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Musculoskeletal Conditions Briefing

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Chronic Conditions Hub
a part of the Health Well



Supporting policy-makers and practitioners working to prevent and manage chronic conditions

www.chronicconditionshub.info

The Chronic Conditions Hub is a website that brings together information on chronic health conditions. It allows you to easily access, manage and share relevant information resources.

The Chronic Conditions Hub includes the Institute of Public Health in Ireland's (IPH) estimates and forecasts of the number of people living with chronic conditions.

On the Chronic Conditions Hub you will find:

- A Briefing for each condition
- Detailed technical documentation
- Detailed national and sub-national data that can be downloaded or explored using online data tools

What are musculoskeletal conditions?

Musculoskeletal conditions (MSCs) are a group of diseases that affect the body's bones, joints, muscles and the tissues that connect them. Common MSCs include back pain, rheumatoid arthritis, osteoarthritis, osteoporosis, and spinal disorders.

MSCs are the most common cause of severe long term pain and physical disability in developed countries.¹ They significantly affect the psychosocial wellbeing of individuals as well as their families and carers.² They are responsible for substantial costs to the health and social care system and the economy.³ They are a leading cause of absence from work and lost productivity at work.^{2,3}

MSCs comprise a diverse group of conditions. Some have a specific medical diagnosis (eg rheumatoid arthritis) but others have no clear medical diagnosis (eg back pain). Risk factors for the development and progression of MSCs include age, sex, family history, obesity, physical inactivity, injury and biomechanical occupational health issues.

Policy Context

In the Republic of Ireland (RoI), the Health Service Executive's (HSE) National Rheumatology Programme adopts a chronic disease model of care to rheumatic diseases and specifies aims in quality of services, access to services, and reduction of costs to the health and social care system and the economy.⁴ The HSE's *Strategy to Prevent Falls and Fractures in Ireland's Ageing Population*⁵ aims to improve the bone health of the whole population and includes best practice guidelines to prevent and manage osteoporosis.

In Northern Ireland (NI), the Department of Health, Social Services and Public Safety's (DHSSPS) *Living With Long Term Conditions: A Policy Framework*⁶ provides an overarching context and direction for supporting people living with long term conditions. It focuses on how people can be supported to maintain and enhance their health and well-being and quality of life. DHSSPS's *Physical and Sensory Disability Strategy and Action Plan 2012-2015*⁷ aims to improve outcomes, services and support for people with a physical impairment that has an adverse effect on their ability to carry out everyday activities.

In addition, there is a wide body of occupational health and safety policy and EU directives for the prevention of work-related musculoskeletal problems.

Population prevalence and other musculoskeletal outcomes



This briefing describes how many people have specific MSCs and how these numbers are expected to change between 2010 and 2020. This information will help us develop services where and when they are needed.

The number of people with an MSC is called its population prevalence and population prevalence includes both clinically diagnosed and undiagnosed cases. We are only able to report national and sub-national rates of diagnosed MSCs. Undiagnosed cases are not included in our figures and so they are likely to be underestimates of the total number of people with these MSCs.

Furthermore, the available data relate to specific MSCs such as arthritis or back pain and so do not include all MSCs.

Method

Data from nationally representative health surveys were used to identify significant biological, behavioural and social risk factors for the MSCs included in the surveys. Table 1 shows the significant risk factors for the MSCs in the reference studies.

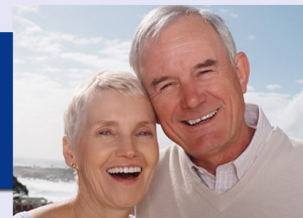
Country	Reference study	Definition	Significant risk factors
Republic of Ireland	Survey of Lifestyle, Attitudes and Nutrition (SLÁN) 2007 ⁸	Self-reported, doctor-diagnosed lower back pain or any other chronic back condition in the previous 12 months (Yes / No)	Age; Injury; Body Mass Index; Smoking; Employment; Social class
	Survey of Lifestyle, Attitudes and Nutrition (SLÁN) 2007	Self-reported, doctor-diagnosed rheumatoid arthritis (inflammation of the joints) in the previous 12 months (Yes / No)	Age; Employment; Body Mass Index; Education; Injury; Physical activity; Smoking; Alcohol;
	Survey of Lifestyle, Attitudes and Nutrition (SLÁN) 2007	Self-reported, doctor-diagnosed osteoarthritis (arthrosis, joint degradation) in the previous 12 months (Yes / No)	Age; Sex; Injury; Employment; Body Mass Index; Physical activity; Smoking; Alcohol
Northern Ireland	Health and Social Wellbeing (HSWB) Survey 2005/06 ⁹	Self-reported, doctor consultation about back pain , ever (Yes / No)	Age; Body Mass Index; Smoking; Physical activity; Alcohol; Sex; Social class; Employment
	Understanding Society 2009 ¹⁰	Self-reported, doctor / health professional-diagnosed arthritis , ever (Yes / No)	Age; Employment; Education; Alcohol; Body Mass Index; Sex
	Health and Social Wellbeing (HSWB) Survey 2005/06	Self-reported, currently receiving treatment for musculoskeletal problems (such as arthritis, rheumatism) (Yes / No)	Age; Physical activity; Employment; Sex; Body Mass Index

