



Society of Actuaries in Ireland

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**PROJECTIONS OF EXPENDITURE FOR  
PUBLIC HOSPITALS IN IRELAND, 2018–2035,  
BASED ON THE HIPPOCRATES MODEL**

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15<sup>th</sup> March 2021

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# Disclaimer

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# BACKGROUND

- ESRI/DoH Research Programme in Healthcare Reform, 2014
- The broad objective
  - to apply economic analysis to explore issues in relation to health services, health spending and population health, to inform the development of health policy and the Government's healthcare reform agenda
- Model (Hippocrates) development began in 2015
  - Demand (Wren, et al. 2017)
  - Capacity (Keegan, et al. 2018)
  - Expenditure (Keegan et al. 2020; Brick & Keegan, 2020; Wren & Fitzpatrick, 2020)

# OUTLINE

- 1) Waiting lists
- 2) Hippocrates public acute hospital expenditure projections



# **PAYING MORE TO WAIT LESS: THE COST OF REDUCING IRELAND'S PUBLIC HOSPITAL WAITING LISTS**

**AOIFE BRICK**

**PRESENTATION TO THE SOCIETY OF ACTUARIES IN IRELAND**

**15<sup>TH</sup> MARCH 2021**

# CONTEXT

- Waiting lists are a feature of all health systems and a significant issue in Ireland over the last two decades
- Capacity constraints being the most likely cause with several recent reports highlighting the requirement for more beds etc.
- Sláintecare report from the Committee on the Future of Health in 2017 set waiting time targets
- Having large numbers on waiting lists is not necessarily an issue, the issue is long waiting times

# AIM

- Important for expenditure projections
- The aim of this analysis is to estimate the **activity** and **expenditure** required to reduce public patient waiting times to **12 weeks** over a 5-year period
- 12 weeks is used as a working assumption for all services – Sláintecare report suggested 10 weeks for outpatients

# SCOPE

## ■ Activity

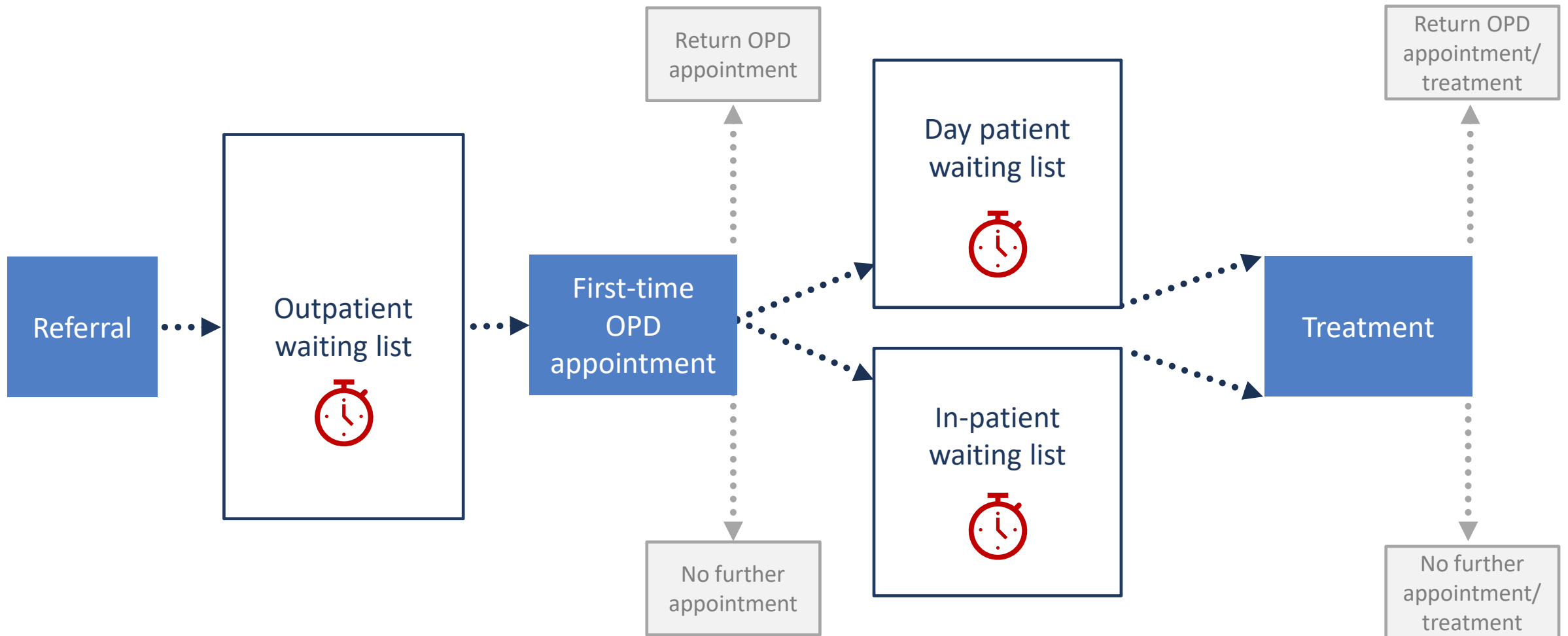
- Public patients
- Public hospitals
- Specialty

