WORK AFTER CANCER – THE VALUE & THE COSTS

ALISON PEARCE @aliepea

CANCER INSIGHTS PUBLIC LECTURE

23 MAY 2017

UTS BUSINESS SCHOOL

National Cancer Registry Ireland

Bowel cancer victims denied life-prolonging drug that's free in Europe

ANOTHER CANCER DRUG TOO DEAR FOR BRITAIN

Tories accused of stalling on election pledge to lift block on life-prolonging cancer drugs

Condemned to an early death

VICTORY THAT CAME TOO LATE

BETRAYAL OF THE CANCER PATIENTS

Rationing watchdog accused of talking down wonder drug's power to save lives

SUNDAY EXPRESS

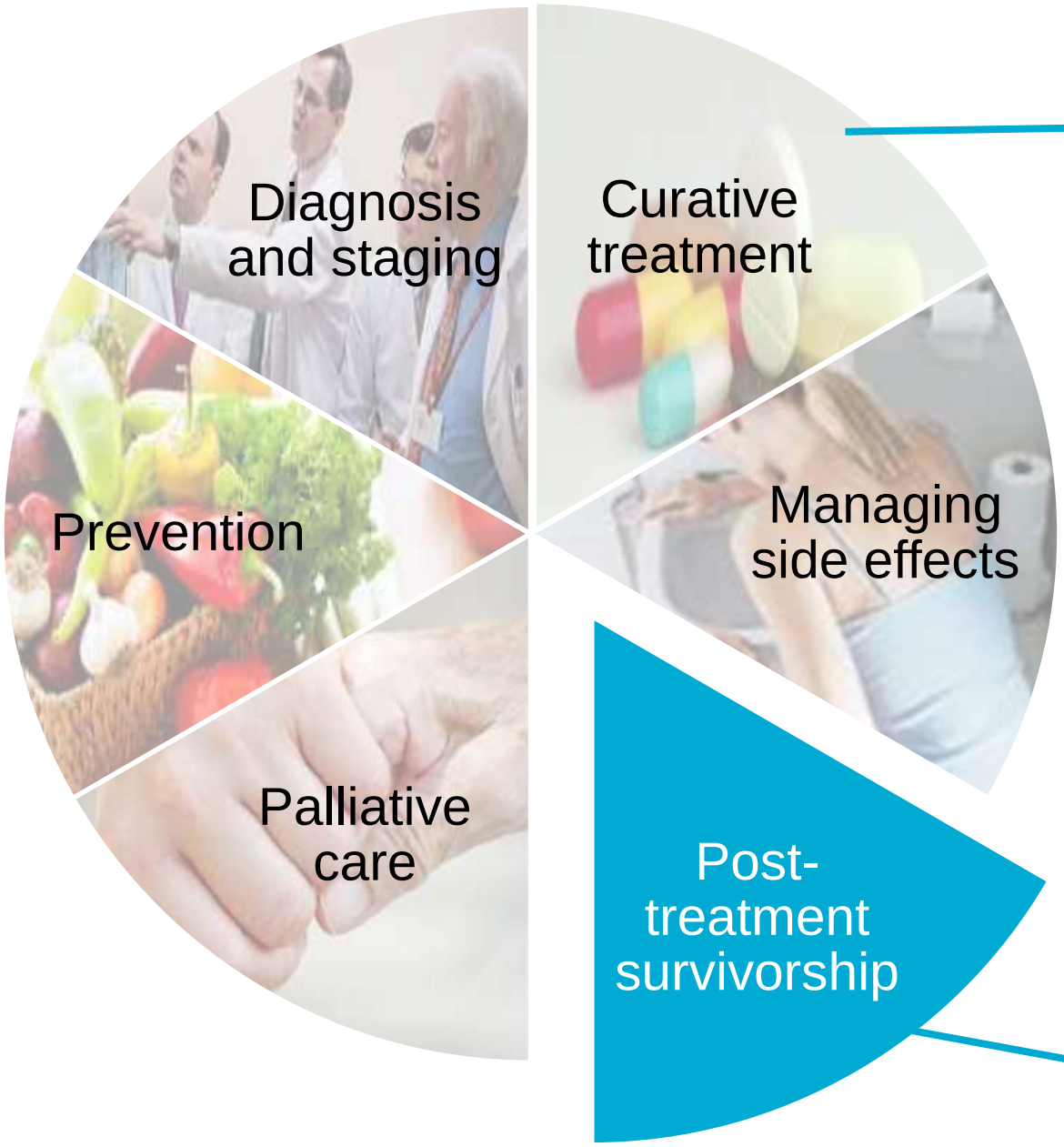
FREE INSIDE

GET FIT & FEEL FABULOUS IN 7 DAYS!

FREE

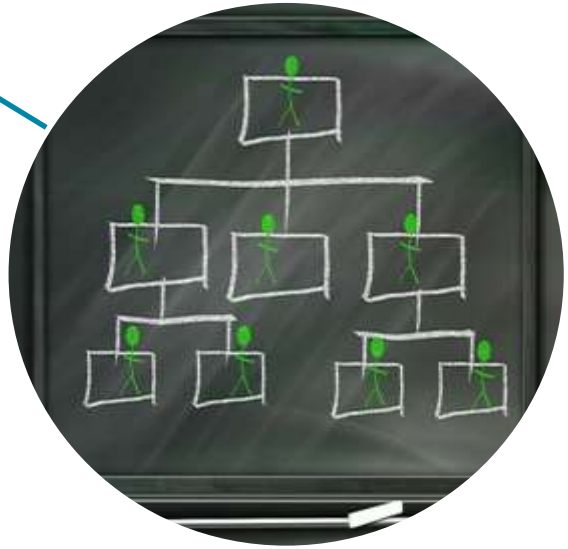
NHS REFORMS WILL KILL CANCER PATIENTS

Bus crash bride fights for her life



Working after cancer


5,970
35,933
1,720
1,710
539,137
1,720
0.316
0.314
48,100
0.314
1,190
1,180
833,789
1,190
0.338
0.332
10,000
0.332
0.479
0.460
10,000



MEANING OF WORK

- Work contributes to / provides:
  - an individual's sense of identity
  - personal challenge and satisfaction
  - relationships with others as social beings
- Returning to work after cancer is seen as re-establishing former structure of every day life
- Being seen as normal and healthy

Lilliehorn et al (2012); Rasmussen & Elverdam (2008)

UNABLE TO WORK

- Reasons for not returning to work:
  - Too fragile
  - Discouraging workplace
  - Took an opportunity to pause
  - Lost the taste for work
- If unable to work, need to establish new activities to give meaning to life or risk:
  - Lower quality of life
  - Depression