We then estimated the number of people in the population with these musculoskeletal measures in 2010, 2015 and 2020 - at a national and sub-national level - by applying the risk estimates associated with the significant risk factors from the reference studies to the number of people in the population who had these risk factors. Not all the significant risk factors were used to calculate rates because detailed sub-national population data were not available on them all. Figures are based on the risk factors with the strongest statistical associations (highlighted in red in Table 1).

There are significant differences between the definitions used in RoI and NI and North-South comparisons are not valid. The RoI measures relate to specific MSCs in the previous 12 months that had been diagnosed by a doctor. The NI measures relate to doctor-consultations at any time in the past, doctor-diagnosis at any time in the past and current treatment.

Full details of our method can be found in the technical documentation.¹¹

Republic of Ireland findings



In RoI the three MSCs relate to adults aged 18+ years who reported an MSC condition in the previous 12 months that had been diagnosed by a doctor (a clinically diagnosed MSC; see Table 1).

In 2010 in RoI it is estimated that substantial numbers of adults aged 18+ years had a clinically diagnosed MSC. This excludes undiagnosed MSCs and is likely to be an underestimate of the total number of people with these conditions.

- 395,000 adults (11.9%; 95% CI = (8.8%, 14.9%)) had lower back pain or another chronic back condition in the previous 12 months that had been clinically diagnosed.
- 169,000 adults (5.1%; 95% CI = (2.8%, 7.4%)) had rheumatoid arthritis in the previous 12 months that had been clinically diagnosed.
- 140,000 adults (4.2%; 95% CI = (2.5%, 5.9%)) had osteoarthritis in the previous 12 months that had been clinically diagnosed.

The estimated rate of clinically diagnosed rheumatoid arthritis was slightly higher than osteoarthritis. While this finding is consistent with other self-reported survey data from RoI^{12,13} it should be interpreted cautiously as it is not consistent with findings from some other countries.

The estimated rates of each of these clinically diagnosed MSCs increased with age (see Figures 1, 3 and 5).

Estimated rates of clinically diagnosed back pain were similar among men (11.8%; 95% CI = (8.8%, 14.8%)) and women (11.9%; 95% CI = (8.8%, 15.0%)). However, estimated rates of clinically diagnosed arthritis were non-significantly higher among women (rheumatoid arthritis: 5.3%; 95% CI = (2.9%, 7.6%); osteoarthritis: 5.7%; 95% CI = (3.5%, 7.8%)) than men (rheumatoid arthritis: 4.8%; 95% CI = (2.6%, 9.1%); osteoarthritis: 2.7%; 95% CI = (1.4%, 4.0%)).

By 2020 the number of adults with clinically diagnosed MSCs is expected to increase substantially.

- The number of adults with clinically diagnosed back pain is expected to increase to 453,000 (12.6%; 95% CI = (9.3%, 15.8%)). This represents a 15% increase in the number of adults (an additional 57,000 adults) in ten years.
- The number of adults with clinically diagnosed rheumatoid arthritis is expected to increase to 218,000 (6.1%; 95% CI = (3.4%, 8.7%)). This represents a 30% increase in the number of adults (an additional 50,000 adults) in ten years.
- The number of adults with clinically diagnosed osteoarthritis is expected to increase to 181,000 (5.0%; 95% CI = (3.0%, 7.0%)). This represents a 29% increase in the number of adults (an additional 41,000 adults) in ten years.

Rates of clinically diagnosed back pain, rheumatoid arthritis and osteoarthritis were prepared for 32 Local Health Offices in RoI (see Figures 2, 4 and 6). Comparing 95% confidence intervals revealed no significant differences in the rates in Local Health Office areas. However, because of differences in population sizes, there was significant variation in the number of adults aged 18+ years in each area who reported each of these clinically diagnosed MSCs.

