

Utilization and patient characteristics for the trastuzumab originator, biosimilars, and other HER2 inhibitors in the United States

Young Hee Nam,¹ Aaron B. Mendelsohn,¹ James Marshall,¹ Nancy Lin,² Jeffrey S. Brown,¹ Cara L. McDermott,³ Pamala A. Pawloski,⁴ Catherine M. Lockhart³

¹ Harvard Medical School and Harvard Pilgrim Health Care Institute ² IQVIA ³ Biologics and Biosimilars Collective Intelligence Consortium (BBCIC) ⁴ HealthPartners Institute

AMCP Nexus, October 19-22, 2021, Denver, CO.

BACKGROUND

- Biosimilars for **trastuzumab**, a **HER2 inhibitor (HER2I)**, have been available in the US since 2019
- Information on their utilization and patient characteristics is limited
- We assessed utilization and patient characteristics for the **trastuzumab originator, biosimilars, and other HER2Is** in the US

METHODS

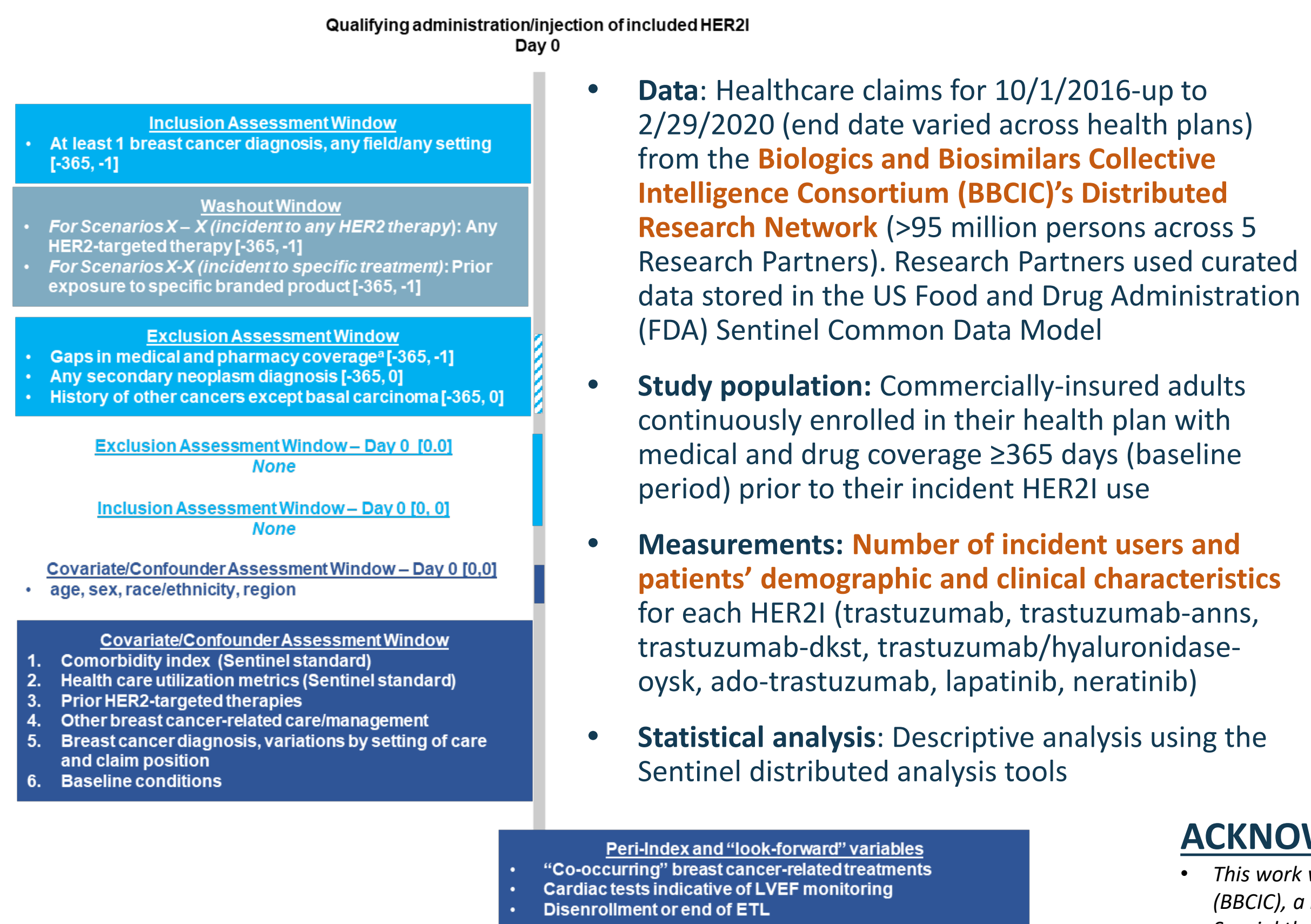


Figure 1. Illustrated study design

a. Up to 45 day gaps in medical or pharmacy enrollment allowed

*Template modified from Schneeweiss et al. Graphical Depiction of Longitudinal Study Designs in Health Care Databases. Ann Intern Med. 2019 Mar 19;170(6):398-406. doi: 10.7326/M18-3079. Epub 2019 Mar 12.

Take-away

