

Child Health Information Conference Briefing

Introduction

The Child Health Information Team (CHIT) was created last year within ISD Scotland to act as a focal point for information relating to the health of children in Scotland. The team have produced two previous publications which concentrate on data extracted from the Pre-School Child Health Surveillance Programme.



These can be accessed via the ISD Online web site,
www.show.scot.nhs.uk/isd/publications/publications.htm

During Summer 2000, the team obtained Scottish immunisation data via the Standard Immunisation and Recall System (SIRS), which covers twelve of the fifteen health boards, and Grampian Immunisation Record System (GIRS), which covers Grampian, Orkney and Shetland. This document is the first review of this data by the team and gives an insight into the wealth of information available. It reviews age at immunisation by health board area, deprivation category and also compares immunisation uptake rates between low and normal birth weight children.

This briefing has been specially produced to coincide with the Child Health Information Conference at Heriot Watt University in October 2000. A report on the conference and the next full length briefing from CHIT will be available by the end of February 2001.

News

- Plans are underway for CHIT to obtain an extract of data from the National Special Needs System and the School Child Health Surveillance System. Analysis will begin during 2000/01.
- The potential for linking data from the Child Health Surveillance Systems and other related datasets is beginning to be explored. For example, researchers are currently using data from the SIRS extract to examine relationships between administration of vaccines and hospital admission.
- To reflect changes in the new clinical and coding practices, the Pre-School Child Health Surveillance forms and clinical guidelines have undergone extensive revision. This is the first major revision since 1995. The surveillance programme will, by the end of 2000, be in use by ten of the fifteen health boards covering over 90% of Scotland's children. Revised forms and guidelines will be available from mid January 2001.
- Further information on child health and associated topics can be found on the ISD Online web site which will be updated on a regular basis. Comments and suggestions on the site are welcome.

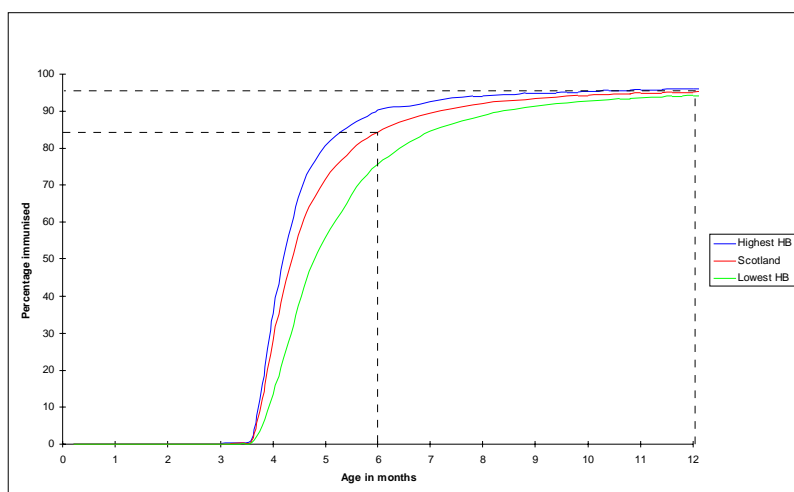
www.show.scot.nhs.uk/isd/child_health/child_health.htm

Immunisation

The Scottish Executive has set a target of 95 percent uptake among children by the age of two for each of the six primary immunisation programmes: diphtheria, tetanus, whooping cough (pertussis), polio, haemophilus influenza b (hib) and measles, mumps and rubella (MMR). With the exception of MMR, uptake rates have remained stable above the target level. The uptake rate of MMR at June 2000 was 93 percent.

The analyses presented in this short briefing focus on uptake rates for diphtheria, tetanus and pertussis (DTP) and MMR among children born in 1997.

Figure 1 Percentage of children born in 1997¹ completing three doses of diphtheria, tetanus & pertussis; by age.



