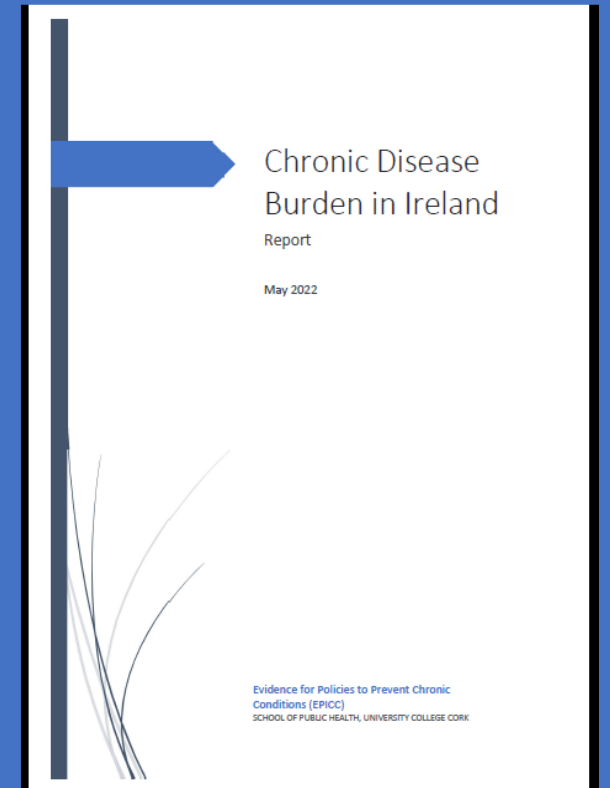


# Chronic Disease in Ireland: How to Achieve Better Outcomes

Patricia M Kearney  
[patricia.kearney@ucc.ie](mailto:patricia.kearney@ucc.ie)  
March 14<sup>th</sup>, 2024

Professor of Epidemiology  
School of Public Health, UCC



# How it started



High blood pressure 2<sup>nd</sup> leading risk factor for death and disability

➤ Global Burden of Hypertension, Lancet 2005

**Global burden of hypertension: analysis of worldwide data**

Patricia M Kearney, Megan Whelton, Kristi Reynolds, Paul Muntner, Paul K Whelton, Jiang He

*Lancet* 2005; 365: 217-23

Departments of Epidemiology (P M Kearney MD, M Whelton BS, K Reynolds PhD, P Muntner PhD, Prof P K Whelton MD, Prof J He MD), and Medicine (P Muntner, Prof P K Whelton, Prof J He), and Tulane Hypertension and Renal Center

**Summary**  
Background Reliable information about the prevalence of hypertension in different world regions is essential to the development of national and international health policies for prevention and control of this condition. We aimed to pool data from different regions of the world to estimate the overall prevalence and absolute burden of hypertension in 2000, and to estimate the global burden in 2025.

	Crude rate of hypertension			Age-standardised rate of hypertension		
	Men rate (SE)	Women rate (SE)	Overall rate (SE)	Men	Women	Overall
<b>Established market economies</b>						
USA <sup>13,12</sup>	23.5% (1.2)	23.3% (0.9)	23.4% (0.9)	21.0%	19.7%	20.3%
Canada <sup>13</sup>	26.0% (0.4)	18.0% (0.4)	22.0% (0.3)	23.5%	15.6%	21.4%
Spain <sup>14</sup>	46.2% (1.8)	44.3% (1.4)	45.1% (1.1)	41.7%	39.0%	40.0%
England <sup>15</sup>	43.4% (0.7)	35.0% (0.6)	38.8% (0.5)	34.7%	25.7%	29.6%
Germany <sup>16</sup>	60.2% (0.8)	50.3% (0.8)	55.3% (0.6)	55.4%	56.6%	..
Greece <sup>17</sup>	30.2% (2.8)	27.1% (2.3)	28.4% (1.7)	18.5%	15.9%	16.9%
Italy <sup>18</sup>	44.8% (0.9)	30.6% (0.8)	37.7% (0.5)	42.0%	43.3%	..
Sweden <sup>19</sup>	44.8% (1.6)	32.0% (1.5)	38.4% (1.1)	39.6%	40.9%	..
Australia <sup>20,21</sup>	31.9% (0.5)	20.7% (0.4)	..	30.8%	20.1%	..
Japan <sup>22</sup>	50.1% (0.3)	43.3% (0.3)	..	42.7%	35.0%	38.3%
<b>India</b>						
North India rural <sup>24</sup>	3.4% (0.6)	6.8% (0.7)	5.2% (0.5)	3.5%	7.5%	5.5%
North India urban <sup>25</sup>	25.0% (1.4)	22.3% (1.4)	..	24.5%	23.2%	23.8%
North India rural <sup>26</sup>	20.8% (1.3)	20.8% (1.3)	20.8% (0.9)	21.5%	24.9%	23.1%
West India urban <sup>27</sup>	30.0% (1.2)	33.0% (1.7)	30.9% (1.0)	31.8%	27.8%	30.7%
West India rural <sup>28</sup>	24.0% (1.0)	17.0% (1.1)	21.0% (0.7)	23.3%	19.8%	22.0%
<b>Latin American and the Caribbean</b>						
Mexico <sup>29</sup>	37.5% (0.6)	28.1% (0.5)	32.0% (0.4)	38.6%	30.1%	33.5%
Paraguay <sup>30</sup>	28.8% (0.5)	40.9% (0.9)	32.5% (0.5)	32.4%	41.9%	35.4%
Venezuela <sup>31</sup>	45.2% (0.8)	28.9% (0.7)	36.9% (0.6)	47.7%	32.2%	39.7%
<b>Middle eastern crescent</b>						
Egypt <sup>32</sup>	25.7% (1.4)	26.9% (1.2)	26.3% (0.9)	25.9%	29.3%	27.4%
Turkey <sup>33</sup>	26.0% (1.5)	34.1% (1.9)	29.6% (1.2)	21.8%	30.9%	25.7%
China <sup>34</sup>	28.6% (0.7)	25.8% (0.7)	27.2% (0.5)	28.8%	26.6%	27.7%
<b>Other Asian and islands</b>						
Korea <sup>35</sup>	..	..	19.8% (0.3)	21.8%	19.4%	..
Thailand <sup>36</sup>	21.3% (1.3)	19.8% (1.0)	20.5% (1.6)	22.1%	21.4%	21.7
Taiwan <sup>37</sup>	33.1% (0.7)	28.0% (0.6)	30.5% (0.5)	27.1%	20.8%	23.7%
<b>Sub-Saharan Africa</b>						
South Africa <sup>38</sup>	22.9% (0.6)	24.6% (0.5)	23.9% (0.7)	22.9%	23.4%	23.1%
Cameroon <sup>39</sup>	17.9% (1.4)	11.2% (1.0)	14.1% (1.7)	18.5%	12.6%	15.0%
Cameroon <sup>40</sup>	14.2% (1.3)	16.3% (1.4)	15.4% (0.9)	..	..	..
Tanzania <sup>41</sup>	31.3% (1.7)	31.0% (1.5)	31.1% (1.1)	30.2%	32.3%	31.3%
Zimbabwe <sup>42</sup>	41.0% (2.5)	28.0% (2.3)	34.1% (1.7)	25.3%	41.0%	33.1%