## ■ Expenditure

- OPD – first appointment cost only
- DP/IP – treatment cost
- We do not account for the cost of
  - increasing bed capacity (capital) or staffing in the public sector
  - commissioning treatment



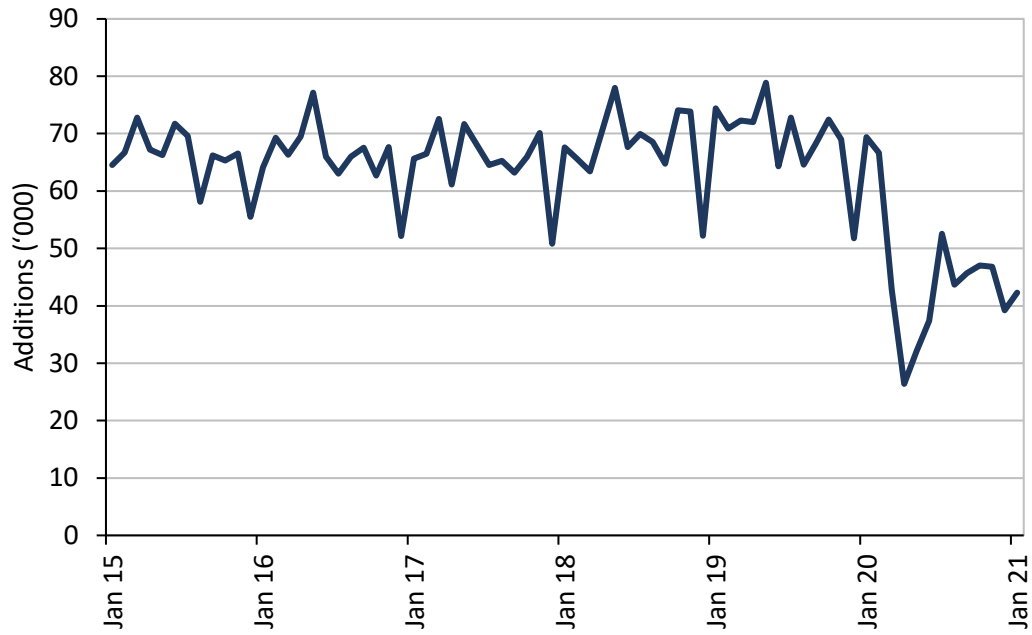
# PUBLIC PATIENT PATHWAY OUTLINE



# DATA

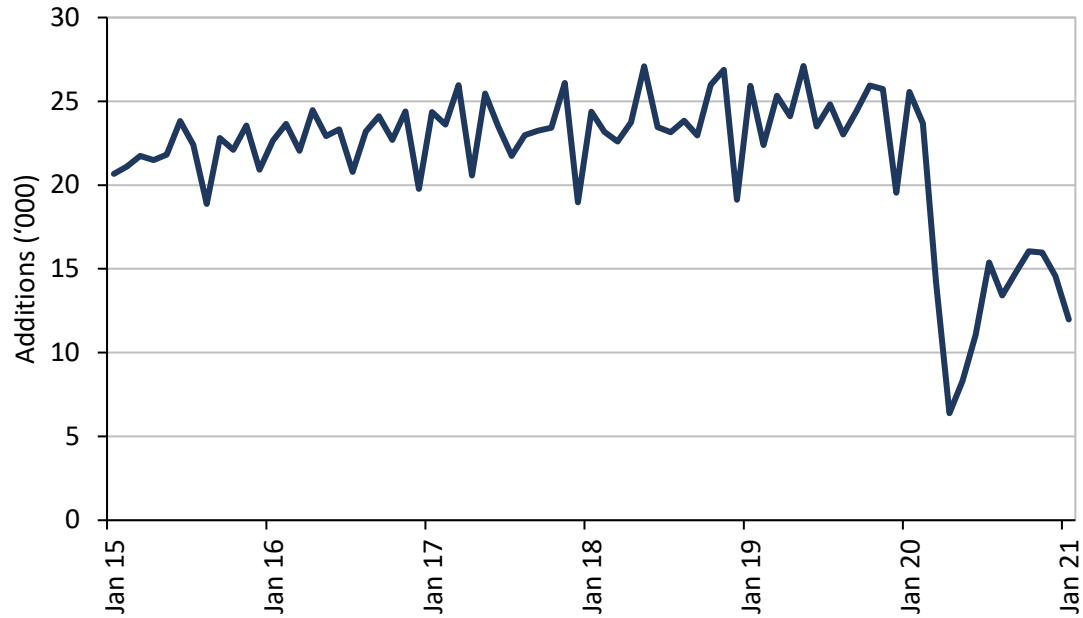
- Waiting list data – **National Treatment Purchase Fund**
  - Three waiting lists considered – outpatient, day patient and in-patient
    - total number of patients waiting and the number of additions to the lists each month 2015-2020.
    - age and sex profile of waiters 2018
- Expenditure – **Healthcare Pricing Office**
  - Outpatient – HPO specialty costing – mean cost of outpatient appointment in 2018
  - Day/in-patient – HPO Hospital In-Patient Enquiry Scheme – complexity weights and base costs 2018

