

## **Notification of locoregional breast cancer recurrence based on pathology reports: a nationwide validation study with the Netherlands Cancer Registry**

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### **Background**

Usually, data on locoregional recurrent breast cancer (LRR) are collected by reviewing all patient files of a specific cohort, despite only few patients actually have a LRR. We describe and validate a new procedure in which notifications of LRRs are obtained via pathology reports, which could improve efficiency.

### **Methods**

Patients diagnosed with nonmetastatic invasive breast cancer between 2012-2016 were identified from the Netherlands Cancer Registry (NCR) and linked to the Dutch Nationwide Pathology Databank (Palga). LRRs were identified using a complex algorithm based on codes and text in pathology reports, whereafter only files from patients with a notification – i.e. patients who were suspected of having had a LRR – were consulted for confirmation and additional information.

To validate this procedure, patients diagnosed between January-March 2012 – of whom data on LRRs were previously collected manually by registrars from the Netherlands Cancer Registry – were used as the gold standard. Subsequently, patients with LRRs not notified by the new method were identified and original pathology reports and clinical reports were evaluated to find reasons for the lack of notification.

### **Results**

In total, 88,257 patients were linked to Palga, and 5,069 patients were labelled with a notification. In patients diagnosed between January-March 2012 (validation cohort, n=3,092), 270 patients were labelled with a notification. Of these patients, 82 (2.7%) were diagnosed with a LRR. The notification method identified 63 patients (77%) with LRRs.

Missed notifications were due to clinical diagnoses (not available in Palga, 53%) or incomplete/incorrect pathological reporting (47%). The notification method resulted in cost savings of €2.949.127,- as compared to the manual scenario.

### **Conclusion**

Using the notification method, almost 80% of the patients with LRRs were identified, with huge reductions in registration burden and costs. The incompleteness should be considered in future analyses. Improvement in pathology reporting could increase completeness.