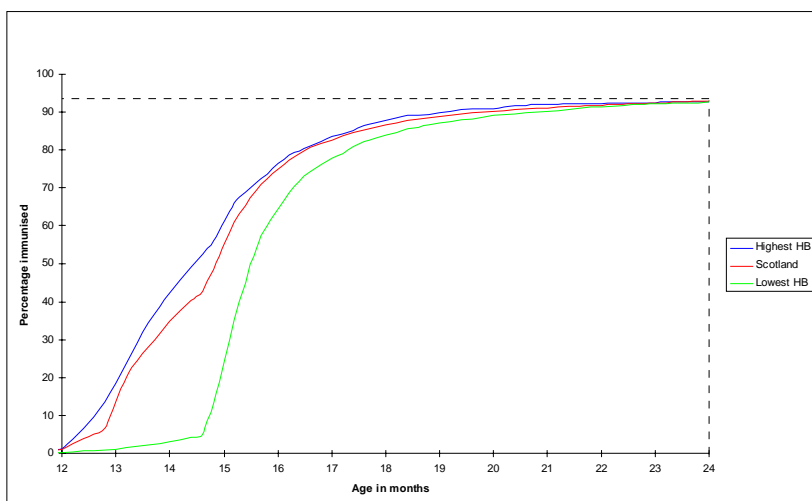
- 1 Children alive and registered on SIRS on 31/3/00 or on GIRS 29/8/00.
- 2 Records with invalid immunisation dates have been excluded.

Source: CHSP-SIRS, GIRS, ISD Scotland

The immunisation schedule recommends that primary administration of three doses of DTP should take place between 2 and 6 months. Figure 1 shows that, across health boards, 84 percent of children have been immunised against DTP by the age of 6 months, and almost 97 percent by 12 months.

Figure 1 also shows uptake by age for the health boards with the highest and lowest uptake rates at 6 months, ranging from 76 percent to 90 percent.

Figure 2 Percentage of children born in 1997¹ receiving primary MMR immunisation; by age



- 1 Children alive and registered on SIRS on 31/3/00 or on GIRS 29/8/00.

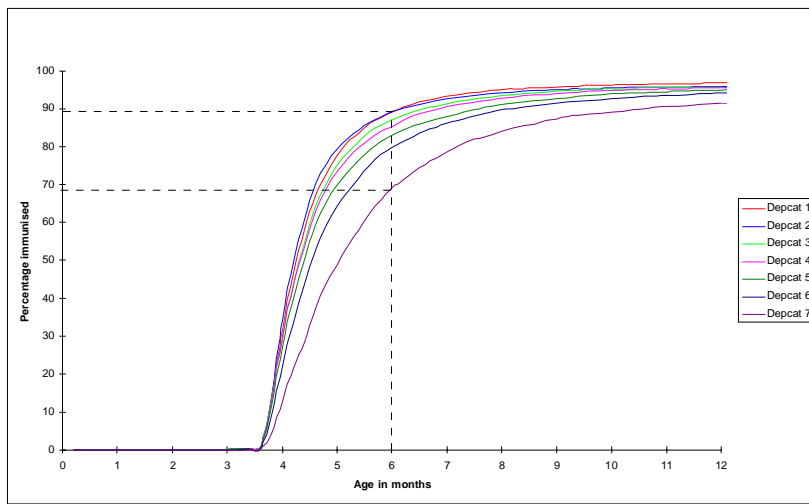
Source: CHSP-SIRS, GIRS, ISD Scotland

Unlike other primary immunisation programmes, MMR is first scheduled for immunisation in the second year of life.

Figure 2 shows a gradual increase in the overall uptake rate from the age of 12 months. Due to different practices among health boards, some boards do not schedule MMR immunisation until nearly 15 months of age. However, uptake rates for all health boards do tend to converge by age 24 months.

It is interesting to look at the variation in the immunisation uptake rates across deprivation category (depcat)¹.

