

# Comparison of IPH prevalence estimates with other survey-based estimates

## 1. Introduction

The Institute of Public Health in Ireland publishes estimates and forecasts of the prevalence of chronic health conditions for national and subnational areas on the island of Ireland. The estimates and forecasts are based on statistical models of nationally representative health survey data that estimate the risk of having the condition. The risks of having the condition are then applied to population estimates and projections. IPH's most recent prevalence estimates and forecasts were published in 2012 and can be found at the Chronic Conditions Hub of the Health Well website (<http://chronicconditions.thehealthwell.info/>).

The purpose of this document is to:

1. Compare IPH prevalence estimates with prevalence estimates from other health surveys on the island (see Table 1).
2. Highlight the methodological issues in comparing prevalence estimates from different surveys (see Box 1).

## 2. Method

Table 1 shows the surveys IPH used to estimate prevalence and the surveys used to compare IPH prevalence estimates. The surveys used to estimate prevalence (Survey of Lifestyles Attitudes and Nutrition (SLÁN) 2007, Northern Ireland Health and Social Wellbeing (HSWB) 2005/06, Understanding Society (US) 2009) were chosen to estimate prevalence because they were the most recent national health surveys that were available that measured the prevalence of chronic conditions in the community.

**Table 1: Surveys used to estimate prevalence and surveys used to compare prevalence estimates**

	<b>Surveys used to estimate prevalence</b>	<b>Surveys used to compare prevalence estimates</b>
<b>Republic of Ireland</b>	Survey of Lifestyles Attitudes and Nutrition (SLÁN) 2007 <a href="http://www.ucd.ie/issda/data/surveyonlifestyleandattitudestonutritionslan/">http://www.ucd.ie/issda/data/surveyonlifestyleandattitudestonutritionslan/</a>	Quarterly National Household Survey (QNHS) Health Module 2007 <a href="http://www.cso.ie/en/qnhs/abouttheqnhs/">http://www.cso.ie/en/qnhs/abouttheqnhs/</a>  Quarterly National Household Survey (QNHS) Health Module 2011 <a href="http://www.cso.ie/en/qnhs/abouttheqnhs/">http://www.cso.ie/en/qnhs/abouttheqnhs/</a>  The Irish Longitudinal Study on Ageing (TILDA) Wave 1 2012 <a href="http://www.tcd.ie/tilda/">http://www.tcd.ie/tilda/</a>
<b>Northern Ireland</b>	Health and Social Wellbeing Survey (HSWB) 2005/2006 <a href="http://www.csu.nisra.gov.uk/survey.asp46.htm">http://www.csu.nisra.gov.uk/survey.asp46.htm</a>  Understanding Society (US) 2009 <a href="https://www.understandingsociety.ac.uk/">https://www.understandingsociety.ac.uk/</a>	Understanding Society (US) 2009 <a href="https://www.understandingsociety.ac.uk/">https://www.understandingsociety.ac.uk/</a>  Health Survey Northern Ireland (HSNI) 2010/2011 <a href="http://www.csu.nisra.gov.uk/surveyNIHS.asp5.htm">http://www.csu.nisra.gov.uk/surveyNIHS.asp5.htm</a>

Surveys can measure similar things in different ways. These different methods can have a significant effect on the value of the surveys' estimates and make valid comparisons difficult. Box 1 highlights the methodological issues in comparing prevalence estimates from different surveys. Boxes 2 and 3 describe these issues in relation to the surveys IPH used to estimate prevalence and the surveys used to compare these prevalence estimates.

### Box 1: Methodological issues affecting comparisons of survey estimates

**1. Coverage – do the surveys target different populations?**

Surveys can target different population groups (eg children or adults, people attending a hospital or people in private residences) and different population groups may have different prevalences.

**2. Year to which the data relate**

There are problems with comparing prevalence estimates from different years because prevalence may have changed over time.

**3. How many participants and how they are selected**

A survey with more participants will produce a more precise prevalence estimate (though this does not mean that the estimate is unbiased). Different methods for selecting the participants (eg an independent cross-sectional sample, a longitudinal panel) can affect survey estimates (eg a longitudinal panel may lose less healthy people over time and this may make the panel healthier than a cross-sectional sample of the same population).

**4. Response rate**

A low response rate may mean that the participants are not representative of your population of interest. In particular, if there are differences between the participants and non-participants in factors that are relevant to the survey estimate (eg many of the non-participants were older) then the estimate is likely to be biased.

**5. How the question is phrased**

Different questions ask different things and will produce different answers. Questions about chronic health conditions can describe the condition in different ways (eg “angina” or “angina (chest pain or exertion)”). Furthermore questions can ask about various aspects of having the condition: was the condition experienced “in the past 12 months” or “ever”; was the condition diagnosed by a “doctor” or a “doctor or other health professional”; are you “currently taking medication” for the condition; have you “ever consulted a doctor” about the condition.

**6. How the response is formatted**

The number of response categories and how they are presented can influence responses.

**7. How the question is administered**

Different methods of administering the questions can affect how the question is answered (eg respondents may be more susceptible to a social desirability bias during a face-to-face interview than when self-completing a questionnaire). In addition, some surveys include physical measurement of some conditions (eg blood pressure measurement for hypertension, glycated haemoglobin measurement for diabetes).

### 3. Comparison of IPH prevalence estimates: Republic of Ireland

IPH prevalence estimates in the Republic of Ireland are based on the Survey of Lifestyles Attitudes and Nutrition (SLÁN) 2007. This section compares IPH estimates for each condition with estimates from:

- Central Statistics Office's (CSO) Quarterly National Household Survey (QNHS) Health Modules 2007 and 2010
- The Irish Longitudinal Study on Ageing (TILDA)

#### 3.1 Comparison of survey features

Box 2 compares SLÁN, QNHS and TILDA on the methodological issues affecting comparisons of survey estimates from Box 1.

#### Box 2: Methodological issues affecting comparisons of estimates from the Survey of Lifestyle, Attitudes and Nutrition (SLÁN) 2007, the Quarterly National Household Survey (QNHS) and The Irish Longitudinal Study of Ageing (TILDA)

SLÁN 2007	QNHS 2007, 2010	TILDA 2010	Comments
<b>Coverage</b> Adults aged 18+ years in private residences	<b>Coverage</b> Adults aged 18+ years in private residences	<b>Coverage</b> Adults aged 50+ years in private residences	SLÁN and QNHS cover the same adult population.  TILDA focuses on older adults and its estimates can be compared with SLÁN and QNHS estimates for older adults.
<b>Year to which the data relate</b> IPH prevalence estimates apply SLÁN's 2007 data to 2010 population estimates	<b>Year to which the data relate</b> QNHS data relate to the third calendar quarters of 2007 and 2010	<b>Year to which the data relate</b> TILDA data relate to the period between October 2009 and February 2011 and are weighted to 2010 population estimates	The years to which the data relate are comparable. Although SLÁN estimates relate to 2007, the estimates were applied to 2010 population data. QNHS estimates relate to 2007 and 2010. TILDA estimates relate to 2010.
<b>How many participants and how they are selected</b> SLÁN is an independent cross-sectional sample of	<b>How many participants and how they are selected</b> QNHS is a rotating panel sample of households in	<b>How many participants and how they are selected</b> TILDA is a longitudinal panel sample of	

**Box 2: Methodological issues affecting comparisons of estimates from the Survey of Lifestyle, Attitudes and Nutrition (SLÁN) 2007, the Quarterly National Household Survey (QNHS) and The Irish Longitudinal Study of Ageing (TILDA)**

<b>SLÁN 2007</b>	<b>QNHS 2007, 2010</b>	<b>TILDA 2010</b>	<b>Comments</b>
10,364 persons in the target population	the target population, whereby one-fifth of the sample is replaced each quarter. The sample size was 21,253 in 2007 and 15,673 in 2010.	households in the target population. The sample size for Wave 1 release of data was 8,504 persons.	
<b>Response rate</b> SLÁN has a response rate of 62% for its main questionnaire	<b>Response rate</b> The response rates for QNHS Health Modules were not published	<b>Response rate</b> TILDA has a response rate of 62%	The response rates for the surveys are similar and typical of population health surveys
<b>How the question is phrased</b>  <u>Hypertension</u> “In the last 12 months, have you been told by a doctor that you have high blood pressure?”  <u>Stroke</u> “Have you had stroke in the last 12 months? If so, was it ever diagnosed by a doctor?”  <u>Coronary heart disease</u> “Have you had angina in the last 12 months? If so, was it ever diagnosed by a doctor?” Or “Have you had heart attack in the last 12 months? If so, was it ever diagnosed by a doctor?”  <u>Diabetes</u> “Have you had diabetes in the last 12 months? If so, was it ever diagnosed by a doctor?” Or “Are you currently taking medication for diabetes?”  <u>Chronic airflow obstruction</u>	<b>How the question is phrased</b>  <u>Hypertension</u> “Has your doctor ever diagnosed you with high blood pressure (hypertension)?”  <u>Stroke</u> “Has your doctor ever diagnosed you with stroke?”  <u>Coronary heart disease</u> “Has your doctor ever diagnosed you with angina (chest pain or tightness on exertion)?” Or “Has your doctor ever diagnosed you with heart attack?”  <u>Diabetes</u> “Has your doctor ever diagnosed you with diabetes?”  <u>Chronic airflow obstruction</u>	<b>How the question is phrased</b>  <u>Hypertension</u> “Has a doctor ever told you that you have high blood pressure or hypertension?”  <u>Stroke</u> “Has a doctor ever told you that you have stroke (cerebral vascular disease)?”  <u>Coronary heart disease</u> “Has a doctor ever told you that you have angina?” Or “Has a doctor ever told you that you have a heart attack (including myocardial infarction or coronary thrombosis)?”  <u>Diabetes</u> “Has a doctor ever told you that you have diabetes or high blood sugar level?”  <u>Chronic airflow obstruction</u>	There is good agreement between the phrasing of the chronic conditions questions in SLÁN and QNHS; most of the conditions are described using exactly the same words. However, SLÁN asks about occurrence of conditions in the previous 12 months but QNHS asks about occurrence of conditions at any time in the past. Therefore we would expect QNHS’s longer reference period to produce higher prevalence estimates.  Although SLÁN and TILDA include questions on broadly similar chronic conditions, there is not good agreement between how the questions are phrased; none of the conditions are described using exactly the same words. Furthermore, SLÁN asks about occurrence of conditions in the previous 12 months but TILDA, like QNHS, asks

**Box 2: Methodological issues affecting comparisons of estimates from the Survey of Lifestyle, Attitudes and Nutrition (SLÁN) 2007, the Quarterly National Household Survey (QNHS) and The Irish Longitudinal Study of Ageing (TILDA)**

