

THE B4 SCHOOL CHECK

Introduction

The B4 School Check (B4SC) aims to promote the health and wellbeing of preschool age children and to identify any behavioural, developmental or health concerns that might impact on their ability to learn in the school environment [231]. It is offered to the families of all four year old children, with its key elements comprising [255]:

- A Child Health Questionnaire
- Hearing & vision screening: sweep audiometry, tympanometry, distance visual acuity
- Measurement of height and weight
- Behavioural and developmental questions using the Strengths and Difficulties Questionnaire (SDQ) and Parental Evaluation of Developmental Status (PEDS) tools
- An oral health screen using *Lift the Lip* and a check for school dental clinic enrolment
- Health promotion and education (e.g. information resources, advice and support)
- Referrals to appropriate health, education and social services where the need for these services has been identified

The B4SC itself is carried out by registered nurses with experience in child health with the help of other providers such as Vision and Hearing Technicians. Parents are provided with a full explanation of what the B4SC involves and must sign a consent form before the check can commence. Checks may take place in a variety of settings including preschools, kohanga reo, doctors' clinics, churches and marae. While most children are assessed at age four, children missing out are offered a School New Entrant Check which includes at a minimum, hearing and vision screening [231].

The following section uses the B4 School Check Information System to review the proportion of children receiving a B4 School Check.

Data Sources and Methods

Indicators

1. *Proportion of eligible children who received a B4 School Check (coverage)*

Numerator: Number of children who have received and completed their B4 School Check between the ages of 4 years and 5 years 7 days

Denominator: Number of children eligible for a B4 School Check

2. *Proportion of eligible children whose caregivers declined a B4 School Check*

Numerator: Number of children whose caregiver did not consent to a B4 School Check

Denominator: Number of children eligible for a B4 School Check

3. *Proportion of children receiving a B4 School Check who commenced their check before 4.5 years*

Numerator: Number of children who commenced a B4 School Check prior to 4.5 years of age (i.e. prior to 4 years and 6 months)

Denominator: Number of children who commenced a B4 School Check

Data Source

Numerator: B4 School Check Information System

Denominator: PHO Enrolment Collection (indicators 1 and 2 only)

Notes on Interpretation

Note 1: The data presented cover the years 2012 to 2014 with each year ending on the 7th July.

Note 2: The calculation of coverage rates (indicator 1) includes children whose caregivers formally declined the B4 School Check but who received some of its components (e.g. hearing and vision screening; as per the Ministry of Health's usual methodology).

Note 3: Indicator 3 excludes children whose caregivers did not consent to a B4 School Check from both the numerator and the denominator

Note 4: DHB is DHB of service rather than DHB of residence

Note 5: The term *high deprivation* refers to those residing in NZ Deprivation Index decile 9–10 areas. The Ministry of Health sets coverage targets for both the total population and for those from high deprivation areas.



Note 6: While information on a wide range of ethnic groups was available from the B4 School Check Information System, denominators from the PHO Enrolment Collection were restricted to three ethnic groups: Māori, Pacific, and European/Other. Thus this analysis is restricted to these three broad ethnic groups, with the European/Other category including European, Asian/Indian, MELAA, and Other children, as well as those whose ethnicity was not stated.

New Zealand Distribution and Trends

Coverage: New Zealand Trends

In New Zealand during 2012–2014 (years ending 7 July), the proportion of children receiving a B4 School Check increased from 77.8% (n=51,137) in 2012 to 91.2% (n=59,581) in 2014. Coverage rates were very similar when the analysis was restricted to those from the most deprived areas (NZDep deciles 9–10; **Figure 1**).

Coverage: Trends by Ethnicity

During 2012–2014 (years ending 7 July), a higher proportion of European/Other children than Māori or Pacific children received a B4 School Check. However, coverage increased for all ethnic groups during this period, with 96.1% of European, 82.7% of Māori, and 79.7% of Pacific children receiving a B4 School Check in 2014 (**Figure 2**).

Timeliness: New Zealand Trends

During 2012–2014 (years ending 7 July), the proportion of children receiving a B4 School Check who started this check prior to 4.5 years of age changed very little, being 80.6% in 2012 and 82.5% in 2014. The proportion starting their checks in a timely manner was very similar when the analysis was restricted to those from the most deprived areas (NZDep deciles 9–10) (**Figure 3**).

