



Public Health
England

Prescribing of endocrine therapy after breast cancer diagnosis

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Endocrine therapy (ET) in breast cancer

- Standard treatment for patients with oestrogen receptor positive (ER+ve) breast cancer
- Guidelines recommend prescribing for five years
- Aromatase inhibitors recommended for post-menopausal women
- Prescribing in primary care:
 - Initiated in a hospital setting
 - Repeat prescriptions issued in primary care
- Access to prescriptions data for the whole of England has been limited

Aim:

Test the application of the prescriptions data by evaluating the level of ET prescribing in women with breast cancer in England.

Prescriptions data

April-July 2015
29 million individuals
332 million prescriptions

Cancer registry data

1995-2015
7 million patients

Women with malignant breast cancer in England

1st January 1995 and 31st July 2015
No other cancers
Alive during the reference period (April-July 2015)
369,280 patients

Women with malignant breast cancer with a prescription for ET

137,792 patients (37%)

Drugs included

Endocrine therapy drugs included:

- Anastrozole
- Letrozole
- Exemestane
- Tamoxifen Citrate
- Fulvestrant
- Toremifene Citrate
- Aminoglutethimide
- Goserelin Acetate
- Megestrol Acetate
- Medroxyprogesterone Acetate

Aromatase
inhibitors

Methods

Endocrine therapy prescribing was analysed by:

- **ER status:**

ER positive (ER+ve); ER negative (ER-ve); ER borderline; ER unknown

- **Time since diagnosis**

- **Age:**

Calculated as of April 2015 (due to missing data)

- **Co-prescribed drugs**

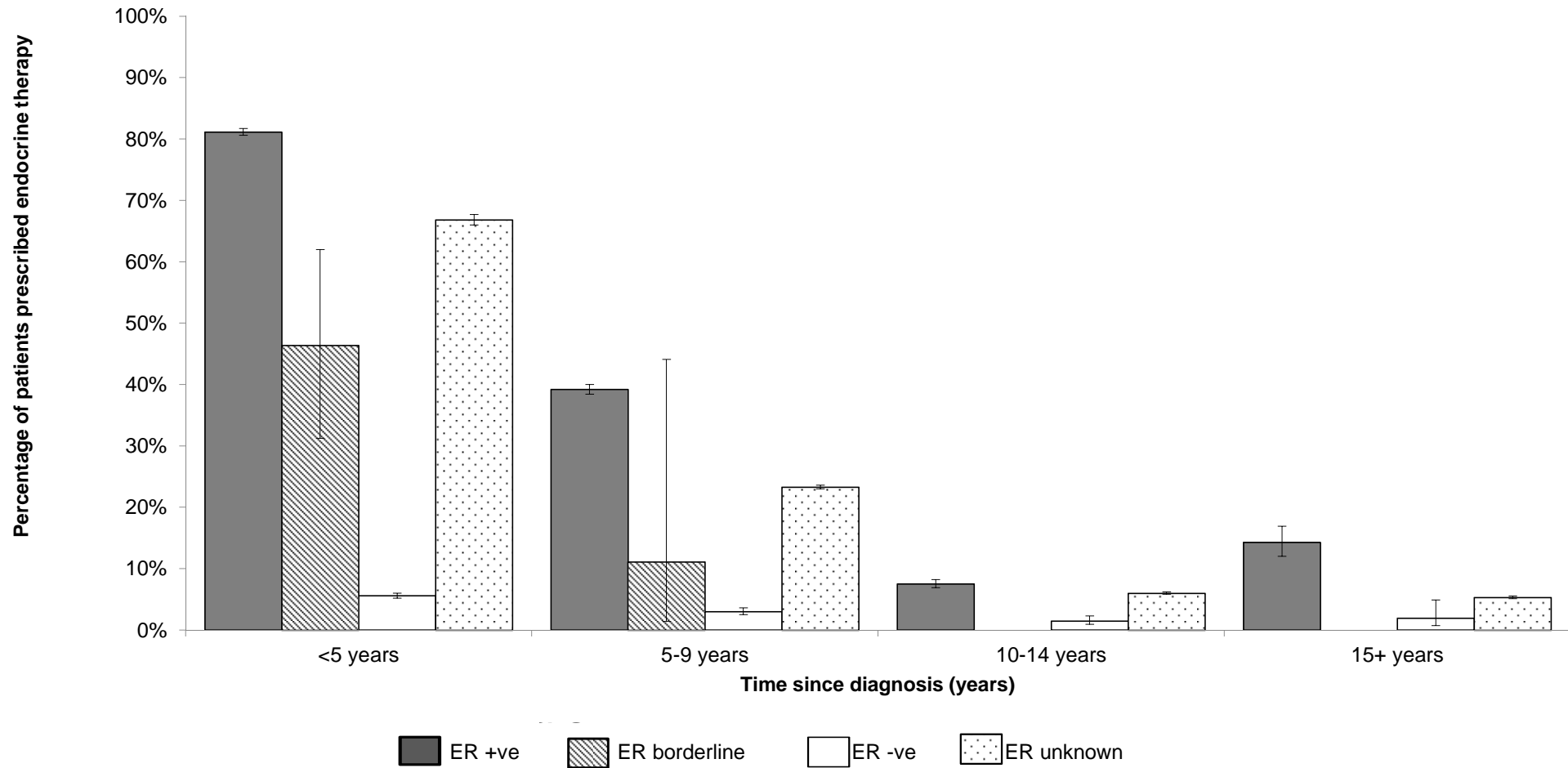
For early stage breast cancer patients diagnosed after July 2010