<b>SLÁN 2007</b>	<b>QNHS 2007, 2010</b>	<b>TILDA 2010</b>	<b>Comments</b>
<p>“Have you had chronic bronchitis, chronic obstructive lung (pulmonary) disease, emphysema in the last 12 months? If so, was it ever diagnosed by a doctor?”</p> <p><u>Arthritis</u> “Have you had rheumatoid arthritis (inflammation of the joints) in the last 12 months? If so, was it ever diagnosed by a doctor?”</p> <p>“Have you had osteoarthritis (arthrosis, joint degradation) in the last 12 months? If so, was it ever diagnosed by a doctor?”</p> <p><u>Back pain</u> “Have you had lower back pain or other chronic back condition in the last 12 months? If so, was it ever diagnosed by a doctor?”</p>	<p>“Has your doctor ever diagnosed you with chronic bronchitis, chronic obstructive lung disease (COPD), emphysema?”</p> <p><u>Arthritis</u> “Has your doctor ever diagnosed you with rheumatoid arthritis (inflammation of joints)?”</p> <p>“Has your doctor ever diagnosed you with osteoarthritis (arthrosis, joint degeneration)?”</p> <p><u>Back pain</u> “Has your doctor ever diagnosed you with lower back pain/chronic back conditions?”</p>	<p>“Has a doctor ever told you that you have chronic lung disease such as chronic bronchitis or emphysema?”</p> <p><u>Arthritis</u> “Has a doctor ever told you that you have arthritis (including osteoarthritis, or rheumatism)? Which type or types of arthritis do you have?”</p> <p><u>Back pain</u> “Are you often troubled with pain? Now thinking about this pain, in which part of your body is it most severe?”</p>	<p>about occurrence of conditions at any time in the past.</p> <p>SLÁN includes some objective measurements of disease status among a subsample of adults aged 45+ years (blood pressure and blood HbA1c concentration as a marker for diabetes). TILDA includes objective measurements of blood pressure. QNHS does not include objective measures of disease status.</p>
<p><b>How the response is formatted</b> Yes / No</p>	<p><b>How the response is formatted</b> Yes / No</p>	<p><b>How the response is formatted</b> Yes / No</p> <p>Three categories for arthritis question (Osteoarthritis, Rheumatoid arthritis, Some other kind of arthritis)</p> <p>Seven categories for pain question (Back, Hips, Knees, Feet, Mouth/teeth, All over, Other)</p>	<p>There is generally good agreement between the formatting of the responses to the chronic conditions questions in the three surveys; all three surveys generally use Yes/No responses.</p> <p>In addition to these dichotomous responses, TILDA presents three categories of arthritis and seven categories of the site of pain.</p>
<b>How the question is</b>	<b>How the question is</b>	<b>How the question is</b>	

**Box 2: Methodological issues affecting comparisons of estimates from the Survey of Lifestyle, Attitudes and Nutrition (SLÁN) 2007, the Quarterly National Household Survey (QNHS) and The Irish Longitudinal Study of Ageing (TILDA)**

<b>SLÁN 2007</b>	<b>QNHS 2007, 2010</b>	<b>TILDA 2010</b>	<b>Comments</b>
<b>administered</b> Face-to-face interview and physical measurement of hypertension and diabetes	<b>administered</b> Face-to-face interview	<b>administered</b> Face-to-face interview and physical measurement of hypertension	All three survey use face-to-face interviews administer the chronic conditions questions.

## 3.2 Comparison of survey estimates

### Hypertension

We would expect IPH estimates of doctor-diagnosed hypertension (“in the last 12 months”) to be lower than QNHS and TILDA estimates of doctor-diagnosed hypertension (“ever”). However, IPH estimates are generally significantly higher than QNHS among the younger age groups (18-34, 35-44, 45-54 and 55-64 years) with no significant differences among the older age groups (65-74 and 75+ years). IPH estimates for doctor-diagnosed hypertension are significantly lower than TILDA.

IPH and TILDA estimates include physical measurements of blood pressure which we can compare with diagnosis status to estimate the prevalence of undiagnosed hypertension. IPH estimates are significantly higher than TILDA for all age groups.

<b>Table 2: Prevalence of self-reported diagnosed hypertension and undiagnosed hypertension by age and survey, Republic of Ireland</b>					
Age		IPH 2010 (based on SLÁN 2007) (no data on undiagnosed for people <45 years)	QNHS 2007 (no data on undiagnosed)	QNHS 2010 (no data on undiagnosed)	TILDA (no data for people aged <50 years; no data on undiagnosed)
18-34	Diagnosed	2.5% (1.9%, 3.3%)	1.4% (1.1%, 1.8%)	1.5% (1.1%, 1.9%)	---
	Undiagnosed	---	---	---	---
	Total	---	---	---	---
35-44	Diagnosed	5.8% (4.7%, 7.1%)	3.6% (3.0%, 4.2%)	4.4% (3.7%, 5.3%)	---
	Undiagnosed	---	---	---	---
	Total	---	---	---	---
45-54	Diagnosed	15.2% (13.0%, 17.6%)	10.2% (9.2%, 11.3%)	9.9% (8.8%, 11.2%)	22.6% (20.4%, 24.9%)
	Undiagnosed	33.8% (27.9%, 39.7%)	---	---	22.4% (19.9%, 24.9%)
	Total	49.0%	---	---	45.0%
55-64	Diagnosed	26.2% (23.3%, 29.4%)	20.6% (19.2%, 22.1%)	20.8% (19.0%, 22.7%)	33.3% (31.5%, 35.1%)
	Undiagnosed	38.9% (31.6%, 46.2%)	---	---	22.7% (20.8%, 24.6%)
	Total	65.1%	---	---	56.0%
65-74	Diagnosed	29.1% (25.6%, 32.9%)	29.0% (27.2%, 30.9%)	32.2% (30.0%, 34.3%)	45.1% (42.9%, 47.3%)

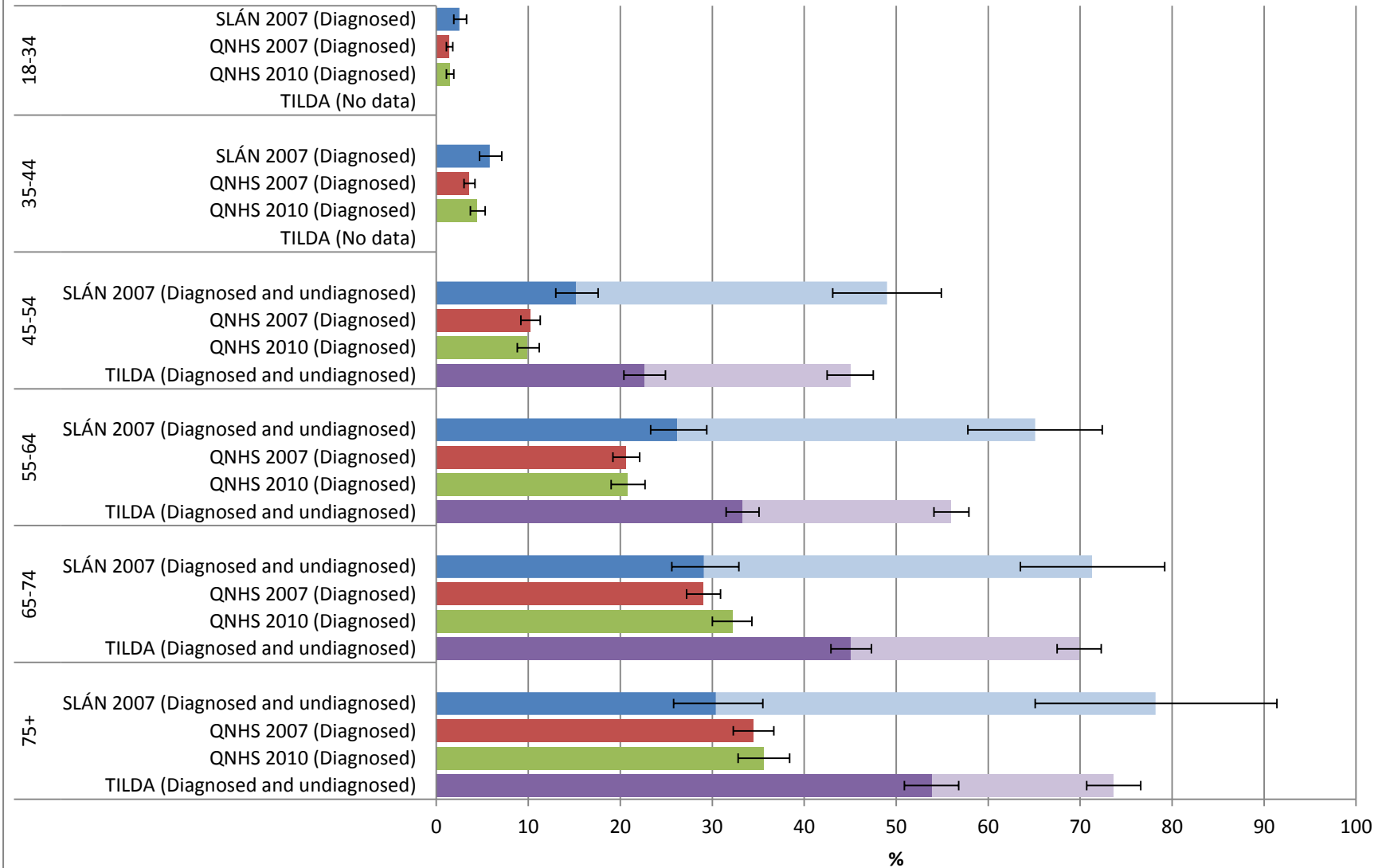


**Table 2: Prevalence of self-reported diagnosed hypertension and undiagnosed hypertension by age and survey, Republic of Ireland**

Age		<b>IPH 2010</b> (based on SLÁN 2007) (no data on undiagnosed for people <45 years)	<b>QNHS 2007</b> (no data on undiagnosed)	<b>QNHS 2010</b> (no data on undiagnosed)	<b>TILDA</b> (no data for people aged <50 years; no data on undiagnosed)
	Undiagnosed	42.2% (34.4%, 50.1%)	---	---	24.8% (22.4%, 27.2%)
	Total	71.3%	---	---	69.9%
75+	Diagnosed	30.4% (25.8%, 35.5%)	34.5% (32.3%, 36.7%)	35.6% (32.8%, 38.4%)	53.9% (50.9%, 56.8%)
	Undiagnosed	47.8% (34.7%, 61.0%)	---	---	19.7% (16.8%, 22.7%)
	Total	78.2%	---	---	73.6%
18+	Diagnosed	12.7%	10.0% (9.6%, 10.4%)	11.1% (10.5%, 11.6%)	
	Undiagnosed	---	---	---	
	Total	---	---	---	

\*This cell relates to prevalence among people aged 50-54 years.

