Introduction: The effectiveness of current follow-up guidelines after breast cancer (BC) treatment is uncertain. A tailored surveillance according to patient age and tumour characteristics may be more adequate. The aim of this study was to assess the frequency of and the risk factors for detection of ipsilateral locoregional recurrences (LR) and second primary breast cancers (SP) outside of scheduled surveillance in patients with recurrent BC.

Method: Patients with surgically treated stage I-III BC from Malmö Diet and Cancer Study (MDCS) 1991-2014 (n=1095) and region Västernorrland 2009-2018 (n=1930) were included. Data on the index BC and recurrences were retrieved from medical records. Recurrent events were defined as symptomatic when detected at a patient-initiated visit or breast imaging outside of scheduled annual mammography surveillance.

Result: Median follow-up time was 6.5 years (Interquartile range: 3.8-10.0). In total, 262 patients had a relapse. The most common first event was distant metastasis (46%) followed by LR (22%) and SP (18%). Fifty-four per cent of LR and 27% of SP were detected outside of scheduled surveillance. Logistic regression analysis showed that lymph node positive BC (HR 2.12; 95%CI, 1.00-4.60), BC of HER2 positive subtype (HR 5.13; 95%CI, 1.37-25.32) and young age (HR 2.25; 95%CI, 0.98-5.47) were associated with increased probability of having a symptomatically detected recurrence.

Discussion: Most recurrent events are detected outside of scheduled surveillance. Risk-based tailored surveillance might be more appropriate for subsets of patients.