

Recurrence Integration Database Results

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Louisville, KY

Foreseeing the Future of Cancer Surveillance

Surveillance, Epidemiology, and End Results (SEER) Program



Presentation Outline

Cohort Description

Recurrence Risk Assessment

Recurrence Status by Demographic and Clinical Factors

Discussion & Conclusion

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Data Source: Recurrence Integration Database

- Build based on February 2026 SEER Data Submission
- SEER*Stat Database: Incidence - SEER In-House Data, 21 Registries (plus AZ and CN), Feb 2026 Sub (1975-2025 varying)
- Includes all data items released to the public in the SEER Research Plus data product
- In addition, it includes 19 data items specific to the Recurrence Integration Database (RID)
 - Currently available internally at NCI for assessment and validation purposes

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Cohort Description

1. **Age at Diagnosis** = '20-24 years', '25-29 years', '30-34 years', '35-39 years', '40-44 years', '45-49 years', '50-54 years', '55-59 years', '60-64 years', '65-69 years', '70-74 years', '75-79 years', '80-84 years', '85-89 years', '90+ years'
2. **Sex** = 'Female'
3. **Year of diagnosis** = '2013', '2014', '2015', '2016', '2017', '2018', '2019', '2020', '2021', '2022', '2023', '2024'
4. **EOD Schema ID Recode** = 'Breast'
5. **Sequence number** = 'One primary only'
6. **Type of Reporting Source** = 'Hospital inpatient/outpatient or clinic', 'Radiation treatment or medical oncology center (2006+)', 'Laboratory only (hospital or private)', 'Physicians office/private medical practitioner (LMD)'

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Breast Cancer Eligible Cases by SEER Central Cancer Registry and Year of Diagnosis

Registry	CT	HI	IA	NM	SE	UT	AN	LX	GC	KY	LA	NJ	ID	NY	IL	TX	GB	GA	Total
Target Patient Population	31,255	10,205	22,281	14,420	39,633	16,625	733	66,200	146,011	34,997	34,346	71,422	12,822	75,198	89,017	179,282	53,697	76,949	975,093

Dx. Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Target Patient Population	76,460	78,930	82,251	83,453	86,634	88,495	92,629	83,394	97,872	100,640	104,335	975,093

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“At Risk for Recurrence” Concept

- Recurrence requires a disease-free period after following curative-intent treatment
- No disease free = cannot develop recurrence (i.e., not ‘at risk’ for recurrence)
- Set of conditions to select cases at risk for recurrence:
 - No distant/ disseminated disease at dx.
 - ODS did not use code '70' (never disease free)
 - Cancer status was NED or blank at some point after dx.
 - Patient received curative-intent treatment (surgery or radiation)
 - No surgery of distant site (flag for distant disease)
 - If surgery, surgical resection margins negative
 - Patient survived at least 6 months (otherwise patient was likely terminally ill, never disease free)

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Frequency Distribution of Cohort Cases by “At Risk” Status

	Count	%
Patient at risk for recurrence	740,416	75.9%
Not at risk, never disease free per registrar assessment	64,003	6.6%
Not at risk, distant/disseminated disease at diagnosis	9,568	1.0%
Not at risk, no evidence of curative intent treatment	34,182	3.5%
Not at risk, positive surgical margins	17,345	1.8%
Not at risk, surgery of distant sites	2,949	0.3%
Not at risk, survival less than 6 months	7,546	0.8%
Not at risk, combination of reasons	99,003	10.2%
<u>Blank(s)</u>	81	<0.1%
Total	975,093	100.0%

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Breast Cancer Eligible Cases by SEER Central Cancer Registry and Year of Diagnosis

Registry	CT	HI	IA	NM	SE	UT	AN	LX	GC	KY	LA	NJ	ID	NY	IL	TX	GB	GA	Total
Target Patient Population	78.6%	80.3%	86.7%	70.2%	83.9%	80.1%	85.7%	78.9%	80.0%	81.7%	70.6%	76.0%	81.2%	77.5%	74.5%	67.9%	82.1%	70.2%	75.9%

Dx. Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Target Patient Population	80.0%	80.0%	79.3%	78.6%	77.0%	79.3%	77.7%	76.1%	75.2%	69.2%	66.6%	75.9%