**Figure 1: Prevalence % of self-reported diagnosed hypertension and undiagnosed hypertension by age and survey, Republic of Ireland**

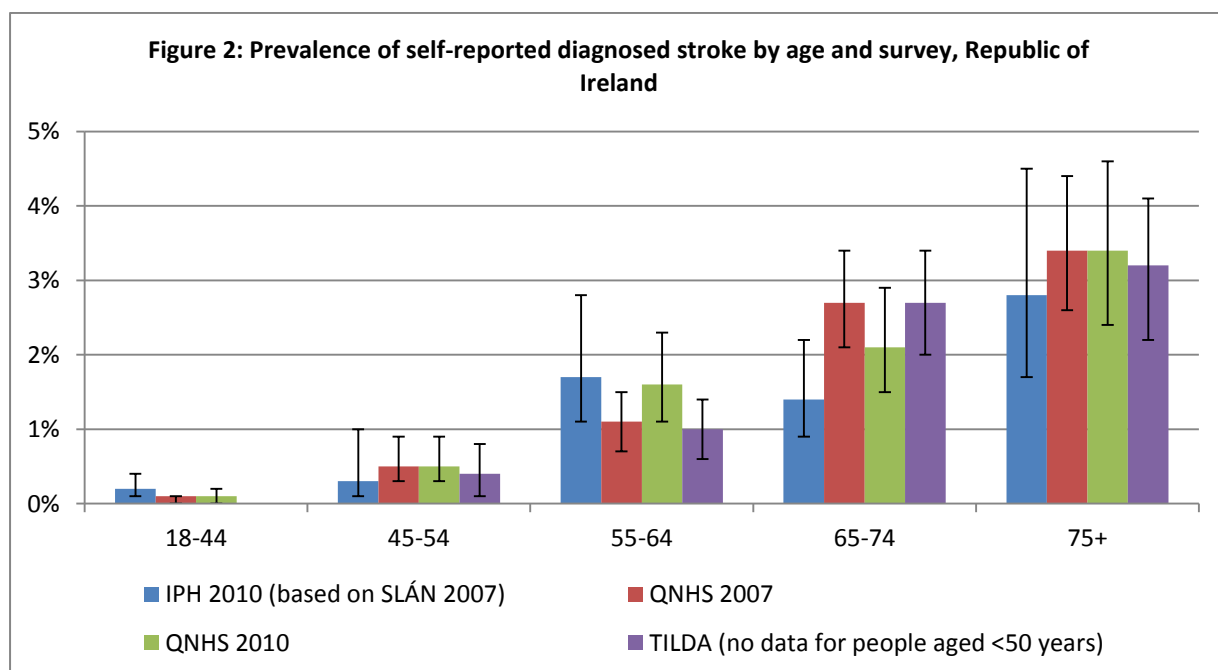


## Stroke

We would expect IPH estimates of stroke (“in the last 12 months”) to be lower than QNHS and TILDA estimates of stroke (“ever”). IPH age-specific point estimates are generally lower (though not significantly lower) than QNHS and TILDA.

<b>Table 3: Prevalence of self-reported diagnosed stroke by age and survey, Republic of Ireland</b>				
<b>Age</b>	<b>IPH 2010</b> (based on SLÁN 2007)	<b>QNHS 2007</b>	<b>QNHS 2010</b>	<b>TILDA</b> (no data for people aged <50 years)
18-44	0.2% (0.1%, 0.4%)	0.1% (0.0%, 0.1%)	0.1% (0.0%, 0.2%)	---
45-54	0.3% (0.1%, 1.0%)	0.5% (0.3%, 0.9%)	0.5% (0.3%, 0.9%)	0.4% <sup>a</sup> (0.1%, 0.8%)
55-64	1.7% (1.1%, 2.8%)	1.1% (0.7%, 1.5%)	1.6% (1.1%, 2.3%)	1.0% (0.6%, 1.4%)
65-74	1.4% (0.9%, 2.2%)	2.7% (2.1%, 3.4%)	2.1% (1.5%, 2.9%)	2.7% (2.0%, 3.4%)
75+	2.8% (1.7%, 4.5%)	3.4% (2.6%, 4.4%)	3.4% (2.4%, 4.6%)	3.2% (2.2%, 4.1%)
18+	0.7%	0.7% (0.6%, 0.8%)	0.8% (0.6%, 0.9%)	---

<sup>a</sup> This cell relates to prevalence among people aged 50-54 years.



## Coronary heart disease (angina or heart attack)

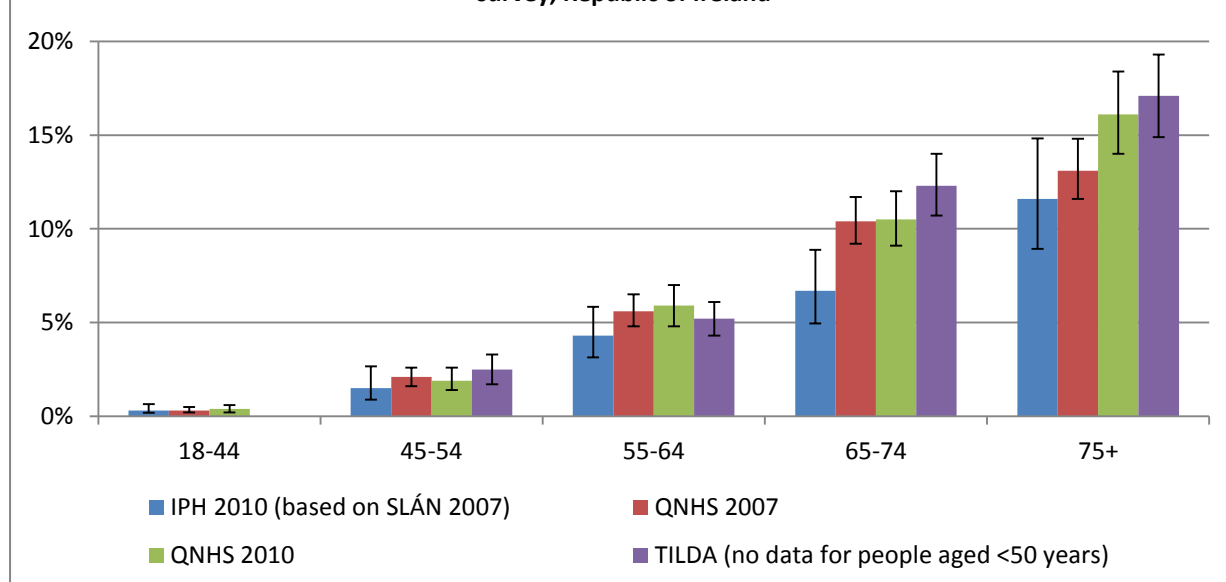
We would expect IPH estimates of coronary heart disease (“in the last 12 months”) to be lower than QNHS and TILDA estimates of coronary heart disease (“ever”). IPH age-specific point estimates are generally lower than QNHS and TILDA and the estimate for 65-74 years is significantly lower.

**Table 4: Prevalence of self-reported diagnosed coronary heart disease by age and survey, Republic of Ireland**

Age	IPH 2010 (based on SLÁN 2007)	QNHS 2007	QNHS 2010	TILDA (no data for people aged <50 years)
18-44	0.3% (0.2%, 0.6%)	0.3% (0.2%, 0.5%)	0.4% (0.2%, 0.6%)	---
45-54	1.5% (0.9%, 2.7%)	2.1% (1.6%, 2.6%)	1.9% (1.4%, 2.6%)	2.5% <sup>a</sup> (1.7%, 3.3%)
55-64	4.3% (3.1%, 5.8%)	5.6% (4.8%, 6.5%)	5.9% (4.8%, 7.0%)	5.2% (4.3%, 6.1%)
65-74	6.7% (5.0%, 8.9%)	10.4% (9.2%, 11.7%)	10.5% (9.1%, 12.0%)	12.3% (10.7%, 14.0%)
75+	11.6% (8.9%, 14.8%)	13.1% (11.6%, 14.8%)	16.1% (14.0%, 18.4%)	17.1% (14.9%, 19.3%)
18+	2.4%	2.9% (2.7%, 3.1%)	3.3% (3%, 3.6%)	---

<sup>a</sup>This cell relates to prevalence among people aged 50-54 years.

**Figure 3: Prevalence of self-reported diagnosed angina or heart attack by age and survey, Republic of Ireland**



## Diabetes

We would expect IPH estimates of doctor-diagnosed diabetes (“in the last 12 months”) to be lower than QNHS and TILDA estimates of doctor-diagnosed diabetes (“ever”). However, IPH estimates are generally similar to or higher than QNHS and the estimate for 75+ years is significantly higher than QNHS 2007. IPH estimates for doctor-diagnosed diabetes are generally lower (though not significantly lower) than TILDA.

IPH estimates include physical measurements of diabetes (based on HbA1c concentration in the blood) which we can compare with diagnosis status to estimate the prevalence of undiagnosed diabetes. The other surveys do not include physical measurements with which we could estimate the prevalence of undiagnosed diabetes.