Timeliness: Trends by Ethnicity

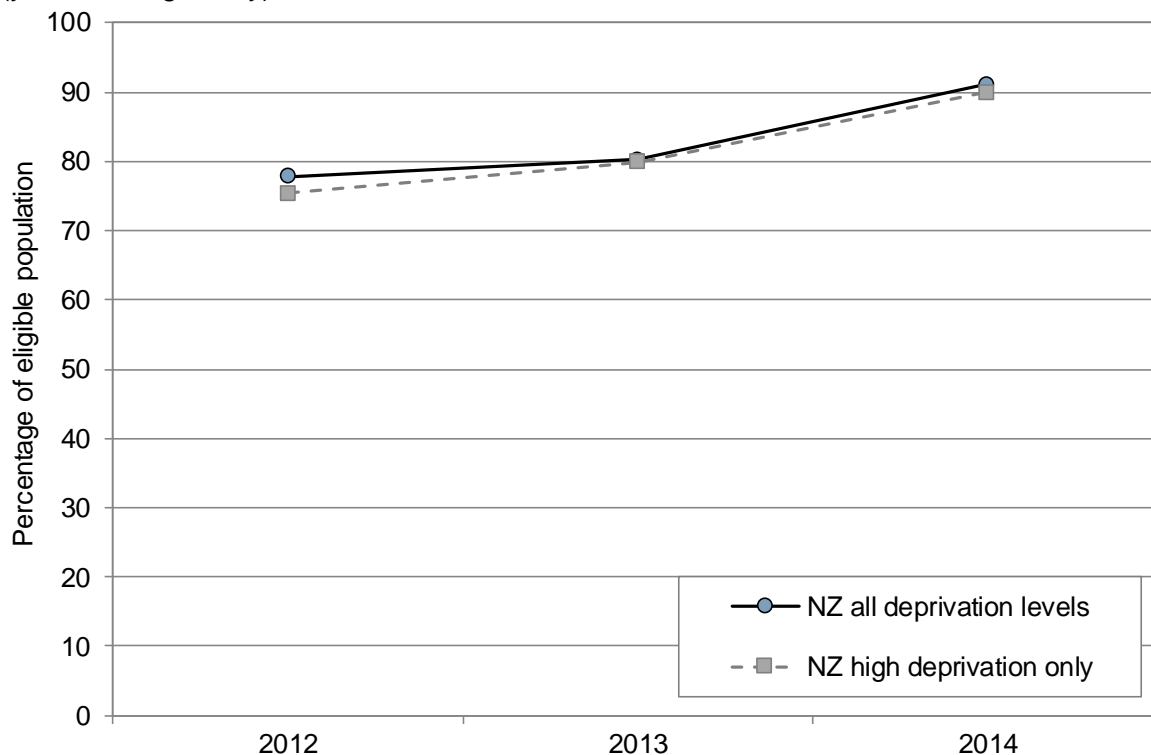
During 2012–2014 (years ending 7 July), a slightly higher proportion of European/Other and Pacific children started their B4 School Check prior to 4.5 years of age than did Māori children. In 2014, 84.1% of European/Other, 80.9% of Pacific, and 78.0% of Māori children who received a B4 School Check had started this check prior to 4.5 years of age (**Figure 4**).

Decline Rates

During 2012–2014 (years ending 7 July), a lower proportion of the caregivers of children from the most deprived areas (NZDep deciles 9–10) declined a B4 School Check, than did the caregivers of New Zealand children as a whole. In 2014, the decline rates were low for both groups, with 2.1% (n=336) for children from the most deprived areas and 2.9% (n=1,907) for New Zealand children as a whole (**Figure 5**).