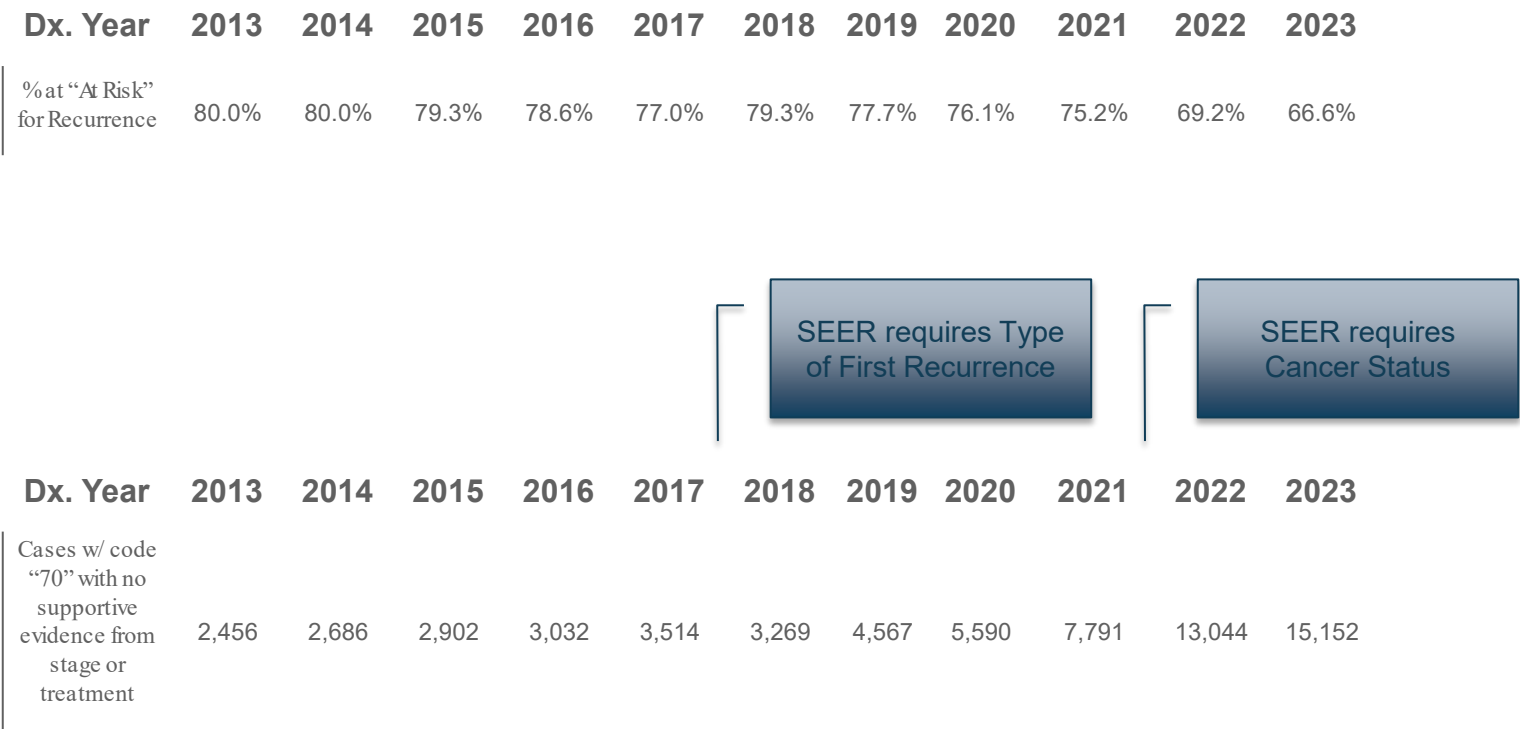
WHY?

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Inverse Correlation Between “At Risk “ for Recurrence and the Frequency of “Never Disease Free” Designation by Abstractors



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Presenting Results for Cancer Outcomes = Recurrence + Cancer Death