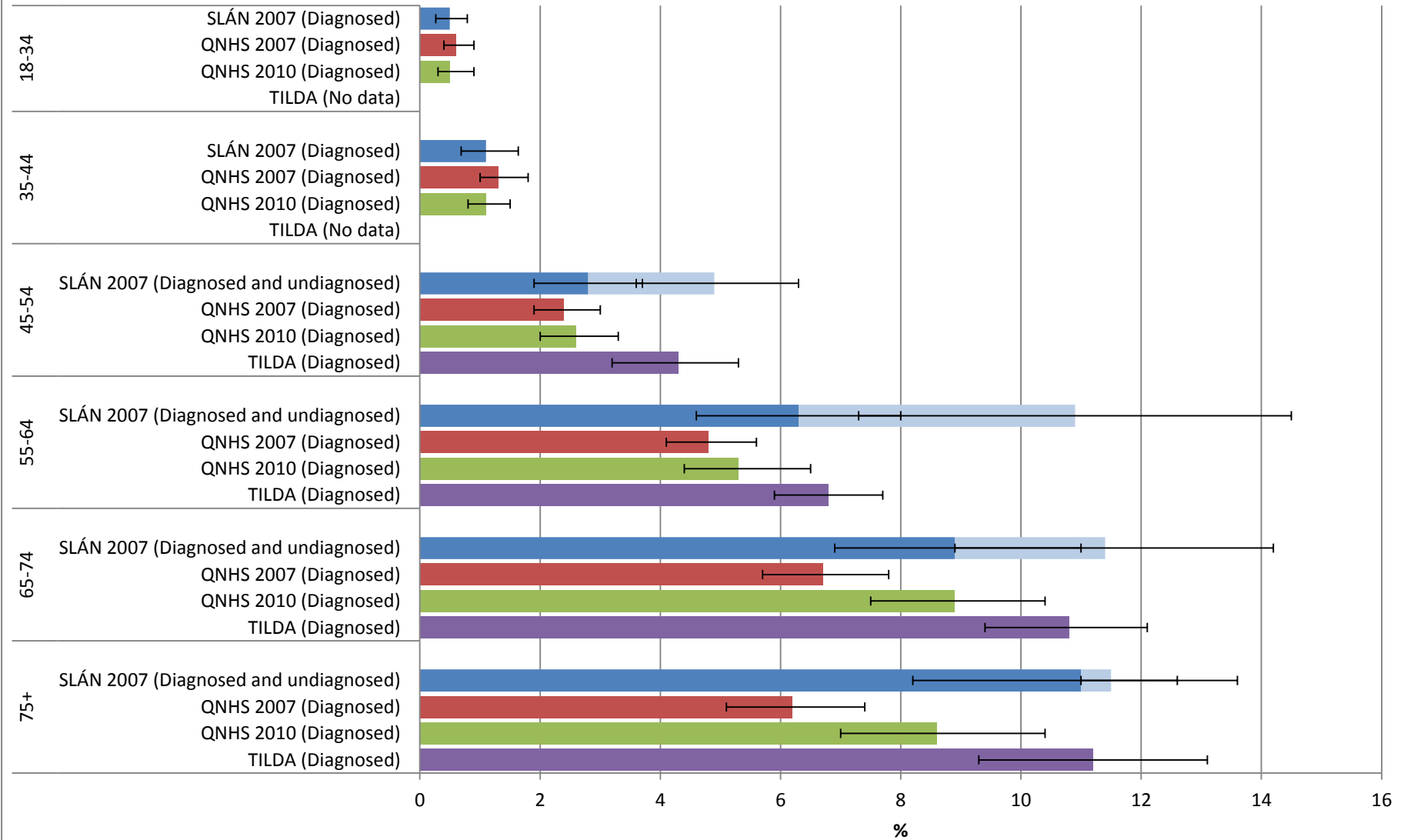
<b>Table 5: Prevalence of self-reported diagnosed diabetes and undiagnosed diabetes by age and survey, Republic of Ireland</b>					
<b>Age</b>		<b>IPH 2010</b> (based on SLÁN 2007) (no data on undiagnosed for people <45 years)	<b>QNHS 2007</b> (no data on undiagnosed)	<b>QNHS 2010</b> (no data on undiagnosed)	<b>TILDA</b> (no data for people aged <50 years; no data on undiagnosed)
18-34	Diagnosed	0.5% (0.3%, 0.8%)	0.6% (0.4%, 0.9%)	0.5% (0.3%, 0.9%)	---
	Undiagnosed	---	---	---	---
	Total	---	---	---	---
35-44	Diagnosed	1.1% (0.7%, 1.6%)	1.3% (1.0%, 1.8%)	1.1% (0.8%, 1.5%)	---
	Undiagnosed	---	---	---	---
	Total	---	---	---	---
45-54	Diagnosed	2.8% (1.9%, 3.7%)	2.4% (1.9%, 3.0%)	2.6% (2.0%, 3.3%)	4.3% (3.2%, 5.3%)
	Undiagnosed	2.1% (0.8%, 3.5%)	---	---	---
	Total	4.9% (3.3%, 6.6%)	---	---	---
55-64	Diagnosed	6.3% (4.6%, 8.0%)	4.8% (4.1%, 5.6%)	5.3% (4.4%, 6.5%)	6.8% (5.9%, 7.7%)
	Undiagnosed	4.6% (1.0%, 8.2%)	---	---	---
	Total	10.9% (6.9%, 14.9%)	---	---	---
65-74	Diagnosed	8.9% (6.9%, 11.0%)	6.7% (5.7%, 7.8%)	8.9% (7.5%, 10.4%)	10.8% (9.4%, 12.1%)

**Table 5: Prevalence of self-reported diagnosed diabetes and undiagnosed diabetes by age and survey, Republic of Ireland**

Age		<b>IPH 2010</b> (based on SLÁN 2007) (no data on undiagnosed for people <45 years)	<b>QNHS 2007</b> (no data on undiagnosed)	<b>QNHS 2010</b> (no data on undiagnosed)	<b>TILDA</b> (no data for people aged <50 years; no data on undiagnosed)
	Undiagnosed	2.5% (0.0%, 5.3%)	---	---	---
	Total	11.5% (8.0%, 15.0%)	---	---	---
75+	Diagnosed	11.0% (8.2%, 13.6%)	6.2% (5.1%, 7.4%)	8.6% (7.0%, 10.4%)	11.2% (9.3%, 13.1%)
	Undiagnosed	0.5% (0.0%, 1.6%)	---	---	---
	Total	11.4% (8.5%, 14.3%)	---	---	---
18+	Diagnosed	3.2%	2.4% (2.2%, 2.6%)	2.9% (2.6%, 3.2%)	
	Undiagnosed	---	---	---	
	Total	---	---	---	

\*This cell relates to prevalence among people aged 50-54 years.

**Figure 4: Prevalence % of self-reported diagnosed diabetes and undiagnosed diabetes by age and survey, Republic of Ireland**



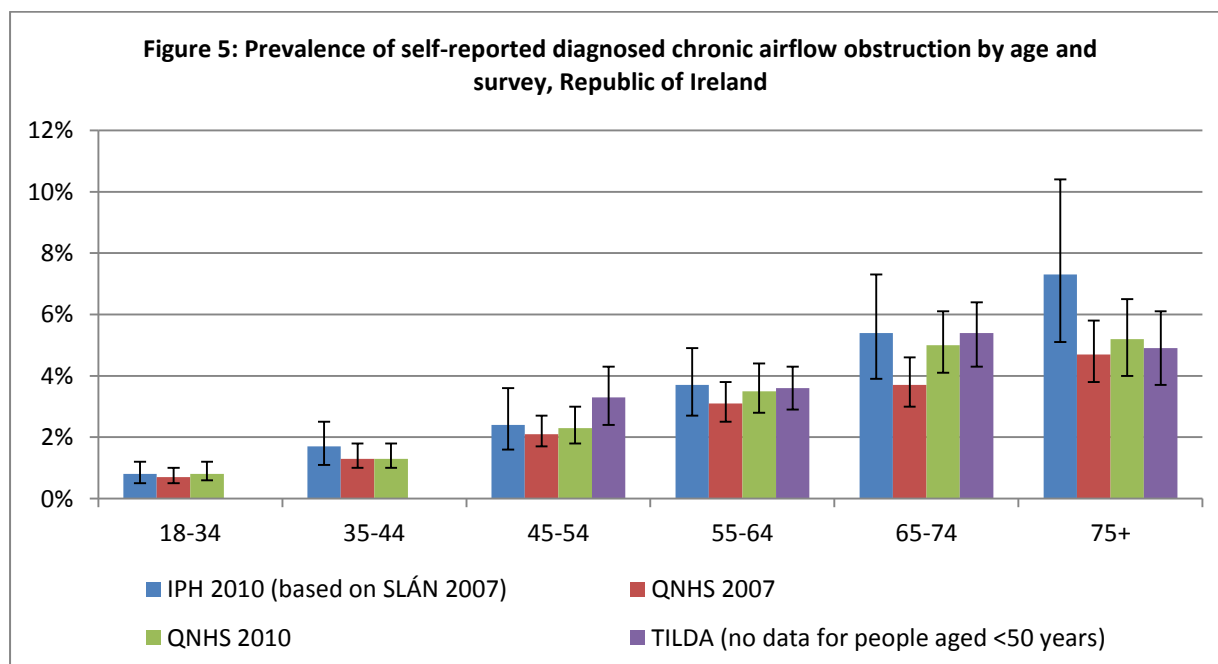
## Chronic Airflow Obstruction

We would expect IPH estimates of chronic airflow obstruction (“in the last 12 months”) to be lower than QNHS and TILDA estimates of chronic airflow obstruction (“ever”). However, IPH age-specific point estimates are generally higher (though not significantly higher) than QNHS and TILDA.

**Table 6: Prevalence of self-reported diagnosed chronic airflow obstruction by age and survey, Republic of Ireland**

Age	IPH 2010 (based on SLÁN 2007)	QNHS 2007	QNHS 2010	TILDA (no data for people aged <50 years)
18-34	0.8% (0.5%, 1.2%)	0.7% (0.5%, 1.0 %)	0.8% (0.6%, 1.2%)	---
35-44	1.7% (1.1%, 2.5%)	1.3% (1.0%, 1.8%)	1.3% (1.0%, 1.8%)	---
45-54	2.4% (1.6%, 3.6%)	2.1% (1.7%, 2.7%)	2.3% (1.8%, 3.0%)	3.3% <sup>a</sup> (2.4%, 4.3%)
55-64	3.7% (2.7%, 4.9%)	3.1% (2.5%, 3.8%)	3.5% (2.8%, 4.4%)	3.6% (2.9%, 4.3%)
65-74	5.4% (3.9%, 7.3%)	3.7% (3.0%, 4.6%)	5.0% (4.1%, 6.1%)	5.4% (4.3%, 6.4%)
75+	7.3% (5.1%, 10.4%)	4.7% (3.8%, 5.8%)	5.2% (4.0%, 6.5%)	4.9% (3.7%, 6.1%)
18+	2.5%	1.9% (1.7%, 2.1%)	2.2% (2.0%, 2.5%)	---

<sup>a</sup> This cell relates to prevalence among people aged 50-54 years.





## Rheumatoid arthritis

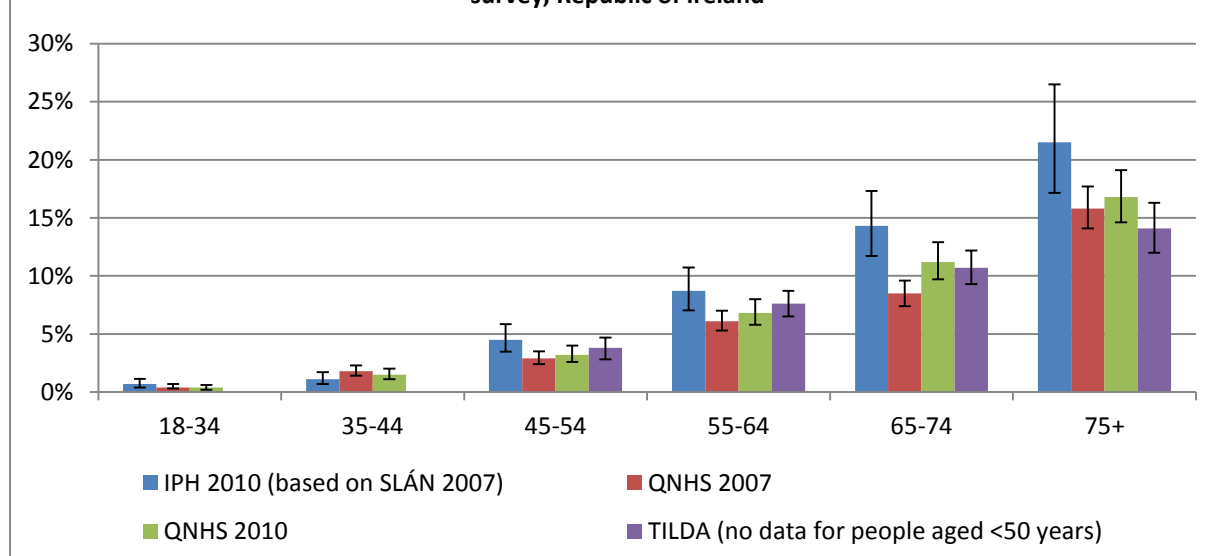
We would expect IPH estimates of rheumatoid arthritis (“in the last 12 months”) to be lower than QNHS and TILDA estimates of rheumatoid arthritis (“ever”). However, IPH age-specific point estimates are generally higher than QNHS and TILDA. IPH estimates for 55-64 years and 65-74 years are significantly higher than QNHS 2007. IPH estimates for 75+ years is significantly higher than TILDA.

