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Abstract

Background: Physical activity levels are a key performance indicator for policy documents in Ireland (Healthy Ireland, 2013; Framework for Preventing and Addressing Obesity, 2012). Ireland’s first Report Card on Physical Activity in Children and Youth aims to set a robust baseline for future surveillance of indicators related to children’s physical activity.

Methods: Data collected between 2003 and 2010 on over 35,000 7 to 18 year old children were used and graded using a standardised grading system under 10 indicators.

Results: Indicators were graded as follows: overall physical activity levels D-; sedentary behaviour (TV viewing) C-; organised sport participation C-; physical education D-; active play INC; active transportation D; school C-, community and the built environment B; family INC; and Government INC.

Conclusions: Physical activity recommendations exist in Ireland but this Report Card has shown that participation is still low. A number of promising policies, programmes and services are in place but these require thorough evaluation and adequate resourcing. Agreement and implementation of a common framework for the systematic surveillance of indicators related to physical activity of children and youth is necessary in order to monitor change over time and ensure the impact of promising work is captured.

Key words: physical education; sedentary; sport; transportation
Introduction

A key performance indicator for the 2013 Healthy Ireland Framework in the Republic of Ireland is to increase by 20% the proportion of the population undertaking regular physical activity while Northern Ireland’s Framework for Preventing and Addressing Obesity has participation in physical activity, physical education (PE) and sport as a key performance component. Due to this renewed interest in physical activity promotion and an impetus to use physical activity as a means of preventing disease and improving overall health, monitoring of indicators related to children’s physical activity are necessary over time.

The Report Card on Physical Activity is a knowledge exchange and translation vehicle that has been used internationally and its use is increasing. It has the potential to create linkage and inter-sectoral engagement of the kind that is required on the island of Ireland. Ireland is made up of the Republic of Ireland (herein called Republic) and Northern Ireland. Overall, ~6.6 million people live on the island (4.8 million in the Republic and 1.8 million in Northern Ireland) and ~20% are under 15 years of age. The island enjoys a temperate maritime climate with rugged hills and low mountains, particularly by the coast. The island has endured a turbulent history, with the country being divided into the Republic of Ireland (26 counties) and Northern Ireland (6 counties). The Republic of Ireland is an independent country and Northern Ireland is part of the United Kingdom. Since 1998, however, Northern Ireland has been largely self-governed by the Northern Ireland Assembly.

Although there are differences between the two jurisdictions in terms of legislation and governance structures, the Good Friday Agreement in 1998 has been the impetus for many all-island bodies and initiatives including joint activities relating to physical activity, sport and health, exist between the two countries, including the Institute of Public Health Ireland (www.publichealth.ie), the Physical Education, Physical Activity and Youth Sport research network (www.ul.ie/pess/pepays) and the successful Irish rugby team. It has been estimated that in Ireland physical inactivity causes 8.8% of the burden of disease from coronary heart disease, 10.9% of type 2 diabetes, 15.2% of breast cancer, and 15.7% of colon cancer. The Report Card will serve as a vital tool for practitioners and policy makers on both sides of the border and cross-border in order to identify key needs and gaps, allocate funds and develop
activity promotion initiatives. This surveillance of indicators related to physical activity is vital for sustainable success and, ultimately, to improve the health profile of Ireland’s children.

The aim of this paper is to present the grades for Ireland’s first Report Card on Physical Activity in Children and Youth and to briefly summarise the evidence surrounding each grade. The data herein represent over 35,000 children aged 7 - 18 years, sampled between 2003 and 2010 and, where possible, from representative datasets.

**Methods**

This scientific advocacy was undertaken by a research work group (RWG) comprised of 12 researchers with experience in children’s physical activity and health. The RWG chair (DMH) informally convened the group based on knowledge of researchers in Ireland and through recommendations. The RWG first met in May 2013 to decide on the indicators to include and to identify key data sources for each indicator. The ten indicators included in Ireland’s first Report Card are: overall physical activity levels; sedentary behaviour (TV viewing); organised sport participation; physical education; active play; active transportation; school; community and the built environment; family; and government. All members of the RWG were responsible for identifying key data sources through database and online searching and examining their personal records. The RWG chair, in collaboration with a research assistant, extracted the relevant information, collated it in a spreadsheet to make the data easy to navigate and be ready for grading. All members of the RWG met for a four hour discussion meeting on the data in Feb 2014. Members were emailed the spreadsheet of data one week before this meeting, to allow for perusal of the data and to consider possible grades. During the meeting each indicator was discussed and assessed, and each member proposed a grade privately. When ambiguity existed, prevalence data and evidence from Ireland were compared to Report Cards from other countries. A proposed grade for each indicator was decided upon using the standardised, international grading system. To increase validity, the key data were sent to four external researchers with experience of the Report Card grading process. Finally, the data and grades were presented during a targeted consultation session to practitioners and policy makers. The key items considered when grading were: (i) representative nature, (ii) sample size, (iii) possibility of that study being repeated or at least the question being asked again in the future and (iv) what other countries had used. The grades are based on the best
available data from the island of Ireland that were collected between 2003 and 2010, and represent data from over 35,000 children (plus census data). Data sources included:

Growing up in Ireland (GUI): A longitudinal study of two cohorts of children in the Republic funded by the Department of Children and Youth Affairs and run by a consortium of researchers led by the Economic and Social Research Institute (ESRI) and Trinity College Dublin. Data from wave one of the 9 year old cohort of 8,568 children and their care-givers sampled in 2007/2008 are reported.

Health Behavior of School-Aged Children (HBSC): HBSC data have been collected in the Republic over four waves between 1997 and 2010. We report data from the 2009/2010 wave collected on a representative sample of 16,060 11 - 15 year olds, run by National University of Ireland Galway and funded by the World Health Organization and the Department of Health.

Young Persons’ Behaviour and Attitudes Survey (2010): This study queried 3,463 11-16 year olds from a representative sample of schools in Northern Ireland. A consortium of Northern Ireland government departments commissioned the Central Survey Unit to design and run the survey.

UK Millennium Cohort Study (MCS): Longitudinal study following the lives of children born in the UK and funded by the Economic and Social Research Council (ESRC) and run by the Centre for Longitudinal Studies in the UK. In the fourth wave (MCS4) in 2008/2009, 1,317 children aged 7-8 years old in Northern Ireland had data available, while 634 children provided objective physical activity data from 2+ days of accelerometry.

Children’s Sport Participation and Physical Activity (CSPPA): This study aimed to provide a national database on physical activity, physical education and sport participation and to examine influences on participation. Overall, 5,397 children between 10 - 18 years old were sampled in 2010, with sampling stratified by urban/rural and SES, amongst other factors, to achieve a representative sample. The project was run by a consortium of Irish universities funded by the Irish Sports Council (ISC).

Census of Population of Ireland: Every 5 years all people in the Republic of Ireland are required to complete the census, which is administered by the Central Statistics Office (CSO). In 2011, demographic and societal data on over 800,000 young people aged 5-18 were included.

Keeping them in the Game: This document contains data and evidence for policy complied from three large nationally representative surveys of sport and physical activity, from years 2007 and 2009, by the ESRI and commissioned by the ISC.
Take PART (Physical Activity Research for Teenagers) Studies: Three Take PART studies were undertaken between 2003 and 2007, with 3,292 15-17 year olds sampled in three areas in the Republic. The study was run by Dublin City University and funded by the Health Service Executive (HSE).

Results
The Ireland’s Report Card 2014 is the first assessment of indicators relating to physical activity in children in Ireland (Figure 1). These grades are included Table 1 below.

Discussion
Overall physical activity levels
Using the criterion of % of children in Ireland meeting the physical activity guidelines of 60 minutes moderate to vigorous physical activity (MVPA) every day, this indicator was graded D-. Based on self-report data, 25% of 11 - 15 year olds, 12% of 11 - 16 years year olds, 25% of 9 year olds and 19% of primary and 12% post-primary (high school/secondary school) were meeting the guidelines. Only one national survey used objective measures and found that 43% of 7 - 8 year olds met recommendations. The prevalence of meeting physical activity recommendations among children and youth living in the Republic of Ireland were lower than those residing in Northern Ireland, although Northern Ireland children had the lowest physical activity of the UK countries involved in MCS4. Moreover, the age group assessed most likely represents the most active age group and would not be representative of all children and youth. Notably, a sex difference existed in the data (due in part to advanced biological maturation in girls) and, similar to other countries this gap widens with age.

Sedentary behaviour (TV viewing)
No recommendations on the maximum amount of sedentary time exist for Ireland, although replacing sedentary time with active time is included in physical activity guideline documents. Using the target of % of children watching < 2hr of TV/day, this indicator was graded C-. From HBSC 2010, 46% of 11 - 15 year olds reported watching < 2hrs TV/day. Other available data reported 73% of 11 - 16 year olds spent < 10 hr/week watching TV, 21% of 9 year olds watched < 1hr TV/video/day and 23% of 7 - 8 year olds spent < 1hr watching TV/Video/day. Given the
mean time spent in self-reported sedentary activities of > 2.6 hr/day\textsuperscript{11}, this grade is likely to be generous.