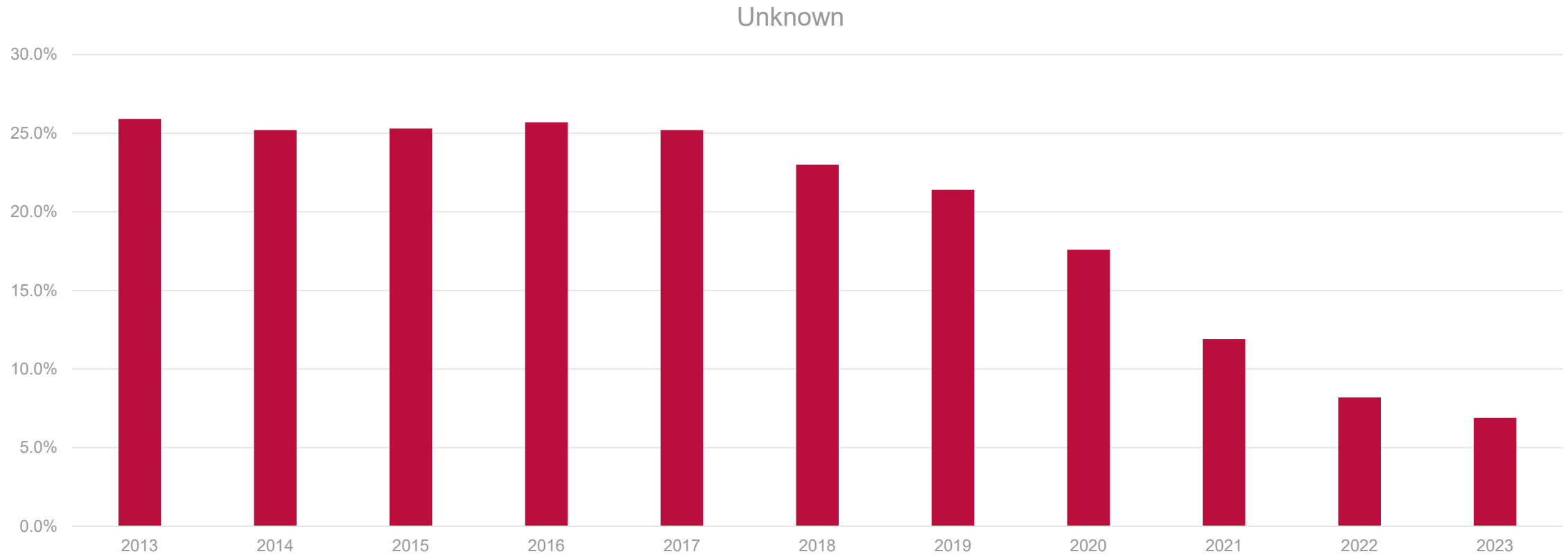
Recurrence Status	Count	Column %
No evidence of recurrence	537,007	72.5%
Evidence of recurrence	27,688	3.7%
Death from breast cancer and no evidence of recurrence	13,490	1.8%
Death from other cancer and no evidence of recurrence	1,520	0.2%
Death from other causes and no evidence of recurrence	16,833	2.3%
Unknown	143,878	19.4%
Total	740,416	100.0%

Cancer Outcome =
Recurrence or Cancer
Death = 5.7%

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Alive Breast Cancer Cases “At Risk” with Unknown Recurrence Status, by Dx. Year



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Recalculating Cancer Outcome Proportion After Removing Cases with Unknown Status

Recurrence Status	Count	Column %
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Death from breast cancer and no evidence of recurrence	13,490	1.8%
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Death from other cancer and no evidence of recurrence	1,520	0.3%
Death from other causes and no evidence of recurrence	16,833	2.8%
Total	596,538	100.0%

