

# Children with BMI greater than 98 percentile referred (excluding advice given)

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## Outcome

Improved advice, screening and interventions for children at risk of developing weight-related health and medical problems in adolescence and adulthood, and their families

## Measure

Children with Body Mass Index (BMI) greater than 98 percentile referred (excluding advice given)

## Type

Contributory measure

## Relationship(s) to other frameworks

This measure is drawn from the:

- Obesity Health Target (i.e. number of children who have had a B4 School Check and were identified as obese (BMI > 98th percentile)
- Well Child Tamariki Ora (WCTO) Quality Improvement Framework (Quality Indicator 27): Ministry of Health. 2015. Indicators for the Well Child/Tamariki Ora Quality Improvement Framework – March 2015. Wellington: Ministry of Health Framework available at: [www.health.govt.nz](http://www.health.govt.nz)

## Rationale

Up to one out of every three children in New Zealand is overweight or obese, and this number is continuing to rise. Children have fewer weight-related health and medical problems than adults, however overweight children are at high risk of becoming overweight adolescents and adults, placing them at risk of developing chronic diseases such as heart disease and diabetes later in life. They are also more prone to develop stress, sadness, and low self-esteem.

Children become overweight and obese for a variety of reasons. The most common causes are genetic factors, lack of physical activity, unhealthy eating patterns, or a combination of these factors. Only in rare cases is being overweight caused by a medical condition such as a hormonal problem. A physical exam and some blood tests can rule out the possibility of a medical condition as the cause for obesity. Although weight problems run in families, not all children with a family history of obesity will be overweight. Children whose parents or brothers or sisters are overweight may be at an increased risk of becoming overweight themselves, but this can be linked to shared family behaviors such as eating and activity habits.

Nationally, referral for extreme obesity (a BMI greater than the 99.4th percentile) is lower than expected. Low referral rates (63 percent national average as at Sept 2013) may reflect limited specialist service availability, or limited support and education for providers when discussing a child's growth with their family. Extreme obesity should be referred, as a minimum, to primary care to ensure that at least the health impacts of obesity are managed appropriately, in addition to any interventions that may be arranged to support healthy weight. There is also significant variation by region for rates of referral for extreme obesity (16 percent to 100 percent). There are opportunities for District Health Boards (DHBs) and B4 School Check providers to investigate

referral protocol and referral options in regions with high rates of referral to establish appropriate local pathways and the local capacity of specialist services for children with obesity.

Māori children with extreme obesity were less likely to be referred (57 percent, versus 62 percent for Pacific children and 63 percent nationally).

## Eligible population

Children aged between 48 and 60 months.

## Measure status

Active

## Numerator

Number of children who had a B4 School Check and were identified as obese (BMI  $\geq$  98th percentile) and

- were referred from the B4 School Check to a relevant service
- or were already under care of a service
- or the parent/caregiver declined the referral

## Denominator

Number of children who had a B4 School Check and were identified as obese (BMI  $\geq$  98th percentile)

## National target

B4 School Check 95% (may change following Health Report)

## Local target

Milestones to be decided by Alliance

## Data Sources

- B4 School Check data set
- Primary Health Organisation (PHO) Enrolment Register

## Data extracted from data sources

### **B4 School Check**

- National Health Index (NHI) number
- Date of birth
- BMI results
- Referral to provider
- Status of referral

**PHO Enrolment Register - applicable at the end of the reporting period**

- Enrolment quarter
- Lead DHB name
- PHO ID (PerOrg)
- PHO name
- PHO practice
- PHO practice ID
- NHI
- Date of birth
- Ethnicity codes
- Deprivation quintile

## Data availability

This data is released by the Ministry of Health.

## Measure calculation process

1. Extract the data according to the above specification for the reporting period.
2. Join the data sets by NHI to identify those enrolled children at the end of the reporting period whose 'Check Completed' status is 'Yes'.
3. Identify for each child that was enrolled within the reporting period, which children whose BMI result was  $\geq$  98th percentile were referred
4. Divide ( $\sum$  step 2 /  $\sum$  step 3).
5. Multiply by 100 to determine percentage

### Exclusions:

- Checks which were declined
- Checks with probable data quality issues:
  - Height less than 88cm, or over 130cm
  - Weight less than 8kg, or over 40kg
  - BMI less than 10, or over 40
- Children aged outside the target range (aged less than 48 months, or more than 60 months)
- Referrals which were not acknowledged by the service provider within 60 days

## Relationship(s) to other measures

## Measure development notes

- Obese children are children with a BMI > 98th percentile.
- Referred is based on available data from the B4SC database and uses the 'Date referral acknowledged' field in the database. Where there is more than one referral the first referral is reported on.
- Referral acknowledged is referral accepted or declined by the service provider within 60 consecutive days of the referral sent.
- Undercare is already under care of a service so not referred.
- Parent/caregiver declined is the parent/caregiver declined the referral.

