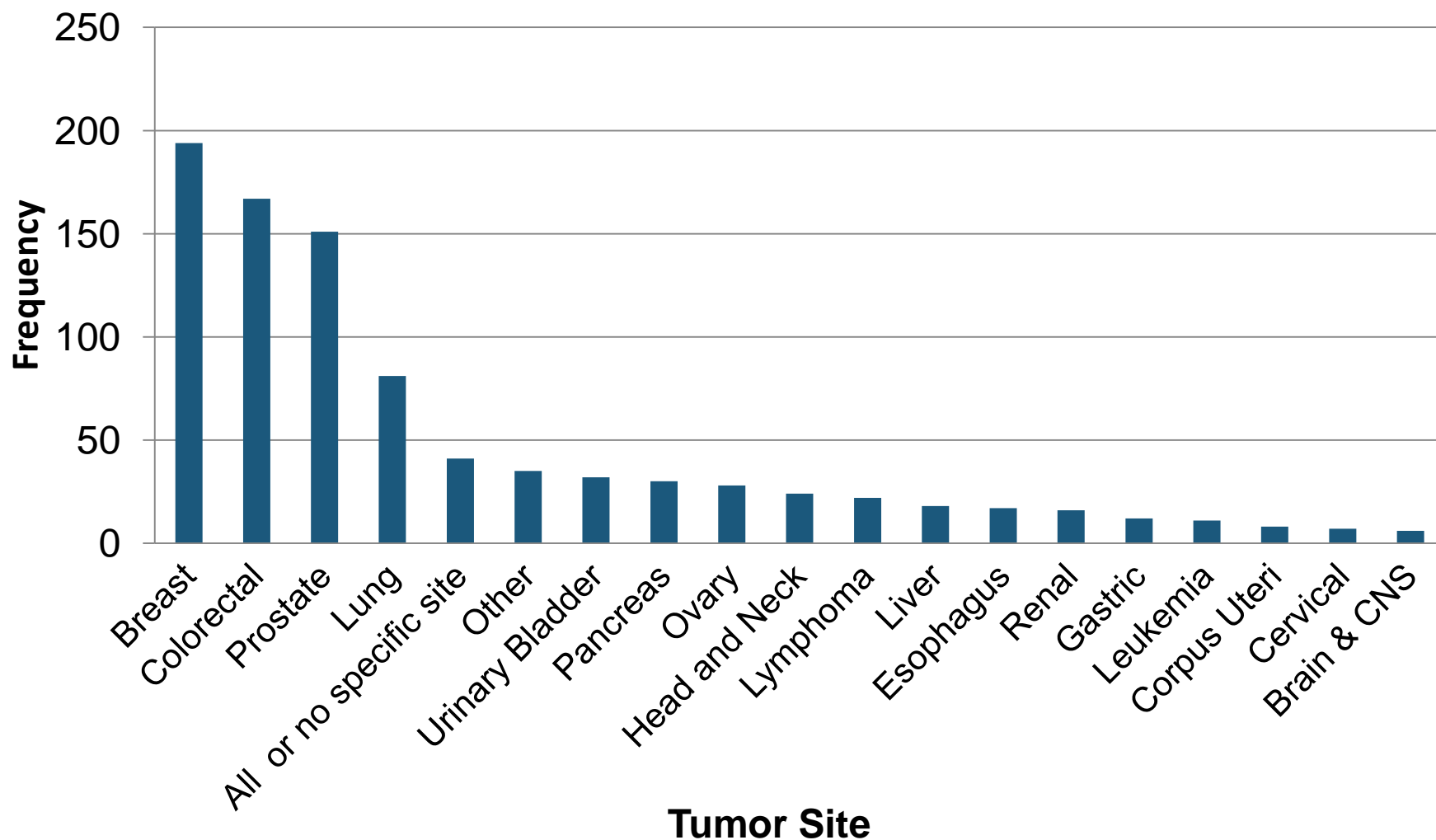
## Tumor Site:

1. All sites or no specific site
2. Brain & CNS
3. Breast
4. Cervical
5. Colorectal
6. Corpus Uteri
7. Esophagus
8. Gastric
9. Head and Neck
10. Leukemia
11. Liver
12. Lung
13. Lymphoma
14. Ovary
15. Pancreas
16. Prostate
17. Renal
18. Urinary Bladder
19. Other

