# Reduced delay in diagnosis of cancer after implementation of ‘fast track’

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## Problem and causes

- Danish cancer patients had lower survival rates and less favourable stage distribution than patients in other Nordic countries.
- In 2004, system delays, particularly in relation to diagnosing cancer, accounted for a substantial part of the total delay experienced by Danish cancers patients.
- As a response, the Danish government introduced the National Integrated Cancer Pathways (“fast track”) in 2008.
- The purpose of introducing “fast track” was to reduce delays in diagnosis and treatment by re-organising the diagnostic cancer pathway and making it more specialised and coherent.

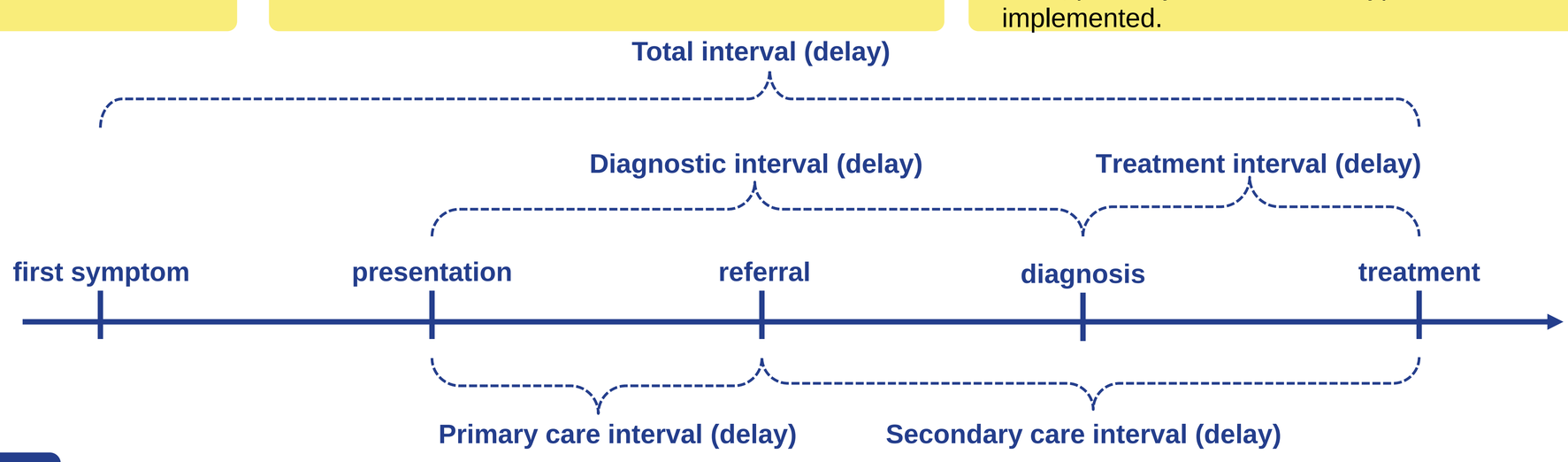
## Design and measurement

- We performed a natural experiment to compare the length of time intervals before and after the introduction of “fast-track”.
- Participants: 14,023 incident cancer patients in Denmark sampled in 2004/05, 2007/08 and 2010, respectively.
- Each patient’s GP received a questionnaire 2-4 weeks after the diagnosis and determined milestones dates using electronic patient files and hospital discharge letters.
- Outcome measures: Total, diagnostic, treatment, primary and secondary care intervals (see Fig. 1)
- We used Wilcoxon rank sum test to test differences between the three cohorts and stratified the analyses by gender.