Co-prescribed defined as therapies prescribed within the same four months (April-July 2015).

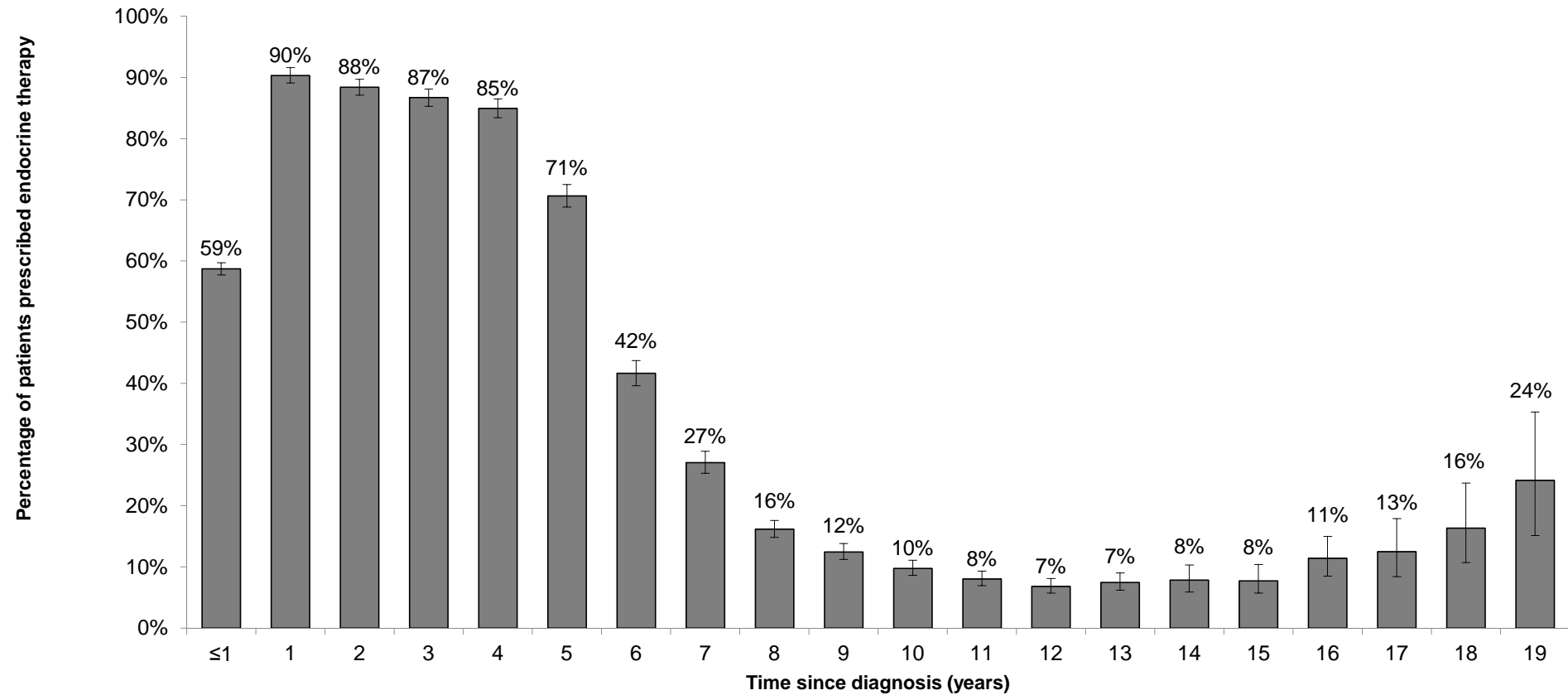
The cohort

- 369,280 women with breast cancer diagnosed during the years 1995-2015.
- 37% were prescribed ET during the reference period of April-July 2015:
 - 69% ER+ve
 - 42% ER borderline
 - 23% ER unknown
 - 5% ER-ve
 - 25% ER-ve and progesterone receptor positive
 - Data quality issue in the cancer registry
 - Data quality issue in the prescriptions data
- The highest proportion of prescriptions was for tamoxifen (34%) and aromatase inhibitors (64%).