**Table 7: Prevalence of self-reported diagnosed rheumatoid arthritis by age and survey, Republic of Ireland**

Age	IPH 2010 (based on SLÁN 2007)	QNHS 2007	QNHS 2010	TILDA (no data for people aged <50 years)
18-34	0.7% (0.4%, 1.1%)	0.4% (0.3%, 0.7%)	0.4% (0.2%, 0.6%)	---
35-44	1.1% (0.7%, 1.7%)	1.8% (1.4%, 2.3%)	1.5% (1.1%, 2.0%)	---
45-54	4.5% (3.5%, 5.8%)	2.9% (2.4%, 3.5%)	3.2% (2.6%, 4.0%)	3.8% <sup>a</sup> (2.8%, 4.7%)
55-64	8.7% (7.0%, 10.7%)	6.1% (5.3%, 7.0%)	6.8% (5.8%, 8.0%)	7.6% (6.5%, 8.7%)
65-74	14.3% (11.7%, 17.3%)	8.5% (7.4%, 9.6%)	11.2% (9.7%, 12.9%)	10.7% (9.3%, 12.2%)
75+	21.5% (17.2%, 26.5%)	15.8% (14.1%, 17.7%)	16.8% (14.6%, 19.1%)	14.1% (12.0%, 16.3%)
18+	5.1%	3.5% (3.2%, 3.7%)	4.0% (3.7%, 4.3%)	---

<sup>a</sup>This cell relates to prevalence among people aged 50-54 years.

**Figure 6: Prevalence of self-reported diagnosed rheumatoid arthritis by age and survey, Republic of Ireland**



## Osteoarthritis

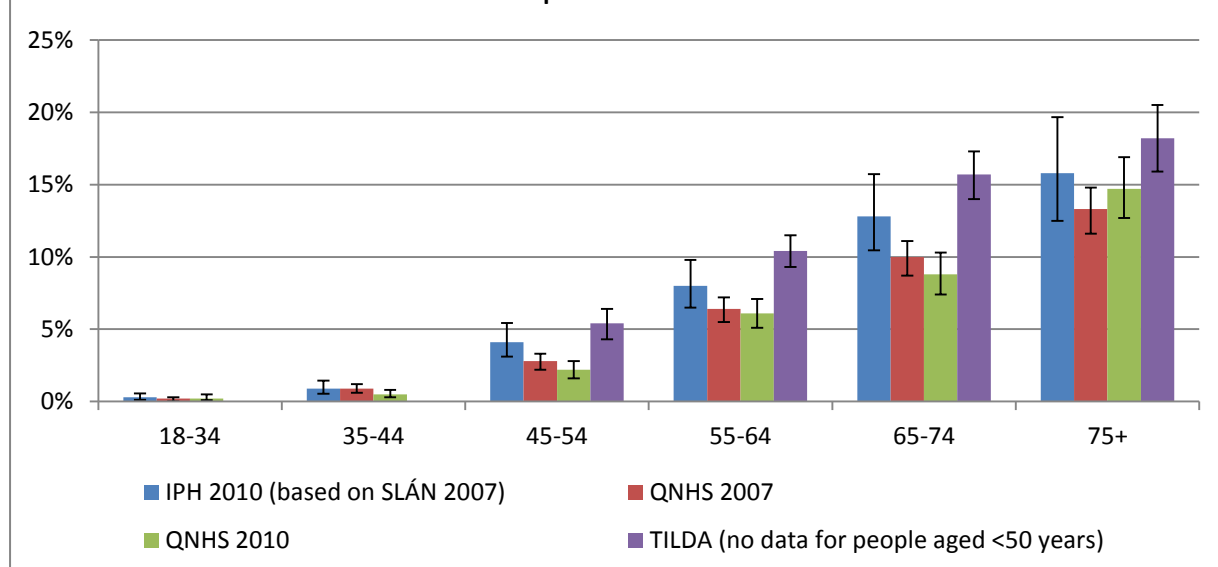
We would expect IPH estimates of osteoarthritis (“in the last 12 months”) to be lower than QNHS and TILDA estimates of osteoarthritis (“ever”). IPH age-specific estimates are generally lower (though not significantly lower) than TILDA. However, IPH age-specific point estimates are generally higher than QNHS and the estimates for 45-54 and 65-74 years are significantly higher than QNHS 2010.

**Table 8: Prevalence of self-reported diagnosed osteoarthritis by age and survey, Republic of Ireland**

Age	IPH 2010 (based on SLÁN 2007)	QNHS 2007	QNHS 2010	TILDA (no data for people aged <50 years)
18-34	0.3% (0.1%, 0.6%)	0.2% (0.1%, 0.4%)	0.2% (0.1%, 0.5%)	---
35-44	0.9% (0.5%, 1.4%)	0.9% (0.6%, 1.2%)	0.5% (0.3%, 0.8%)	---
45-54	4.1% (3.1%, 5.4%)	2.8% (2.3%, 3.4%)	2.2% (1.6%, 2.8%)	5.4% <sup>a</sup> (4.3%, 6.4%)
55-64	8.0% (6.5%, 9.8%)	6.4% (5.6%, 7.3%)	6.1% (5.1%, 7.1%)	10.4% (9.3%, 11.5%)
65-74	12.8% (10.5%, 15.7%)	10.0% (8.9%, 11.3%)	8.8% (7.4%, 10.3%)	15.7% (14.0%, 17.3%)
75+	15.8% (12.5%, 19.7%)	13.3% (11.8%, 15.0%)	14.7% (12.7%, 16.9%)	18.2% (15.9%, 20.5%)
18+	4.2%	3.2% (2.9%, 3.4%)	3.1% (2.8%, 3.4%)	---

<sup>a</sup>This cell relates to prevalence among people aged 50-54 years.

**Figure 7: Prevalence of self-reported diagnosed osteoarthritis by age and survey, Republic of Ireland**

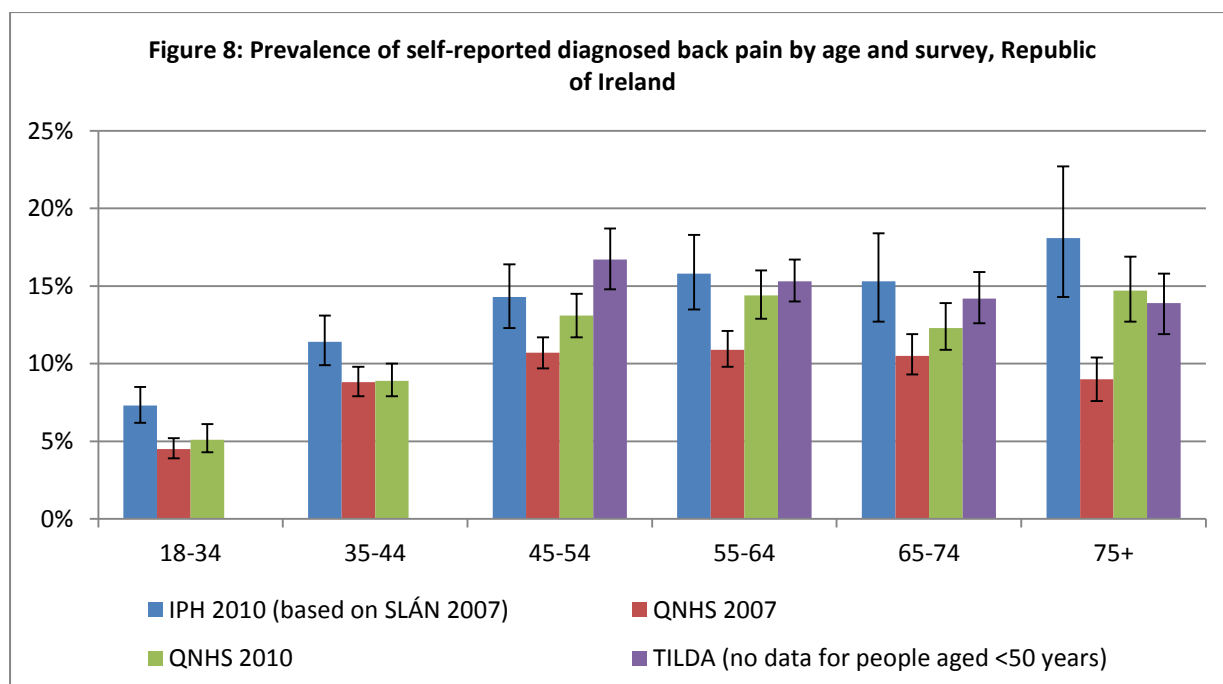


## Back pain

We would expect IPH estimates of back pain (“in the last 12 months”) to be lower than QNHS and TILDA estimates of back pain (“ever”). IPH age-specific estimates are generally similar to TILDA. However, IPH age-specific point estimates are generally higher than QNHS and significantly higher than QNHS 2007 for all age groups.

<b>Table 9: Prevalence of self-reported diagnosed back pain by age and survey, Republic of Ireland</b>				
<b>Age</b>	<b>IPH 2010</b> (based on SLÁN 2007)	<b>QNHS 2007</b>	<b>QNHS 2010</b>	<b>TILDA</b> (no data for people aged <50 years)
18-34	7.3% (6.2%, 8.5%)	4.5% (3.9%, 5.2%)	5.1% (4.3%, 6.1%)	---
35-44	11.4% (9.9%, 13.1%)	8.8% (7.9%, 9.8%)	8.9% (7.9%, 10.0%)	---
45-54	14.3% (12.3%, 16.4%)	10.7% (9.7%, 11.7%)	13.1% (11.7%, 14.5%)	16.7% <sup>a</sup> (14.8%, 18.7%)
55-64	15.8% (13.5%, 18.3%)	10.9% (9.8%, 12.1%)	14.4% (12.9%, 16.0%)	15.3% (14.0%, 16.7%)
65-74	15.3% (12.7%, 18.4%)	10.5% (9.3%, 11.9%)	12.3% (10.9%, 13.9%)	14.2% (12.6%, 15.9%)
75+	18.1% (14.3%, 22.7%)	9.0% (7.6%, 10.4%)	14.7% (12.7%, 16.9%)	13.9% (11.9%, 15.8%)
18+	11.9%	7.9% (7.5%, 8.3%)	9.8% (9.2%, 10.4%)	---

<sup>a</sup> This cell relates to prevalence among people aged 50-54 years.