Republic of Ireland findings

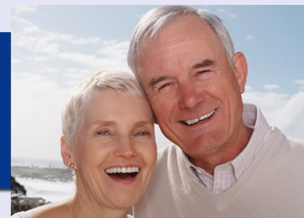


Figure 1: Percentage of adults (18+ years) with back pain in the previous 12 months that had been clinically diagnosed (Republic of Ireland, 2010).

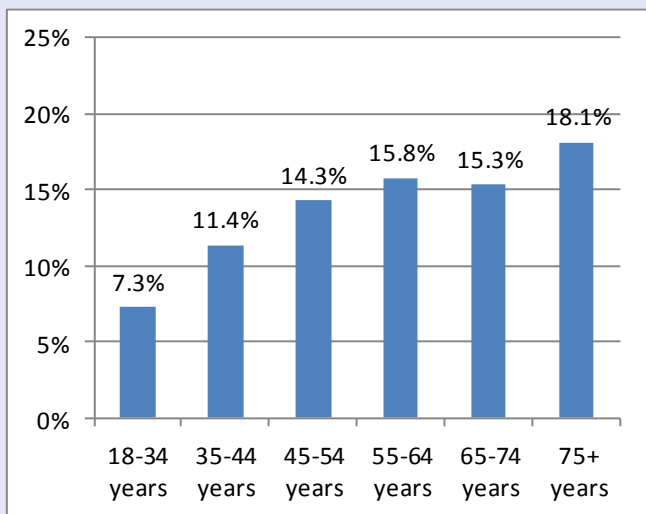


Figure 3: Percentage of adults (18+ years) with rheumatoid arthritis in the previous 12 months that had been clinically diagnosed (Republic of Ireland, 2010).

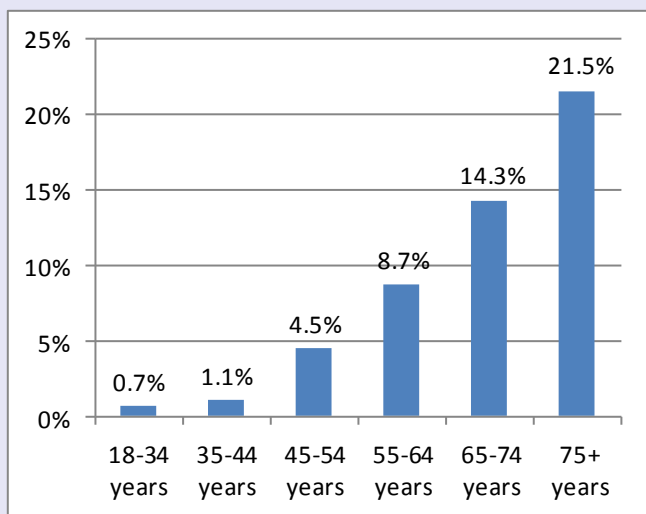


Figure 5: Percentage of adults (18+ years) with osteoarthritis in the previous 12 months that had been clinically diagnosed (Republic of Ireland, 2010).

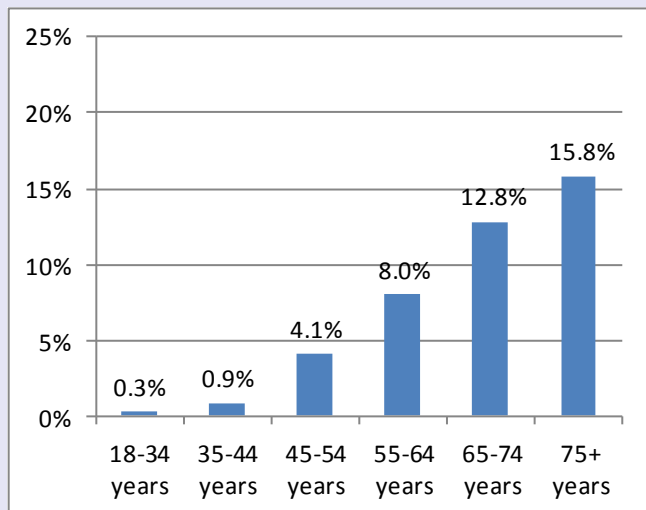


Figure 2: Percentage of adults (18+ years) with back pain in the previous 12 months that had been clinically diagnosed (Local Health Offices, Republic of Ireland, 2010).