Outpatients

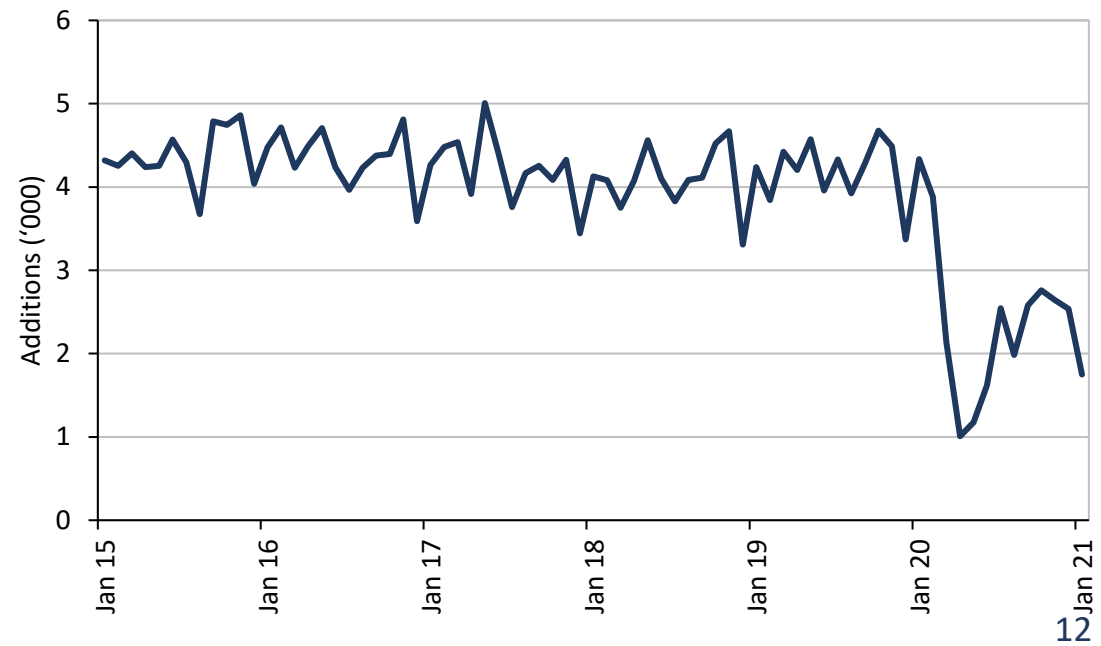


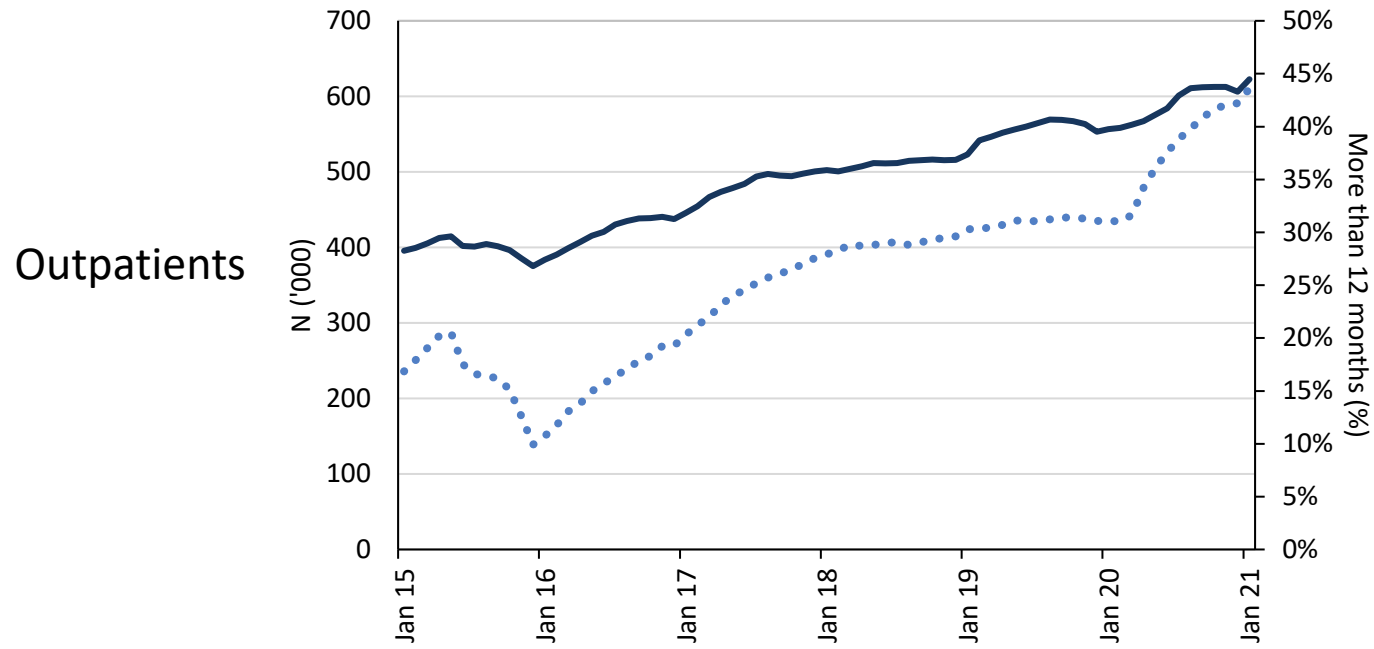
Additions to the list by month  
January 2015-January 2021