## 4. Comparison of IPH prevalence estimates: Northern Ireland

IPH prevalence estimates in Northern Ireland are based on the Health and Social Wellbeing Survey (HSWB) 2005/06. This section compares IPH estimates for each condition with estimates from:

- Northern Ireland Health Survey (HSNI) 2010/11
- Understanding Society (US) (formerly the Northern Ireland Household Panel Survey) 2009

### 4.1 Comparison of survey features

Box 3 compares HSWB, HSNI and US on the methodological issues in comparing prevalence estimates from different surveys.

#### Box 3: Methodological issues affecting comparisons of estimates from the Health and Social Wellbeing Survey (HSWB) 2005/06, the Health Survey Northern Ireland 2010/11 and Understanding Society 2009

HSWB 2005/06	HSNI 2010/11	US 2009	Comments
<b>Coverage</b> Adults aged 16+ years in private residences	<b>Coverage</b> Adults aged 18+ years in private residences	<b>Coverage</b> Adults aged 16+ years in private residences	All three surveys cover the same adult population
<b>Year to which the data relate</b> IPH prevalence estimates apply HSWB's 2005/06 data to 2010 population estimates	<b>Year to which the data relate</b> HSNI data relate to the period between April 2010 and March 2010	<b>Year to which the data relate</b> US data relate to 2009	The years to which the data relate are comparable. Although HSWB estimates relate to 2005/06, the estimates were applied to 2010 population data. HSNI estimates relate to 2010. US estimates relate to 2009.
<b>How many participants and how they are selected</b> HSWB is an independent cross-sectional sample of households in the target population. The 2005/06 sample size was 4,245.	<b>How many participants and how they are selected</b> HSNI is an independent cross-sectional sample of households in the target population. The 2010/11 sample size was 4,085.	<b>How many participants and how they are selected</b> US is a new longitudinal panel sample of households in the target population. The 2009 sample size was for Northern Ireland was 1,997.	
<b>Response rate</b> HSWB has a response rate of 66%	<b>Response rate</b> HSNI has a response rate of 62%	<b>Response rate</b> US has a response rate of 62%	The response rates for the surveys are similar and typical of population

**Box 3: Methodological issues affecting comparisons of estimates from the Health and Social Wellbeing Survey (HSWB) 2005/06, the Health Survey Northern Ireland 2010/11 and Understanding Society 2009**

HSWB 2005/06	HSNI 2010/11	US 2009	Comments
			health surveys
<p><b>How the question is phrased</b></p> <p><u>Hypertension</u> “Have you ever been told by a doctor or a nurse that you had high blood pressure (not during pregnancy)?”</p> <p><u>Stroke</u> “Have you ever been told by a doctor that you had stroke?”</p> <p><u>Coronary heart disease</u> “Have you ever been told by a doctor that you had angina?” Or “Have you ever been told by a doctor that you had heart attack?”</p> <p><u>Diabetes</u> “Have you ever been told by a doctor that you had diabetes (not during pregnancy)?”</p> <p><u>Chronic airflow obstruction</u> “Have you ever been told by a doctor that you had COPD or chronic obstructive pulmonary disease eg chronic bronchitis/emphysema or both disorders?”</p> <p><u>Musculoskeletal conditions</u> “Are you currently receiving treatment for musculo-skeletal</p>	<p><b>How the question is phrased</b></p> <p><u>Hypertension</u> “Have you ever been told by a doctor or a nurse that you had high blood pressure (not during pregnancy)?”</p> <p><u>Stroke</u> “Have you ever been told by a doctor that you had stroke?”</p> <p><u>Coronary heart disease</u> “Have you ever been told by a doctor that you had angina?” Or “Have you ever been told by a doctor that you had heart attack?”</p> <p><u>Diabetes</u> “Have you ever been told by a doctor that you had diabetes (not during pregnancy)?”</p> <p><u>Chronic airflow obstruction</u> “Have you ever been told by a doctor that you had COPD eg chronic bronchitis/emphysema or both disorders?”</p> <p><u>Musculoskeletal conditions</u> “Are you currently receiving treatment for musculo-skeletal</p>	<p><b>How the question is phrased</b></p> <p><u>Hypertension</u> “Has a doctor or other health professional ever told you that you have high blood pressure?”</p> <p><u>Stroke</u> “Has a doctor or other health professional ever told you that you have stroke?”</p> <p><u>Coronary heart disease</u> “Has a doctor or other health professional ever told you that you have angina?” Or Has a doctor or other health professional ever told you that you have heart attack or myocardial infarction?”</p> <p><u>Diabetes</u> “Has a doctor or other health professional ever told you that you have diabetes?”</p> <p><u>Chronic airflow obstruction</u> “Has a doctor or other health professional ever told you that you have chronic bronchitis?”</p> <p><u>Musculoskeletal conditions</u> None</p>	<p>There is very good agreement between the phrasing of the chronic conditions questions in HSWB and HSNI; almost all of the conditions are described using exactly the same words. However, HSWB includes a question about back pain but HSNI did not.</p> <p>Although HSWB and US include questions on similar chronic conditions, there are a number of important differences in how the questions are phrased:</p> <ul style="list-style-type: none"> <li>• HSWB asks respondents if they have been told by a doctor that they have the condition while US ask respondents if they have been told by a doctor or health professional that they have the condition. Therefore we would expect US’s prevalence estimates to be higher.</li> <li>• HSWB’s hypertension and diabetes estimates exclude having the condition during pregnancy but US’s hypertension and diabetes estimates do not. Therefore we would expect US’s</li> </ul>

**Box 3: Methodological issues affecting comparisons of estimates from the Health and Social Wellbeing Survey (HSWB) 2005/06, the Health Survey Northern Ireland 2010/11 and Understanding Society 2009**

<b>HSWB 2005/06</b>	<b>HSNI 2010/11</b>	<b>US 2009</b>	<b>Comments</b>
<p>problems (such as arthritis, rheumatism)?"</p> <p><u>Back pain</u> "Have you ever consulted a doctor about back pain?"</p> <p><u>Arthritis</u> None</p>	<p>problems (such as arthritis, rheumatism)?"</p> <p><u>Back pain</u> None</p> <p><u>Arthritis</u> None</p>	<p><u>Back pain</u> None</p> <p><u>Arthritis</u> "Has a doctor or other health professional ever told you that you have arthritis?"</p>	<p>prevalence estimates to be higher.</p> <ul style="list-style-type: none"> <li>• HSWB's chronic airflow obstruction definition includes chronic obstructive pulmonary disease (COPD), chronic bronchitis, and emphysema. US asks respondents about chronic bronchitis only. Therefore we would expect US's prevalence estimates to be lower.</li> </ul> <p>Furthermore, HSWB includes questions about back pain and musculoskeletal conditions but US does not.</p>
<p><b>How the response is formatted</b> Yes / No</p>	<p><b>How the response is formatted</b> Yes / No</p>	<p><b>How the response is formatted</b> Yes / No</p>	<p>There is good agreement between the formatting of the responses to the chronic conditions questions in the three surveys; all three surveys use Yes/No responses</p>
<p><b>How the question is administered</b> Face-to-face interview</p>	<p><b>How the question is administered</b> Face-to-face interview</p>	<p><b>How the question is administered</b> Face-to-face interview</p>	<p>All three survey use face-to-face interviews administer the chronic conditions questions</p>

## 4.2 Comparison of survey estimates

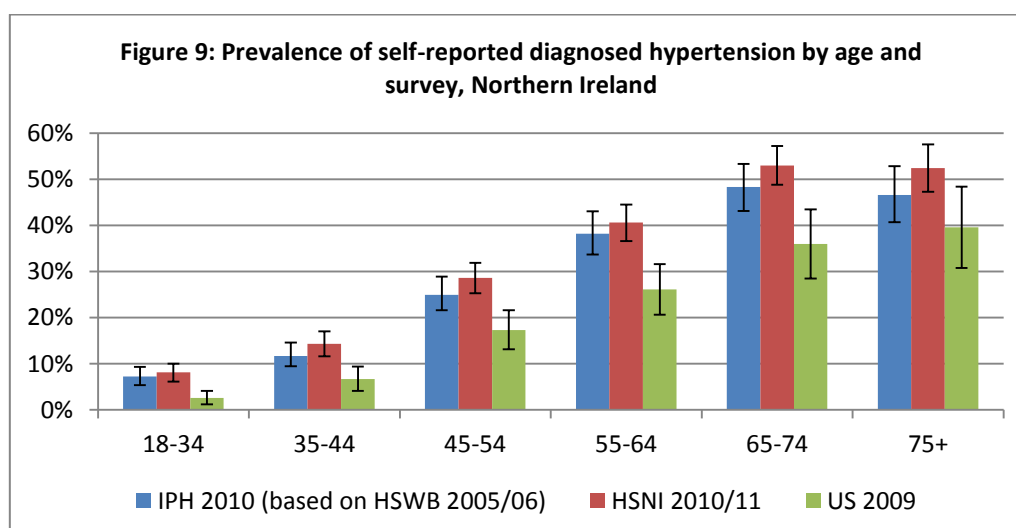
### Hypertension

We would expect IPH estimates of hypertension to be similar to HSNI because they are based on the same definition and description of hypertension. IPH age-specific point estimates are generally lower (though not significantly lower) than HSNI.

We would expect IPH estimates of hypertension to be lower than US because IPH estimates do not include hypertension during pregnancy and diagnoses by “other health professionals.” However, IPH age-specific point estimates are generally higher than US and the estimates for 18-34, 35-44 and 55-64 years are significantly higher.

<b>Table 10: Prevalence of self-reported diagnosed hypertension by age and survey, Northern Ireland</b>			
<b>Age</b>	<b>IPH 2010</b> (based on HSWB 2005/06)	<b>HSNI 2010/11</b>	<b>US 2009</b>
18-34	7.2% (5.3%, 9.3%)	8.1% <sup>a</sup> (6.1%, 10.0%)	2.6% (1.2%, 4.1%)
35-44	11.7% (9.4%, 14.6%)	14.3% (11.6%, 17.0%)	6.7% (4.1%, 9.4%)
45-54	24.9% (21.6%, 28.9%)	28.6% (25.3%, 31.9%)	17.3% (13.1%, 21.6%)
55-64	38.2% (33.7%, 43.1%)	40.6% (36.6%, 44.5%)	26.1% (20.6%, 31.6%)
65-74	48.3% (43.1%, 53.4%)	53.0% (48.8%, 57.2%)	36.0% (28.5%, 43.5%)
75+	46.6% (40.7%, 52.8%)	52.4% (47.3%, 57.6%)	39.6% (30.8%, 48.4%)
18+	23.2%	26.4% (24.9%, 27.8%)	15.7% (13.9%, 17.6%)

<sup>a</sup>This cell relates to prevalence among people aged 16-34 years.