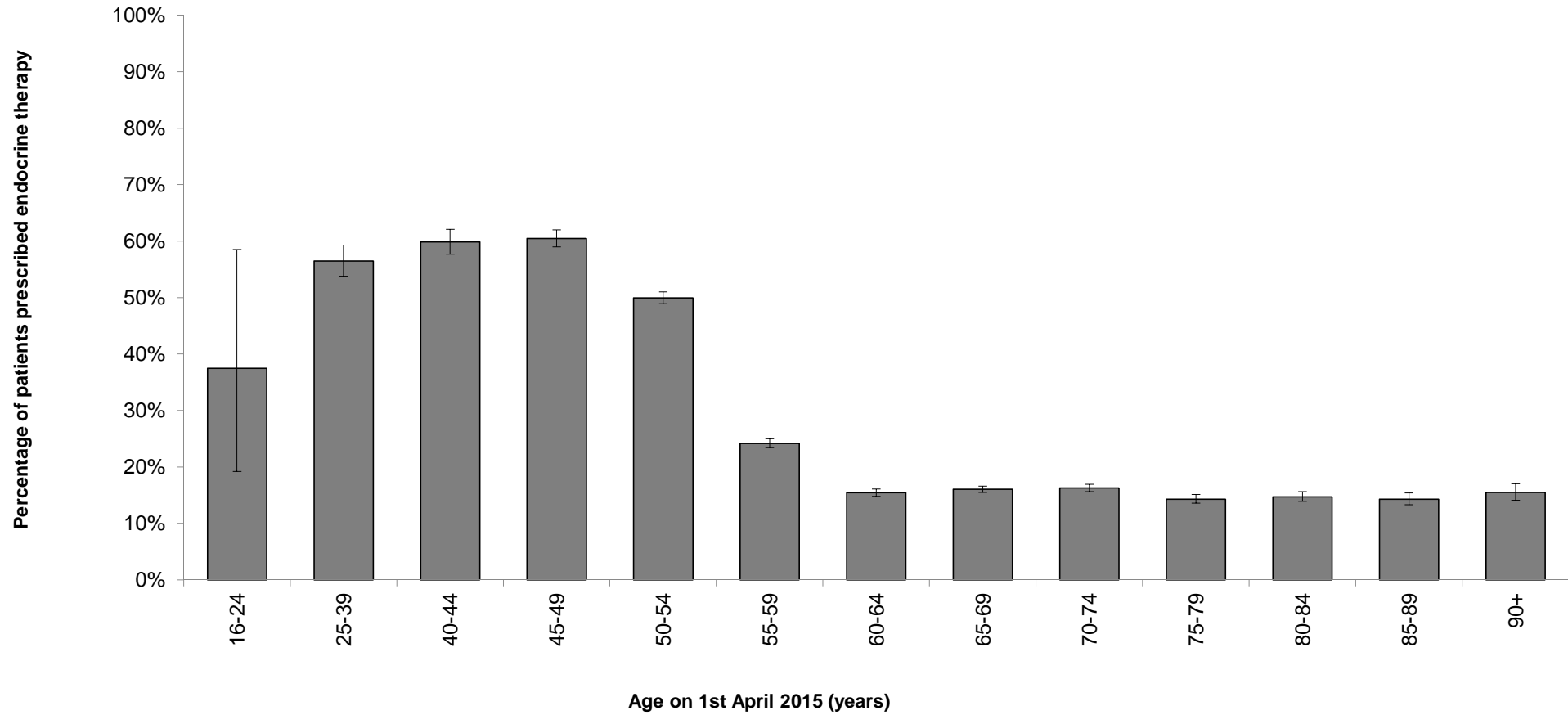
ET prescriptions by ER status and time since diagnosis