Day patients

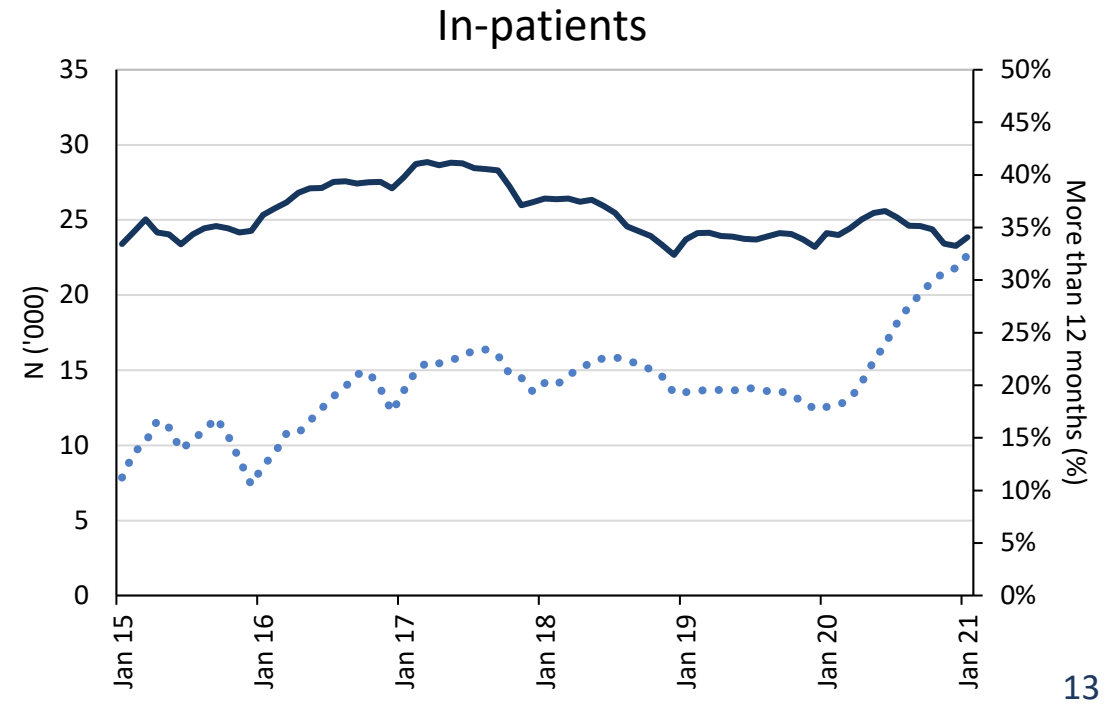
