

# Comparative Success Rates of Immuno-Oncology Versus Other Cancer Treatments Appraised by NICE in the UK, 2011 -2020

Pagotto A, Gonçalves Bradley D, Kontogiannis V, Chalmers K, Langford B, Rinciog C, Sawyer L, Diamantopoulos A

Symmetron Limited, London, England • Poster inquiries: apagotto@symmetron.net • www.symmetron.net

## Immuno-oncology treatments: the promise

- Immuno-oncology (I-O) therapies stimulate the body's own immune system to kill cancer cells.<sup>1</sup>
- I-O therapies have emerged as an alternative to conventional anti-cancer treatments, including surgery, chemotherapy, targeted therapy and radiotherapy.<sup>2</sup>
- Over the last decade, the rapid development of I-O therapies for various indications has transformed the cancer treatment landscape by providing **outstanding clinical outcomes** across many tumour types.<sup>2</sup>

## Immuno-oncology treatments: the challenge

- Since the emergence of I-O therapies, Health Technology Assessment (HTA) agencies have reviewed many I-O appraisals for multiple oncology indications.
  - However, reimbursement of I-O therapies can be hindered because they are more biologically complex and expensive than other cancer therapies.
- We evaluated the HTA appraisal process for I-O drugs by the National Institute for Health and Care Excellence (NICE) in the UK in the last decade, to quantify their success rate and compare it with the other cancer drugs appraised in the same period.**

## Immuno-oncology treatments: how do they compare to other treatments?

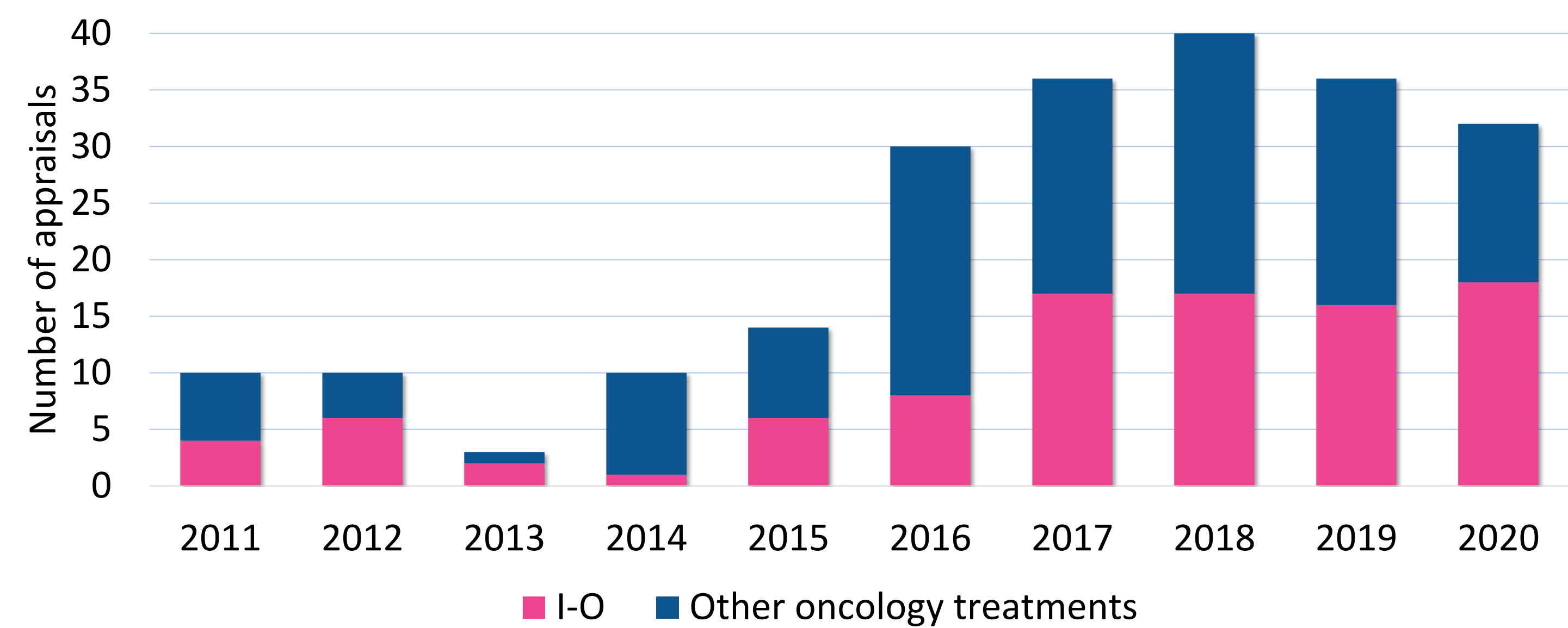
### Conclusions

- I-O therapies were recommended for reimbursement by NICE at a **similar rate** as other cancer therapies (85.3% vs. 86.2%).
- I-O therapies were **more likely** than other cancer therapies **to be reimbursed within the Cancer Drugs Fund** (22.7% vs 11.0%).