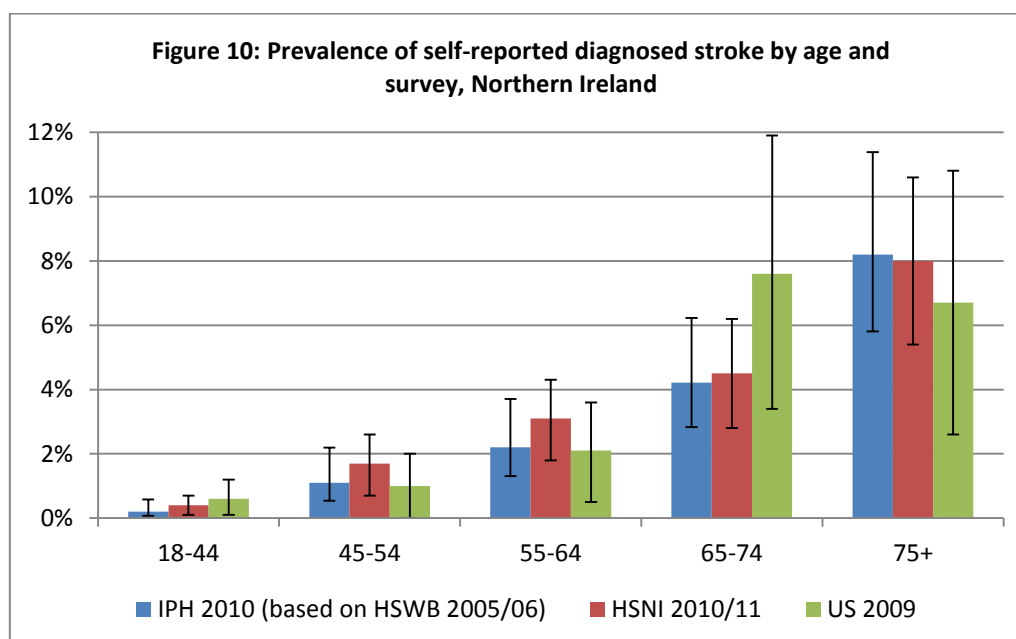
## Stroke

We would expect IPH estimates of stroke to be similar to HSNi because they are based on the same definition and description of stroke. The age-specific estimates are generally similar and no significant differences were found.

We might expect IPH estimates of stroke to be lower than US because IPH estimates do not include diagnoses by “other health professionals.” The age-specific estimates are generally similar except the 65-74 years group where IPH estimate is lower (though not significantly lower) than US.

<b>Table 11: Prevalence of self-reported diagnosed stroke by age and survey, Northern Ireland</b>			
<b>Age</b>	<b>IPH 2010 (based on HSWB 2005/06)</b>	<b>HSNI 2010/11</b>	<b>US 2009</b>
18-44	0.2% (0.1%, 0.6%)	0.4% <sup>a</sup> (0.1%, 0.7%)	0.6% (0.1%, 1.2%)
45-54	1.1% (0.5%, 2.2%)	1.7% (0.7%, 2.6%)	1.0% (0.0%, 2.0%)
55-64	2.2% (1.3%, 3.7%)	3.1% (1.8%, 4.3%)	2.1% (0.5%, 3.6%)
65-74	4.2% (2.8%, 6.2%)	4.5% (2.8%, 6.2%)	7.6% (3.4%, 11.9%)
75+	8.2% (5.8%, 11.4%)	8.0% (5.4%, 10.6%)	6.7% (2.6%, 10.8%)
18+	1.7%	2.0% (1.6%, 2.4%)	2.1% (1.4%, 2.8%)

<sup>a</sup> This cell relates to prevalence among people aged 16-34 years.





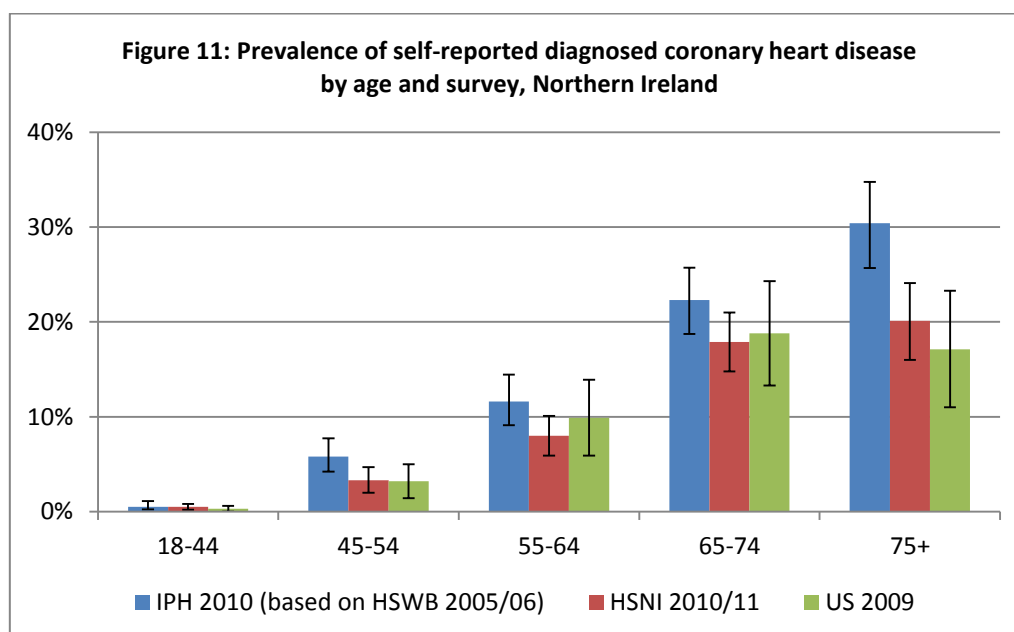
## Coronary heart disease (angina or heart attack)

We would expect IPH estimates of coronary heart disease to be similar to HSNi because they are based on the same definition and description of coronary heart disease. However, IPH estimates are generally higher than HSNi and the estimate for 75+ years is significantly higher.

We might expect IPH estimates of coronary heart disease to be lower than US because IPH estimates do not include diagnoses by “other health professionals.” However, IPH estimates are generally higher than US and the estimate for 75+ years is significantly higher.

<b>Table 12: Prevalence of self-reported diagnosed coronary heart disease by age and survey, Northern Ireland</b>			
<b>Age</b>	<b>IPH 2010</b> (based on HSWB 2005/06)	<b>HSNI 2010/11</b>	<b>US 2009</b>
18-44	0.5% (0.2%, 1.1%)	0.5% <sup>a</sup> (0.2%, 0.8%)	0.3% (0.0%, 0.6%)
45-54	5.8% (4.2%, 7.7%)	3.3% (2.0%, 4.7%)	3.2% (1.4%, 5.0%)
55-64	11.6% (9.1%, 14.4%)	8.0% (5.9%, 10.1%)	9.9% (5.9%, 13.9%)
65-74	22.3% (18.7%, 25.7%)	17.9% (14.8%, 21.0%)	18.8% (13.3%, 24.3%)
75+	30.4% (25.7%, 34.8%)	20.1% (16.0%, 24.1%)	17.1% (11.0%, 23.3%)
18+	0.5%	5.4% (4.7%, 6.1%)	5.4% (4.3%, 6.5%)

<sup>a</sup> This cell relates to prevalence among people aged 16-34 years.



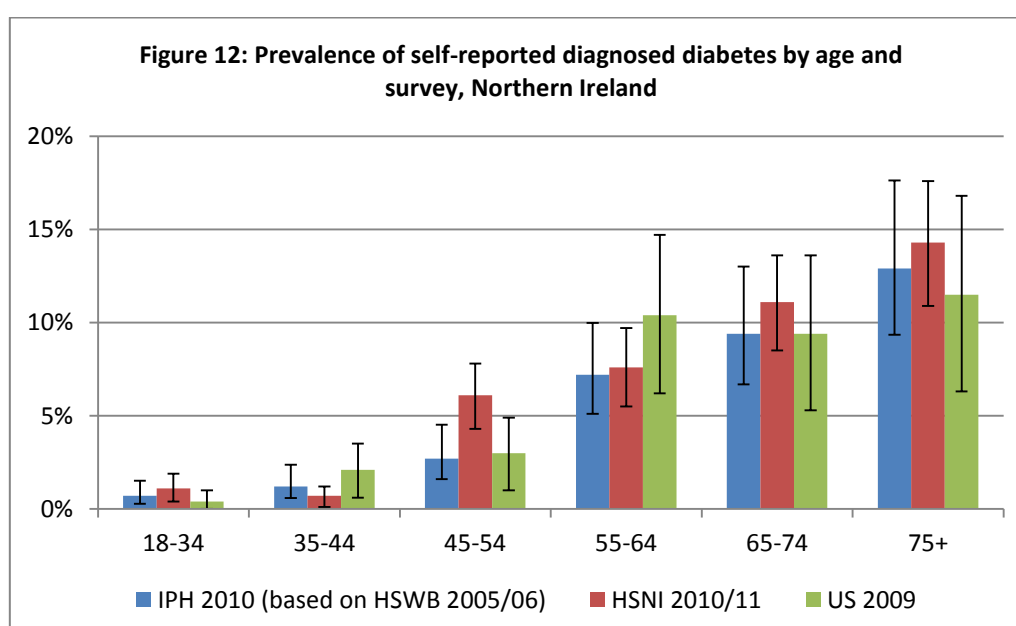
## Diabetes

We would expect IPH estimates of diabetes to be similar to HSNI because they are based on the same definition and description of diabetes. However, IPH estimates are generally lower (though not significantly lower) than HSNI.

We would expect IPH estimates of diabetes to be lower than US because IPH estimates do not include diabetes during pregnancy and diagnoses by “other health professionals.” IPH estimates were generally similar to or lower (though not significantly lower) than US.

<b>Table 13: Prevalence of self-reported diagnosed diabetes by age and survey, Northern Ireland</b>			
<b>Age</b>	<b>IPH 2010</b> (based on HSWB 2005/06)	<b>HSNI 2010/11</b>	<b>US 2009</b>
18-34	0.7% (0.3%, 1.5%)	1.1% <sup>a</sup> (0.4%, 1.9%)	0.4% (0.0%, 1.0%)
35-44	1.2% (0.6%, 2.4%)	0.7% (0.1%, 1.2%)	2.1% (0.6%, 3.5%)
45-54	2.7% (1.6%, 4.5%)	6.1% (4.3%, 7.8%)	3.0% (1.0%, 4.9%)
55-64	7.2% (5.1%, 10.0%)	7.6% (5.5%, 9.7%)	10.4% (6.2%, 14.7%)
65-74	9.4% (6.7%, 13.0%)	11.1% (8.5%, 13.6%)	9.4% (5.3%, 13.6%)
75+	12.9% (9.3%, 17.6%)	14.3% (10.9%, 17.6%)	11.5% (6.3%, 16.8%)
18+	4.0%	4.9% (4.2%, 5.5%)	4.4% (3.4%, 5.4%)

<sup>a</sup>This cell relates to prevalence among people aged 16-34 years.