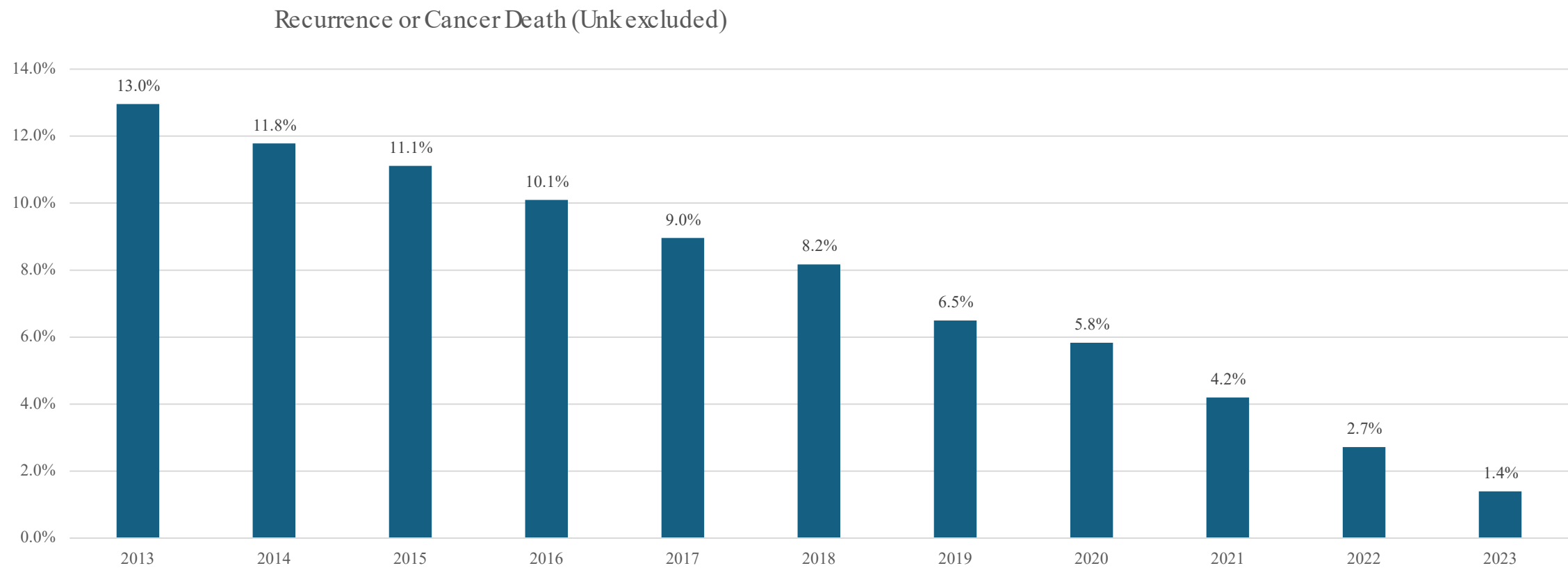
} = 7.2%

Outcome = Recurrence or Cancer Death

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Cancer Outcomes by the Year of Diagnosis Among Target Population at Risk for Breast Cancer Recurrence