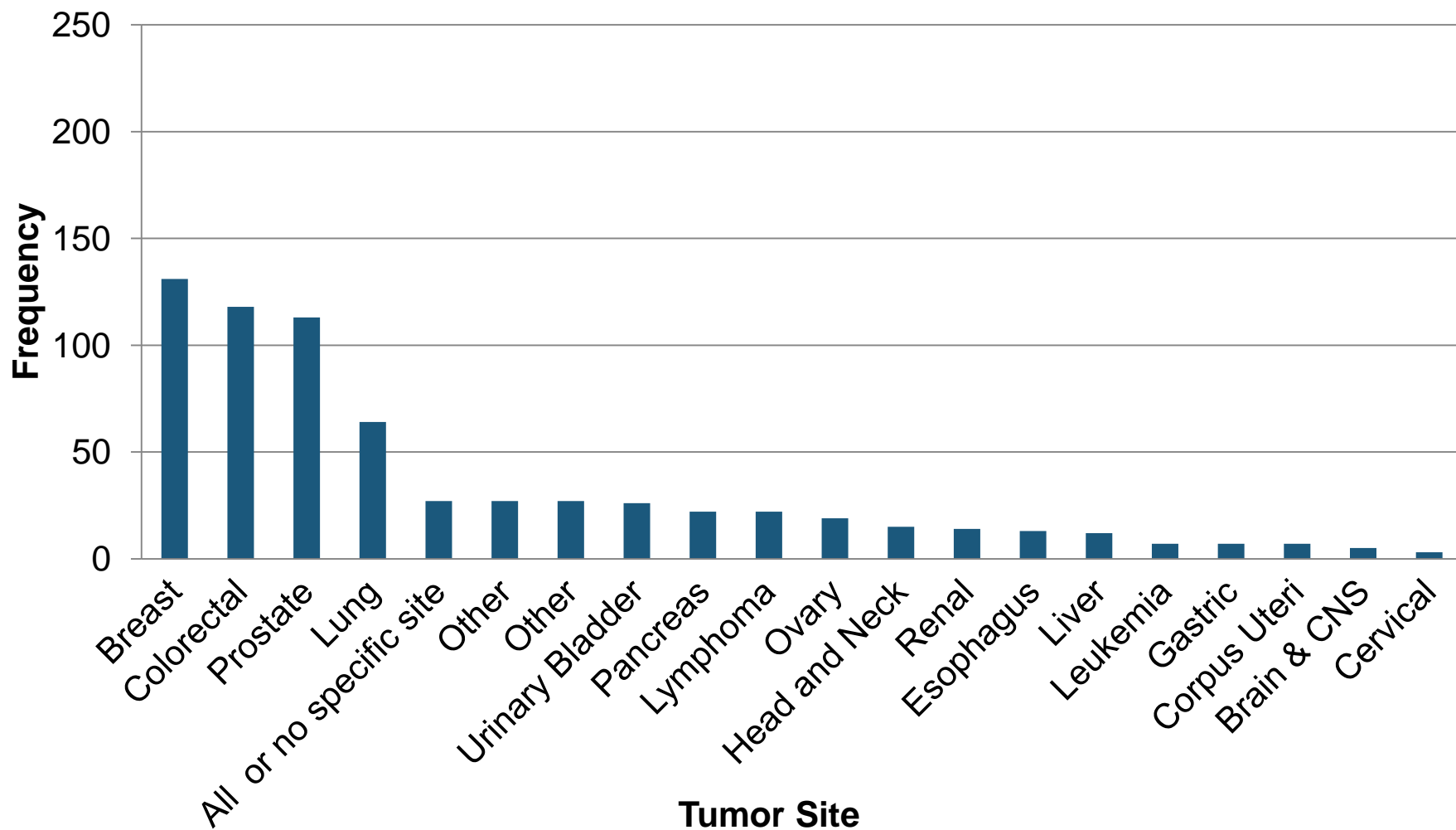
Summary of Publications

# **BY TUMOR SITE, YEAR, AND TOPIC AREA**

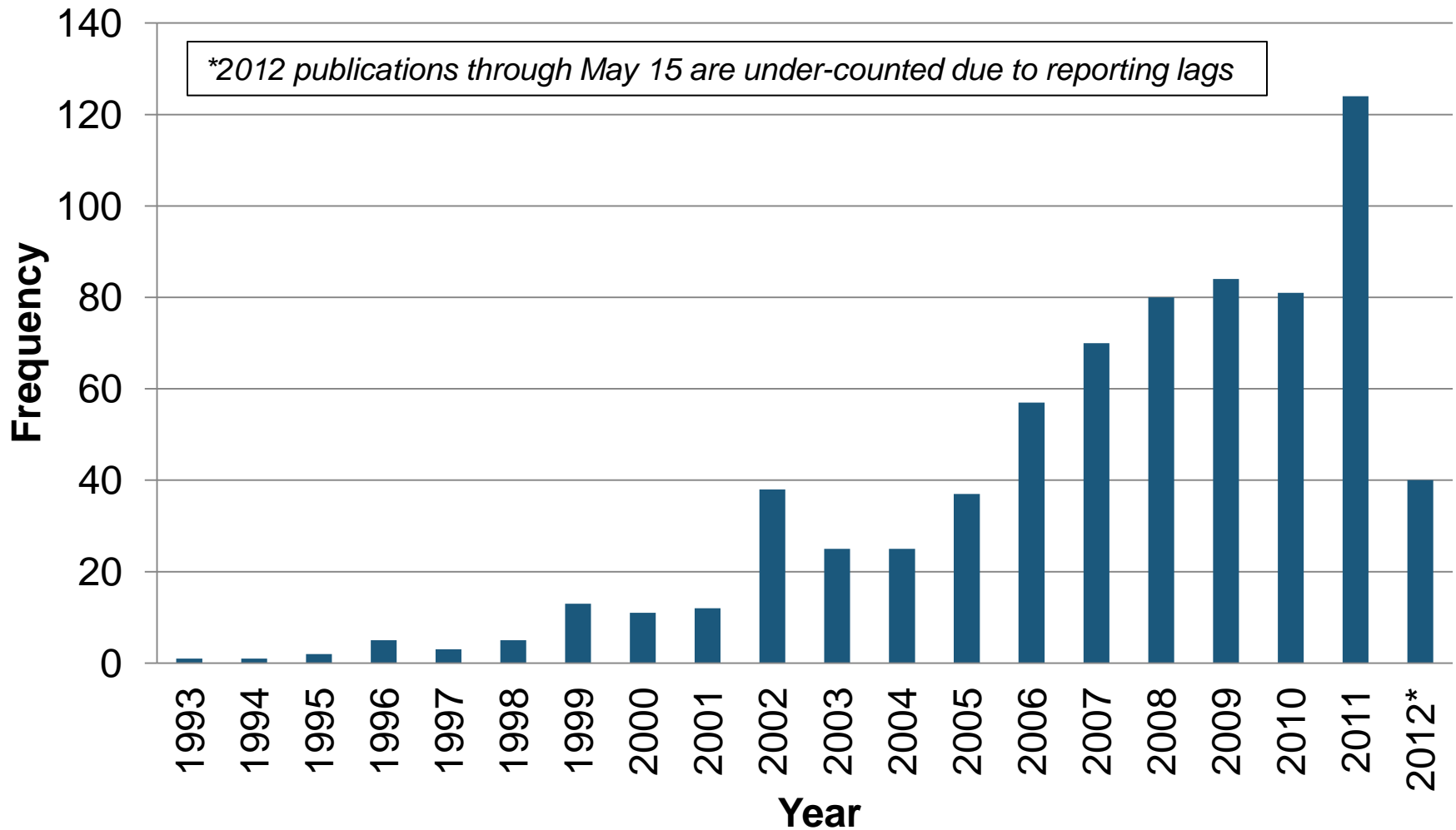
# Publications by Tumor Site (All Years)