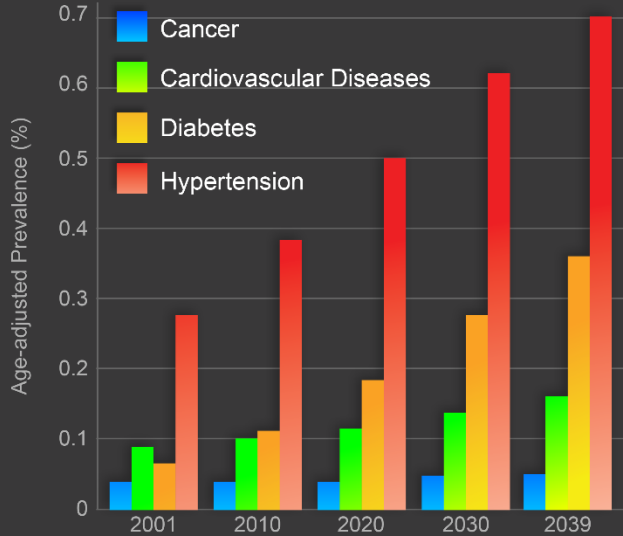
Table 2: Rate of hypertension in people aged 20 years and older in world regions

# How it's going

- The Irish Longitudinal Study on Ageing
- Mitchelstown Cohort Study
- Healthy Ireland
- Chronic Disease Management Programme



## Increasing Rates of Chronic Disease



Source: Public Health Agency of Canada  
From the 2010 report 'Against the Growing Burden of Disease' by The Public Health Agency of Canada © Global News

# Why Chronic Disease Prevention?



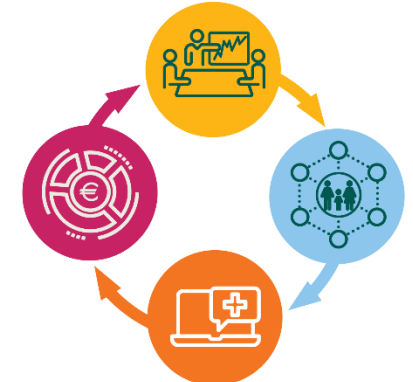
**Healthy Ireland**  
Initiatives



**HSE**  
Integrated Care Programme for the Prevention and Management of Chronic Disease



**HSE**  
Framework for Self Management support of Chronic Conditions



**Sláintecare**  
Implementation Strategy



**CDP**  
**CDP**

COLLABORATIVE DOCTORAL PROGRAMME IN CHRONIC DISEASE PREVENTION

# What causes the most death and disability in Ireland?

## What causes the most deaths?

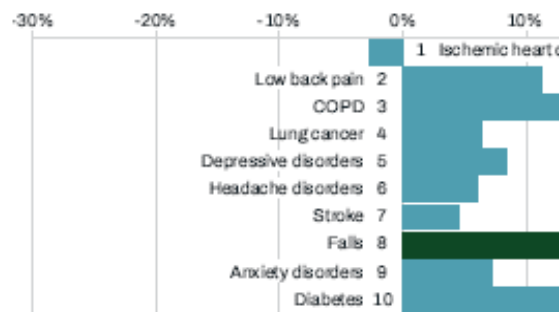
- Communicable, maternal, neonatal, and nutritional diseases
- Non-communicable diseases

Cause	2009 rank	2019 rank
Ischemic heart disease	1	1
Stroke	2	2
Lung cancer	3	3
COPD	4	4
Lower respiratory infect	5	5
Alzheimer's disease	6	6
Colorectal cancer	7	7
Breast cancer	8	8
Prostate cancer	9	9
Chronic kidney disease	12	10

Top 10 causes of deaths per 100k in 2019 and rate change 2009–2019

## What causes the most death and disability combined?

- Communicable, maternal, neonatal, and nutritional diseases
- Non-communicable diseases
- Injuries



Top 10 causes of death and disability (DALYs) in 2019

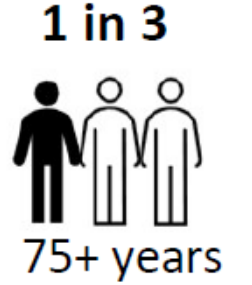
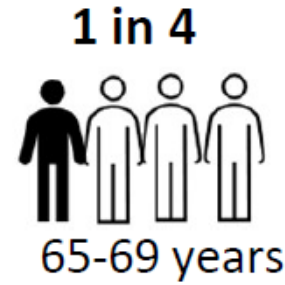
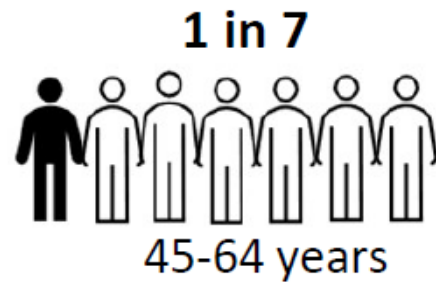
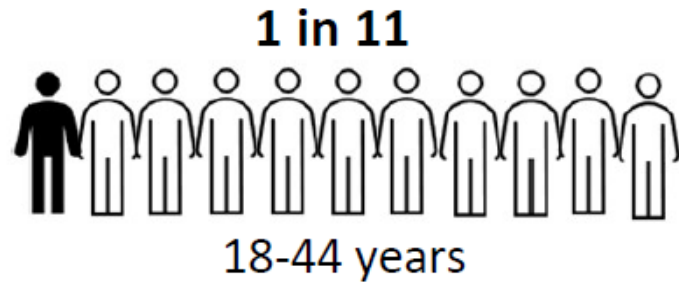
## What risk factors drive the most death and disability combined?

- Metabolic risks
- Environmental/occupational risks
- Behavioral risks

Risk	2009 rank	2019 rank	Change in DALYs per 100k, 2009–2019
Tobacco	1	1	↓ -290.4
High blood pressure	2	2	↓ -109.7
High body-mass index	3	3	↑ +145.1
Dietary risks	3	4	↓ -89.6
High fasting plasma glucose	5	5	↑ +556.8
Alcohol use	5	6	↓ -211.0
High LDL	7	7	↓ -118.8
Occupational risks	8	8	↓ -22.9
Kidney dysfunction	10	9	↑ +28.5
Drug use	9	10	↓ -58.7

Top 10 risks contributing to Disability-Adjusted Life Years (DALYs) per 100k in 2019 and rate change 2009–2019, all ages combined