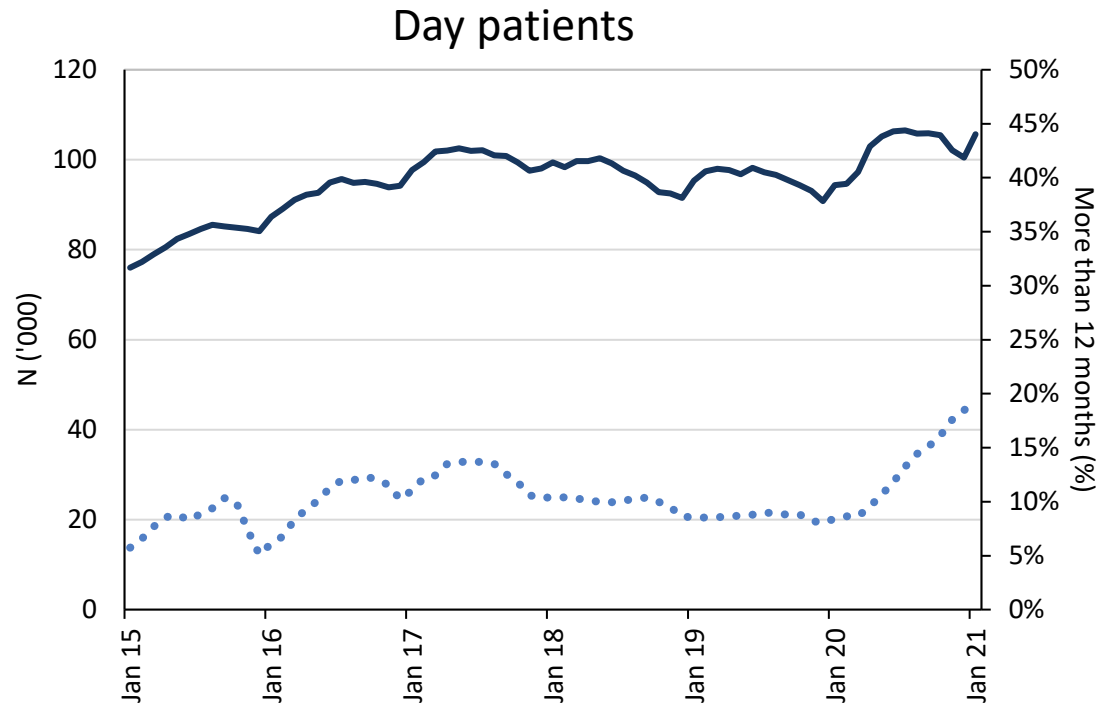
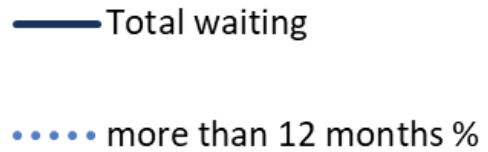