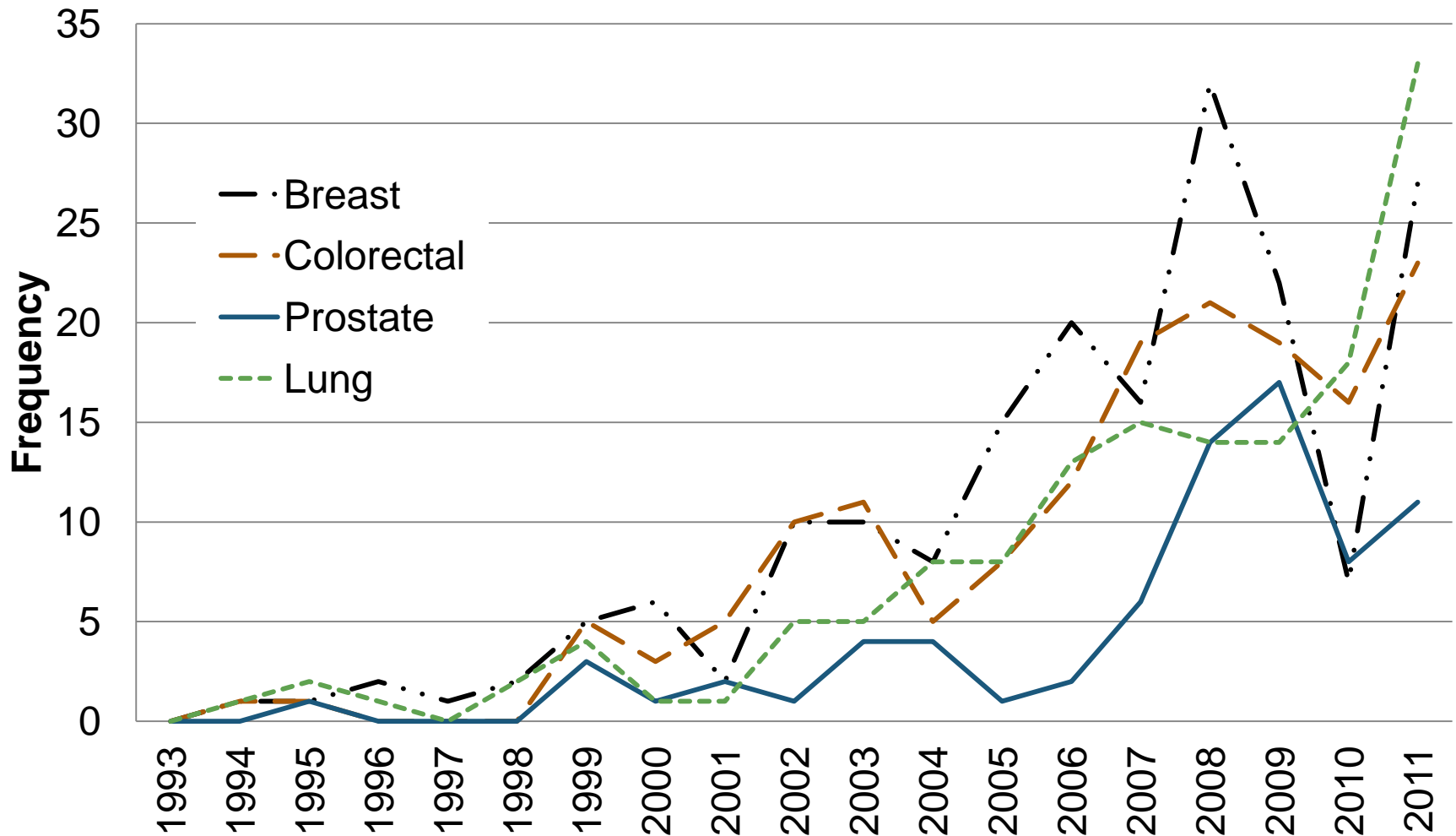
# Publications by Tumor Site (2006-2012)