- Number of incident users per person-time decreased with the trastuzumab originator and increased with its biosimilar trastuzumab-anns
- Charlson/Elixhauser comorbidity score was the highest for lapatinib and similar between the trastuzumab originator and trastuzumab-anns
- There were variations in patient characteristics between HER2Is and by metastatic status, while the characteristics were generally similar between the trastuzumab originator and trastuzumab-anns

ACKNOWLEDGMENTS

- This work was supported by the Biologics and Biosimilars Collective Intelligence Consortium (BBCIC), a non-profit, multi-stakeholder collaborative.
- Special thanks to the BBCIC Research Partners: CVS Clinical Trial Services, Anthem/HealthCore, Harvard Pilgrim Health Care, HealthPartners, Kaiser Permanente of Washington.

DEPARTMENT OF POPULATION MEDICINE



RESULTS

- Number of incident users (incident to any HER2Is):** trastuzumab (6,631), trastuzumab-anns (122), ado-trastuzumab emtansine (116), neratinib (54), lapatinib (54), trastuzumab-dkst and trastuzumab/hyaluronidase-oysk (<11)
- Mean age:** Highest for trastuzumab/hyaluronidase-oysk (73.7 years; SD, 18.6) and similar between the trastuzumab originator and biosimilars (52.5-59.0)