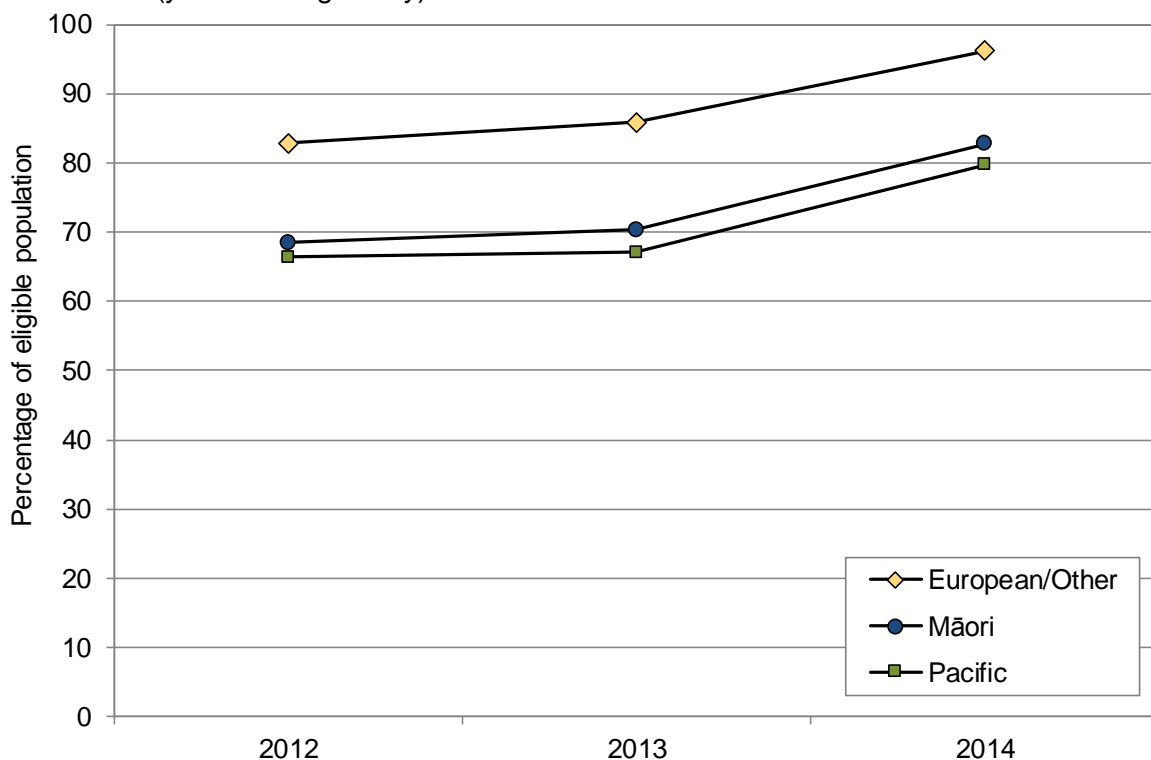


Figure 1. Percent of children receiving their B4 School Check, New Zealand 2012–2014 (years ending 7 July)



Source: Numerator: B4 School Check Information System; Denominator: PHO Enrolment Collection; Note: high deprivation refers to those residing in NZDep decile 9–10 areas