Figure 3 Percentage of children born in 1997¹ completing three doses of diphtheria, tetanus & pertussis; by age and deprivation category

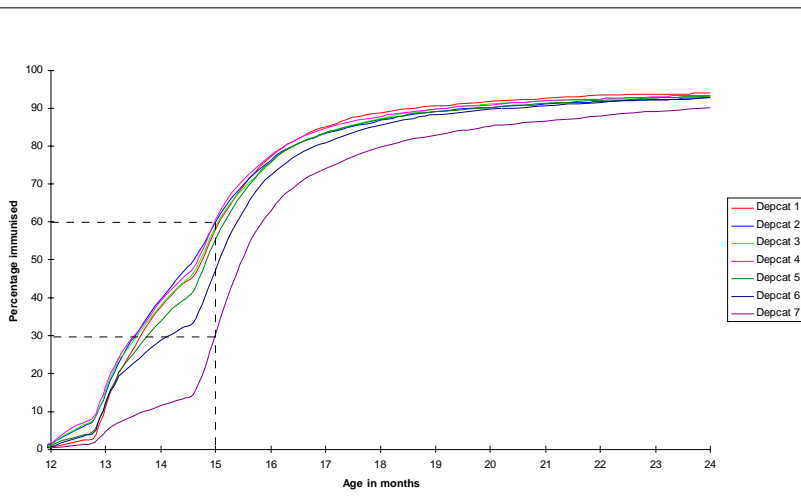


1. Children alive and registered on SIRS on 31/3/00 or on GIRS 29/8/00.

Source: CHSP-SIRS, GIRS, ISD Scotland

Figure 3 shows that immunisation rates for DTP tend to follow a trend in relation to depcat. Those in the higher deprived areas are less likely to be immunised at all ages up to 12 months. For example, at 6 months of age there are marked differences across the categories, with 89 percent of children completing a primary course of DTP in the least deprived areas (depcat 1 and 2) compared to only 69 percent in the most deprived area (depcat 7). By 12 months of age the differences between categories are not so apparent, although the most deprived areas are still lower at 91 percent.

Figure 4 Percentage of children born in 1997¹ receiving primary MMR immunisation; by age and deprivation category



1. Children alive and registered on SIRS on 31/3/00 or on GIRS 29/8/00.

Source: CHSP-SIRS, GIRS, ISD Scotland

Variations in health board practice would appear to be a contributing factor to the pattern of uptake rates in MMR (Figure 4). However, as for DTP the least deprived areas (depcat 1 & 2) are immunising earlier with 60 percent immunised by the age of 15 months compared to only 47 percent in depcat 6 and 30 percent in depcat 7.

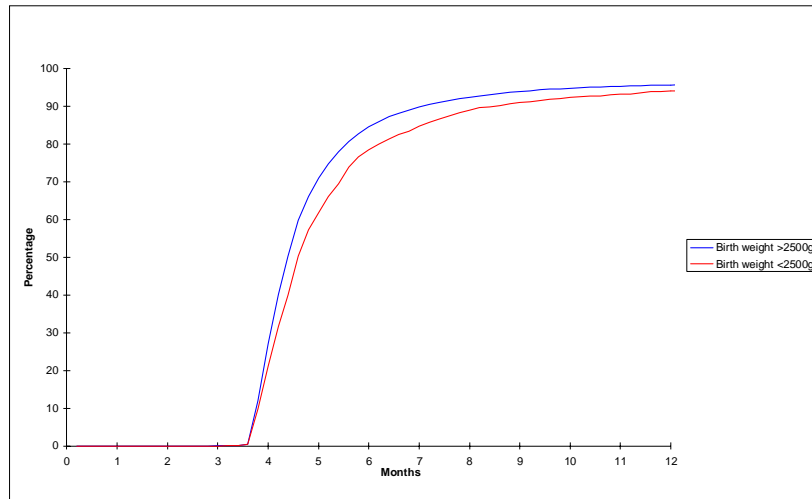
1 General notes on analyses involving Deprivation Categories

The deprivation analyses presented here use the Carstairs Deprivation Categories (depcat 1-7). (Carstairs V, Morris R, Deprivation and Health in Scotland 1991). This is an area based measure, calculated at postcode sector level (eg. EH3 5) and is derived from four census variables: over crowding, male unemployment, social class and car ownership. These items are combined to create a composite score. The deprivation score is divided into seven categories, ranging from very high (depcat 7) to very low deprivation (depcat 1). The Scottish population is unevenly distributed between these 7 groups, with the middle range depcats (3 & 4) holding a greater proportion than the extremes (1,2,6&7).