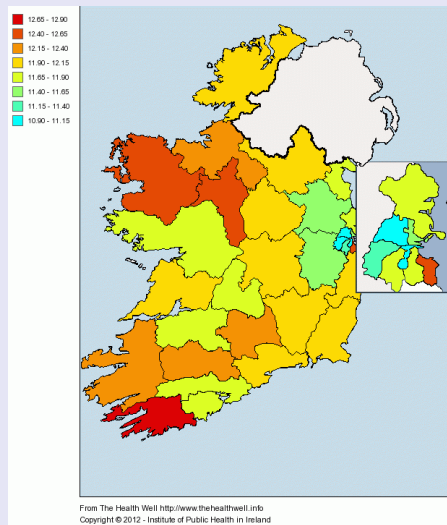


Figure 4: Percentage of adults (18+ years) with rheumatoid arthritis in the previous 12 months that had been clinically diagnosed (Local Health Offices, Republic of Ireland, 2010).

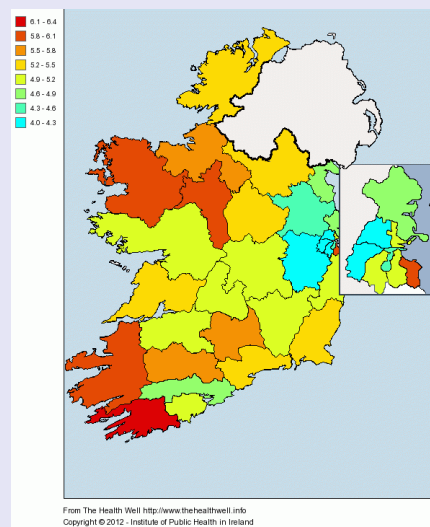
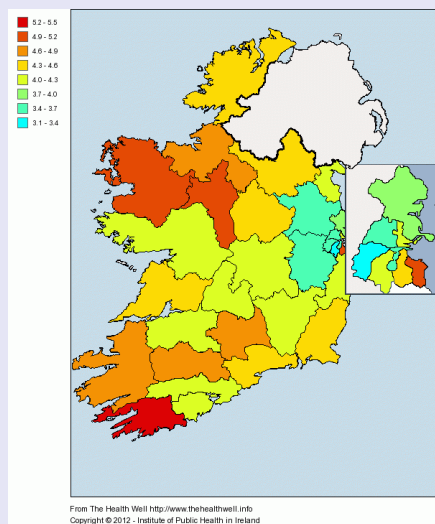


Figure 6: Percentage of adults (18+ years) with osteoarthritis in the previous 12 months that had been clinically diagnosed (Local Health Offices, Republic of Ireland, 2010).



Northern Ireland findings



In NI the three measures relate to adults aged 16+ years who reported a consultation with a doctor about back pain at any time in the past, a diagnosis of arthritis by a health professional (clinically diagnosed arthritis) at any time in the past, or currently receiving treatment for MSCs (see Table 1).

In 2010 in NI it is estimated that substantial numbers of adults aged 16+ years were living with an MSC.

- 503,000 adults (35.5%; 95% CI = (30.5%, 40.5%)) had ever consulted a doctor about back pain.
- 203,000 adults (14.3%; 95% CI = (9.2%, 19.4%)) had ever been clinically diagnosed with arthritis.
- 187,000 adults (13.2%; 95% CI = (9.5%, 16.8%)) were currently receiving treatment for MSCs.

These estimated rates generally increased with age (see Figures 7, 9 and 11). However, the estimated rate of consultations for back pain levelled out among people aged 45+ years and was consistent with evidence that suggests the prevalence of back pain peaks at around aged 60 years.¹⁴

Estimated rates of these MSC outcomes were slightly higher among women than men but not significantly higher.

By 2020 the number of adults living with an MSC is expected to increase substantially.

- The number of adults who have ever consulted a doctor about back pain is expected to increase to 550,000 (36.2%; 95% CI = (31.2%, 41.2%)). This represents a 9% increase in the number of adults (an additional 47,000 adults) in ten years.
- The number of adults who have ever been clinically diagnosed with arthritis is expected to increase to 241,000 (15.9%; 95% CI = (10.5%, 21.3%)). This represents a 19% increase in the number of adults (an additional 39,000 adults) in ten years.
- The number of adults who are receiving treatment for MSCs is expected to increase to 217,000 (14.3%; 95% CI = (10.5%, 18.1%)). This represents a 17% increase in the number of adults (an additional 31,000 adults) in ten years.