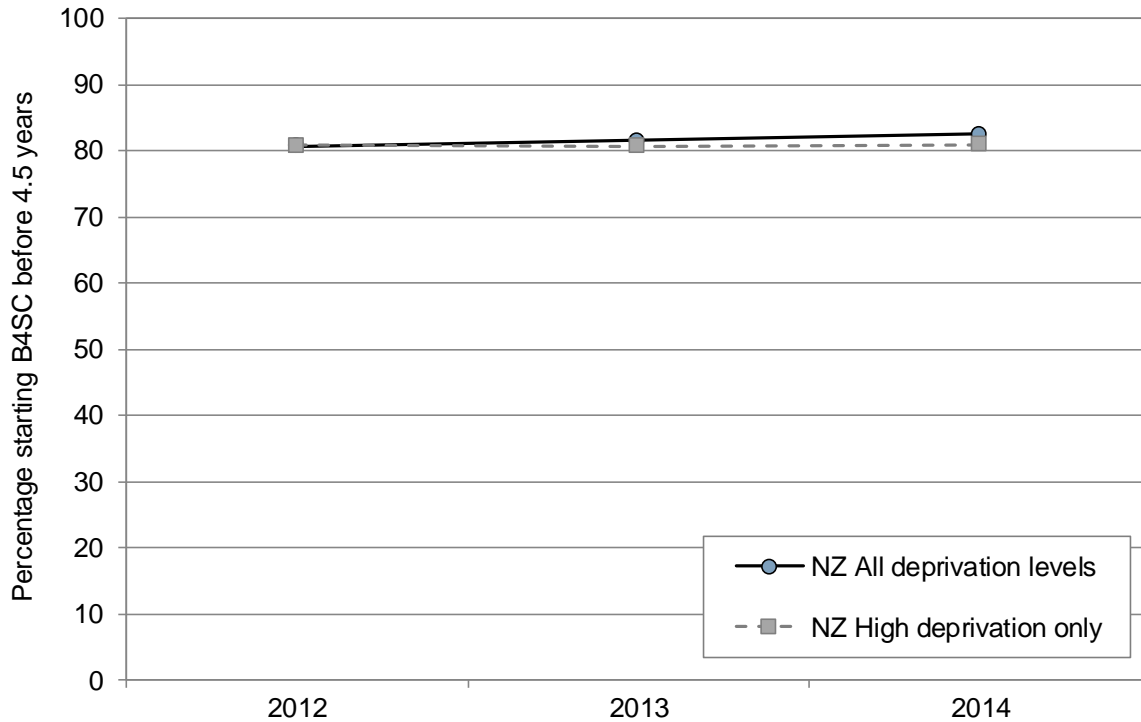
Figure 2. Percent of children receiving their B4 School Check by ethnicity, New Zealand 2012–2014 (years ending 7 July)



Source: Numerator: B4 School Check Information System; Denominator: PHO Enrolment Collection; Note: European/Other includes European, Asian/Indian, MELAA, Other, Not stated

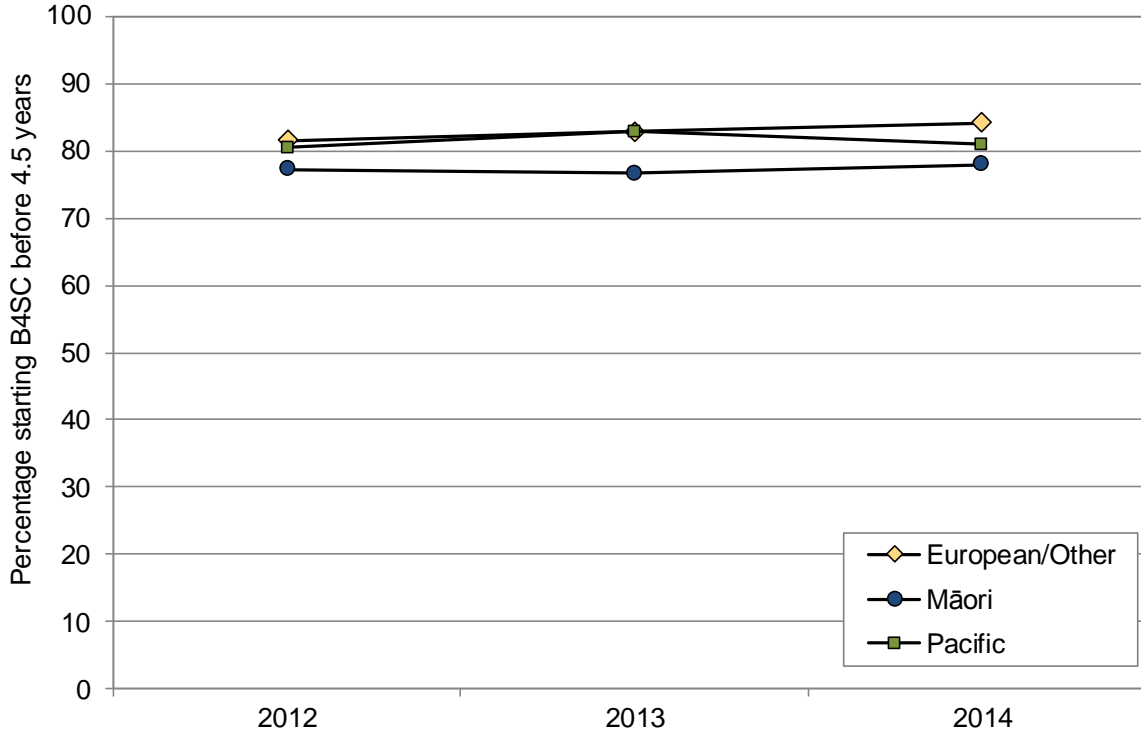


Figure 3. Percent of children starting their B4 School Check (B4SC) before 4.5 years of age, New Zealand 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: High deprivation refers to those residing in NZDep decile 9–10 areas