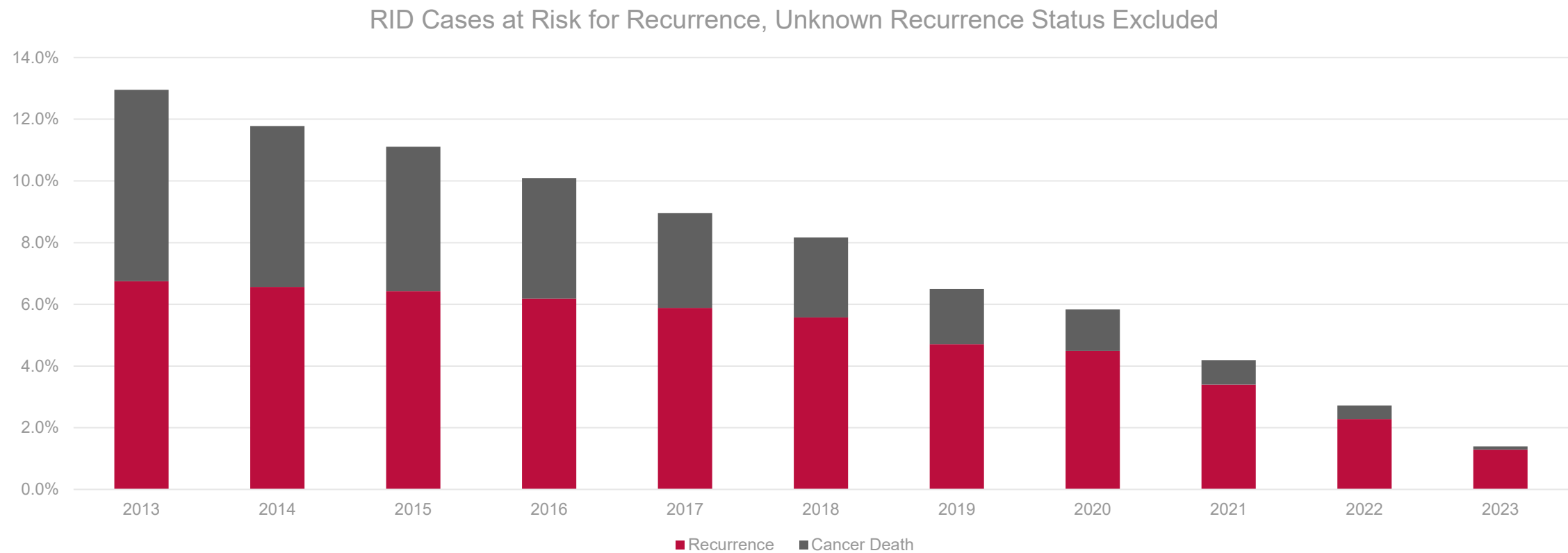


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Detailed Cancer Outcomes by the Year of Diagnosis Among Breast Cancer Cases at Risk for Recurrence

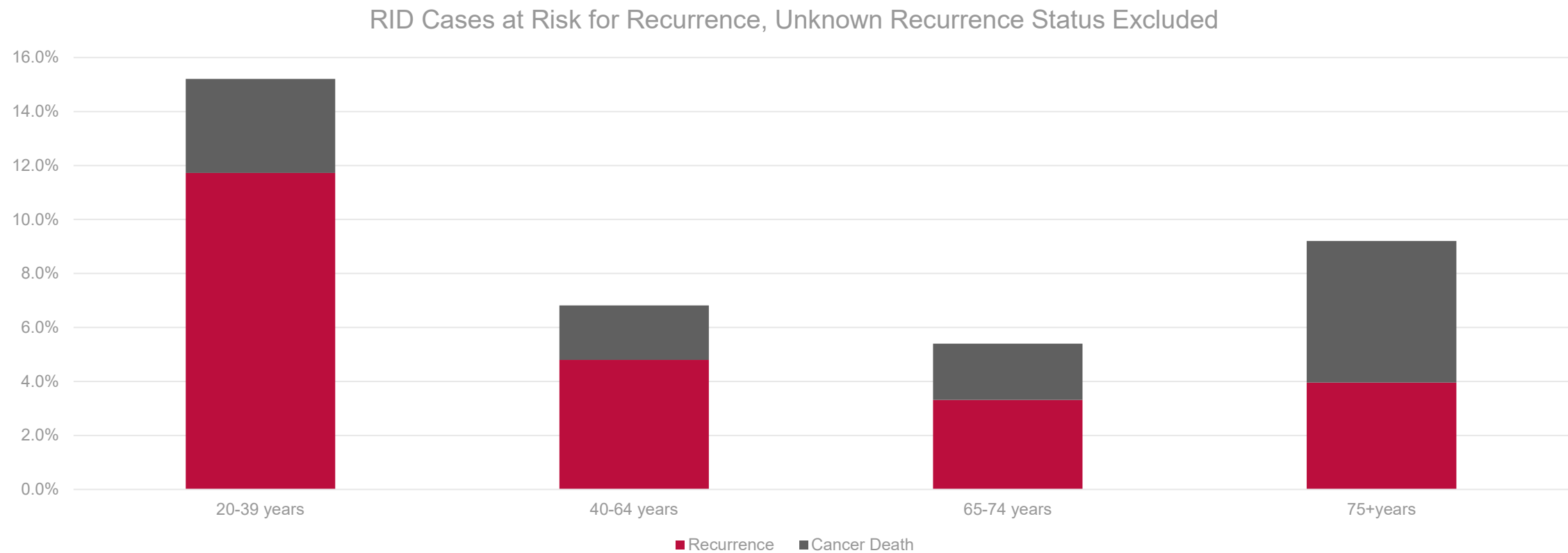


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Cancer Outcomes by Age Among Breast Cancer Cases at Risk for Recurrence

