

### Appendix 3: Results

#### 1) Results for the period 2015-2019:

- A. Indicators related to clinical and imaging diagnosis
  - a. Proportion of patients with preoperative mammography and breast and axillary ultrasound: It was found that 92% of patients (230 out of 249, 35 of whom had no data) underwent a complete clinical and imaging evaluation prior to treatment. This percentage exceeds the minimum standard proposed by EUSOMA by 2%.
- B. Indicators related to preoperative diagnosis
  - b. Proportion of patients with invasive carcinoma with axillary staging (ultrasound +/- biopsy as appropriate): It was found that 90% of the cases evaluated met this indicator (225 of 250 patients, 34 of them remaining without data), exceeding the proposed minimum standard value by 5%.
  - c. Proportion of patients with carcinoma with pre-surgical histological/cytological diagnosis: 88% of cases (220 out of 249, with 35 cases without data) had some type of cytological or histological diagnostic methodology prior to treatment, exceeding the established minimum standard value by 3%.
- C. Indicators related to prognostic/predictive anatomopathological characterization
  - d. Proportion of patients with complete records of prognostic/predictive factors in invasive carcinoma: 95% of cases fully met this requirement (224 out of 237 patients, with 19 cases without data), reaching the minimum standard value. For the evaluation of this indicator, all patients whose anatomopathological reports included all the mandatory aspects included in the indicator (with the Ki 67 value optional) were included. If any of the aspects that constitute the indicator were not described in the report, regardless of whether most of the prognostic factors were reported, it was not included in the group of cases that made up the final percentage.
  - e. Proportion of patients with prognostic factors recorded in carcinoma in situ: 92% of cases (22 out of 24 patients, with 4 cases without data) fully complied with the indicator, leaving 3% below the minimum standard established according to EUSOMA criteria.
- D. Indicators related to waiting time
  - f. Proportion of patients with a time interval to the start of treatment less than or equal to 6 weeks from the first consultation: only 30% of patients had a time interval to treatment less than or equal to six weeks (86 out of 284 cases), with the majority falling below the minimum standard established, with a difference of 50%.
- E. Indicators related to the availability of magnetic resonance imaging (MRI)
  - g. Proportion of cases examined with MRI (excluding patients who underwent neoadjuvant therapy): Breast MRI was performed in 5% of cases (9 out of 190 patients, with 37 of them without data), falling 5% below the minimum standard accepted by EUSOMA. The total number of patients who did not undergo neoadjuvant treatment was 227, including patients with carcinoma in situ (28) and patients who underwent primary surgery (199). Of these 227, data on whether or not MRI was performed was obtained in 190 cases.
  - h. Proportion of patients undergoing neoadjuvant therapy who underwent MRI: 54% of patients undergoing neoadjuvant chemotherapy underwent MRI (31 out of 57 cases), which is 6% below the minimum standard value.
- F. Indicators related to multidisciplinary assessment
  - i. Proportion of patients who attend multidisciplinary meetings: 98% of cases evaluated attended multidisciplinary meetings (245 out of 251 patients, with 33 cases without data), which is 8% above the established minimum standard value.
- G. Indicators related to locoregional surgical treatment
  - j. Proportion of patients with invasive carcinoma who underwent a single surgery for the primary tumor (excluding reconstructive surgery): this percentage was 93% (239 out of 256 cases), which is 13% above the established minimum standard and 3% above the ideal value. Of these 239 cases, 184 corresponded to primary

surgery and 55 to surgery after neoadjuvant treatment. In other words, only 15 of 199 patients undergoing primary surgery and 2 of 57 patients undergoing post-neoadjuvant surgery required a second intervention to complete their cancer treatment.