Active transportation

Using the target of the % of children reporting active transport to or from school each day, this indicator was graded D. The data showed that 24\% of 11 - 16 year olds\textsuperscript{8} and 26\% of 9 year olds\textsuperscript{5} actively commuted to or from school. This indicator is one that does not follow the typical decline that is seen in overall physical activity and sport participation. For example, 32\% of primary children and 43\% of post-primary children actively commute to school\textsuperscript{11}, while the census reported that 25\% of primary and 24\% of post-primary commuted on foot\textsuperscript{12.} Notably, an urban-rural divide exists, whereby children in more rural areas reported less active commuting (39\% versus 18\%)\textsuperscript{15,16} possibly due to distance and less opportunity to actively commute.

Physical Education

Using the discrepancy between the recommended time allocated to PE in schools and the amount actually reported by students, this indicator was graded D-. In the Republic of Ireland, 1 hour+/week on the Primary curriculum is suggested\textsuperscript{23} while at post-primary level, 2 hours/week for post-primary is suggested\textsuperscript{24}. Of 123 schools in the Republic that agreed to participate, 35\% of primary (5\textsuperscript{th} and 6\textsuperscript{th} class) children reported receiving the recommended levels\textsuperscript{11} while 10\% of post-primary children reported receiving the recommended levels. In Northern Ireland, PE is a compulsory subject for children aged 4 - 16\textsuperscript{25} years and although there is a flexible timetable, guidance recommends 2hrs/week. Of the 419 primary schools in Northern Ireland that returned surveys, 17\% reported 2+ hours of PE/week.\textsuperscript{26} Recommended levels of PE are lower than global and European averages\textsuperscript{26,27} and, based on the data, the prevalence of meeting those recommendations is even lower.

Organised sport participation

Using the target of % of children participating in sport twice/week,\textsuperscript{28} this indicator was graded C-. In Northern Ireland, 40\% of parents report participation in 2+ days/week sport by their 7 - 8 year old,\textsuperscript{9} while in the Republic, 56\% of 9 year old males and 33\% of 9 year old females report playing sport almost every day,\textsuperscript{5} while 64\% primary and 54\% post-primary (sex differences found) report at
least 2 - 3 days/week of extra-school sport. Sport participation typically decreases with age and socioeconomic differences are evident. 

Active play

Although active play is mentioned as a contributor to MVPA recommendations and guidelines exist for early years, there are no recommendations for active play alone. Due to lack of a target and data, this indicator was graded as Inconclusive. However, a number of promising signs are in place including an Active Play Plan and an early years curriculum framework (birth to 6 years), with a section on learning and developing through play in the Republic and a dedicated agency Play Board (www.playboard.org) in Northern Ireland.

Family

Infrastructure, support and parental/peer physical activity behaviours and attitudes are all elements that could contribute to this indicator. As a target or data do not currently exist, this indicator was graded as Inconclusive. Some data from Northern Ireland has reported on family support and found that 22% of children do physical activities with family every day/almost every day, while 8% of parents play active games with their children every day/almost every day. In the Republic, 6% of parents play sports/cards/games with their child every day, while the typical sport club volunteer is a parent aged 35 - 54 years.

School

Using the target of % participating in 2+ hr/week in extra-curricular sport (ECS) and school based recreation, this indicator was graded C-. In the Republic, 42% of primary and 57% of post-primary students reported participating in ECS 2+ times/week while ECS drops when moving from primary to post-primary school. In Northern Ireland, 49% of adolescents reported 2 hrs of PE or games at school, while 46% are part of school club or team.

Community and the built environment (perceptions of quality and safety)

Using the target of percentage of parents, young children and percentage of adolescent perceiving their local area as safe, this indicator was graded B. In Northern Ireland, 47% of parents say their 7 - 8 year old child plays on the street/public, while 53% of adolescents state play/leisure facilities
locally are very good/fairly good. In the Republic, 68% of parents agree that it is safe to walk alone after dark in their area, 91% agree it is safe to play outside during the day and 58% agree there are safe parks/playgrounds in their area.