# Prevalence of any Chronic Disease (any of the eight prioritised chronic conditions)



# Prevalence of Individual Chronic Conditions and Multi-morbidity by Age Group

Condition	All adults over 18	18-44 years old	45-64 years old	65-69 years old	70-74 years old	75+ years old
Asthma	6.9 (6.1, 7.8)	7.9 (6.5, 9.3)	6.0 (4.7, 7.2)	6.4 (4.0, 8.9)	5.6 (3.1, 8.1)	6.3 (4.2, 8.4)
COPD*	1.8 (1.4, 2.2)	0.3 (0.04, 0.5)	2.4 (1.5, 3.4)	5.6 (2.8, 8.4)	3.0 (1.3, 4.8)	4.6 (3.0, 6.1)
CHD**	3.7 (3.2, 4.2)	0.7 (0.4, 1.0)	4.2 (3.0, 5.4)	5.7 (3.6, 7.8)	8.9 (6.2, 11.6)	14.5 (11.9, 17.2)
Stroke	0.6 (0.4, 0.8)	0.2 (0.01, 0.4)	0.7 (0.3, 1.0)	1.2 (0.1, 2.2)	1.0 (0.2, 1.8)	2.2 (1.2, 3.2)
Diabetes	4.6 (4.1, 5.2)	0.4 (0.2, 0.7)	6.4 (5.0, 7.7)	11.4 (8.4, 14.4)	13.2 (9.9, 16.6)	12.7 (10.3, 15.2)
Heart failure	0.4 (0.2, 0.5)	0.04 (0.01, 0.09)	0.2 (0.04, 0.5)	1.1 (0.2, 2.0)	0.4 (0.01, 1.2)	2.1 (0.9, 3.3)
TIA***	0.8 (0.5, 1.0)	0.02 (0.01, 0.05)	0.7 (0.2, 1.2)	1.7 (0.7, 2.8)	2.2 (0.9, 3.5)	3.7 (2.3, 5.1)
Atrial Fibrillation	1.8 (1.4, 2.2)	0.5 (0.2, 0.8)	1.7 (0.9, 2.5)	3.1 (1.4, 4.8)	5.0 (2.7, 7.4)	7.4 (5.1, 9.8)
<b>Multi-morbidity</b>						
At least 1 condition	13.9 (12.9, 14.9)	9.2 (7.8, 10.6)	14.4 (12.5, 16.2)	23.0 (18.8, 27.2)	22.7 (18.4, 26.9)	28.7 (25.0, 32.4)
At least 2 conditions	2.1 (1.7, 2.5)	0.3 (0.06, 0.6)	2.6 (1.6, 3.7)	4.9 (3, 6.8)	5.1 (3.2, 7)	6.6 (4.9, 8.3)
At least 3 conditions	0.7 (0.5, 0.9)	0.03 (0.01, 0.08)	0.8 (0.2, 1.3)	1.1 (0.01, 2.1)	2.0 (0.5, 3.6)	3.4 (2.1, 4.7)

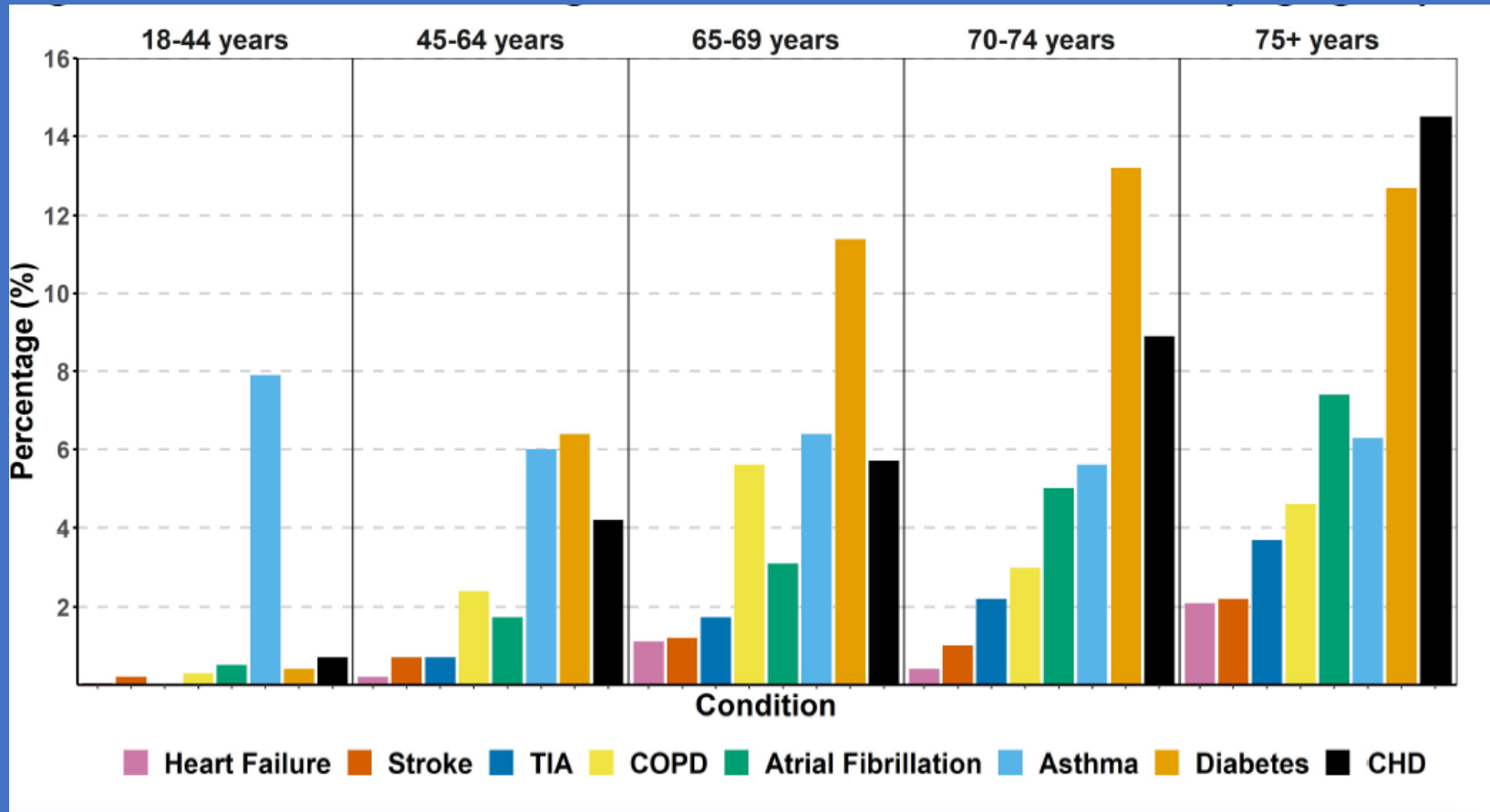
\*COPD = chronic obstructive pulmonary disease

\*\*CHD = coronary heart disease (heart attack or chronic consequences of heart attack or other heart trouble)