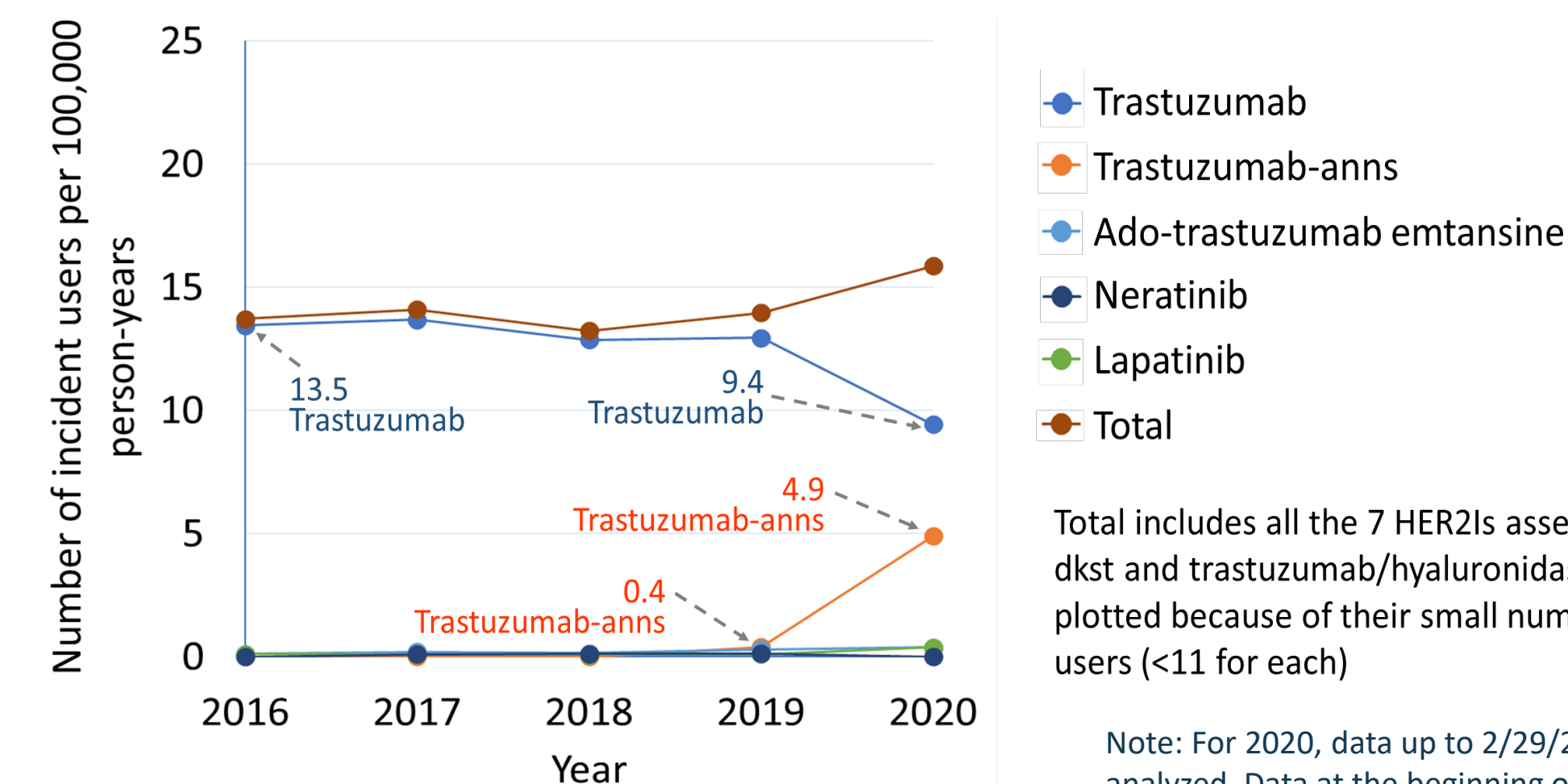


Figure 2. Number of incident users/100,000 person-years

Total includes all the 7 HER2Is assessed. Trastuzumab-dkst and trastuzumab/hyaluronidase-oysk are not plotted because of their small numbers of incident users (<11 for each)

Note: For 2020, data up to 2/29/21 were analyzed. Data at the beginning of the year may reflect different utilization compared to the rest of the year due to coverage changes.