- k. Proportion of patients with carcinoma in situ who underwent a single surgery (excluding reconstruction): this value was 89% (25 out of 28 cases), representing a difference of 19% above the minimum standard value. Only 3 patients required a second surgery to complete treatment.
  - l. Proportion of patients who underwent immediate breast reconstruction after mastectomy: 12% of the cases evaluated (10 of the 84 patients who underwent mastectomy) met the indicator. This value is 28% below the minimum standard value.
- H. Indicators related to adjuvant radiotherapy treatment
- m. Proportion of patients with invasive carcinoma who received breast radiotherapy after conservative surgery: 98% of cases in which conservative surgery was performed were followed by adjuvant radiotherapy (161 out of 164 patients). This result is 8% above the minimum standard value and 3% above the ideal value. Of these 161 patients who received radiotherapy (with invasive carcinoma), 138 underwent primary surgery (with a total of 141 cases of primary breast-conserving surgery) and 23 underwent post-neoadjuvant surgery (with a total of 23 cases of neoadjuvant breast-conserving surgery). Carcinoma in situ was not included in the definition of this indicator.
  - n. Proportion of patients who received postmastectomy radiotherapy (with indication): 93% of patients who underwent mastectomy and had an indication for adjuvant radiotherapy agreed to this treatment (55 out of 59 cases; the rest of the mastectomies did not have an indication for adjuvant radiotherapy). This result is 3% above the minimum standard value established by EUSOMA.
- I. Indicators related to reduction in overtreatment
- o. Proportion of patients with negative axilla who underwent sentinel lymph node biopsy (excluding patients undergoing neoadjuvant therapy): 94% of the cases evaluated met this indicator (151 out of 161 patients), which is 4% above the minimum standard value. The remaining patients were excluded from the indicator calculation because they had positive axillary nodes or were receiving neoadjuvant therapy.
  - p. Proportion of patients with invasive carcinoma who underwent sentinel lymph node biopsy and had fewer than five lymph nodes resected: 96% of the cases evaluated met the indicator characteristics (162 of 168 patients). This value is 6% above the minimum standard and 1% above the ideal value. Of these 162 patients, 146 underwent primary surgery and 16 underwent post-neoadjuvant surgery.
  - q. Proportion of patients with invasive carcinoma smaller than or equal to 3 cm who underwent conservative surgery (excluding patients with BRCA mutation): 82% of patients with tumors smaller than 3 cm underwent conservative surgery (137 of 166 patients), with this percentage being 12% above the minimum standard.
  - r. Proportion of patients with carcinoma in situ less than or equal to 2 cm who underwent conservative surgery: 94% of the cases evaluated met this criterion (17 out of 18 patients, with 3 cases without data). This value is 14% above the minimum standard value and 4% above the ideal value. There were 18 cases of the 28 carcinomas in situ with a tumor size of less than 2 cm. In 3 of these cases, the tumor size data was not found in the registry, and the remaining 7 had a size greater than 3 cm.
  - s. Proportion of patients with carcinoma in situ who did not undergo axillary surgery: this proportion was 64% (18 out of 28 cases), a finding that is 33% below the minimum acceptable standard.
- J. Indicators related to systemic treatment
- t. Proportion of patients with hormone-sensitive tumors (invasive carcinoma) who received endocrine therapy: the value found was 98% (198 out of 203), 13% above the minimum standard value and 8% above the ideal value.
  - u. Proportion of patients with tumors without hormone receptor expression,  $\geq 1$  cm, and/or with axillary involvement who received adjuvant chemotherapy: this percentage was 90% (19 out of 21 cases), 5% above the minimum acceptable standard value. Among patients with tumors without hormone receptor expression, 21 were included in the calculation of the indicator denominator, since the remaining patients (32 patients, for a total of 53 patients without hormone receptor expression) underwent neoadjuvant treatment.

- v. Proportion of patients with invasive tumors expressing the Her2neu+ receptor,  $\geq 1$  cm and/or axilla+ who received adjuvant chemotherapy and trastuzumab: 86% of patients (32 of 37 Her2neu+ patients, data not available for 2 of them) received trastuzumab in the adjuvant setting. This value is 1% above the minimum standard.
  - w. Proportion of patients with Her2neu + invasive tumors treated with QTN who received trastuzumab in neoadjuvant therapy: 83% (15 out of 18 patients) of Her2neu + patients who underwent primary systemic treatment received trastuzumab in the neoadjuvant setting. This value is 7% below the minimum standard.
  - x. Proportion of patients with inflammatory or locally advanced inoperable carcinoma at baseline who received neoadjuvant therapy: 96% of patients with these characteristics received primary systemic treatment (31 out of 32 patients, with 12 cases without data for a total of 44 patients in advanced stages), with this result being 6% above the minimum standard and 1% above the ideal value.
- K. Indicators related to follow-up
- y. Proportion of patients with routine follow-up every 6-12 months post-treatment: 99% of patients (281 out of 284) underwent routine follow-up every 6-12 months after treatment. This result exceeds the minimum standard value by 4% and reaches the ideal value.