\*\*\*TIA = transient ischemic attack



# Prevalence of Chronic Disease by Age Group





# Prevalence of Chronic Disease by Gender

Condition	Female	Male
Asthma	7.9 (6.7, 9)	6.0 (4.8, 7.1)
COPD*	1.5 (1.0, 2.1)	2.0 (1.4, 2.6)
CHD**	2.4 (1.9, 2.9)	5.0 (4.1, 5.8)
Stroke	0.6 (0.4, 0.9)	0.6 (0.3, 0.9)
Diabetes	3.4 (2.8, 4.1)	5.9 (4.9, 6.8)
Heart failure	0.3 (0.2, 0.5)	0.4 (0.2, 0.6)
TIA***	0.5 (0.3, 0.8)	1.0 (0.6, 1.3)
Atrial Fibrillation	1.5 (1.0, 2.0)	2.1 (1.5, 2.8)
<b>Multimorbidity</b>		
At least 1 condition	13.2 (11.8, 14.6)	14.7 (13.1, 16.2)
At least 2 conditions	1.7 (1.2, 2.2)	2.5 (1.8, 3.1)
At least 3 conditions	0.4 (0.2, 0.6)	1.0 (0.6, 1.4)

# Prevalence of Chronic Disease by Deprivation Level (HP Pobal Deprivation Index)

Chronic Condition	Extremely affluent <sup>a</sup>	Very affluent <sup>b</sup>	Affluent <sup>c</sup>	Marginally above average <sup>d</sup>	Marginally below average <sup>e</sup>	Disadvantaged <sup>f</sup>	Very disadvantaged <sup>g</sup>	Extremely disadvantaged <sup>h</sup>
Asthma	8.3 (4.2, 12.4)	7.0 (4.4, 9.6)	4.5 (2.6, 6.3)	6.9 (5.2, 8.6)	6.0 (4.5, 7.5)	6.3 (4.1, 8.4)	7.3 (4.9, 9.8)	11.0 (7.2, 14.8)
COPD	1.0 (0.01, 2.4)	0.01 (0.04, 2.4)	1.0 (0.3, 1.7)	1.6 (0.7, 2.5)	1.7 (0.8, 2.6)	1.1 (0.5, 1.7)	2.4 (1.1, 3.7)	3.9 (2.1, 5.7)
CHD	2.1 (0.9, 3.4)	2.7 (1.3, 4.2)	2.3 (1.2, 3.3)	3.1 (2.3, 3.9)	3.9 (2.7, 5.0)	4.4 (3.0, 5.9)	5.2 (3.2, 7.3)	5.1 (2.8, 7.4)
Stroke	0 (0, 0)	0.01 (0.2, 1.0)	0.6 (0.01, 1.2)	0.5 (0.2, 0.9)	0.8 (0.4, 1.2)	0.6 (0.04, 1.1)	1.0 (0.3, 1.7)	0.8 (0.01, 1.6)
Diabetes	2.0 (0.8, 3.1)	4.0 (1.9, 6.1)	4.4 (2.7, 6.2)	4.5 (3.2, 5.7)	4.9 (3.7, 6.2)	4.1 (2.8, 5.5)	5.8 (4.1, 7.5)	6.0 (3.7, 8.4)
Heart failure	0.1 (0.01, 0.4)	0.01 (0.2, 1.0)	0.4 (0.01, 0.9)	0.2 (0.03, 0.4)	0.3 (0.01, 0.6)	0.2 (0.01, 0.4)	0.7 (0.1, 1.3)	0.7 (0.05, 1.3)
TIA	0.1 (0.01, 0.3)	0.01 (0.3, 2.2)	0.8 (0.02, 1.5)	0.4 (0.2, 0.7)	0.9 (0.5, 1.2)	0.5 (0.07, 1.0)	0.8 (0.3, 1.4)	1.6 (0.3, 2.9)
Atrial Fibrillation	1.6 (0.2, 2.9)	2.5 (0.8, 4.2)	1.1 (0.4, 1.7)	1.9 (1.1, 2.6)	2.5 (1.3, 3.7)	2.0 (0.9, 3.0)	1.0 (0.2, 1.7)	1.2 (0.3, 2.1)
<b>Multimorbidity</b>								
At least 1 condition	12.1 (7.6, 16.5)	4.4 (0.7, 18.2)	11.2 (8.5, 13.8)	3.8 (1.7, 15.9)	1.8 (9.9, 3.7)	13.6 (10.9, 16.3)	16.8 (3.4, 20.3)	19.6 (15.2, 24.1)
At least 2 conditions	0.8 (0.01, 1.8)	1.8 (0.4, 3.1)	1.2 (0.5, 1.8)	1.8 (0.9, 2.7)	3.2 (2.1, 4.3)	1.6 (0.8, 2.4)	2.0 (1.0, 2.9)	3.2 (1.4, 5.0)
At least 3 conditions	0.5 (0.01, 1.2)	0.01 (0.2, 1.0)	0.5 (0.01, 1.2)	0.6 (0.2, 0.9)	0.9 (0.3, 1.5)	0.8 (0.2, 1.5)	0.6 (0.09, 1.0)	1.1 (0.2, 2.1)

# The Pobal HP Deprivation Index

## The Pobal HP Deprivation Index

The Pobal HP Deprivation Index is Ireland's primary social gradient tool. Based on the latest Census information it reveals the profile of communities throughout Ireland.

It is a powerful tool that enables Government Departments and state agencies to target resources where they are needed most.



1	2	3	4	5	6	7	8
Extremely Disadvantaged	Very Disadvantaged	Disadvantaged	Marginally Below Average	Marginally Above Average	Affluent	Very Affluent	Extremely Affluent

The 18,919 small areas in the Republic of Ireland are a consistent geographical boundary with an average of 100 households.

### Indicators Used To Calculate The Relative Index Score

Three categories - demographic, social class and labour market situation, which include the following indicators:

- Population Change
- Age Dependency
- Third Level Education
- Type of Profession
- Unemployment Rate
- Primary Education Only
- Persons Per Room

### How The Index Is Used

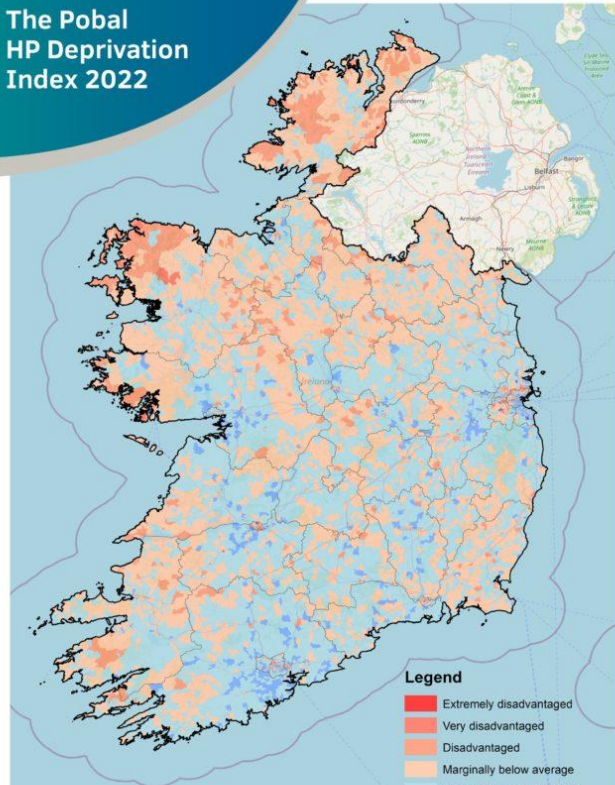
- Comparing small areas (around 100 households) across the state.
- Targeting and allocating resources to the areas most in need.
- Plotting changes in deprivation over various censuses (2006, 2011, 2016, 2022).
- Planning effective service delivery.