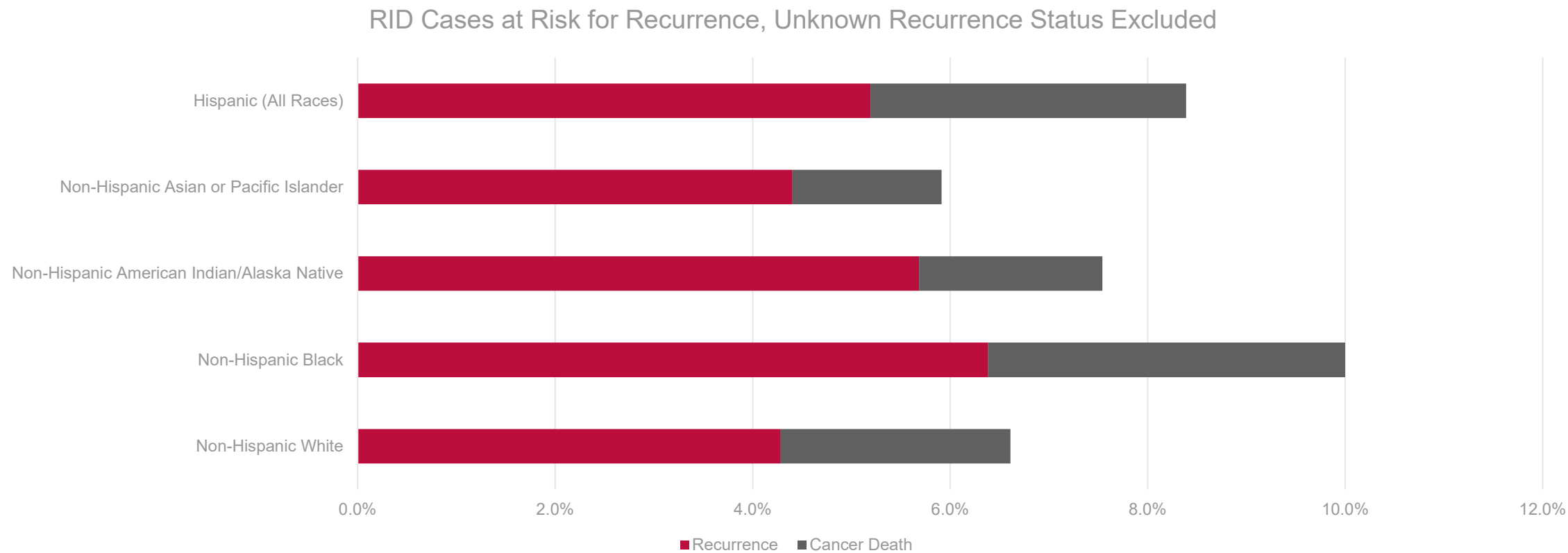


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Cancer Outcomes by Race/Ethnicity Among Breast Cancer Cases at Risk for Recurrence