## Intervention and strategy for change

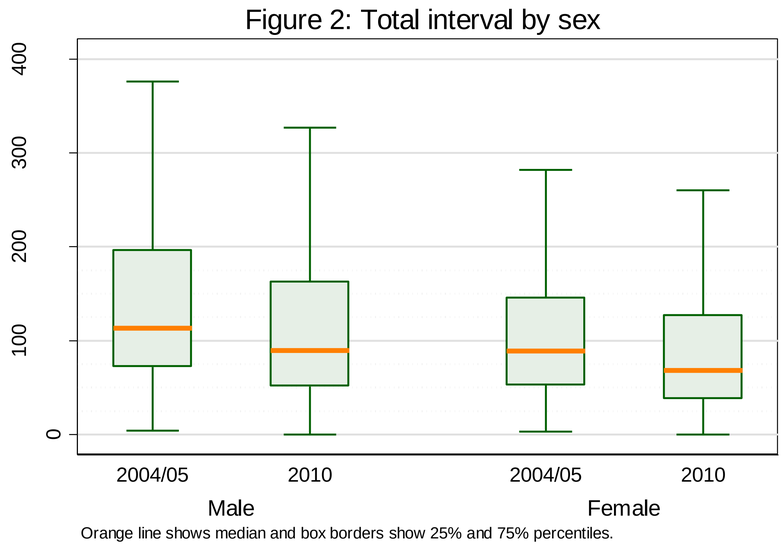
- Organisational and clinical standards were developed for cancer diagnosis and treatment in Denmark.
- Standards were developed by 14 working groups supervised by the National Board of Health.
- The working groups established national guidelines comprising clinical descriptions that included time standards for all steps in the clinical processing.
- Each region in Denmark implemented the guidelines by different methods, but it was recommended only to use internationally recognised methods.
- The National Board of Health supplied the regions with predicted activity levels in each region.
- The implementation began in April 2008. By January 2009, pathways for 34 cancer types were implemented.

Figure 1: Time intervals(delay) and associated milestones



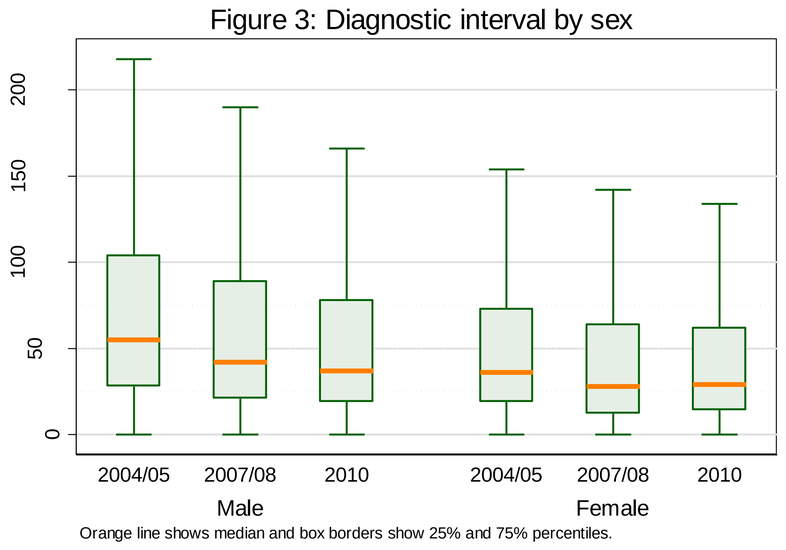

## Results

Figure 2: Total interval by sex



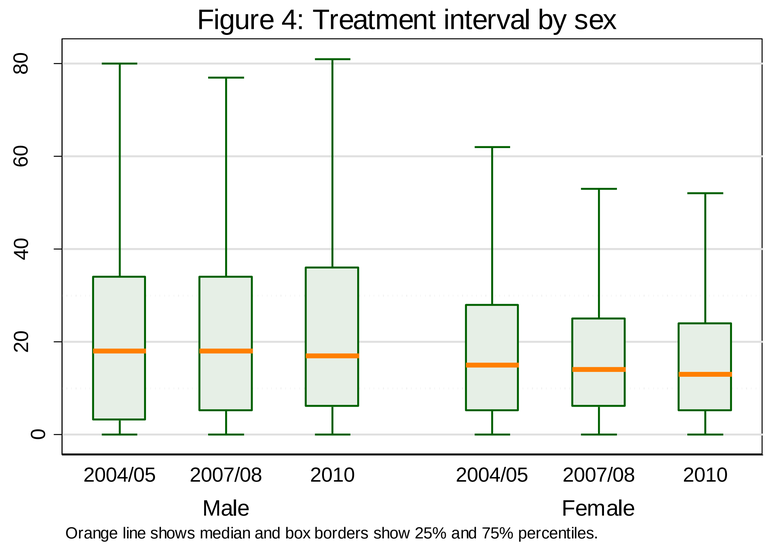

Orange line shows median and box borders show 25% and 75% percentiles.

Figure 3: Diagnostic interval by sex




Orange line shows median and box borders show 25% and 75% percentiles.