### Who Uses The Index

- The Department of Education (DEIS school identification).
- The HSE (Health Atlas Ireland).
- Various other Government Departments and State Agencies involved in targeting and supporting marginalised communities.
- Researchers, media and the public.

Find out more by visiting [www.pobal.ie](http://www.pobal.ie)  
or email: [pobalmaps@pobal.ie](mailto:pobalmaps@pobal.ie)

## The Pobal HP Deprivation Index 2022



**Legend**

- Extremely disadvantaged
- Very disadvantaged
- Disadvantaged
- Marginally below average
- Marginally above average
- Affluent
- Very affluent
- Extremely affluent

0 20 40 80 Kilometres

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# Prevalence of Chronic Disease and Multi-morbidity by GMS Status

Aged 18-44	Overall population		GMS+		Non-GMS	
	Proportion % (95% CI)	Population <sup>††</sup> n=1,798,793	Proportion % (95% CI)	Population n=480,670	Proportion % (95% CI)	Population n=1,318,123
<i>Any of the 8 conditions or their combination</i>	9.6 (8.1, 11.0)	172,375	11.6 (8.9, 14.4)	55,980	8.8 (7.1, 10.5)	116,395
Asthma	7.9 (6.5, 9.3)	142,015	8.5 (6.0, 10.9)	40,797	7.7 (6.1, 9.3)	101,218
COPD*	0.3 (0.04, 0.5)	4,805	0.3 (0.01, 0.7)	1,305	0.3 (0.01, 0.5)	3,499
CHD**	0.7 (0.4, 1.0)	12,321	1.0 (0.2, 1.8)	4,815	0.6 (0.2, 0.9)	7,505
Stroke	0.2 (0.01, 0.4)	3,665	0.6 (0.01, 1.4)	2,938	0.06 (0.01, 0.1)	727
Diabetes	0.4 (0.2, 0.7)	7,546	1.0 (0.3, 1.7)	4,821	0.2 (0.03, 0.4)	2,725
Heart failure	0.04 (0.01, 0.09)	642	0.1 (0.01, 0.3)	642	0	0
TIA***	0.02 (0.01, 0.05)	295	0	0	0.02 (0.01, 0.07)	295
Atrial Fibrillation	0.5 (0.2, 0.8)	8,213	0.8 (0.02, 1.5)	3,743	0.3 (0.03, 0.6)	4,470
<i>Any unique condition</i>	9.2 (7.8, 10.6)	165,849	11.1 (8.4, 13.8)	53,203	8.5 (6.9, 10.2)	112,646
Asthma only	7.6 (6.3, 9.0)	137,294	8.1 (5.7, 10.5)	39,035	7.5 (5.8, 9.1)	98,259
COPD only	0.3 (0.04, 0.5)	4,805	0.3 (0.01, 0.7)	1,305	0.3 (0.01, 0.5)	3,499
CHD only	0.6 (0.3, 0.9)	10,811	0.8 (0.06, 1.5)	3,801	0.5 (0.2, 0.9)	7,010
Stroke only	0.1 (0.01, 0.2)	1,875	0.3 (0.01, 0.7)	1,443	0.03 (0.01, 0.1)	432
Diabetes only	0.3 (0.1, 0.5)	5,483	0.8 (0.1, 1.5)	3,845	0.1 (0.01, 0.3)	1,638
Heart failure only	0.02 (0.01, 0.06)	336	0.07 (0.01, 0.2)	336	0	0
TIA only	0	0	0	0	0	0
Atrial Fibrillation only	0.3 (0.05, 0.5)	5,245	0.7 (0.01, 1.5)	3,438	0.1 (0.01, 0.3)	1,807
<i>Multi-morbidity</i>						
Two or more of the 8 conditions	0.4 (0.09, 0.6)	6,526	0.6 (0.01, 1.3)	2,777	0.3 (0.01, 0.6)	3,749
Three or more of the 8 conditions	0.03 (0.01, 0.08)	601	0.06 (0.01, 0.2)	306	0.02 (0.01, 0.07)	295
Four or more of the 8 conditions	0	0	0	0	0 (0, 0)	0