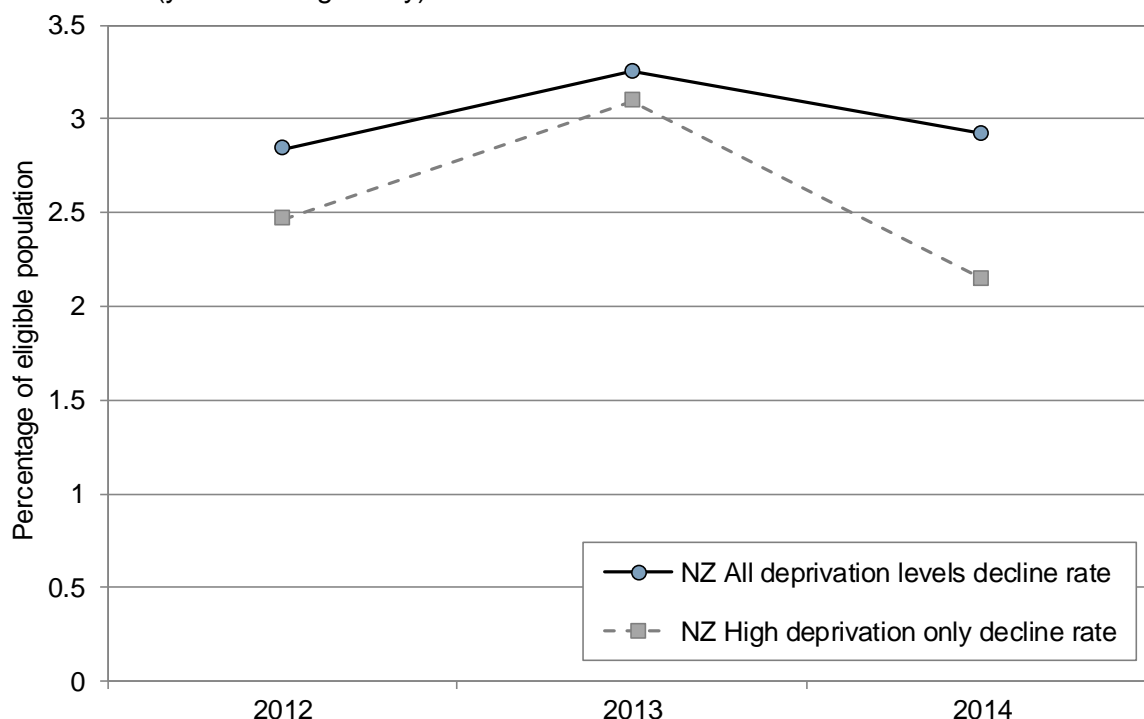
Figure 4. Percent of children starting their B4 School Check (B4SC) before 4.5 years of age by ethnicity, New Zealand 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: European/Other includes European, Asian/Indian, MELAA, Other, and Not stated



Figure 5. Percent of children whose caregivers declined a B4 School Check, New Zealand 2012–2014 (years ending 7 July)



Source: Numerator: B4 School Check Information System; Denominator: PHO Enrolment Collection; Note: High deprivation refers to those residing in NZDep decile 9–10 areas

South Island DHBs Distribution and Trends

Coverage: South Island DHBs Trends

During 2012–2014 (years ending 7 July), the proportion of children receiving a B4 School Check increased in all of the South Island DHBs. During this period, coverage in South Canterbury and Southern DHB were generally higher than the New Zealand rate, while in the remaining South Island DHBs coverage were similar to the New Zealand rate (**Figure 6**).