# Publications by Year (1993-2012)

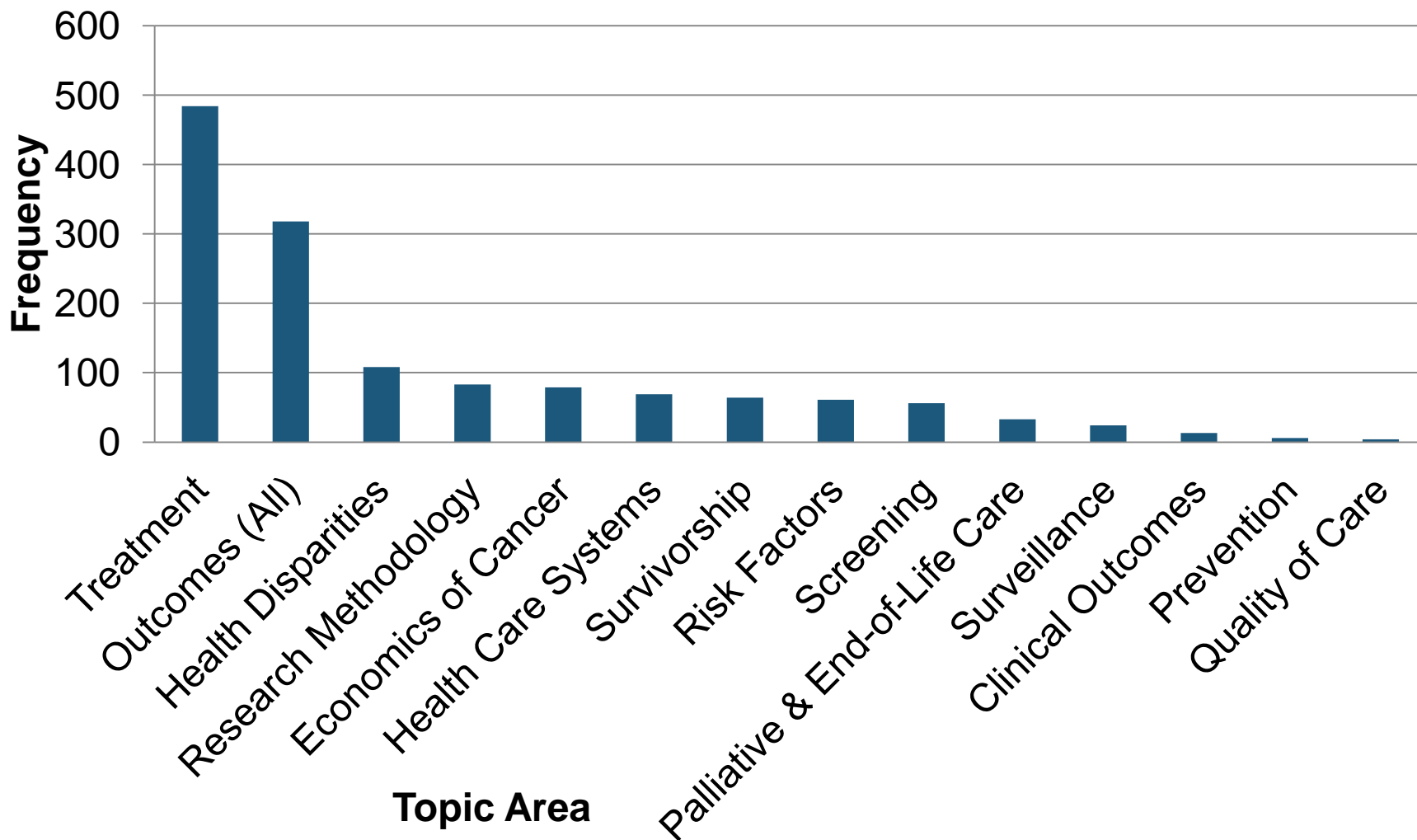


# Publications by Top 4 Tumor Sites and Year

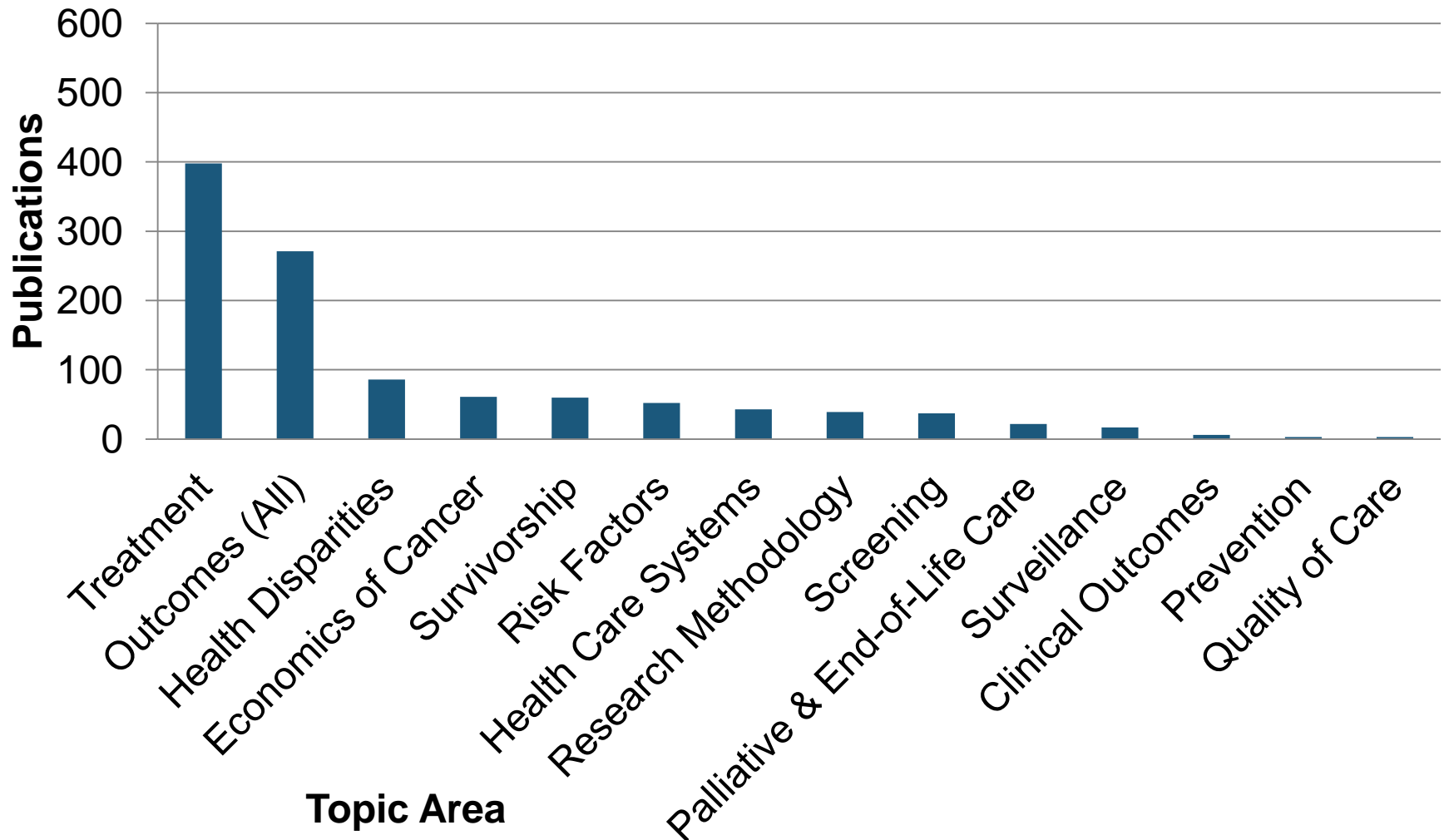




# Publications by Topic Area (All Years)



# Publications by Topic Area (2006-2012)



Exploratory Analyses

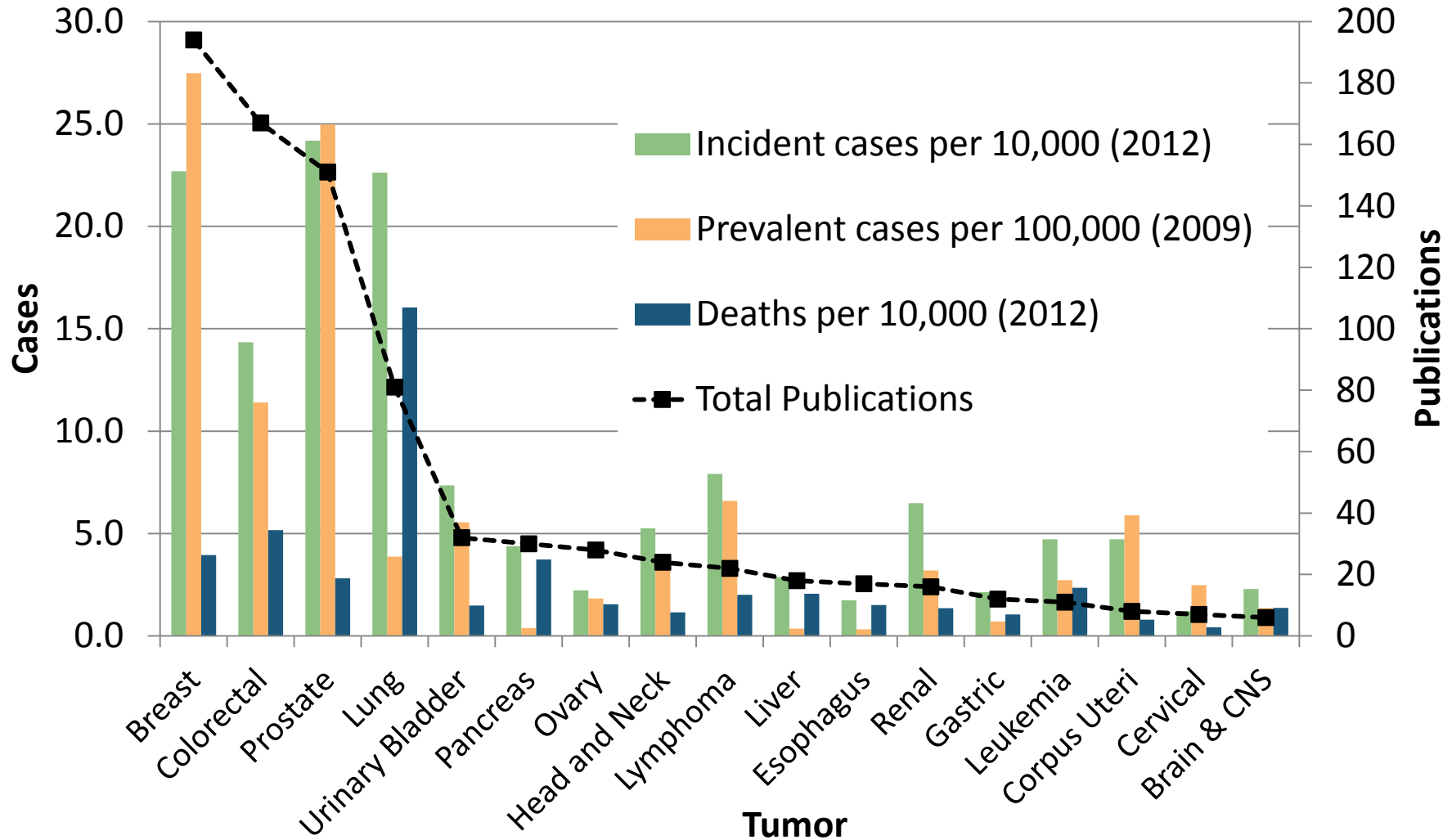
# **PUBLICATIONS RELATIVE TO POPULATION SIZE**

# Methodology

- Publication counts were plotted against tumor type
- Counts of incident and prevalent patients, as well as deaths from cancer, were taken from SEER estimates (see Appendix for references)
- Ratios of publications to these patient counts were estimated
  - Publications divided by incidence (per 10,000 patients)
  - Publications divided by prevalence (per 100,000 patients)
  - Publications divided by deaths (per 1,000 deaths)\*
  - Higher numbers reflect more publications per patient
  - The median publication ratio across all tumors was used as an index for establishing high versus low ratios

*(\*Note that the deaths were divided by 10,000 for creating the figure.)*

# Publications Relative to Incidence, Prevalence, and Deaths



# Publications per Patient According to Incidence, Prevalence, and Death

|   | Breast | Colorectal | Prostate | Lung | Urinary Bladder | Pancreas | Ovary | Head & Neck | Lymphoma | Liver | Esophagus | Renal | Gastric | Leukemia | Corpus Uteri | Cervical | Brain & CNS |