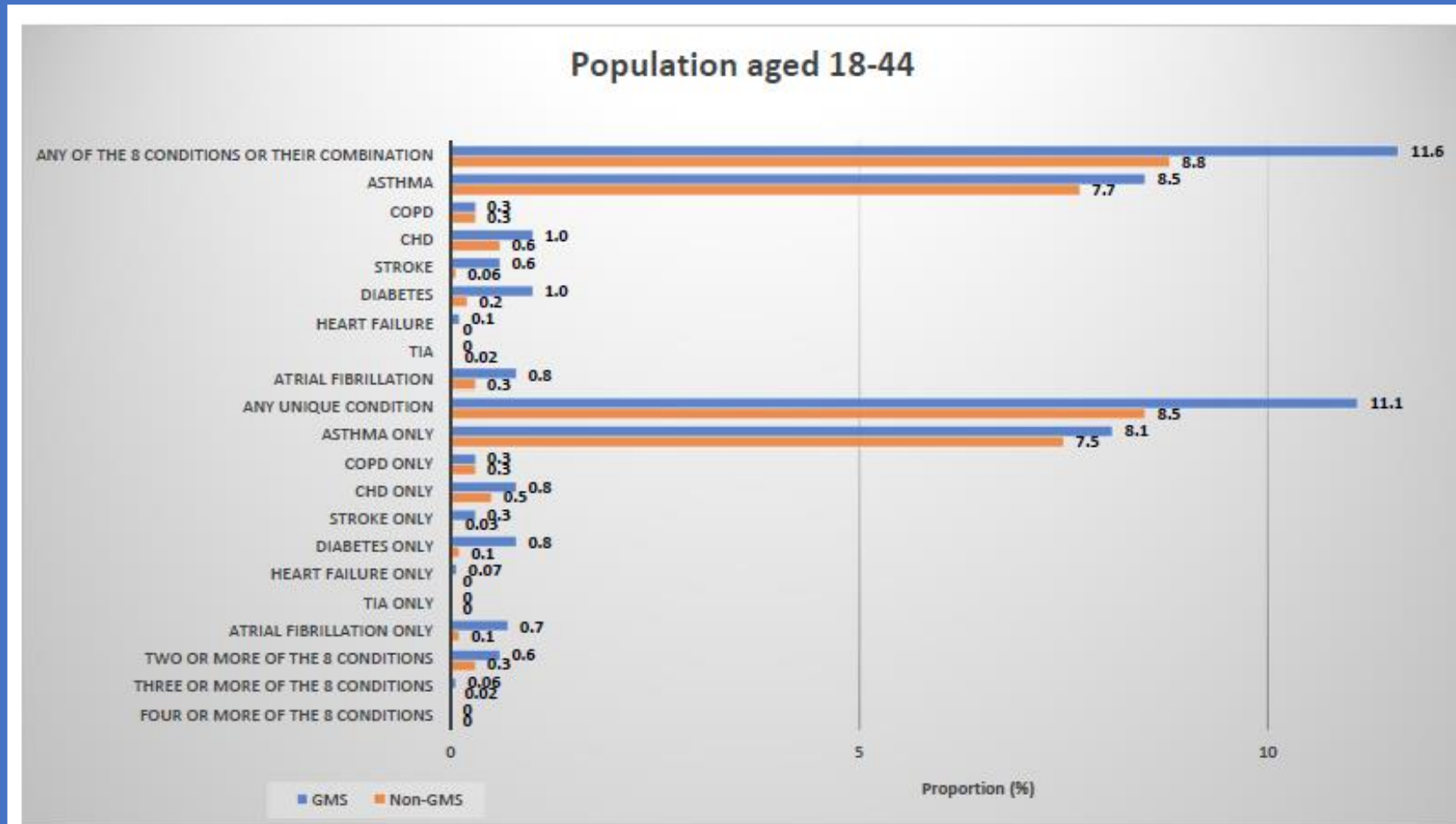


# Prevalence of Chronic Disease and Multi-morbidity by GMS Status

Aged 45-64	Overall population		GMS†		Non-GMS	
	Proportion % (95% CI)	Population†† n=1,135,003	Proportion % (95% CI)	Population n=358,839	Proportion % (95% CI)	Population n=776,164
<i>Any of the 8 conditions or their combination</i>	17.8 (15.8, 19.9)	202,303	30.0 (25.6, 34.5)	107,828	12.2 (10.1, 14.3)	94,475
Asthma	6.0 (4.7, 7.2)	67,651	9.6 (6.7, 12.5)	34,406	4.3 (3.0, 5.5)	33,246
COPD*	2.4 (1.5, 3.4)	27,661	5.6 (3.0, 8.1)	19,916	1.0 (0.3, 1.7)	7,745
CHD**	4.2 (3.0, 5.4)	47,846	9.0 (5.9, 12.1)	32,196	2.0 (1.1, 2.9)	15,651
Stroke	0.7 (0.3, 1.0)	7,734	1.6 (0.6, 2.5)	5,592	0.3 (0.02, 0.5)	2,142
Diabetes	6.4 (5.0, 7.7)	72,189	11.3 (8.2, 14.3)	40,450	4.1 (2.7, 5.4)	31,739
Heart failure	0.2 (0.04, 0.5)	2,829	0.3 (0.01, 0.7)	1,228	0.2 (0.01, 0.5)	1,601
TIA***	0.7 (0.2, 1.2)	8,220	1.2 (0.4, 2.1)	4,458	0.5 (0.01, 1.1)	3,762
Atrial Fibrillation	1.7 (0.9, 2.5)	19,013	2.5 (0.7, 4.4)	9,145	1.3 (0.5, 2.1)	9,868
<i>Any unique condition</i>	14.4 (12.5, 16.2)	162,883	21.7 (17.8, 25.5)	77,736	11.0 (9.0, 12.9)	85,148
Asthma only	4.5 (3.5, 5.5)	51,222	5.9 (3.8, 8.0)	21,160	3.9 (2.7, 5.0)	30,062
COPD only	1.2 (0.6, 1.8)	13,110	2.0 (0.7, 3.4)	7,327	0.7 (0.1, 1.4)	5,783
CHD only	2.6 (1.7, 3.5)	29,735	5.3 (2.9, 7.7)	19,038	1.4 (0.7, 2.0)	10,697
Stroke only	0.2 (0.05, 0.4)	2,628	0.3 (0.01, 0.6)	920	0.2 (0.01, 0.4)	1,709
Diabetes only	4.8 (3.7, 6.0)	54,810	7.2 (4.7, 9.7)	25,950	3.7 (2.5, 5.0)	28,860
Heart failure only	0.2 (0.01, 0.4)	2,036	0.1 (0.01, 0.4)	434	0.2 (0.01, 0.5)	1,601
TIA only	0.3 (0.01, 0.6)	3,135	0.4 (0.01, 0.8)	1,315	0.2 (0.01, 0.7)	1,821
Atrial Fibrillation only	0.5 (0.2, 0.9)	6,207	0.4 (0.01, 0.9)	1,592	0.6 (0.2, 1.0)	4,615
<i>Multi-morbidity</i>						
Two or more of the 8 conditions	3.5 (2.3, 4.6)	39,419	8.4 (5.3, 11.5)	30,092	1.2 (0.4, 2.0)	9,327
Three or more of the 8 conditions	0.8 (0.3, 1.4)	9,461	2.1 (0.7, 3.4)	7,510	0.3 (0.01, 0.7)	1,952
Four or more of the 8 conditions	0.07 (0.01, 0.2)	793	0.2 (0.01, 0.5)	793	0	0

\*COPD = chronic obstructive pulmonary disease  
\*\*CHD = coronary heart disease (heart attack or chronic consequences of heart attack or other heart trouble)  
\*\*\*TIA = transient ischemic attack  
†GMS = having a medical card or a GP-visit card  
†† Data from Census 2016, CSO

# Prevalence of Chronic Disease and Multi-morbidity by GMS status



# Integrated Knowledge Translation






### Prevalence Estimates of Chronic Conditions in Ireland

Chronic conditions including cardiovascular diseases and diabetes are among the leading causes of death worldwide. Due to a combination of factors including population ageing and increasing prevalence of overweight and obesity, the prevalence of chronic disease and multimorbidity (two or more chronic conditions) is increasing in Ireland. The Integrated Care Programme for the Prevention and Management of Chronic Disease focuses on the management and prevention of atrial fibrillation, chronic obstructive pulmonary disorder (COPD), coronary heart disease (CHD), diabetes, heart failure, stroke, transient ischaemic attack (TIA) and asthma. The main burden of chronic disease is in older people with the exception of asthma, which is the most prevalent condition in the youngest age-group.

**The most prevalent chronic conditions are:**

- Diabetes (in those aged 45 to 74) and
- Coronary Heart Disease (in those aged 75 and older)

**Prevalence of multimorbidities increases with age:**

- 6.6% of those over 75+ have two different conditions
- 3.4% have three or more

**PREVALENCE OF CHRONIC CONDITIONS BY AGE**



**Prevalence of chronic conditions in different age-groups:**

Age Group	Prevalence
18-44 y.o.	1 in 11
45-64 y.o.	1 in 7
65-69 y.o.	1 in 4
70-74 y.o.	1 in 4
75+ y.o.	1 in 3

**Integrated Knowledge Translation**

- These estimates were obtained through the secondary data analysis of the 5<sup>th</sup> wave of the Healthy Ireland survey conducted in 2018-2019 as part of the EPICC (Evidence for Policies to Prevent Chronic Conditions) study, funded by the Health Research Board.
- More detailed information on the data source and prevalence estimates stratified by deprivation status, medical reimbursement status (GMS Medical Card), age, are available here (link):
- The EPICC team was asked by the National Clinical Advisor & Group Lead for Chronic Disease to provide prevalence estimates for the specified eight chronic conditions. These estimates informed the Integrated Care Programme for the Prevention and Management of Chronic Disease in the development of a new Programme for the Prevention and Management of Chronic Disease.