Coverage: Trends by Ethnicity

In Canterbury during 2012–2014 (years ending 7 July), a higher proportion of European/Other than Māori or Pacific children received a B4 School Check. In the remaining South Island DHBs, coverage was generally higher for European than for Māori children, with the exception of Southern for 2014 and the West Coast during 2012 and 2013 (**Figure 7**).

Timeliness: South Island DHBs Trends

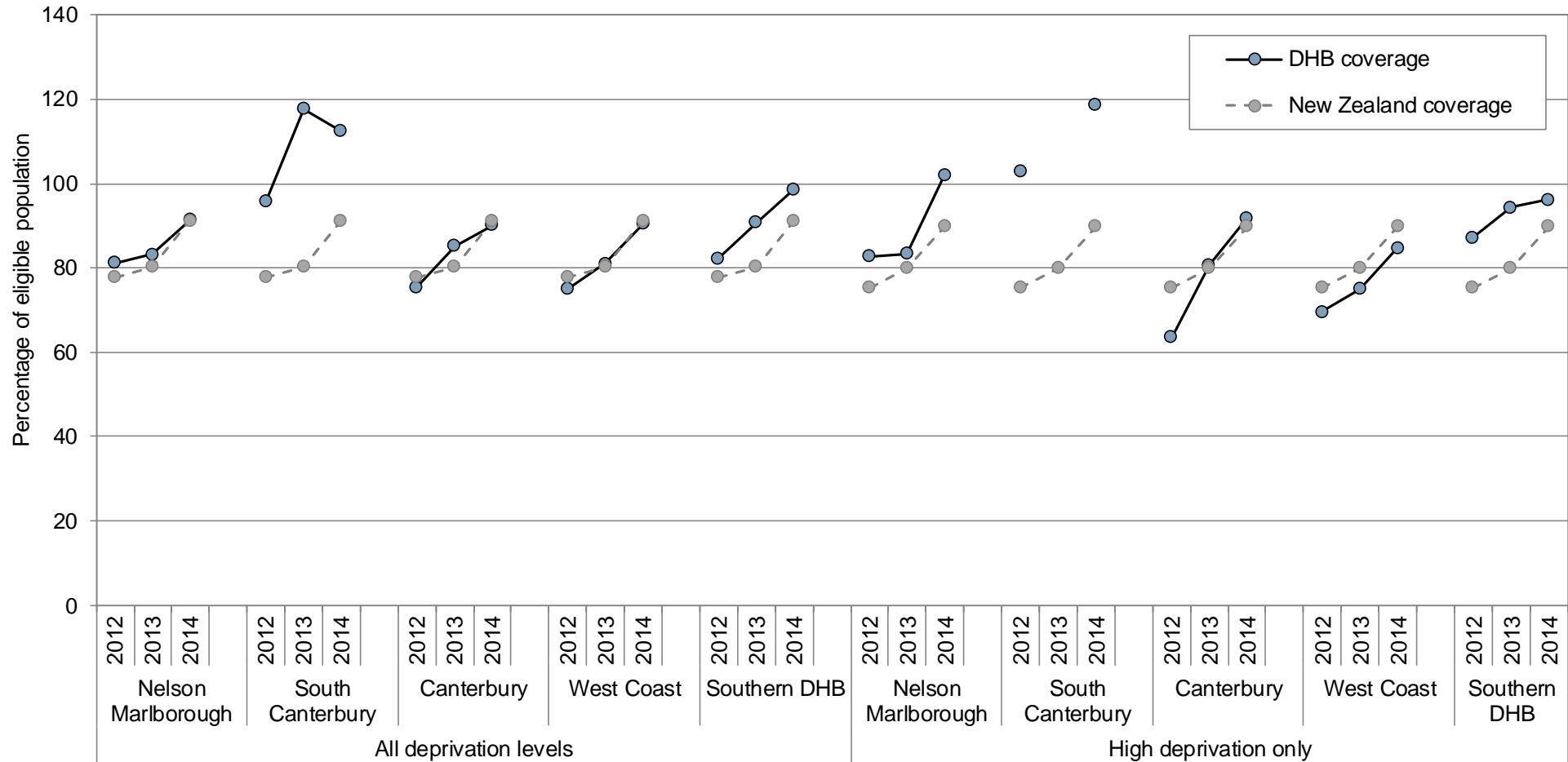
In South Canterbury, and Canterbury during 2012–2014 (years ending 7 July), the proportion of children receiving a B4 School Check who started their check prior to 4.5 years of age was consistently higher than the New Zealand rate, while in Nelson Marlborough rates were consistently lower. In the West Coast and Southern, rates were similar to the New Zealand rate (**Figure 8**).