In-patients





Waiting >12 months	January 2020	January 2021
OPD	31%	44%
DP	8%	20%
IP	18%	32%





# METHOD



# ACTIVITY REQUIREMENTS

- How much additional activity is required to reduce and maintain waiting lists at 12 weeks within 5 years (2021-2025)?
  - 1) **Non-recurring activity (backlog)**: the number of people waiting for longer than 12 weeks at a point in time
  - 2) **Recurring activity**: the amount by which activity needs to increase each year, above the established growth trend, to stop waiting times from growing
  - 3) **Outpatient conversion**

# ACTIVITY REQUIREMENTS

## 1) Non-recurring (backlog)

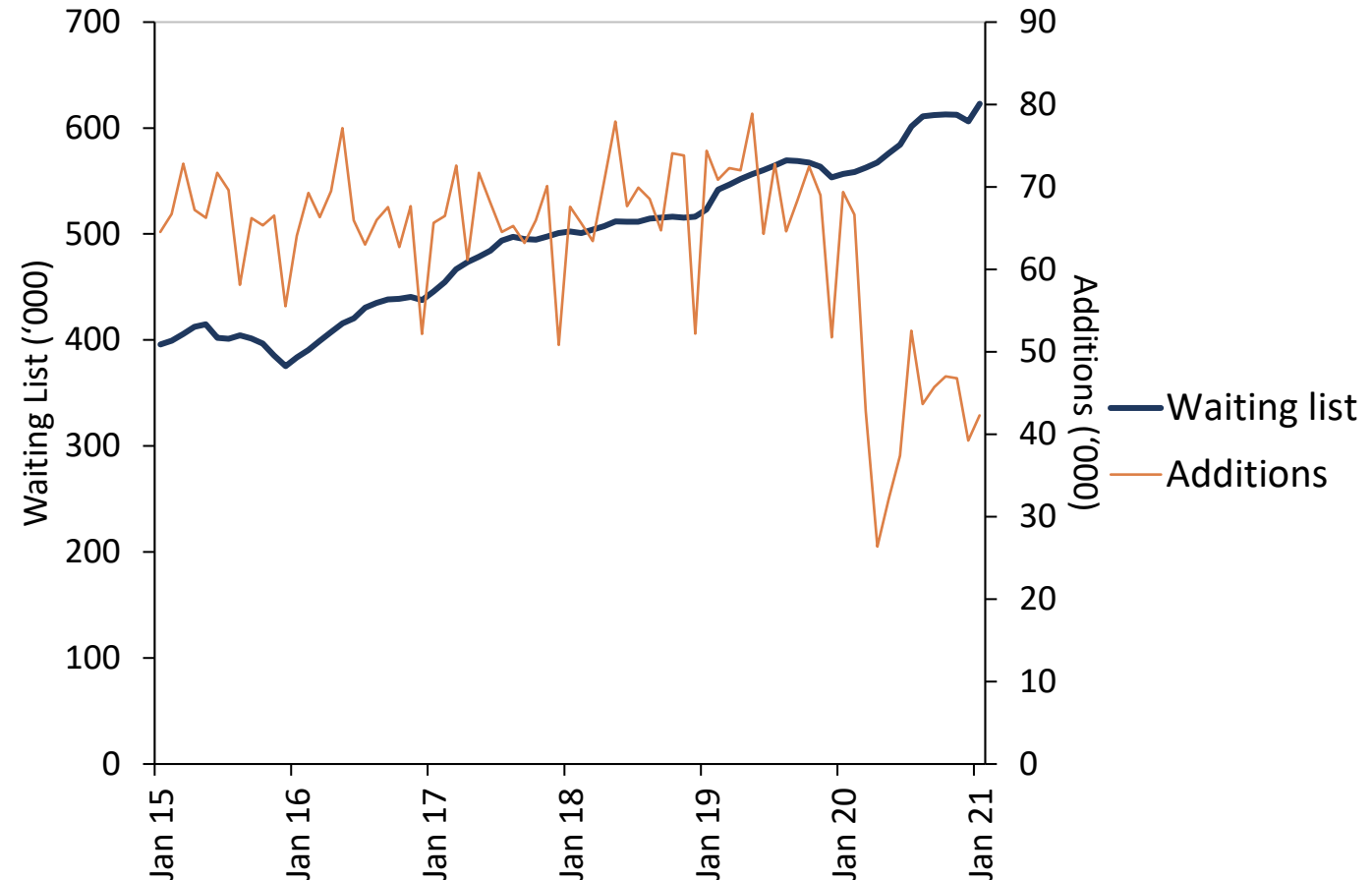
- We have *assumed* the backlog stopped growing at the end of December 2020
- Backlog calculated for each month between November 2018 and October 2020
- For Hippocrates we take the **maximum** of the backlog calculations