Lilliehorn et al (2012); Rasmussen & Elverdam (2008); Ramirez et al (2003)

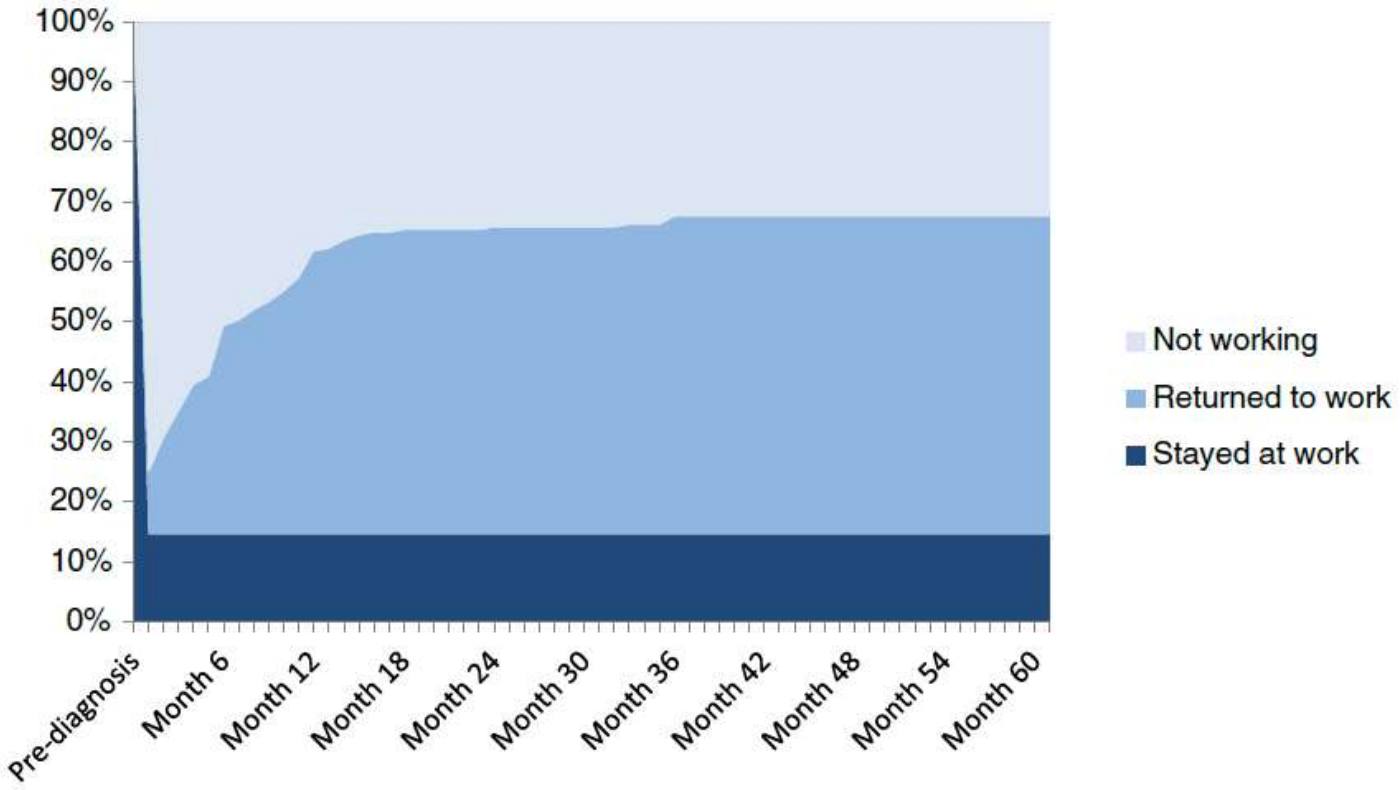
CANCER AND WORK

- Almost half of cancer diagnoses occur in working age (<65 years)
- Improved treatments and survival mean many are surviving long enough to return to work
- Approximately 60% of cancer survivors return to work after 12 months (range 30% to 93%)

De Boer (2011)

EXAMPLE – RTW AFTER HNC

Fig. 1 Proportion of individuals employed at the time of head and neck cancer diagnosis and included in the analysis, working from time of diagnosis to 5 years following HNC diagnosis

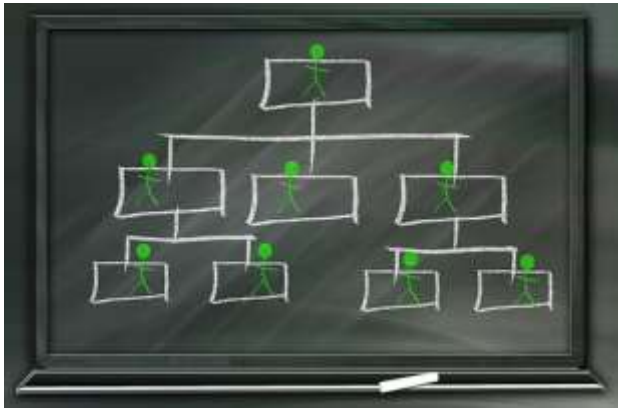


IMPACT ON INCOME

- Financial impact of cancer is worse for whose work is effected
- Cancer survivors earn about 12% less than those without cancer, and these continue up to 10 years after diagnosis
- Loss of earnings can represent a moderate or large burden on family
  - Note that unemployed often have few reserves to meet costs of care (scripts, travel, heating, diet, etc)

Syse (2008); Jeon (2014)