### Limitations

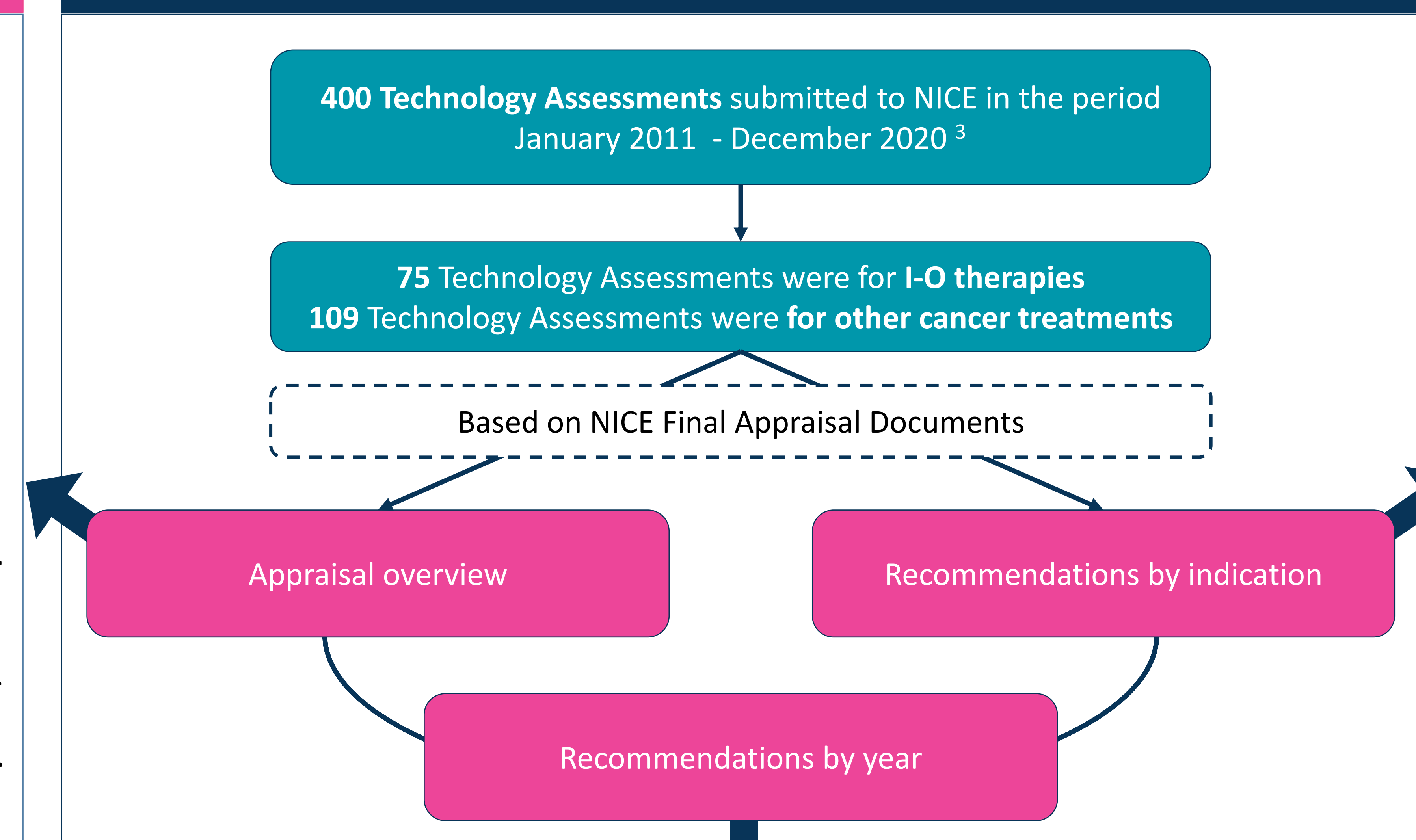
- Only information publicly available on the NICE website was analysed.

## Oncology appraisals submitted to NICE



- Out of all 400 appraisals, **more than half were oncology appraisals** (55.2%).
- **23.7%** of all NICE appraisals assessed **I-O treatments**, and **31.5%** assessed **other cancer treatments**, including chemotherapy and targeted therapies.
- The number of oncology appraisals increased substantially from 2016: the number of I-O appraisals increased from 4 (2011) to 18 (2020), while the number of appraisals for other cancer treatments increased from 6 to 14
- **Terminated appraisals** represented **21.1%** of all I-O appraisals and **13.5%** of all other cancer treatment appraisals.