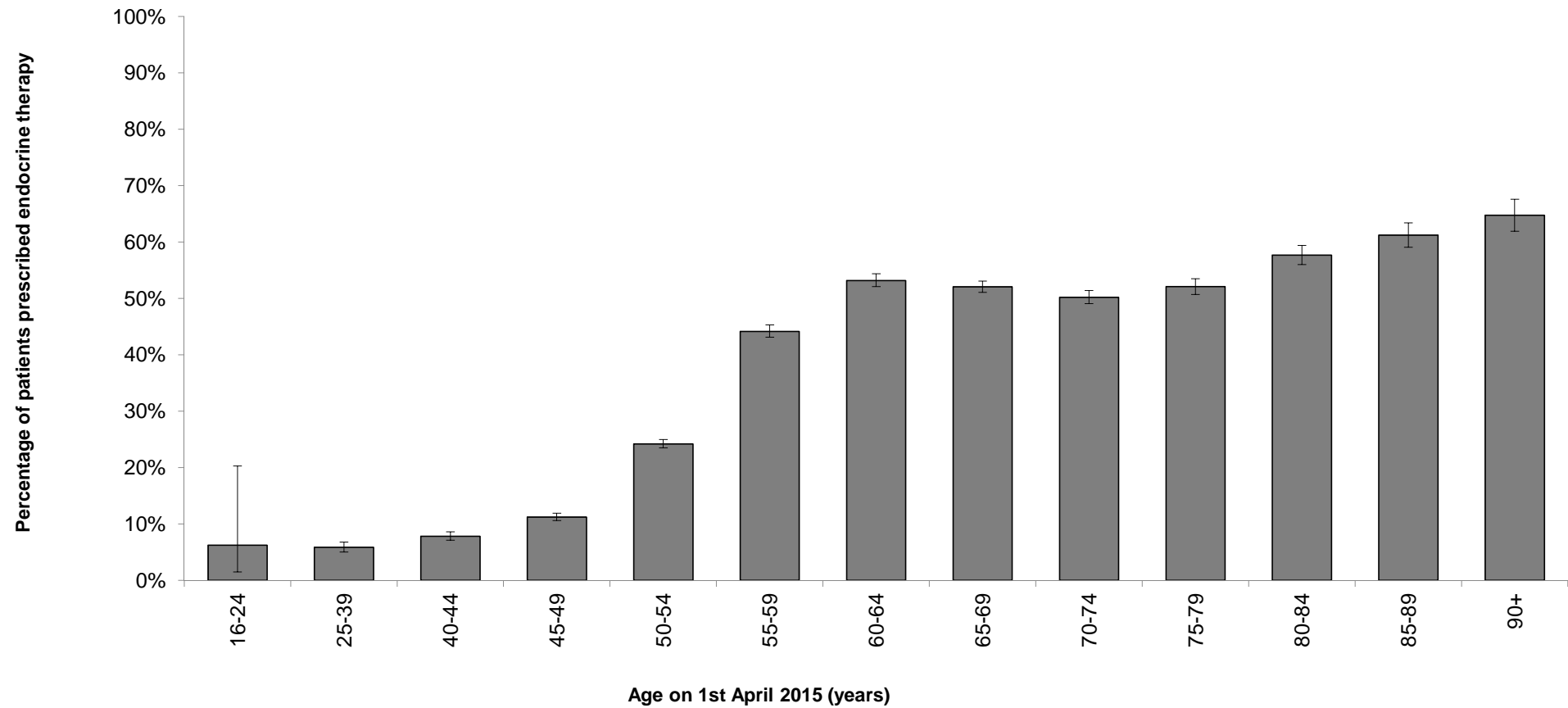
ET prescriptions by time since diagnosis – ER+ve patients



Tamoxifen prescriptions by age – ER+ve patients



Aromatase inhibitor prescriptions by age – ER+ve patients



Co-prescribed drugs

- In early stage ER+ve women diagnosed between 2010 and 2015

Co-prescribed with aromatase inhibitors

- Oral bisphosphonates – 22% of patients

Co-prescribed with ET

- Analgesics (opioid and non-opioid) – 27% of patients
- Statins – 24% of patients
- Aspirin – 9% of patients
- Oral hypoglycaemics – 7% of patients
- Anticoagulents – 4% of patients

Conclusions 1)

- Guidelines recommend ET be prescribed for five years and in accordance to a woman's menopausal status.
- 90% received ET prescriptions during the second year after diagnosis.
- Prescribing dropped more than five years after diagnosis.
- The majority of younger women (under 55) received tamoxifen.
- The majority of older women (55+) received aromatase inhibitors.
- Oral bisphosphonates and analgesics were co-prescribed as a result of side effects associated with cancer treatment.

Conclusions 2)

- Before the linkage, ET prescribing in women with breast cancer in England could not be reliably captured for the entire population.
- Prescribing was as expected from clinical practice.
- This study provides confidence in the use of the prescriptions data for epidemiological purposes.
- Prescriptions data can be used to study long-term cancer therapies which are not hospital based.

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