IMPACT ON EMPLOYER & ECONOMY



Profits

Gross Domestic Product

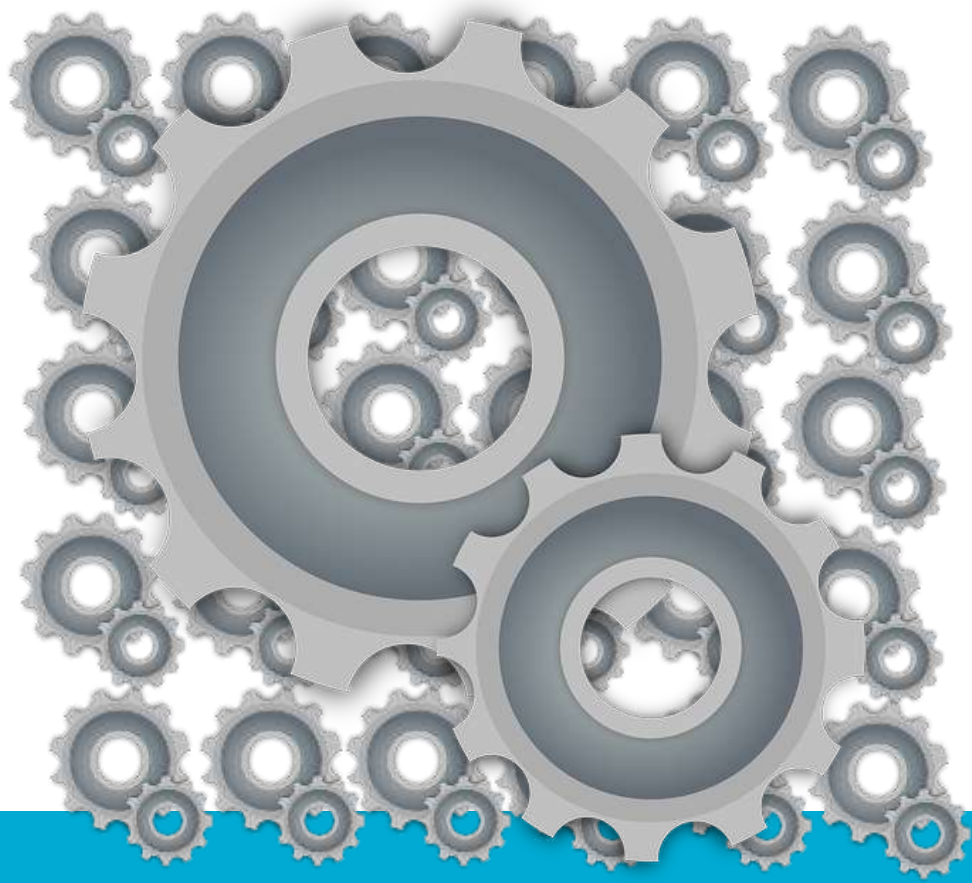
Productivity

WHAT ARE PRODUCTIVITY LOSSES?

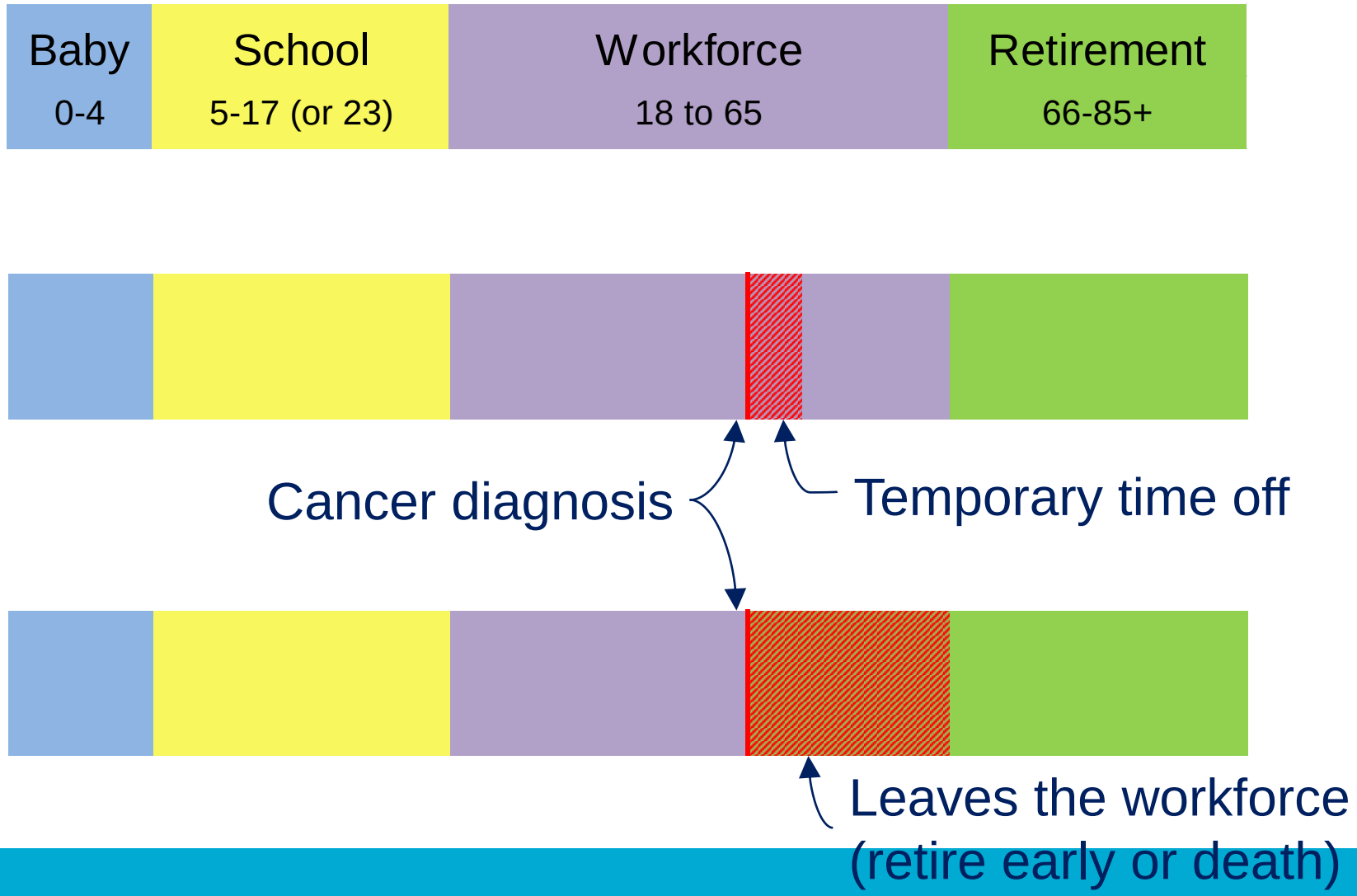
Everyone’s work contributes to the economy, and time-off represents a loss to society

ESTIMATING PRODUCTIVITY LOSSES

Baby	School	Workforce	Retirement
0-4	5-17 (or 23)	18 to 65	66-85+



ESTIMATING PRODUCTIVITY LOSSES



VALUING LOST PRODUCTIVITY

Temporary time off valued at market wage:

Wage	=	$1,000/month
Time off	=	3 months
Loss to society	**=**	**$3,000**

VALUING LOST PRODUCTIVITY

Early retirement or premature death, valued at market wage:

Wage	=	$1,000/month
Time off	=	5 years
Loss to society	**=**	**$60,000**

ADJUSTMENTS

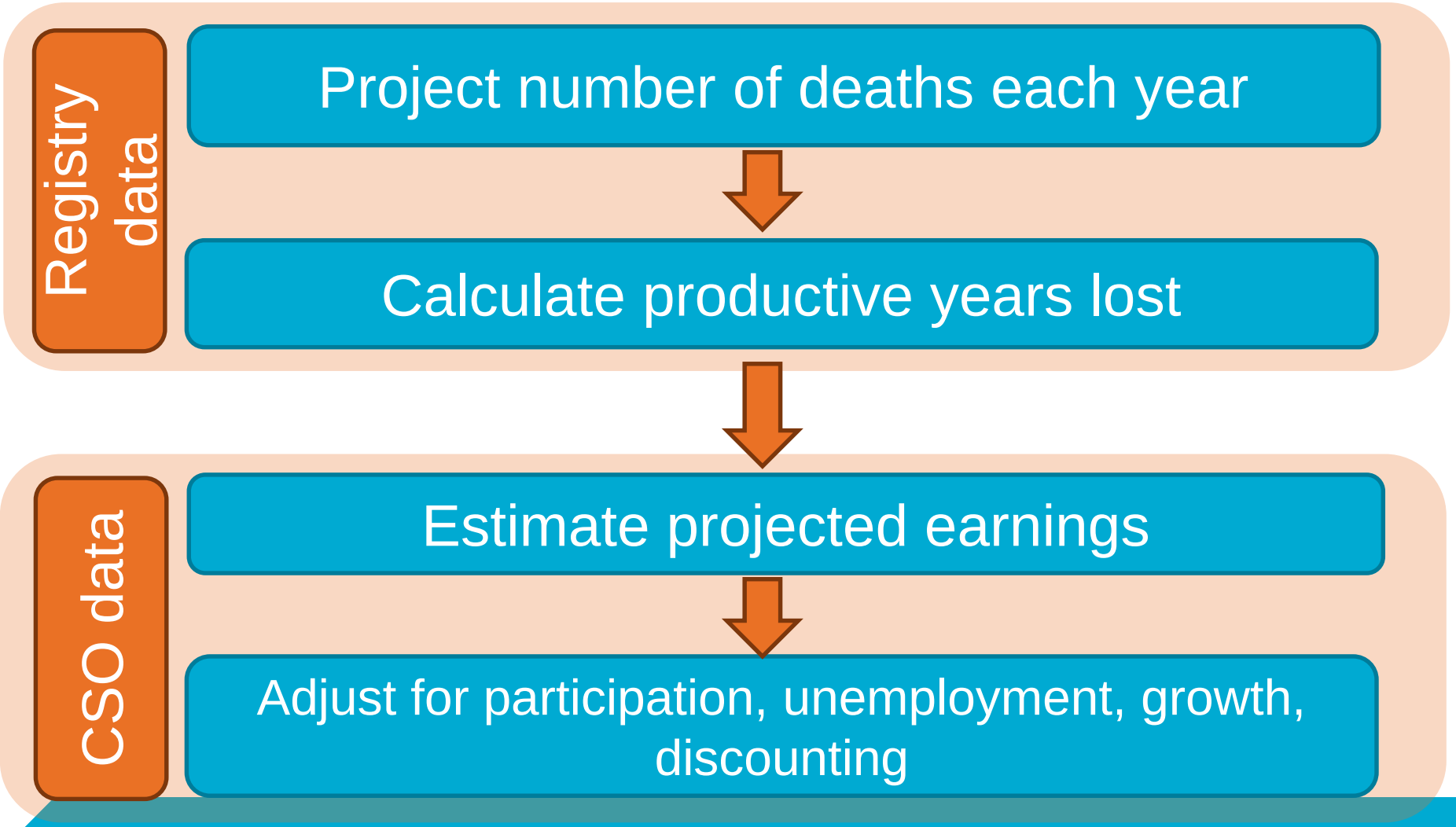
- Workforce participation rates
- Unemployment rates
- Wage growth over time
- Discounting future earnings

EXAMPLE

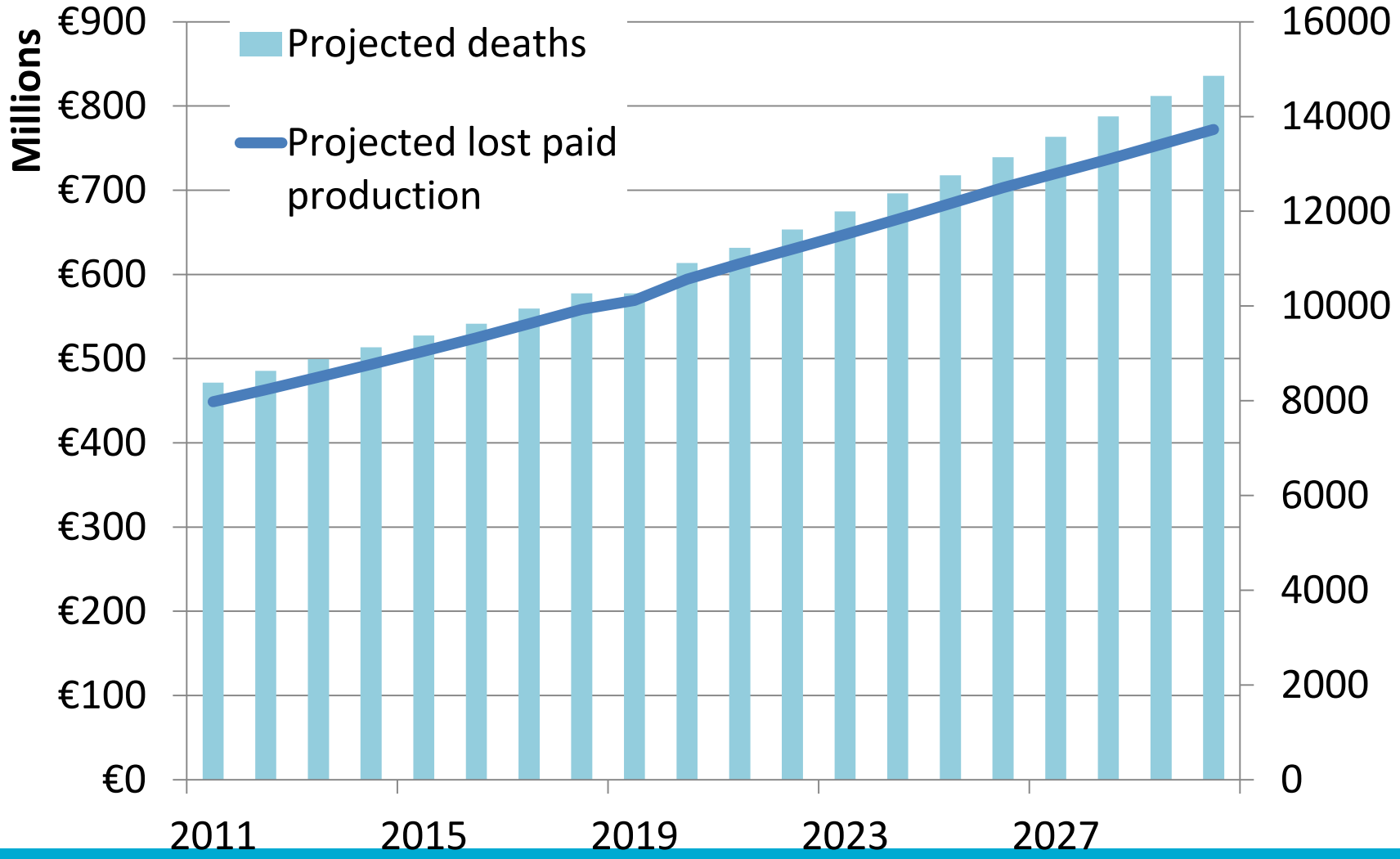
- **Aim:** Estimate productivity losses due to cancer mortality (all invasive and 20 most common) in Ireland, from 2011 to 2030