# ACTIVITY REQUIREMENTS

## 2) Recurring activity

- Two series are considered

- i) Waiting list growth rate
- ii) Additions growth rate



- To ensure that waiting times do not grow, the waiting list growth rate must be no faster than the addition growth rate.



# ACTIVITY REQUIREMENTS

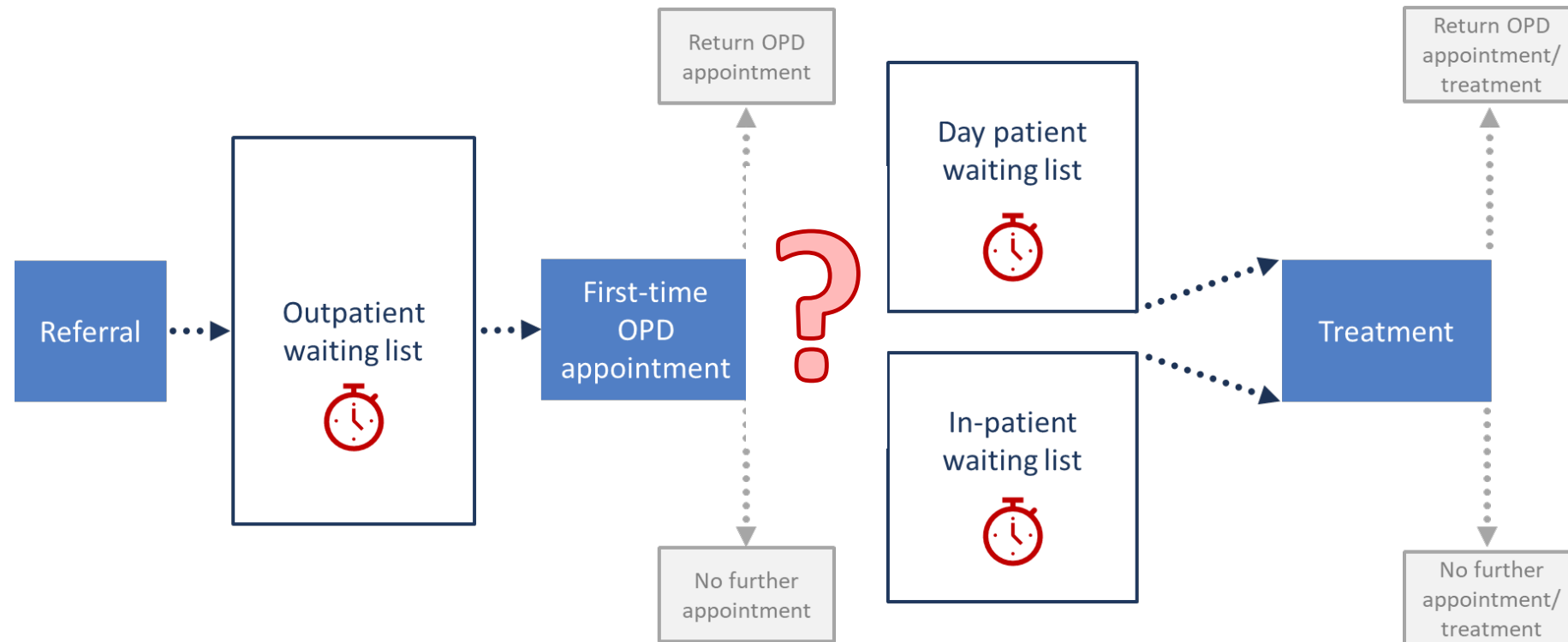
## 2) Recurring activity cont'd.