|---|--------|------------|----------|------|-----------------|----------|-------|-------------|----------|-------|-----------|-------|---------|----------|--------------|----------|-------------|
| <b>Total Publications</b>                         | 194    | 167        | 151      | 81   | 32              | 30       | 28    | 24          | 22       | 18    | 17        | 16    | 12      | 11       | 8            | 7        | 6           |
| <b>% incident patients ≥ 65 years (2004-2009)</b> | 41%    | 61%        | 59%      | 68%  | 72%             | 67%      | 46%   | 44%         | 50%      | 45%   | 60%       | 49%   | 63%     | 53%      | 41%          | 19%      | 35%         |
| <b>Pub/Incidence ratio (per 10,000)</b>           | 8.6    | 11.6       | 6.2      | 3.6  | 4.4             | 6.8      | 12.6  | 4.6         | 2.8      | 6.3   | 9.7       | 2.5   | 5.6     | 2.3      | 1.7          | 5.8      | 2.6         |
| <b>Pub/Prevalence ratio (per 100,000)</b>         | 7.1    | 14.6       | 6.0      | 20.9 | 5.8             | 78.3     | 15.3  | 6.8         | 3.3      | 50.6  | 53.4      | 5.0   | 17.1    | 4.0      | 1.4          | 2.8      | 4.4         |
| <b>Pub/Death ratio (per 1,000)</b>                | 4.9    | 3.2        | 5.4      | 0.5  | 2.2             | 0.8      | 1.8   | 2.1         | 1.1      | 0.9   | 1.1       | 1.2   | 1.1     | 0.5      | 1.0          | 1.7      | 0.4         |

Notes: Higher numbers indicate more publications per patient. See next slide for comparisons to the median ratios.