Figure 4: Treatment interval by sex



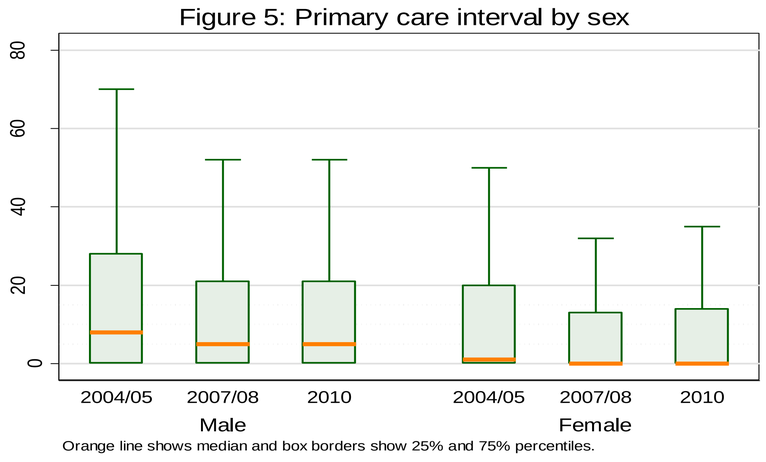

Orange line shows median and box borders show 25% and 75% percentiles.

**Total interval (Fig. 2)**
Decreased from 101 (58-174) days to 80 (43-152) days (p<0.001).

**Diagnostic interval (Fig. 3)**
Decreased from 45 (22-93) days to 34 (15-72) days (p<0.001). The decrease was observed from 2004/05 to 2007/08 (p<0.001) and sustained in 2010 (p=0.551).

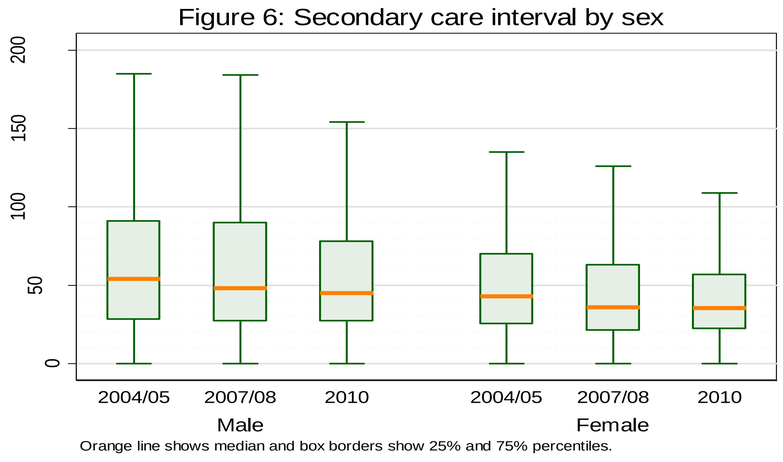
**Treatment interval (Fig. 4)**
No overall changes were observed (p=0.266). A trend of males experience a longer treatment interval was observed (p=0.024)

Figure 5: Primary care interval by sex




Orange line shows median and box borders show 25% and 75% percentiles.

Figure 6: Secondary care interval by sex




Orange line shows median and box borders show 25% and 75% percentiles.

**Primary care interval (Fig. 5)**
Decreased from 5 (0-25) days to 1 (0-19) days in 2010 (p<0.001). The decrease was observed from 2004/05 to 2007/08 (p<0.001) and sustained in 2010 (p=0.699).

**Secondary care interval (Fig. 6)**
Decreased from 47.5 (26-80) days to 40 (23-69) days in 2010 (p<0.001). The decrease was observed from 2004/05 to 2007/08 (p<0.001) and sustained in 2010 (p=0.126).

## Lesson learnt and take-home message

- In general, we saw a decrease in time intervals after the implementation of Integrated Cancer Pathways in Denmark, but the difference in treatment interval was not statistically significant. Despite the general decrease, many cancer patients - especially males - still experienced rather long waiting times (delays).
- The reduction in time intervals seemed to occur already from 2004/2005 to 2007/2008, i.e. prior to the implementation of ‘fast track’ – indicating that factors such as culture, awareness and commitment among health care professionals and administrators may also have influenced the length of the cancer diagnostic pathways. Further investigation of these factors and their impact is needed.

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