- For the three services between March 2015/2016 and February 2019/20
  - **Waiting list** mean year-on-year growth rate
  - **Additions** mean year-on-year growth rate
- Each growth rate is applied to the total list size.
- Differential between the two is the volume of additional activity required to stop waiting times from growing

# ACTIVITY REQUIREMENTS

## 3) Outpatient conversion

- In order to maintain waiting times at 12 weeks we must consider the conversion of the outpatient recurring and non-recurring activity to day or in-patient activity



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- In order to maintain waiting times at 12 weeks we must consider the conversion of the outpatient recurring and non-recurring activity to day or in-patient activity
- In the UK, where referral to treatment lists are used, it is estimated at 36% (Charlesworth et al., 2020)
- As a working assumption for Hippocrates we apply an OPD conversion rate of 33.3%

# EXPENDITURE REQUIREMENTS

- How much additional expenditure is required to reduce and maintain waiting lists at 12 weeks within 5 years?
- Outpatient activity –
  - There are no patient level costs available
  - We use the mean cost of an outpatient appointment as calculated by the Healthcare Pricing Office.
- Day and in-patients – Costs will vary depending primarily on the treatment required but also by the age and sex of the patient.



# FINDINGS



# ADDITIONAL ACTIVITY AND EXPENDITURE 2021-2025

		LOW (20%)		HIGH (33.3%)	
		Activity	Expenditure	Activity	Expenditure
		('000)	(€m)	('000)	(€m)
<b>Non-recurring (Backlog)</b>	OPD	104	20	104	20
	DP (incl. OPD conversion)	34	45	45	61
	IP (incl. OPD conversion)	7	65	10	83
	Non-recurring - per annum	-	130	-	164

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	DP (incl. OPD conversion)	34	45	45	61
	IP (incl. OPD conversion)	7	65	10	83
	Non-recurring - per annum	-	130	-	164
Recurring	OPD	45	9	45	9
	DP (incl. OPD conversion)	8	11	14	18
	IP (incl. OPD conversion)	2	14	2	22
	Recurring - per annum	-	33	-	48

# ADDITIONAL ACTIVITY AND EXPENDITURE 2021-2025

		LOW (20%)		HIGH (33.3%)	
		Activity	Expenditure	Activity	Expenditure
		('000)	(€m)	('000)	(€m)
<b>Total</b>	OPD	149	29	149	29
	DP (incl. OPD conversion)	42	57	59	79
	IP (incl. OPD conversion)	9	79	12	104
	Per annum (2021–2025)	-	164	-	212

	Required (max)	2018 actual	%
OPD (first time public ex maternity)	149	950	16
DP (public ex maternity-non-DCR)	59	560	11
IP (public ex maternity -elective-non-DCR)	12	72	17



# SUMMARY

- Substantial initial expenditure over 5-year clearance period of between €800m and €1.1bn or circa €200m per annum
- €200m is approximately 3.3% of total expenditure in 2018 which was €5.9bn
- Expenditure in subsequent years (2026+) would be approximately €65m additional to maintain
- Potential to offset the required expenditure

# SUMMARY

- Periodic updating of the analysis required
- Future work – data requirements

# THANK YOU



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