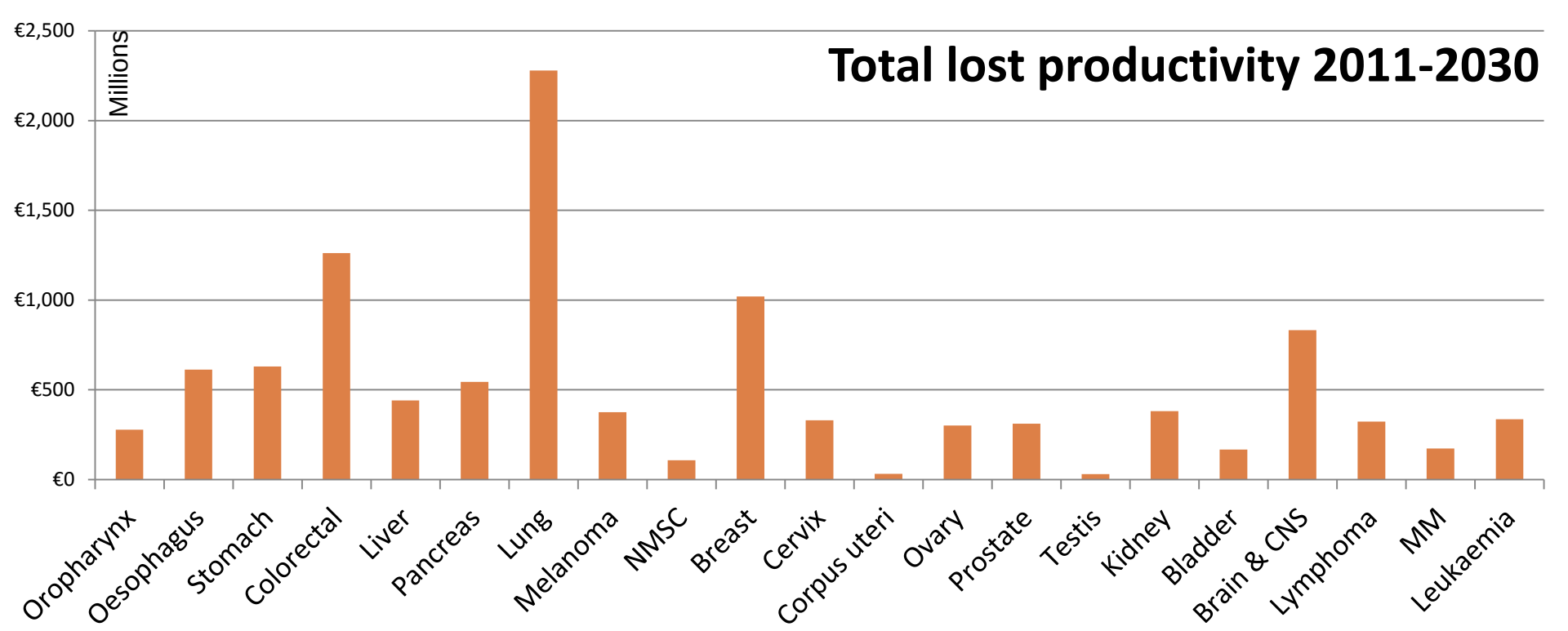
  - Quantifying the cancer burden can inform priority setting for cancer control
  - Productivity loss is a complementary measure, alongside incidence, mortality and rates

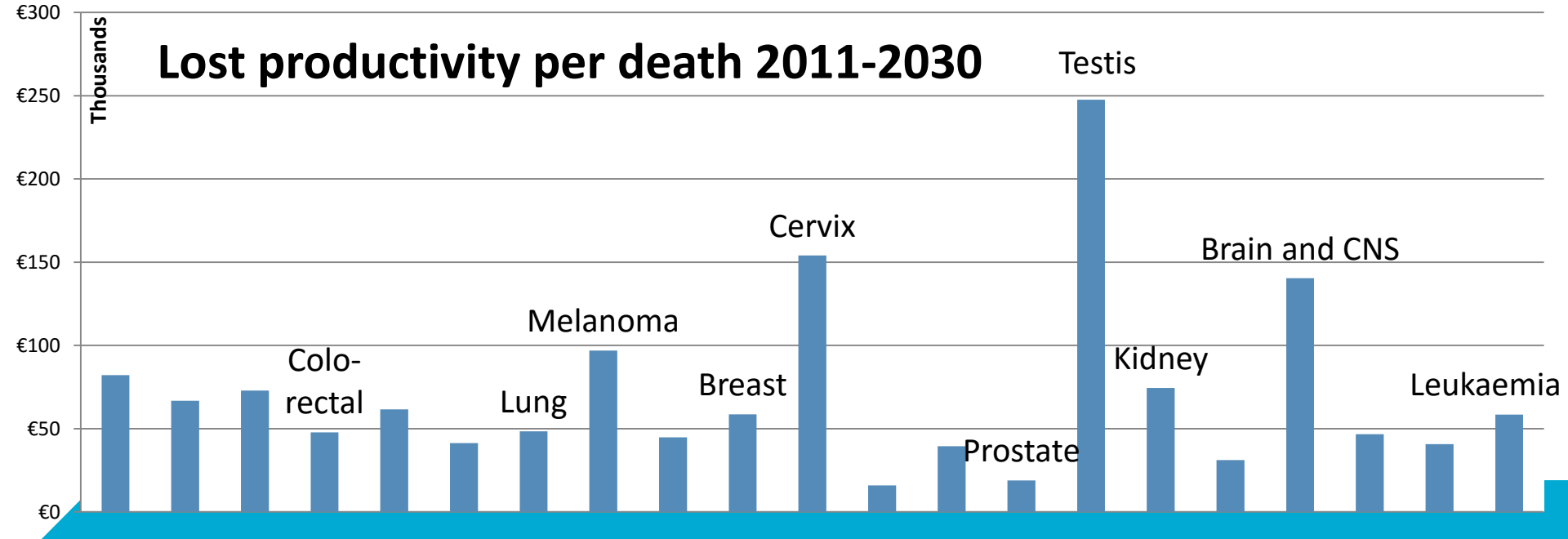
METHODS


Registry data
Project number of deaths each year
Calculate productive years lost
CSO data
Estimate projected earnings
Adjust for participation, unemployment, growth, discounting