Rates were prepared for 32 Local Government Districts in NI (see Figures 8, 10 and 12). Comparing 95% confidence intervals revealed no significant differences in the rates in Local Government District areas. However, because of differences in population sizes, there was significant variation in the number of adults aged 16+ years in each area who reported these musculoskeletal measures.

Northern Ireland findings



Figure 7: Percentage of adults (16+ years) who had ever consulted a doctor about back pain (Northern Ireland, 2010).

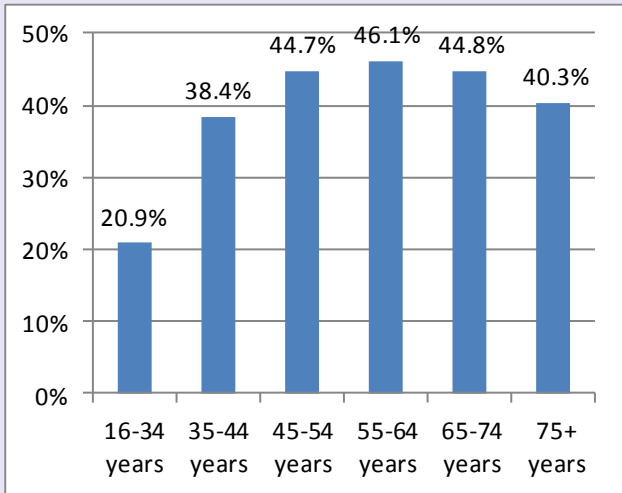


Figure 9: Percentage of adults (16+ years) who had ever been clinically diagnosed with arthritis (Northern Ireland, 2010).

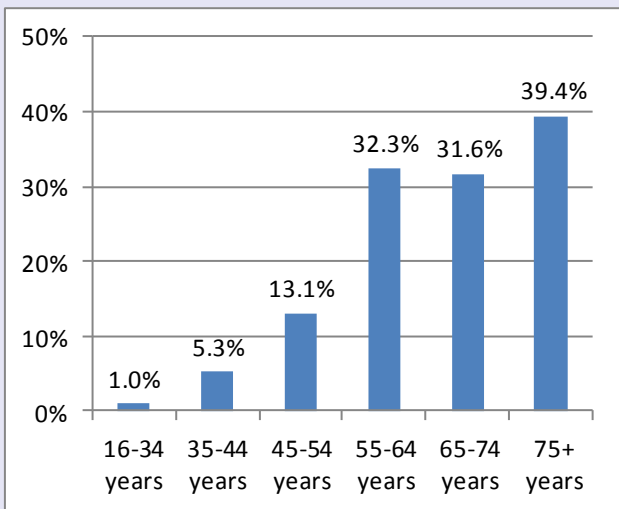


Figure 11: Percentage of adults (16+ years) who were currently receiving treatment for a musculoskeletal condition (Northern Ireland, 2010).

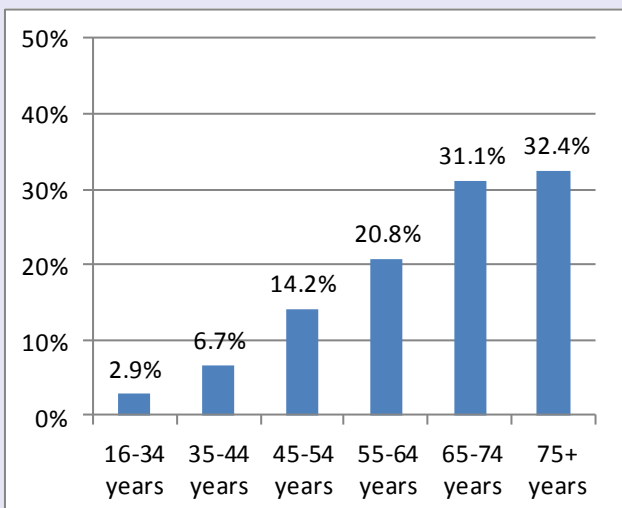


Figure 8: Percentage of adults (16+ years) who had ever consulted a doctor about back pain (Local Government Districts, Northern Ireland, 2010).