## 2) Results for the 2021-2024 period:

- A. Indicators related to clinical and imaging diagnosis
- a. Proportion of patients with preoperative mammography and breast and axillary ultrasound: we observed that 99% (n=176) of all patients underwent a complete preoperative imaging evaluation, exceeding the minimum quality standard by 9% and the ideal value by 4%.
- B. Indicators related to preoperative diagnosis
- b. Proportion of patients with invasive carcinoma with axillary staging (ultrasound +/- biopsy as appropriate): we found that of the total number of patients diagnosed with invasive carcinoma, 99% (n=162) completed preoperative axillary staging, exceeding the minimum standard by 14% and the ideal standard by 4%.
  - c. Proportion of patients with carcinoma with pre-surgical histological/cytological diagnosis: 97% of patients (n=173) had a preoperative diagnosis (RESTO BRQ), obtaining a difference of 12% from the minimum value and 7% from the ideal value.
- C. Indicators related to prognostic/predictive anatomopathological characterization
- d. Proportion of patients with complete recording of prognostic/predictive factors in invasive carcinoma: 99% (n=163) completed the preoperative study, exceeding the minimum value by 4% and the ideal value by 1%.
  - e. Proportion of patients with a record of prognostic factors in carcinoma in situ: 93% (n=13) completed the preoperative record, but did not reach the minimum value set by EUSOMA (95%).
- D. Indicators related to waiting time
- f. Proportion of patients with a time interval at the start of treatment of less than or equal to 6 weeks from the first consultation: only 29% (n=51) of all patients started treatment within this specified time, falling 51% below the minimum established value.
- E. Indicators related to the availability of magnetic resonance imaging (MRI):
- g. Proportion of cases examined with MRI (excluding patients who underwent neoadjuvant therapy): we observed that of the total number of patients who did not undergo neoadjuvant therapy, 42% (n=42) were examined with MRI, well above the minimum established by EUSOMA (10%).
  - h. Proportion of patients undergoing neoadjuvant therapy who underwent NMR: 84% (n=59 of 70 patients) were evaluated with NMR, also greatly exceeding the minimum value by 24% but failing to reach the ideal value of 90%.
- F. Indicators related to multidisciplinary assessment:
- i. Proportion of patients referred to a multidisciplinary team: we found that 92% (n=162/176, 2 without data) of patients were referred to a multidisciplinary team, exceeding the minimum value by 2%.
- G. Indicators related to locoregional surgical treatment:

- j. Proportion of patients with invasive carcinoma who underwent a single surgery for the primary tumor (excluding reconstruction surgery): 98% (n=160) achieved this marker, exceeding the minimum value by 18% and the ideal value by 8%.
  - k. Proportion of patients with carcinoma in situ who underwent a single surgery (excluding reconstruction): 93% (n=13) underwent a single surgery, exceeding the minimum value by 23% and the ideal value by 3%.
  - l. Proportion of patients who underwent immediate breast reconstruction after mastectomy: of the 67 patients who underwent mastectomy, 27% (n=18) underwent immediate breast reconstruction, falling short of the minimum standard of 40% set by EUSOMA by 13%.
- H. Indicators related to adjuvant radiotherapy treatment:
- m. Proportion of patients with invasive carcinoma who received breast radiotherapy after conservative surgery: 96% (n=87), 6% above the minimum value established and exceeding the ideal value by 1%.
  - n. Proportion of patients who received postmastectomy radiotherapy (with indication): we found that 88% (n=15) of the 17 patients who underwent mastectomy and had an indication for radiotherapy received it, which is 2% below the minimum value established by EUSOMA.
- I. Indicators related to reduction in overtreatment
- o. Proportion of patients with negative axilla who underwent sentinel lymph node biopsy (excluding patients in neoadjuvant therapy): 97% (n=66), exceeding the minimum value established by 7% and the ideal value by 2%.
  - p. Proportion of patients with invasive carcinoma who underwent sentinel lymph node biopsy and had five or fewer lymph nodes resected: we observed that 88% (n=100) of patients who underwent sentinel lymph node biopsy had five or fewer lymph nodes resected, which is 2% below the minimum value.
  - q. Proportion of patients with invasive carcinoma  $\leq 3$  cm who underwent conservative surgery (excluding BRCA patients): 88% (n=88), exceeding the minimum value by 18% and the ideal value by 3%.
  - r. Proportion of patients with carcinoma in situ  $\leq 2$  cm who underwent conservative surgery: 93% (n=13) of patients with carcinoma in situ  $\leq 2$  cm underwent conservative surgery, which is 13% above the minimum value established and 3% above the ideal value.
  - s. Proportion of patients with carcinoma in situ who did not undergo axillary surgery: in 86% (n=12) of cases of carcinoma in situ, axillary surgery was not performed, falling short of the minimum standard established by EUSOMA of 97%.
  - t. Proportion of patients with hormone-sensitive tumors (invasive carcinoma) who received endocrine therapy: 98% of patients with hormone-sensitive invasive carcinomas (n=125) received endocrine therapy, 13% above the minimum value established and 3% above the ideal value.
  - u. These indicators were not analyzed because the indication for adjuvant therapy in these cases has changed.
  - v. Proportion of patients with Her2neu + invasive tumors treated with neoadjuvant chemotherapy who received trastuzumab in neoadjuvant chemotherapy: we found that 94% of these patients (n=16) received trastuzumab in neoadjuvant chemotherapy, 4% above the minimum established value, without reaching the ideal value of 95%.
  - w. Proportion of patients with inflammatory or locally advanced inoperable carcinoma at onset who received neoadjuvant therapy: 92% of patients with these characteristics received primary systemic treatment (n=48/52 patients), with this result being 2% above the minimum standard and only 3% below the ideal value.
- J. Indicators related to follow-up
- x. Proportion of patients with routine follow-up every 6-12 months post-treatment: 97% of patients (n=171/176, 2 cases without data) underwent routine follow-up every 6-12 months after treatment. This result is 2% below the ideal value and 2% above the minimum standard value.