# Publication Ratios Standardized to the Median Ratio

|  | Breast | Colorectal | Prostate | Lung | Urinary Bladder | Pancreas | Ovary | Head & Neck | Lymphoma | Liver | Esophagus | Renal | Gastric | Leukemia | Corpus Uteri | Cervical | Brain & CNS |
|--|--------|------------|----------|------|-----------------|----------|-------|-------------|----------|-------|-----------|-------|---------|----------|--------------|----------|-------------|
| <b>Total Publications</b>                        | 194    | 167        | 151      | 81   | 32              | 30       | 28    | 24          | 22       | 18    | 17        | 16    | 12      | 11       | 8            | 7        | 6           |
| <b>% incident patients ≥65 years (2004-2009)</b> | 41%    | 61%        | 59%      | 68%  | 72%             | 67%      | 46%   | 44%         | 50%      | 45%   | 60%       | 49%   | 63%     | 53%      | 41%          | 19%      | 35%         |
| <b>Pub/Incidence ratio (per 10,000)</b>          | 1.5    | 2.1        | 1.1      | 0.6  | 0.8             | 1.2      | 2.2   | 0.8         | 0.5      | 1.1   | 1.7       | 0.4   | 1.0     | 0.4      | 0.3          | 1.0      | 0.5         |
| <b>Pub/Prevalence ratio (per 100,000)</b>        | 1.0    | 2.2        | 0.9      | 3.1  | 0.9             | 11.5     | 2.3   | 1.0         | 0.5      | 7.5   | 7.9       | 0.7   | 2.5     | 0.6      | 0.2          | 0.4      | 0.7         |
| <b>Pub/Death ratio (per 1,000)</b>               | 4.3    | 2.8        | 4.7      | 0.4  | 1.9             | 0.7      | 1.6   | 1.8         | 1.0      | 0.8   | 1.0       | 1.0   | 1.0     | 0.4      | 0.9          | 0.9      | 0.4         |

Notes: Ratios reflect the tumor-specific publication ratio relative to median publication ratio (see previous slide for non-standardized ratios). Values above 1.0 indicate ratios higher than the median, and values below 1.0 indicate ratios below the median (shaded orange).

# Conclusions

- There has been steady growth in the number of publications over time using the SEER-Medicare data
- Breast, colorectal, prostate, and lung are the tumor sites with the highest number of publications
  - This corresponds well with estimates of incidence and prevalence in the United States population
- The number of publications appears to align better with incidence and prevalence than with death, particularly for more common cancers
- Leukemia, lymphoma, lung, and renal might be under-represented in terms of the absolute number of publications