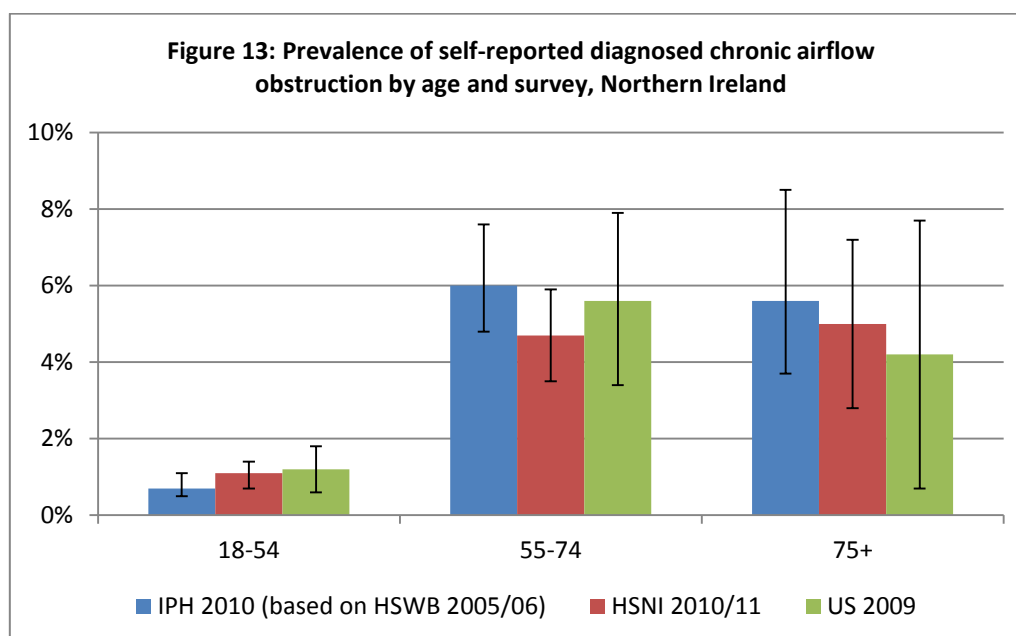
## Chronic airflow obstruction

We would expect IPH estimates of chronic airflow obstruction to be similar to HSNI because they are based on a very similar definition and description of chronic airflow obstruction. The age-specific estimates are generally similar and no significant differences were found.

It is difficult to compare IPH estimates of chronic airflow obstruction with US as US asks about chronic bronchitis only. Furthermore, US includes diagnoses by “other health professionals.”

<b>Table 14: Prevalence of self-reported diagnosed chronic airflow obstruction by age and survey, Northern Ireland</b>			
<b>Age</b>	<b>IPH 2010 (based on HSWB 2005/06)</b>	<b>HSNI 2010/11</b>	<b>US 2009</b>
18-54	0.7% (0.5%, 1.1%)	1.1% <sup>a</sup> (0.7%, 1.4%)	1.2% (0.6%, 1.8%)
55-74	6.0% (4.8%, 7.6%)	4.7% (3.5%, 5.9%)	5.6% (3.4%, 7.9%)
75+	5.6% (3.7%, 8.5%)	5.0% (2.8%, 7.2%)	4.2% (0.7%, 7.7%)
18+	2.4%	2.2% (1.8%, 2.7%)	2.5% (1.8%, 3.3%)

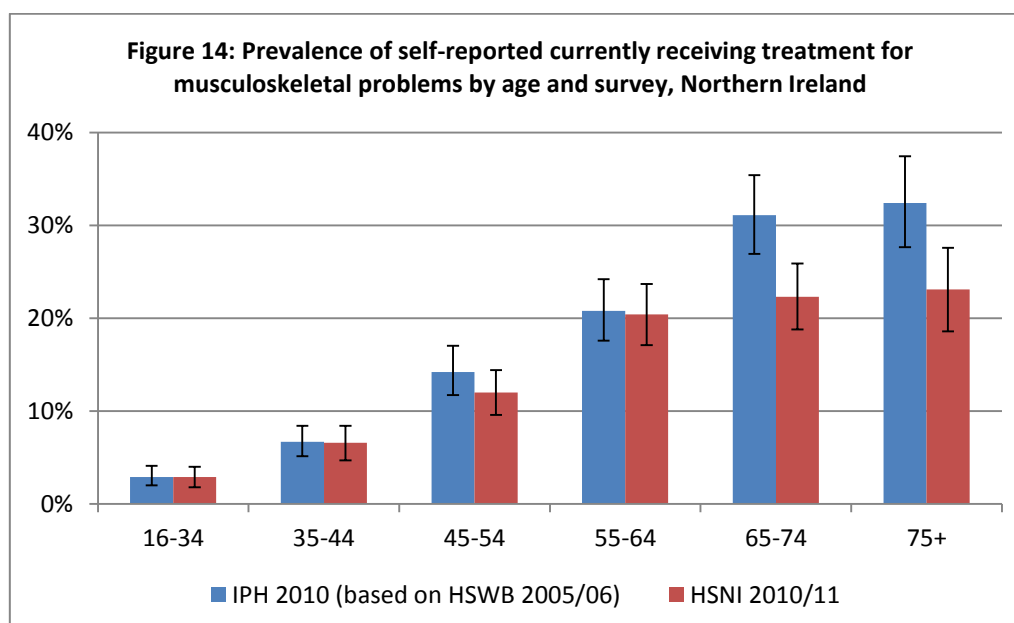
<sup>a</sup>This cell relates to prevalence among people aged 16-34 years.



## Musculoskeletal conditions

We would expect IPH estimates of service utilisation for musculoskeletal conditions to be similar to HSNI because they are based on the same definition and description. The estimates are generally similar for 16-34, 35-44, 45-54 and 55-64 years but IPH estimates for 65-74 and 75+ years are significantly higher than HSNI.

<b>Table 15: Prevalence of self-reported currently receiving treatment for musculoskeletal problems by age and survey, Northern Ireland</b>			
<b>Age</b>	<b>IPH 2010</b> (based on HSWB 2005/06)	<b>HSNI 2010/11</b>	<b>US 2009</b> (no data)
16-34	2.9% (2.0%, 4.1%)	2.9% (1.8%, 4.0%)	---
35-44	6.7% (5.1%, 8.4%)	6.6% (4.7%, 8.4%)	---
45-54	14.2% (11.7%, 17.0%)	12.0% (9.6%, 14.4%)	---
55-64	20.8% (17.6%, 24.2%)	20.4% (17.1%, 23.7%)	---
65-74	31.1% (26.9%, 35.4%)	22.3% (18.8%, 25.9%)	---
75+	32.4% (27.7%, 37.4%)	23.1% (18.6%, 27.6%)	---
18+	13.2%	11.1% (10.2%, 12.1%)	---



## 5. Discussion

This document compares IPH prevalence estimates with prevalence estimates from other health surveys on the island and highlights the methodological issues in comparing prevalence estimates from different surveys.

### 5.1 Comparison of IPH prevalence estimates with other surveys

In general, IPH prevalence estimates for these conditions are not significantly different to prevalence estimates from other surveys. Sections 3.2 and 4.2 notes some differences in the age-specific point estimates for conditions but most of these differences are not statistically significant.

In the Republic of Ireland, the most significant differences are observed for hypertension and back pain. We would expect IPH estimates of diagnosed conditions (“in the last 12 months”) to be lower than QNHS and TILDA estimates of diagnosed conditions (“ever”). However, IPH estimates for diagnosed hypertension are significantly higher than QNHS estimates among the younger age groups (aged 18-64 years). Similarly for back pain, IPH estimates are generally higher than QNHS and significantly higher than QNHS 2007 for all age groups.

In Northern Ireland, the most significant differences are observed for hypertension. We would expect IPH estimates of diagnosed hypertension to be lower than US because IPH estimates do not include hypertension during pregnancy and diagnoses by “other health professionals.” However, IPH age-specific point estimates are generally higher than US and the estimates for 18-34, 35-44 and 55-64 years are significantly higher.

### 5.2 Methodological issues

Box 1 describes some of the methodological issues in comparing survey estimates and Boxes 2 and 3 describe how these issues relate to the surveys in the Republic of Ireland and Northern Ireland. Because different questions ask different things, how the question is phrased and how the response is formatted are likely to have the biggest impact on differences in prevalence estimates between surveys.

It should also be noted that IPH estimates may be marginally different to estimated prevalence per cents taken directly from the reference studies (SLÁN 2007, HSWB 2005/06, US 2009). There are two reasons for this:

1. The IPH prevalence estimates relate to 2010 while the reference studies relate to earlier years. Although we assume that the risk of the condition does not change over time, the distribution of risk in the population changes over time (eg the population ages). This new distribution of the risk in the population means that the risk of the condition is weighted differently to the reference study and this results in a different overall prevalence estimate.

2. IPH prevalence estimates are based on a statistical model of the survey data. The model includes a number of explanatory variables to predict the risk of the condition. Therefore the model does not include records from the survey that are missing data on these explanatory variables. A prevalence estimate for a condition taken directly from the reference study would include these records.

IPH methods for estimating prevalence are reviewed and refined on an ongoing basis. Future prevalence estimates based on statistical models will be adjusted so that the modelled prevalence estimate matches the prevalence estimate taken directly from the reference study.

### 5.3 Implications

We have discussed the public health implications of the high prevalence of chronic conditions elsewhere.<sup>1</sup> The comparisons presented here highlight a number of data issues that should be addressed:

1. Health surveys should include a gold standard physical measurement of the condition in all participants in addition to self-reported recall of a diagnosis. This would allow us to better estimate the total prevalence of a condition as well as the balance of diagnosed and undiagnosed cases.
2. Survey questions about chronic conditions should use a consistent phrasing, format and administration. This would improve comparability between data sources and comparability over time.
3. Larger sample sizes in these studies would allow more robust and precise prevalence estimates.
4. Higher response rates may reduce potential sampling bias and produce more accurate results.
5. Researchers and developers of surveys and information systems should be aware of the methodological differences between surveys and how they may impact on results.

The IPH method for estimating national and subnational prevalence is both systematic and flexible and can incorporate better survey data if and when they are available.

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<sup>1</sup> The Chronic Conditions Hub (<http://chronicconditions.thehealthwell.info/>) includes a brief report for each condition. Methods and prevalence estimates for hypertension (<http://www.biomedcentral.com/1471-2458/14/24>) and diabetes (<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0078406>) have been published in peer-reviewed literature.