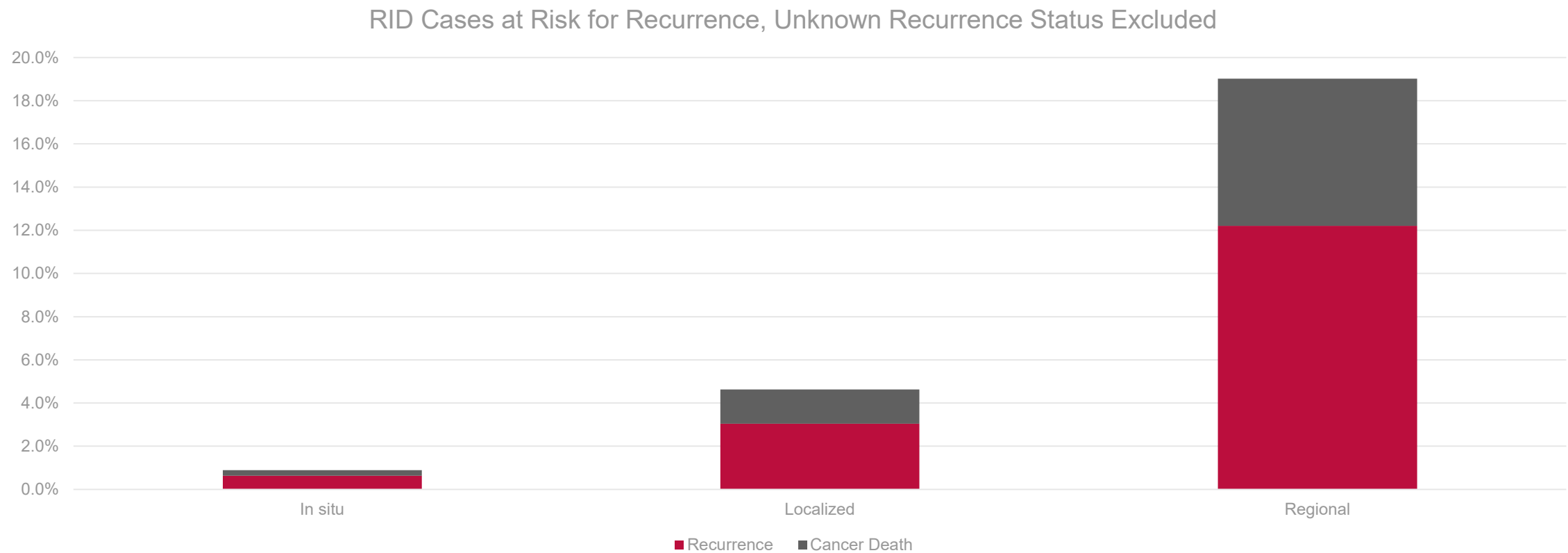


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Cancer Outcomes by Stage at Diagnosis Among Breast Cancer Cases at Risk for Recurrence

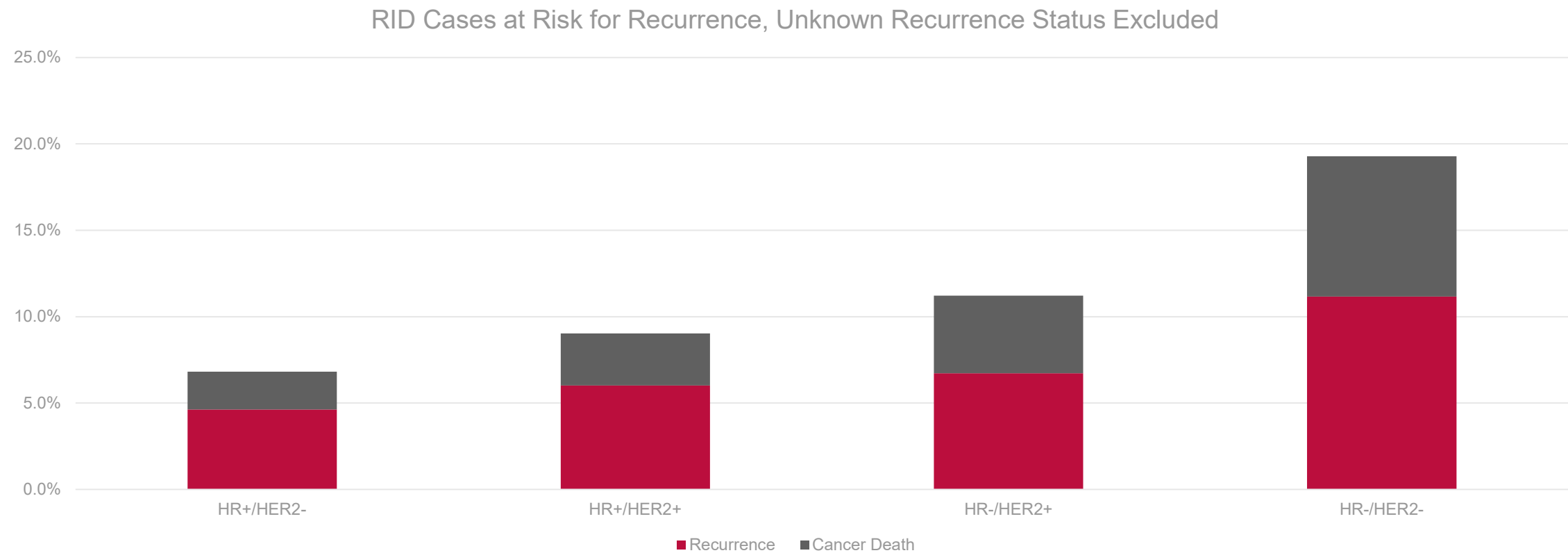


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Cancer Outcomes by HR/her2 Status at Diagnosis Among Breast Cancer Cases at Risk for Recurrence