[ESPRIT\\_UCC](#)
[UCCPublicHealth](#)
[Katarzyna.Gajewska@ucc.ie](mailto:Katarzyna.Gajewska@ucc.ie)
[Danko.Stamenic@ucc.ie](mailto:Danko.Stamenic@ucc.ie)

## What is a chronic disease?

A chronic disease is a long-term health condition that needs ongoing treatment and management. Cardiovascular disease and diabetes are considered chronic diseases.

## Benefits of the programme

The programme is designed so that you and your GP (family doctor) can work together on reducing your risk of developing cardiovascular disease, diabetes or both.

## Annual Chronic Disease Prevention Programme

## Chronic Disease Treatment Programme

### What is a chronic disease?

A chronic disease is a long-term health condition that needs ongoing treatment and management.

### Benefits of the programme


The programme is designed so that you and your GP (family doctor) can work together to monitor your condition and identify the best way to treat it now.

### The Chronic Disease Treatment Programme supports you by providing:

- an annual review with your GP and practice nurse
- a review of your medication
- a plan to help you manage your risk factors
- health promotion advice
- appropriate medical treatment
- referrals to support services, if required
- care in your community, close to your home

- set reviews of your chronic disease with your GP or practice nurse
- a personalised care plan that you develop and agree with your GP
- reviews of your care plan and medicine
- support you to manage your condition
- early detection of any new conditions you may develop
- early detection of complications in your condition
- care in your community, close to your home

Order code: HPC01527





# Use of healthcare services over the past year by CVD diagnosis

Healthcare service	No CVD N = 6,655	CVD N = 1,458	Overall N = 8,113
<b>GP visits</b>			
Mean (SD) number	3.4 (3.8)	5.7 (5.0)	3.9 (4.1)
Attended	5,703 (86%)	1,391 (95%)	7,094 (87%)
<b>A&amp;E Department attendance</b>			
Mean (SD) number	0.2 (0.6)	0.4 (0.9)	0.2 (0.7)
Attended	871 (13%)	348 (24%)	1,219 (15%)
<b>OPD visits:</b>			
Mean (SD) number	1.0 (2.0)	2.1 (2.8)	1.2 (2.2)
Attended	2,446 (37%)	880 (60%)	3,326 (41%)
<b>Hospital overnight admissions:</b>			
Mean (SD) number	0.2 (0.6)	0.4 (0.9)	0.2 (0.6)
Admitted	686 (10%)	362 (25%)	1,048 (13%)
Results presented as n (%) unless indicated otherwise;			
CVD, cardiovascular disease; GP, general practitioner; A&E, accident and emergency; OPD , outpatient department			

# Incremental healthcare service use and costs attributable to CVD

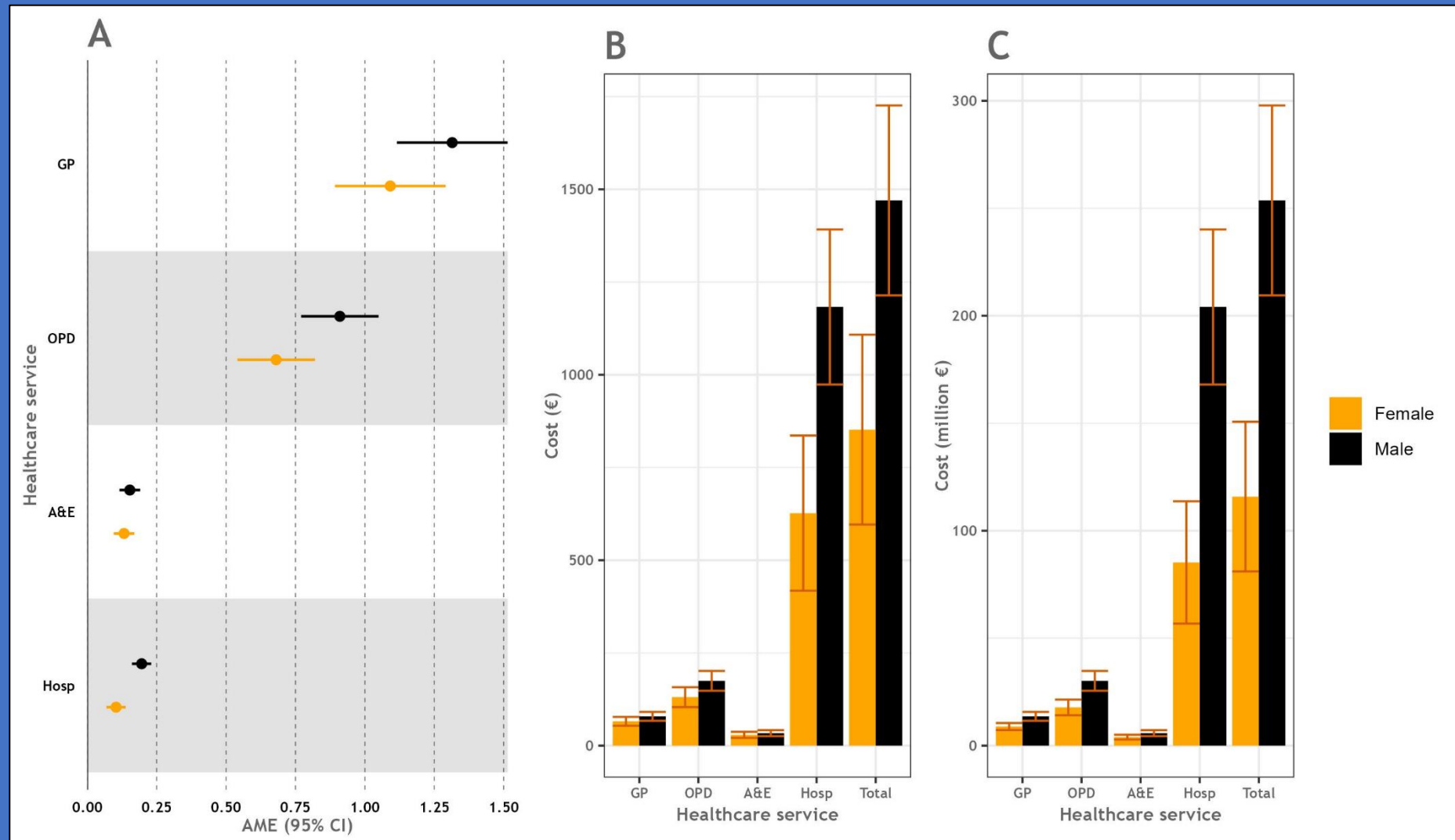
Health service	Average marginal effect (95% CI)		Direct costs, 2023 (95% CI)		
	Univariate	Multivariable	Costs per person (€)	Costs overall (million €)	% total
GP visits	1.98 (1.76, 2.2)	1.19 (0.99, 1.39)	€71.6 (€59.7, €83.6)	€22.2 (€18.5, €25.9)	6.3%
OPD visits	0.85 (0.72, 0.98)	0.79 (0.65, 0.93)	€150.8 (€124.1, €177.6)	€46.8 (€38.5, €55.1)	13.3%
A&E attendances	0.17 (0.13, 0.2)	0.14 (0.10, 0.18)	€31.2 (€23, €39.4)	€9.7 (€7.1, €12.2)	2.7%
Hospital admissions	0.18 (0.14, 0.21)	0.15 (0.11, 0.18)	€881.5 (€672.3, €1090.7)	€273.5 (€208.6, €338.5)	77.7%
<b>Total</b>			€1135.2 (€879, 1391.3)	€352.2 (€272.8, €431.7)	100.0%