Areas classified as depcat 7 are largely found in the Greater Glasgow Health Board area, while the classification depcat 1 mainly appears in Greater Glasgow and Lothian Health Boards areas. This should be taken into account when interpreting analyses by depcat where variations in health board practice may be a contributing factor.

Birthweight data are also available for a large proportion of children registered for immunisation in Scotland. The main exceptions are Dumfries and Galloway and Western Isles Health Boards, who rarely use SIRS to record birthweight, and the three health boards which use the GIRS system (Grampian, Orkney and Shetland). Figures 5 and 6 show uptake rates by age of primary immunisation for DTP and MMR respectively, comparing low birthweight children (birthweight less than 2500g) and children greater than 2500g.

**Figure 5 Diphtheria, tetanus & pertussis primary immunisation:
Comparison between two birthweight¹ groups born in 1997²**

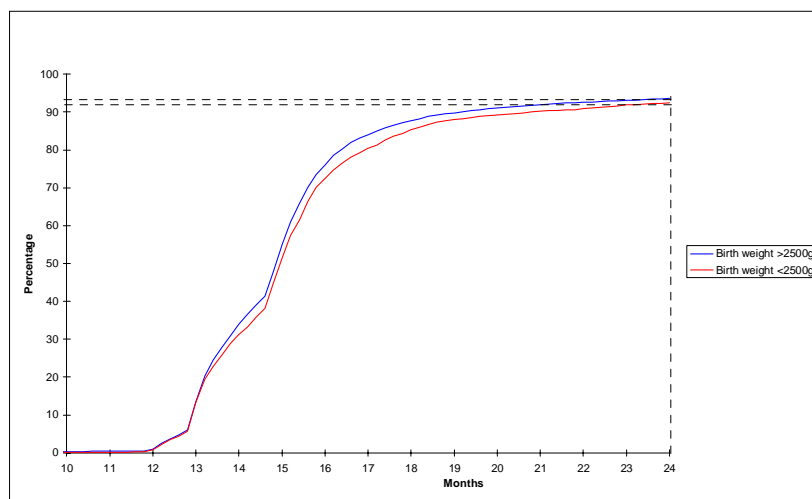


- 1 Excludes Dumfries & Galloway, Grampian, Orkney, Shetland and Western Isles Health Boards.
- 2 Children alive and registered on SIRS on 31/3/00.

Source: CHSP-SIRS, ISD Scotland

Figure 5 shows that uptake rates for primary DTP immunisation are lower for low birthweight children at ages older than 4 months. By 12 months, almost 96 percent of children with birthweight over 2500g have completed a course of DTP compared to 94 percent of low birth weight children. From analyses not presented here, it would seem that uptake remains lower among low birth weight children, although the difference is less marked.

**Figure 6 MMR primary immunisation:
Comparison between two birth weight¹ groups born in 1997²**



- 1 Excludes Dumfries & Galloway, Grampian, Orkney, Shetland and Western Isles Health Boards.
- 2 Children alive and registered on SIRS on 31/3/00.

Source: CHSP-SIRS, ISD Scotland

A similar pattern emerges for uptake of MMR (Figure 6), with uptake among low birth weight children reaching 92 percent at 24 months of age compared to 94 percent among those with birthweight over 2500g.

It is possible that for some of the babies immunisation has been undertaken whilst in special care units and not recorded, but this is unlikely to be the case with MMR. There may also be a higher incidence of genuine contraindications to immunisation for low birthweight children. However, these data suggest that further study may be warranted to investigate whether all babies are being offered appropriate immunisation.

Comments regarding the content and interpretation of this briefing are welcome. These and any other enquiries relating to child health information should be directed to:

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