LOST PRODUCTIVITY DUE TO CANCER 2011-2030




Total lost productivity 2011-2030
Millions
€2,500
€2,000
€1,500
€1,000
€500
€0
Oropharynx
Oesophagus
Stomach
Colorectal
Liver
Pancreas
Lung
Melanoma
NMSC
Breast
Cervix
Corpus uteri
Ovary
Prostate
Testis
Kidney
Bladder
Brain & CNS
Lymphoma
MM
Leukaemia


Lost productivity per death 2011-2030
Thousands
€300
€250
€200
€150
€100
€50
€0
Colo-
rectal
Lung
Melanoma
Breast
Cervix
Prostate
Testis
Kidney
Brain and CNS
Leukaemia

POLICY MESSAGE

- While high incidence cancers have a large impact on society, so too do high mortality cancers occurring in young people and cancer control strategies should be prioritised accordingly

PRODUCTIVITY PRIOR TO DEATH

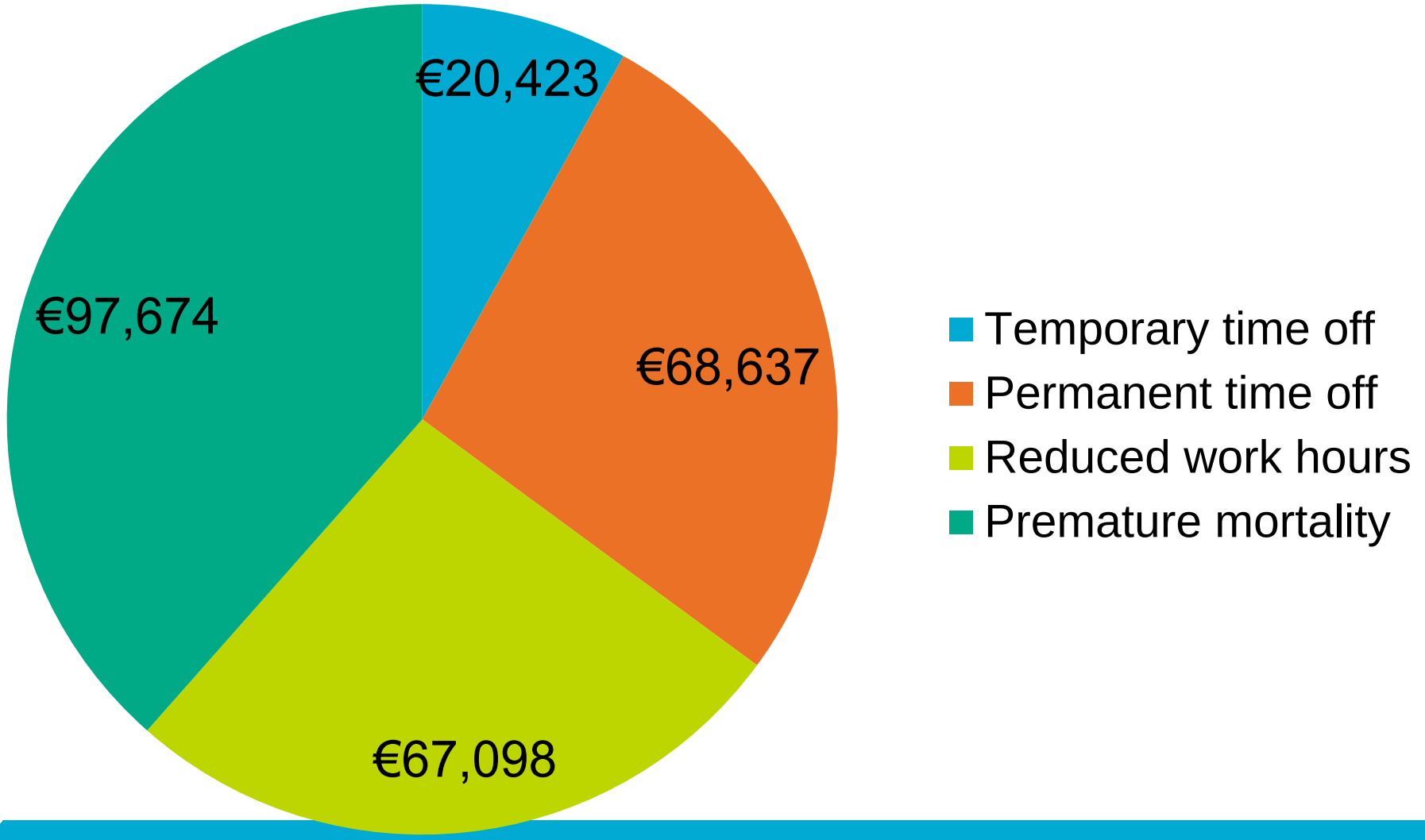
- Estimated productivity losses per person of working age and employed at the time of HNC diagnosis using the HCA (2013 €)

Cost Category	HCA base case	% of total HCA productivity
Temporary time off	EUR 20,423	8
Permanent time off	EUR 68,637	27
Reduce work hours	EUR 67,098	26
Premature mortality	EUR 97,674	38
Total	EUR 253,833	

FCA friction cost approach, *HCA* human capital approach

Pearce A, et al. (2014). Productivity losses associated with head and neck cancer using the Human Capital and Friction Cost approaches. App HE&HP