CI, confidence interval; GP, general practitioner; A&E, accident and emergency department; OPD, outpatient department.

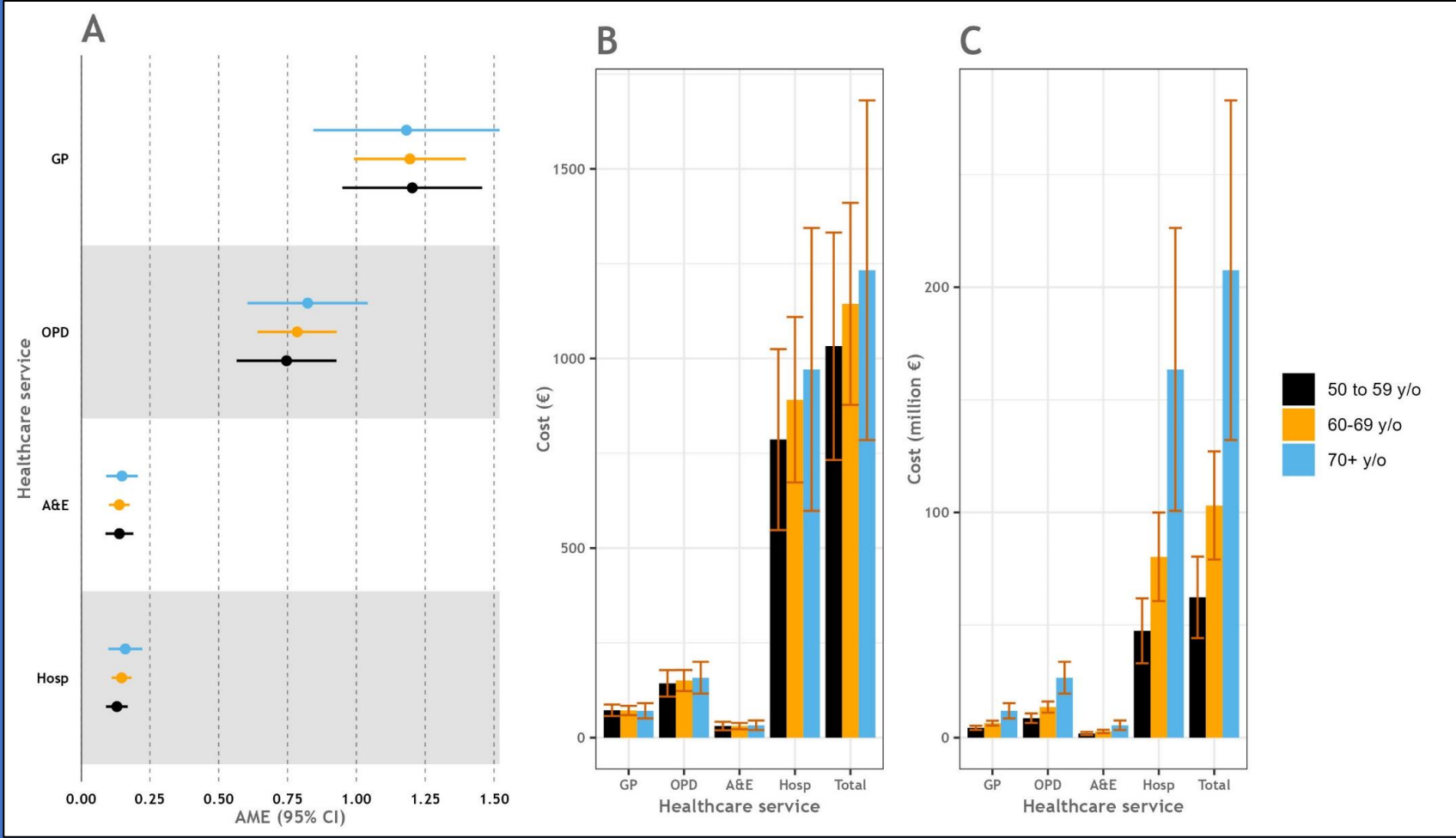
Multivariable model adjusted for participant gender and age, household location, education level, marital status, healthcare cover, other chronic conditions and the interaction terms of age and gender with CVD.

Cost estimates based on average marginal effects from multivariable models.

# Incremental Use of Healthcare Services attributable to CVD and associated costs by Gender



# Incremental use of healthcare services attributable to CVD and associated costs by age group



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EPICC Team:

Post-doctoral Researchers

Danko Stamenic, Katarzyna A. Gajewska



UCC Co-PIs

Anthony P. Fitzgerald, Kate N. O'Neill, Sheena M. McHugh, Linda M. O'Keeffe, Jodi Cronin, Margaret Bermingham, Brenda M. Lynch,

HSE Collaborators/Knowledge Users

Orlaith O'Reilly, Sarah M. O'Brien, Claire M. Buckley, Paul M. Kavanagh



COLLABORATIVE DOCTORAL PROGRAMME IN CHRONIC DISEASE PREVENTION



# PhD Trainees



## Irene Gibson

Cardiovascular nurse specialist

Developing and implementing a digital intervention for secondary prevention of CVD

University of Galway



## Eanna Kenny

- Health psychologist
- Optimising digital cardiac rehabilitation using the Multiphase Optimisation Strategy
- University of Galway



## Pauline Dunne

- Dietician
- Evaluating the feasibility of a type 2 diabetes prevention pathway, after pregnancy with GDM
- UCD



## Edel Burton

- Pharmacist
- Impact of COVID-19 on prehospital emergency care for stroke/TIA
- UCC



## Clair Haseldine

- Physiotherapist
- Implementation of digital diabetes prevention programmes to improve engagement
- UCC



## Marcia Carvalho

- Health psychologist
- SUSTAIN T2DM – using behaviour science to understand maintenance of self-management behaviours
- University of Galway



**CDP**  
**CDP**

COLLABORATIVE DOCTORAL PROGRAMME IN CHRONIC DISEASE PREVENTION



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University College Cork, Ireland  
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University College Dublin



**SPHeRE**

Structured Population and  
Health-services Research Education



Health  
Research  
Board



# Questions