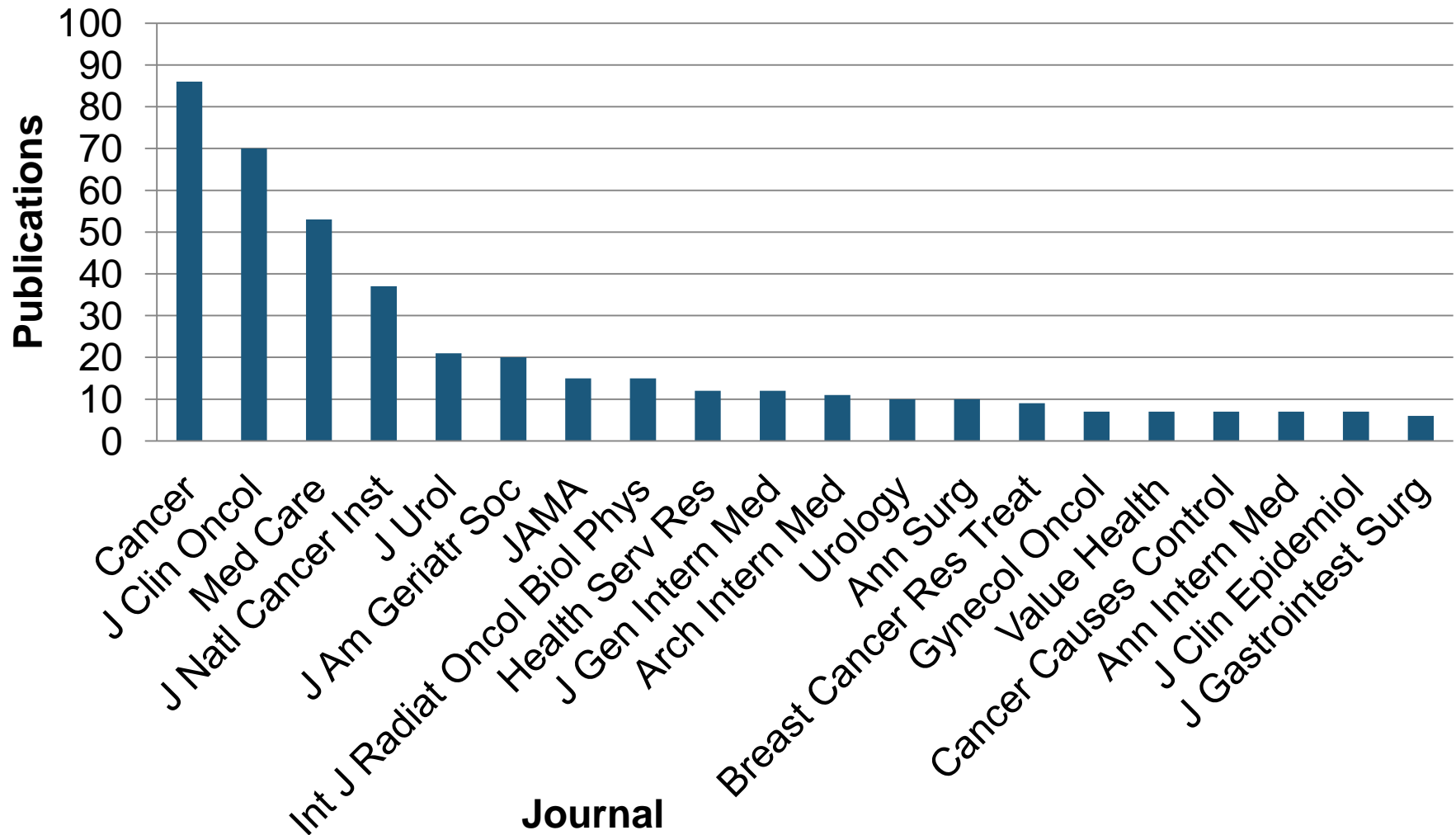
Appendix

# **ADDITIONAL RESULTS AND INFORMATION**

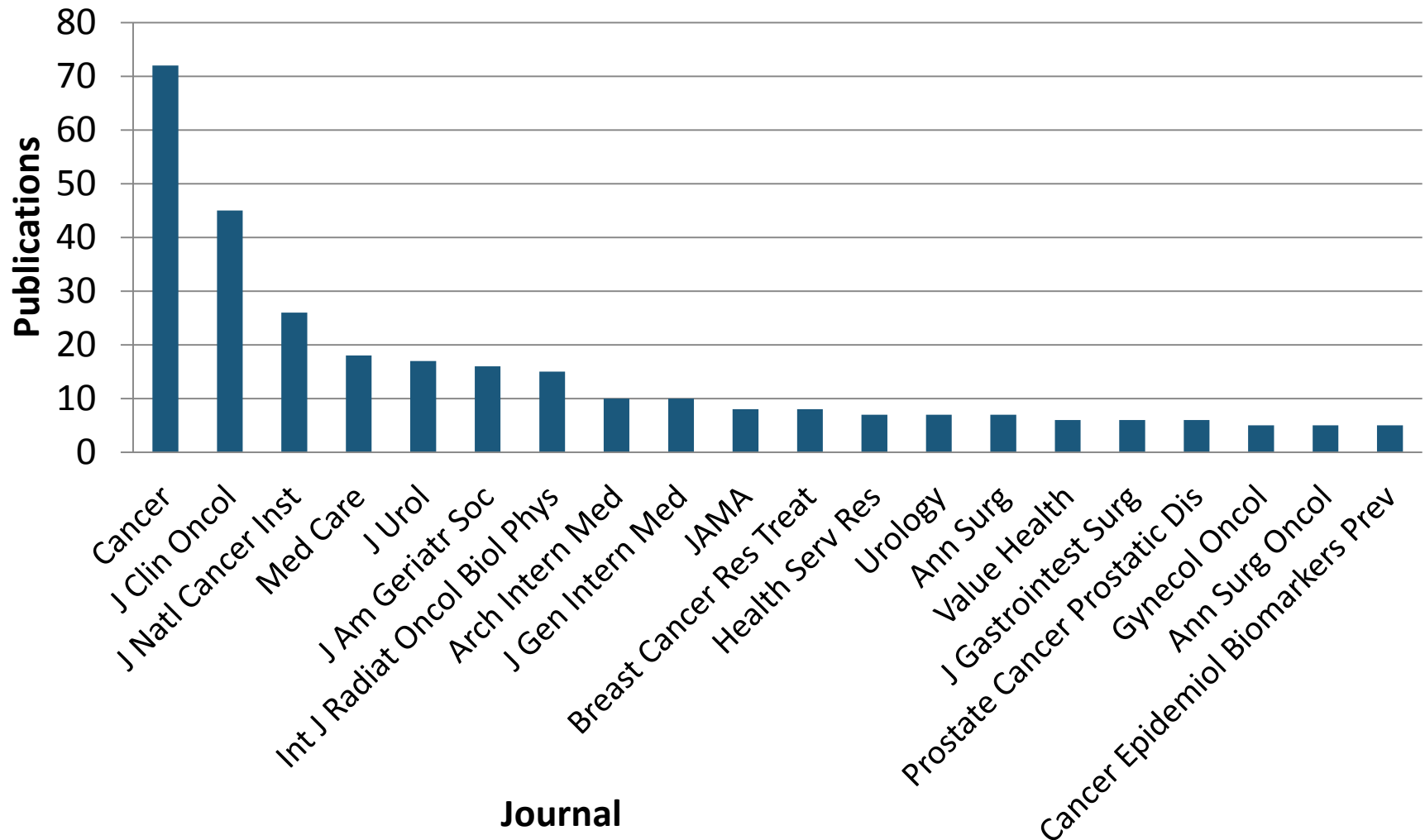
Summary of Publications

# **JOURNAL**

# Publications by Journal (All Years)



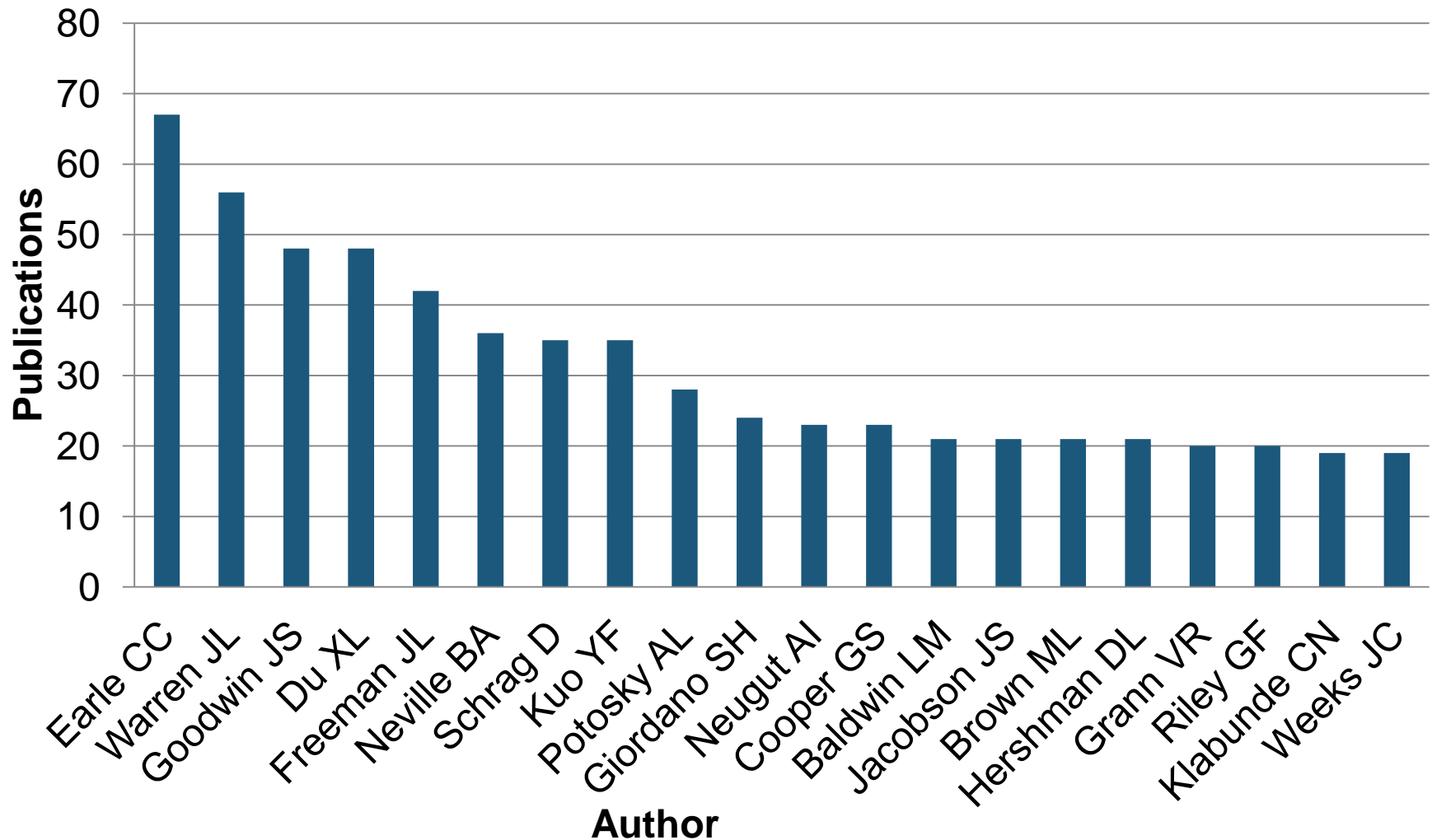
# Publications by Journal (2006-2012)