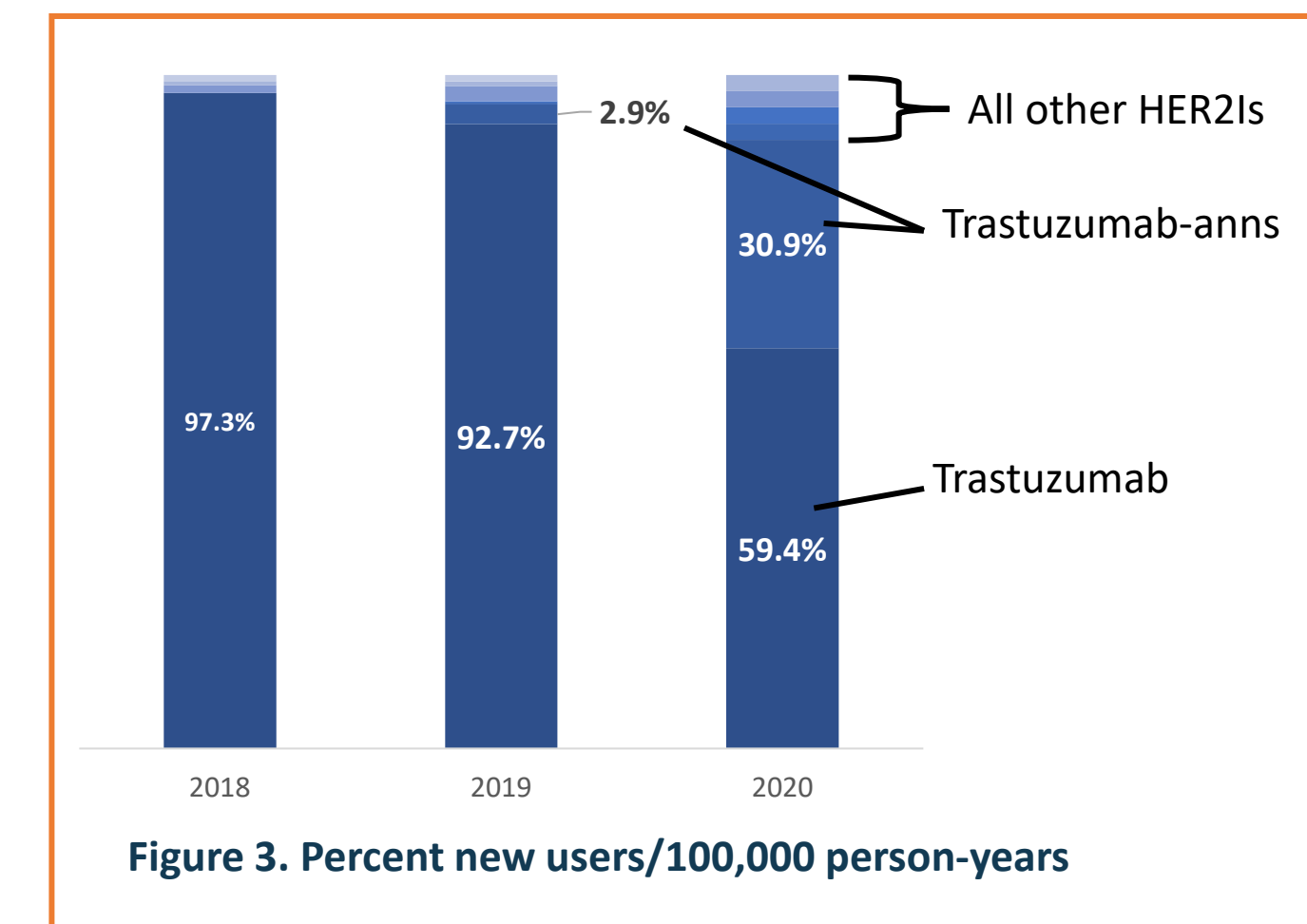


Figure 3. Percent new users/100,000 person-years

- Mean number ambulatory health service encounters** overall was 18.4 (range 13.4 – 22.7) through the study period
- Ambulatory service utilization was higher among patients with **metastatic disease** (mean 19.8; range 14.0 – 23.7) compared to patients with **non-metastatic disease** (mean 16.4; range 11.6 – 20.4)

Table 1. Clinical characteristics of incident users (incident to any HER2Is)

	Trastuzumab	Trastuzumab-anns	Ado-trastuzumab emtansine	Neratinib	Lapatinib
Charlson/Elixhauser Combined Comorbidity Score	1.1	1.3	1.7	0.5	2.0
Chemotherapy users, %^a	18.5	14.8	24.1	NC	38.9
Endocrine therapy users, %^b	11.1	10.7	41.4	63.0	50.0
Among metastatic breast cancer patients, endocrine therapy users, %^b	19.3	NC	55.6	NC	69.6

Only part of the characteristics investigated are presented due to limited space. NC: not calculated, for smaller counts (>0, <11). Trastuzumab-dkst and trastuzumab/hyaluronidase-oysk are not shown because of their small numbers of incident users (<11 for each).

^a Measured during the 183 days prior to the incident HER2I dispensing. ^b Measured during the 365 days prior to the incident HER2I dispensing.