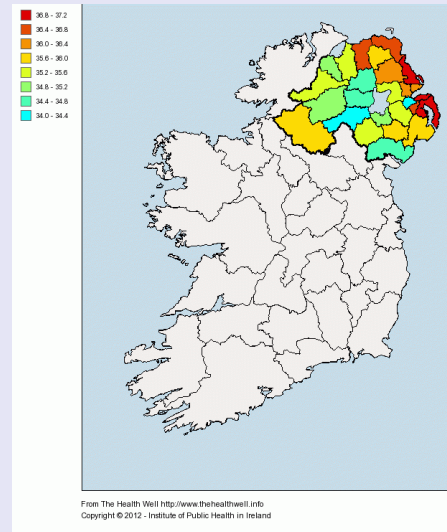


Figure 10: Percentage of adults (16+ years) who had ever been clinically diagnosed with arthritis (Local Government Districts, Northern Ireland, 2010).

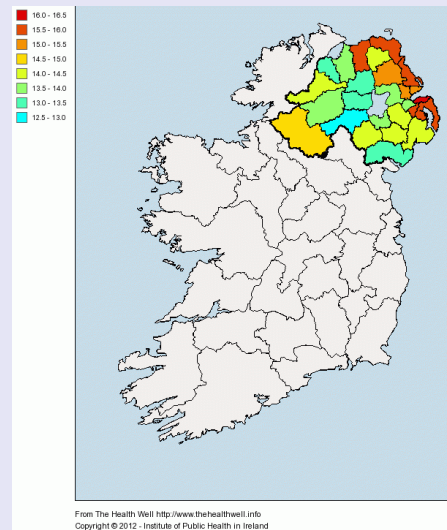
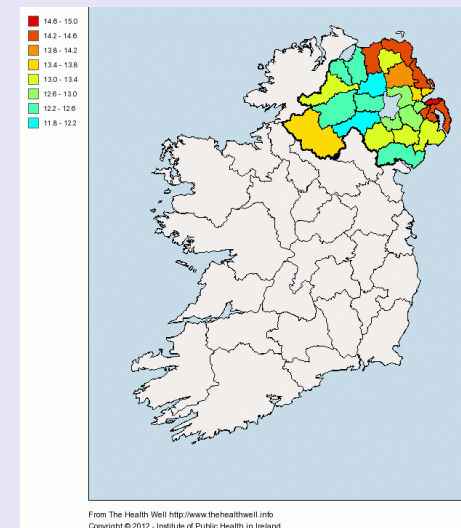
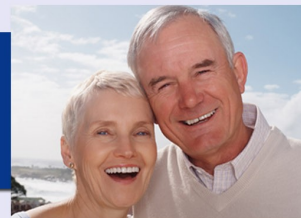


Figure 12: Percentage of adults (16+ years) who were currently receiving treatment for a musculoskeletal condition (Local Government Districts, Northern Ireland, 2010).



Discussion



A large number of adults on the island are living with specific MSCs and this number is expected to increase between 2010 and 2020. These findings have significant implications for individuals and families, the health and social care system and Ireland's economies.

These estimates and forecasts are likely to be an underestimate of the total number of adults with MSCs as they do not include all MSCs or undiagnosed cases. It is important that people who think that they may have an MSC consult with their general practitioner so that they can be assessed and treated if appropriate.

The expected increases assume that risk factors levels do not change over time. If levels deteriorate, the expected increases in the number of people with these MSCs will be even greater. A greater focus on prevention to reduce these risk factors and promote healthier lifestyles, particularly in relation to physical activity and occupational health (such as proper manual handling, less repetitive motions or less prolonged awkward physical positions) will help moderate these increases. Prevention programmes should also address social, environmental and other issues that influence the development of MSCs.

There remain significant limitations in the data that are available for estimating and forecasting the population prevalence of MSCs on the island.

- Firstly, there are limited data on less common MSCs. For more common MSCs (such as back pain and arthritis) for which we have data on diagnosed cases, there are limited data on cases that are undiagnosed.
- Secondly, detailed population data are not available on the risk factors associated with MSCs. The data limitations are particularly critical when we are looking at sub-national estimates and forecasts to guide local action. For risk factors other than age and sex, we had to assume that all sub-national areas had the same distribution of risk factors as the national population.
- Thirdly, there are no agreed data on future trends in risk factors so we had to assume that the levels of risk factors do not change over time.

Estimates and forecasts of the population prevalence of major chronic conditions are essential for the development of healthy and equitable communities. The figures reported here could be improved if comprehensive and accurate data at local level were more readily available.

The Institute of Public Health in Ireland (IPH: www.publichealth.ie) produces figures on the number of people living with chronic conditions on the island of Ireland. Briefings, technical documentation and data tables can be accessed on the Chronic Conditions Hub website (www.chronicconditionshub.info).

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