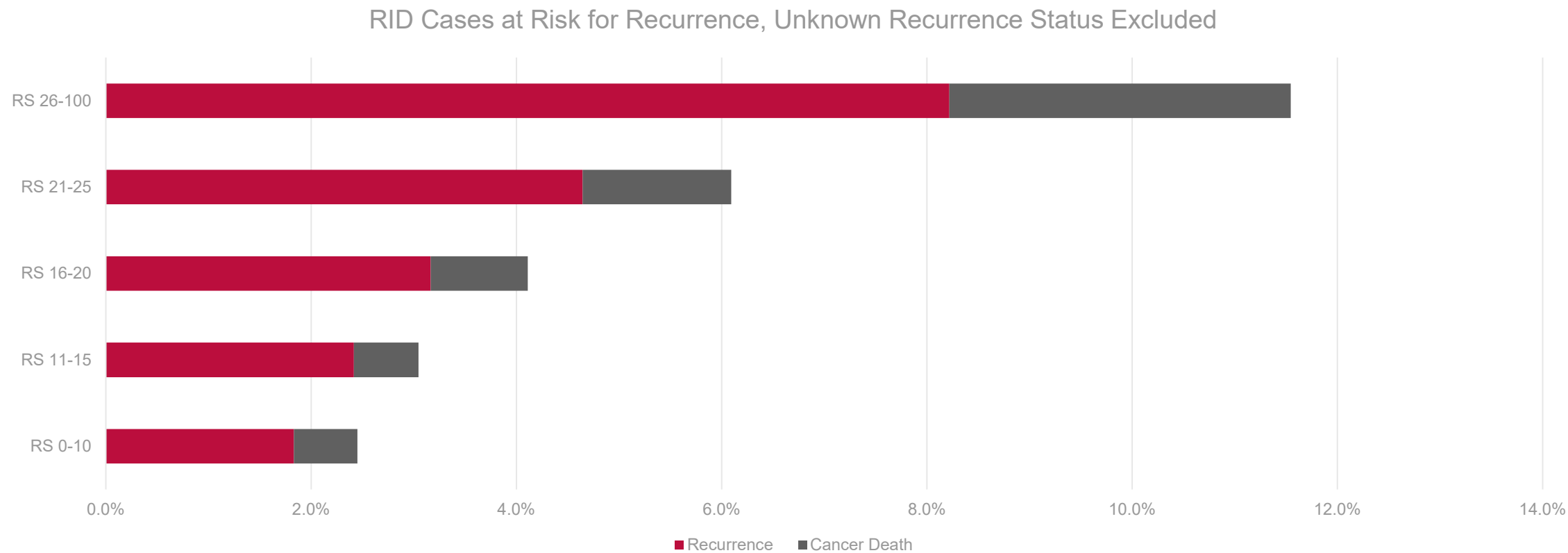


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Cancer Outcomes by Oncotype DX Recurrence Score Among Breast Cancer Cases at Risk for Recurrence



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Discussion

- NCI's RID allows for automatic processing and enhancing of recurrence outcome data for a **large cohort of female breast cancer patients (n>975,000)**
- Assessment of patient status at the end of the curative-intent treatment is based on abstractor coding, extent of disease at diagnosis, whether curative treatment was administered, treatment effect, and patient survival
- Proportion of patients deemed **at risk varied significantly over time** from 80% to 67%
 - This requires further analysis and monitoring to assess potential misclassification bias
- Among breast cancer survivors deemed “at risk”, approximately 20% of patients are alive with unknown recurrence status
 - **Proportion unknown improved considerably** in later years, decreasing from 26% to just 7%

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Discussion (continued)

- Among breast cancer survivors “at risk” 7.2% experienced unfavorable outcomes, recurrence or cancer-related death
 - Unfavorable outcomes have been associated with known demographic and clinical risk factors:
 - Age below 50 at diagnosis, African American race, Hispanic ethnicity
 - Regional disease spread at diagnosis, triple negative subtype, higher Oncotype DX
 - In earlier years of observation, RID could not detect signals of documented recurrence for close to half of the patients with unfavorable outcomes
 - This improved dramatically in later years of observations, after NCI SEER initiated the collection of Type of First Recurrence and Cancer Status
 - 90% and over of cases with unfavorable outcomes have documented recurrence

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Conclusion:

Oncology Data Specialists and other cancer abstracters helped improve significantly the collection of recurrence data items

SEER Central Registries contributed to the development of a mechanism to automate the integration of recurrence-related data from multiple sources

Additional analysis and monitoring is necessary to validate the new Recurrence Integrated Database

NCI will continue collaborations with American College of Surgeons Programs and other surveillance partners to improve the collection of cancer outcomes for cancer control and research

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**Thank You on the Behalf of the SEER
Program and Former and Current
Members of the Recurrence Workgroup
at NCI Surveillance Research Program**

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