Decline Rates

During the year ending 7 July 2014, 3.6% (n=65) of Nelson Marlborough, 2.1% (n=15) of South Canterbury, 4.3% (n=286) of Canterbury, and 2.5% (n=97) of Southern caregivers of eligible children declined a B4 School Check. None of the West Coast caregivers of eligible children declined a B4 School Check.

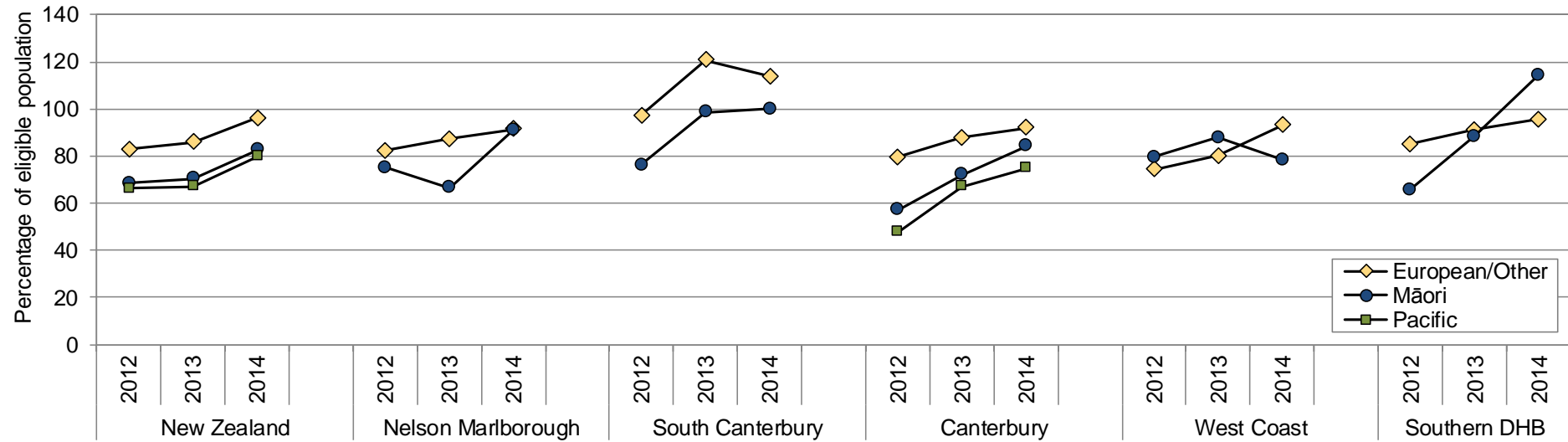


Figure 6. Percent of children receiving their B4 School Check, South Island DHBs vs. New Zealand 2012–2014 (years ending 7 July)