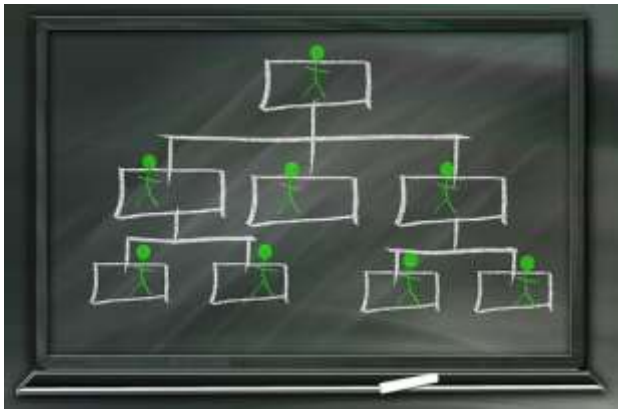
PRODUCTIVITY LOSS IN HEAD & NECK CANCER



POLICY MESSAGE

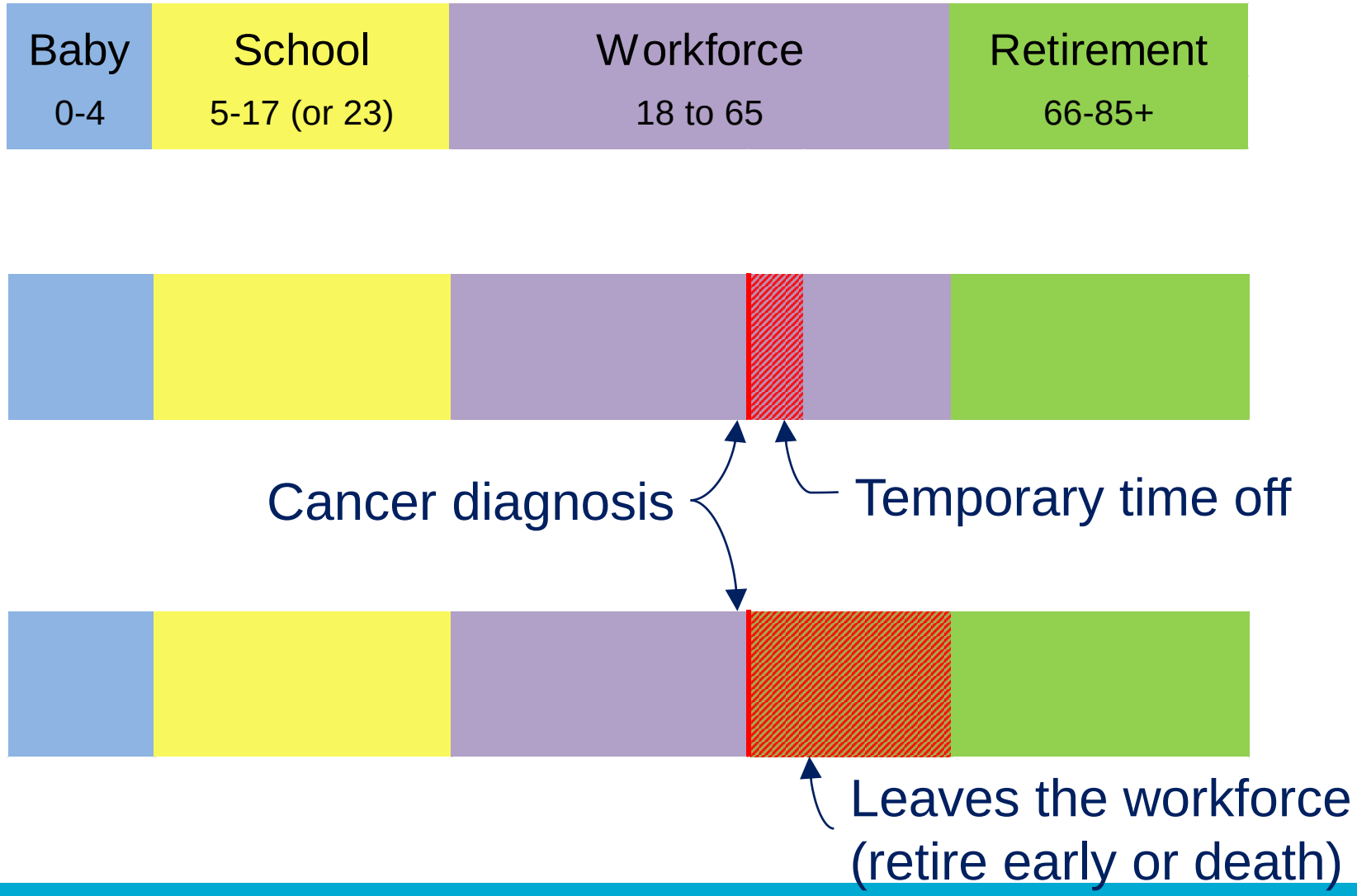
- While high incidence cancers have a large impact on society, so too do high mortality cancers occurring in young people, and cancer control strategies should be prioritised accordingly
- Returning to work after cancer is not just important for patient quality of life and family finances, but also for society and the economy

EMPLOYER PERSPECTIVE



- Critics suggest the traditional productivity loss calculations (HCA method) overestimate economic losses
- There is a pool of unemployed people, from whom replacement workers can be sourced
- Taking an employers perspective then, productivity loss is limited to the time it takes to replace a worker – the friction period

ESTIMATING PRODUCTIVITY LOSSES

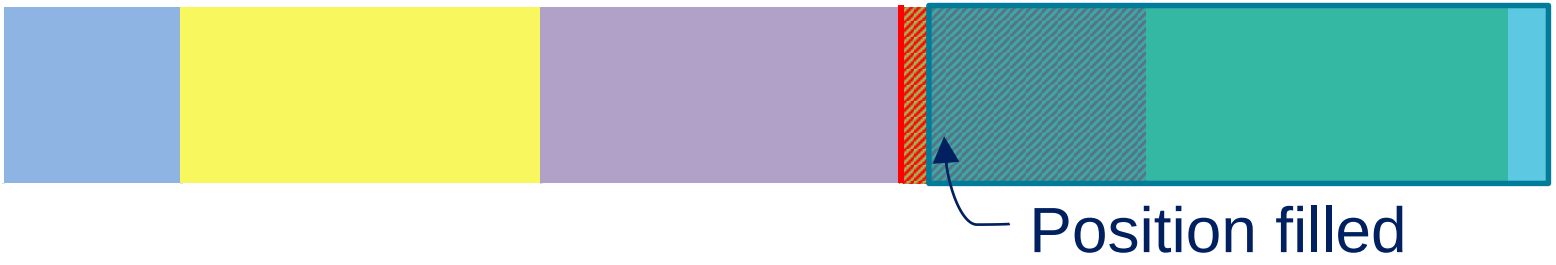


VALUING LOST PRODUCTIVITY

Temporary time off, until replacement found, valued at market wage:

Wage	=	$1,000/month
Time off	=	3 months
Time until replacement	=	1 month
Loss to society	**=**	**$1,000**

VALUING LOST PRODUCTIVITY



Early retirement or premature death, valued at market wage, until a replacement found:

Wage	=	$1,000/month
Time off	=	5 years
Time until replacement	=	1 month
Loss to society	**=**	**$1,000**