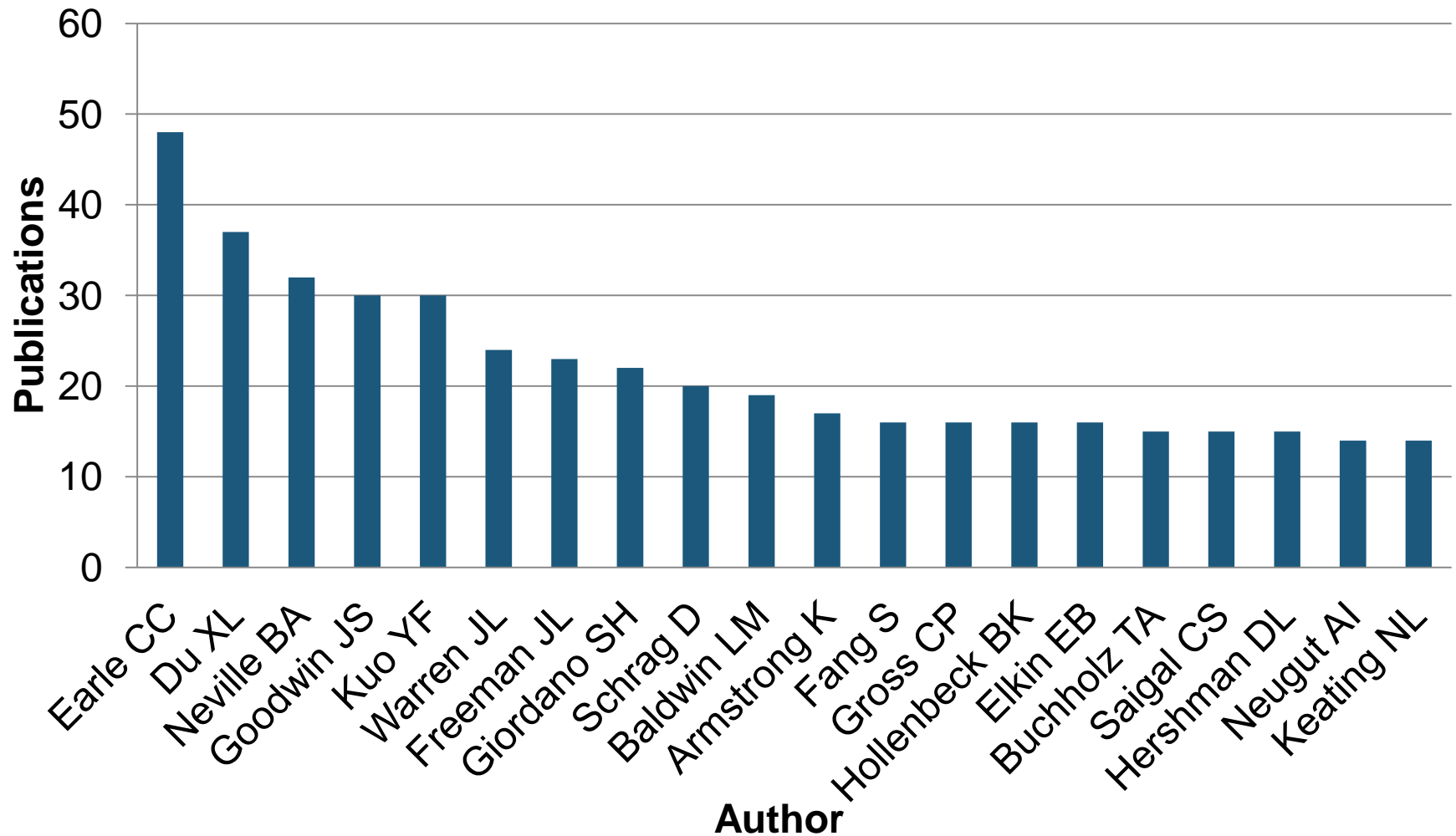
Summary of Publications

# **AUTHORS (ANY POSITION)**

# Publications by Journal (2006-2012)



# Publications by Author (2006-2012)



# Data Sources

- Incidence (2012), Deaths (2012) and Prevalence (2009)
  - <http://seer.cancer.gov/statfacts/index.html>
  - Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA (eds). *SEER Cancer Statistics Review, 1975-2009 (Vintage 2009 Populations)*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2009\\_pops09/](http://seer.cancer.gov/csr/1975_2009_pops09/), based on November 2011 SEER data submission, posted to the SEER web site, 2012.
- Proportion of patients age  $\geq 65$  at diagnosis
  - Surveillance, Epidemiology, and End Results (SEER) Program ([www.seer.cancer.gov](http://www.seer.cancer.gov)) SEER\*Stat Database: Incidence - SEER 18 Regs Research Data + Hurricane Katrina Impacted Louisiana Cases, Nov 2011 Sub, Vintage 2009 Pops (2000-2009) <Katrina/Rita Population Adjustment> - Linked To County Attributes - Total U.S., 1969-2010 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems Branch, released April 2012, based on the November 2011 submission.
  - Year of diagnosis = 2004-2009
- All Site and Morphology classifications were aligned among all data sources with the exception of Head & Neck
  - Head & Neck was defined using two readily available categories: Larynx + Oral Cavity and Pharynx



# Acknowledgements

- Thanks to Jennifer Duryea for the SEER\*Stat analyses and to Marc Halperin for extracting the data from the NCI website

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