**Government**

Although there is evidence of good practice in both the Republic and Northern Ireland, there are a number of gaps and weaknesses that need to be addressed. For this reason, this indicator was deemed Inconclusive. Strengths in the Republic include a dedicated Department of Children and Youth Affairs (www.dcyagov.ie) and a National Cycle Framework as part of Smarter Transport for a Sustainable Future. Healthy Ireland (2013) is a new national health and wellbeing framework and physical activity has been identified as the exemplar. However, currently no national physical activity plan exists in the Republic, and consequently no agreed physical activity goals or targets have been agreed to evidence any exemplary practice. The Northern Ireland Strategy for Sport and Physical Recreation 2009-2019 (Sport Matters) and the development of the Framework for Preventing and Addressing Overweight and Obesity in Northern Ireland 2012-2022 also exist. However, the absence of a national physical activity plan, a national physical activity and health surveillance system, and unavailability of physical activity workforce and investment data means that much of the key evidence on this indicator is in fact lacking.

**Limitations**

Although grades are based on the best available data, there are research gaps for objective data, on active play, early childhood and family physical activity. Guidelines for screen time are needed and monitoring children’s total screen time is necessary, as using just TV is likely to underestimate total time spent sedentary. Evidence of the physical activity levels of children with disabilities is also needed Evaluation of the effectiveness and cost-effectiveness of interventions to identify best practice and to resource adequately are required.

**Conclusion**

Physical activity recommendations exist on the island of Ireland but this Report Card has shown that physical activity levels remain low. A number of promising policies, programmes and services are in place, but these require thorough evaluation and adequate resourcing. Agreement and
implementation of a common framework for the systematic surveillance of indicators related to physical activity of children and youth which would align with HEPA Europe,36 and meet Ireland’s commitments under the recent Council of the European Union recommendations on physical activity,37 is necessary to monitor change over time and ensure the impact of promising work is captured. All children should have the opportunity of a ‘quality’ experience of school based physical activity and sport. Halting the proposed downgrading of physical education to a short course (rather than a subject) in the post-primary curriculum by the Department of Education and Skills (in the Republic) is vital for improving the grade. Embracing 4 hours/week of sport and physical activity during school (PE) and after-school, as is the case in Northern Ireland and the rest of UK, would be another useful step to improve the grade. Finally, the development, launch and implementation of a national physical activity plan is a necessity.

Volunteerism is an important non-governmental, community based support for sport. In the Republic, 97% of the junior sport workforce are volunteers, with a typical commitment 1 day/week,31 while 92% of sports clubs in Northern Ireland could not operate without volunteers.38

In order for sustainable physical activity participation on the island, we need to carefully monitor experiences in other countries. Norway39 recently concluded that they cannot not solely rely on volunteers to deliver physical activity and sporting opportunities. Establishing an appropriate volunteer:paid workforce ratio would be a useful undertaking.

This inaugural Report Card will support efforts to change policy and programming for children’s physical activity, which in turn will improve the health of our future adults. This inaugural Report Card will also set the stage for future Physical Activity Report Cards in Ireland and be a baseline for surveillance of physical activity promotion efforts.

Institution Where Work Originated The NIHR Leicester-Loughborough Diet, Lifestyle and Physical Activity Biomedical Research Unit which is a partnership between University Hospitals of Leicester NHS Trust, Loughborough University and the University of Leicester. The views expressed are those of the author(s) and not necessarily those of the National Health Service, the National Institute for Health Research or the Department of Health (UK).
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### Table 1. Grades According to Physical Activity Indicator in the 2014 Ireland Report Card on Physical Activity for Children and Youth

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Grades</th>
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<tbody>
<tr>
<td>Overall Physical Activity Levels</td>
<td>D-</td>
</tr>
<tr>
<td>Organised Sport Participation</td>
<td>C-</td>
</tr>
<tr>
<td>Physical Education</td>
<td>D-</td>
</tr>
<tr>
<td>Active Play</td>
<td>INC</td>
</tr>
<tr>
<td>Active Transportation</td>
<td>D</td>
</tr>
<tr>
<td>Sedentary Behaviour (TV viewing)</td>
<td>C-</td>
</tr>
<tr>
<td>Family</td>
<td>INC</td>
</tr>
<tr>
<td>Community and Built Environment (perceptions)</td>
<td>B</td>
</tr>
<tr>
<td>School</td>
<td>C-</td>
</tr>
<tr>
<td>Government</td>
<td>INC</td>
</tr>
</tbody>
</table>

*Note.* The grade for each indicator is based on the percentage of children and youth meeting a defined benchmark: *A* is 81% to 100%; *B* is 61% to 80%; *C* is 41% to 60%, *D* is 21% to 40%; *F* is 0% to 20%; *INC* is incomplete data/inconclusive.
Figures

Figure 1: Front cover of the 2014 Ireland Physical Activity Report Card