EXAMPLE

Appl Health Econ Health Policy (2015) 13:359–367
DOI 10.1007/s40258-015-0155-8

ORIGINAL RESEARCH ARTICLE

Productivity Losses Associated with Head and Neck Cancer Using the Human Capital and Friction Cost Approaches

Alison M. Pearce · Paul Hanly · Aileen Timmons · Paul M. Walsh · Ciaran O'Neill · Eleanor O'Sullivan · Rachael Gooberman-Hill · Audrey Alforque Thomas · Pamela Gallagher · Linda Sharp

EXAMPLE

Table 3 Estimated productivity losses per person of working age and employed at the time of head and neck cancer diagnosis calculated with the Human Capital Approach (HCA) and Friction Cost Approach (FCA) (2013 Euros)

Cost Category	HCA base case	% of total HCA productivity	FCA base case	% of total FCA productivity
Temporary time off	EUR 20,423	8	EUR 4,953	73
Permanent time off	EUR 68,637	27	EUR 1,186	17
Reduce work hours	EUR 67,098	26	EUR 489	7
Premature mortality	EUR 97,674	38	EUR 175	3
Total	EUR 253,833		EUR 6,803	

FCA friction cost approach, *HCA* human capital approach

PRODUCTIVITY PROS & CONS

- Pros:
  - Lost productivity is advocated as part of a societal perspective in economic evaluations
  - Several studies suggest productivity losses far exceed direct health care costs
  - Lost productivity provides an additional perspective on burden of disease for decision making
- Cons:
  - Guidelines usually prefer health care payer perspective
  - Debate over appropriate method

CANCER & PRODUCTIVITY IN AUSTRALIA

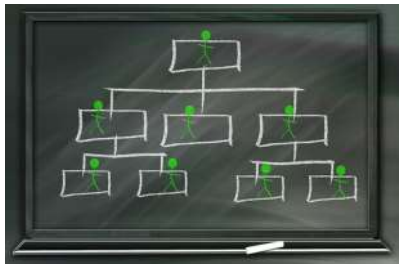
- Costs of cancer in NSW (Access Economics, 2007)
  - FCA for absenteeism and HCA for reduced hours, early retirement or premature mortality. Patient and carer work, no unpaid work
- Costs of melanoma in Australia (KPMG, 2014)
  - No detailed methods, but probably HCA and included absenteeism, premature mortality and carer incomes. No unpaid work

There are no national estimates of lost productivity (paid or unpaid) due to cancer in Australia

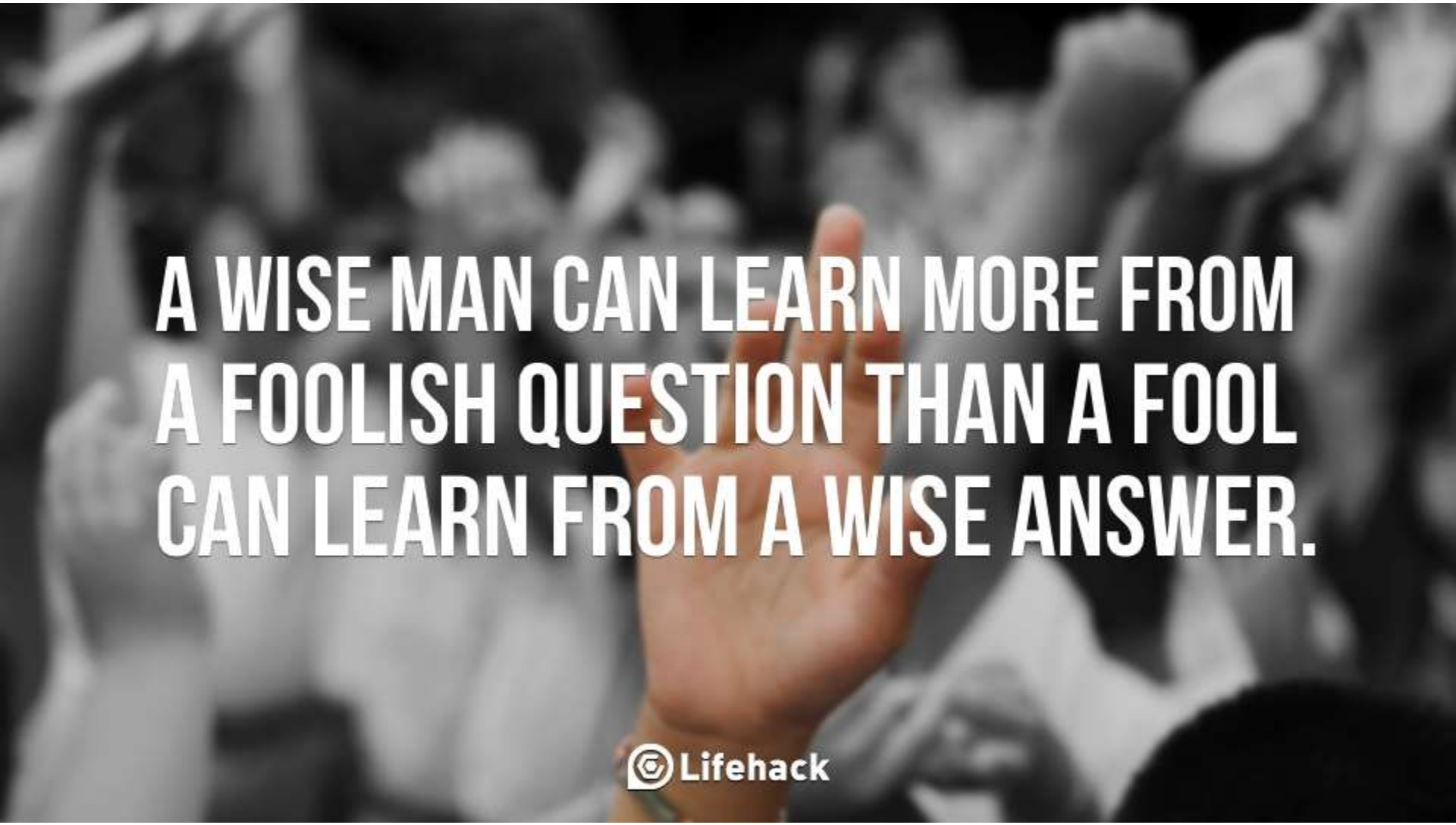
CONCLUSION

- The impact of cancer on work can be felt at many different levels






- Estimates of these various impacts can contribute to prioritisation and decision making in health care & broader policy
- Interventions to assist return to work after cancer could lead to gains at each of these levels


A WISE MAN CAN LEARN MORE FROM
A FOOLISH QUESTION THAN A FOOL
CAN LEARN FROM A WISE ANSWER.
Lifehack