## Identifying factors linked to reimbursement success

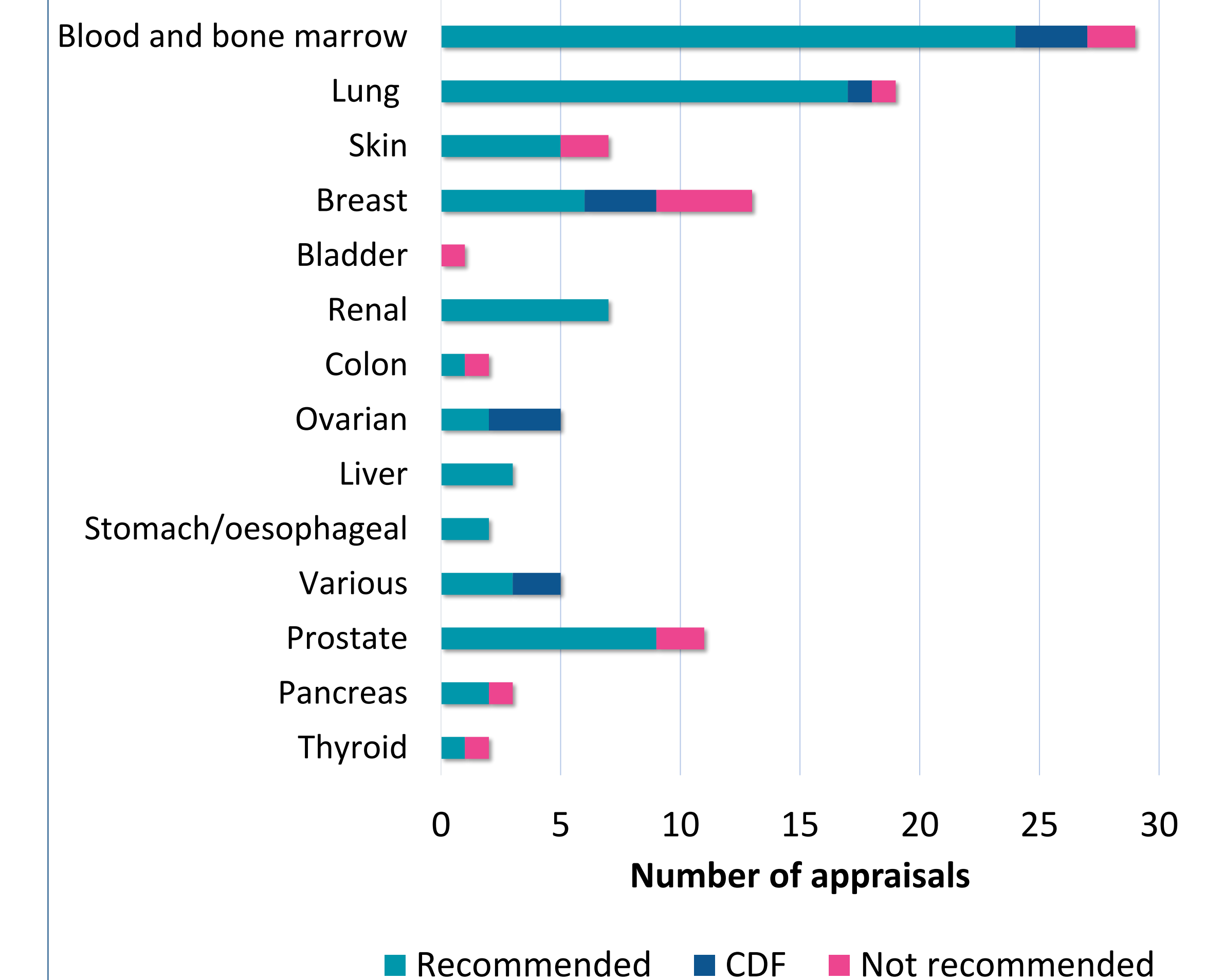


## NICE recommendations by indication

### I-O treatments



### Other cancer treatments



- **Blood and bone marrow cancers and lung cancers** were the most appraised indications for both I-O and non-I-O treatments.
- All **25 I-O appraisals of blood and bone marrow treatments were successful**: 18 recommended within the National Health Service and 7 within the Cancer Drugs Fund. The **success rate** for this indication was also **high for other cancer treatments** (93.1%): 24 within the National Health Service and 3 within the Cancer Drugs Fund.
- **I-O treatments** seemed **more successful** against **skin and bladder cancers**, whereas **other treatments** were **more successful** against **lung, renal and ovarian cancers**.
- I-O and other treatments were similarly **successful against breast cancer** (66.7% vs. 69.2%).
- There were no I-O treatment appraisals for prostate, pancreas and thyroid cancer. There were no other cancer treatment appraisals for head and neck cancer or mixed indications.

## NICE recommendations by year

### Appraisals recommended by NICE and the Cancer Drugs Fund

- **62.6%** of I-O therapies and **75.2%** of other cancer treatments were recommended for reimbursement **within the National Health Service**.
- **I-O therapies were twice as likely** as other cancer therapies **to be reimbursed within the Cancer Drugs Fund** (22.7% vs 11.0%). Rates of recommendation for either the National Health Service or Cancer Drugs Fund were similar for I-O treatments (85.3%) as for other cancer treatments (86.2%).

### Negative recommendations

- The **rate of appraisal failure** was similar for I-O treatments (14.7%) as for other cancer treatments (13.8%).

### Success rate over time

- The **number of recommendations increased over the years** for both I-O treatments and other treatments, in parallel with the increase in the total number of oncology appraisals.
- Since its inception in 2016, the Cancer Drugs Fund has played an important role in the reimbursement of I-O treatments.