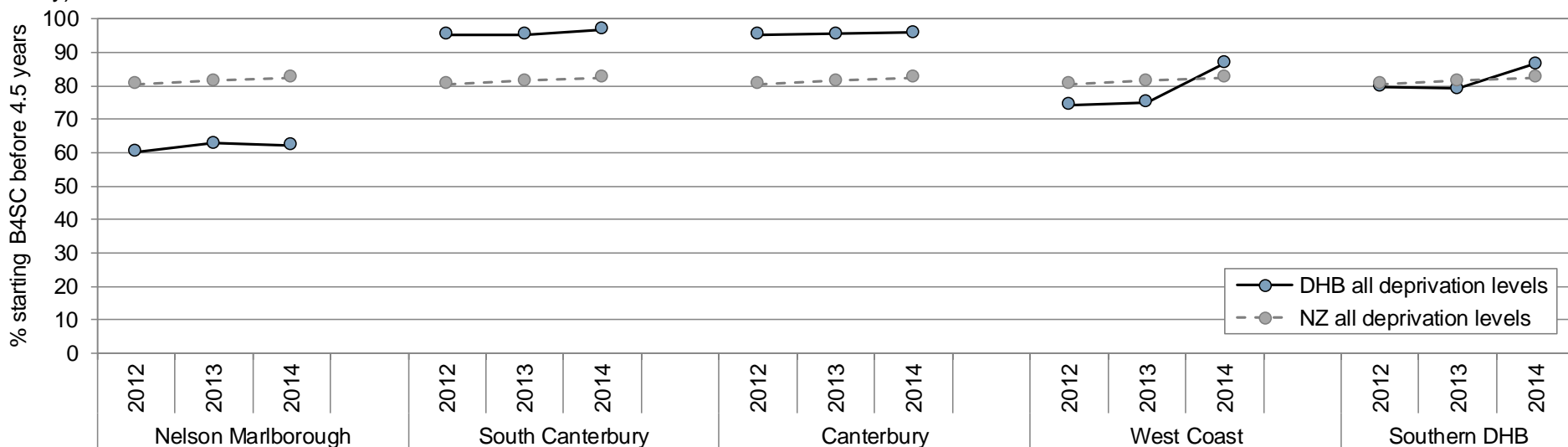
Source: Numerator: B4 School Check Information System; Denominator: PHO Enrolment Collection; Note: High deprivation refers to those residing in NZDep decile 9–10 areas; Results for High deprivation only in South Canterbury in 2013 not included due to unusually high result

Figure 7. Percent of children receiving their B4SC by ethnicity, South Island DHBs vs. New Zealand 2012–2014 (years ending 7 July)



Source: Numerator: B4 School Check Information System; Denominator: PHO Enrolment Collection; Note: B4SC corresponds to B4 School Check; European/Other includes European, Asian/Indian, MELAA, Other, and Not stated

Figure 8. Percent of children starting their B4SC before 4.5 years of age, South Island DHBs vs. New Zealand 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: B4SC corresponds to B4 School Check

B4 SCHOOL CHECK: HEARING AND VISION SCREENING

Hearing Screening

Hearing screening and surveillance are key parts of the Well Child Tamariki Ora programme, with screening beginning shortly after birth as part of the Universal Newborn Hearing Screening and Early Intervention Programme. Hearing surveillance then continues at each core Well Child Check, until four years of age, when the next formal hearing screen occurs as part of the B4 School Check [231].

The B4 School Check occurs as soon as possible after the child turns four. The aims of its hearing screening component are to [231]:

1. Identify hearing loss that is likely to interfere with normal speech, language development and learning;
2. Find children with persistent middle-ear disease that is likely to lead to significant hearing loss;
3. Identify and refer children with hearing-related developmental or learning difficulties, so that appropriate intervention can be initiated prior to the child starting primary school.

Children missing this component of the B4 School Check are checked at school entry [231].

Hearing screening involves screening audiometry (also known as the sweep test), with tympanometry only being used to further assess children with an abnormal screening result (although some DHBs use targeted tympanometry screening for groups at high risk from otitis media with effusion) [231]. Following screening, one of four possible outcomes is recorded [231]:

1. **Not tested** because the child was unable or unwilling to participate. These children are booked for rescreening in three months' time
2. A **Pass** is recorded if the child hears audiometry screening levels of 20 dB at 1000, 2000 and 4000 Hz and 30 dB at 500 Hz bilaterally
3. A **Rescreen** is scheduled if the child hears 40 dB bilaterally at 1000 Hz, but does not respond to the next or any other tone
4. A child is **Referred** for further assessment if they do not respond to 40 dB in either the right or the left ear at 1000 Hz.

Referral pathways vary by region, but, in general, referrals for suspected sensorineural hearing loss are made to audiology, while referrals for suspected conductive hearing loss (e.g. due to otitis media with effusion) are made to general practitioners or ear nurses. However, as a sensorineural hearing loss may be masked by a conductive hearing loss, any identified middle ear disease must be treated and the child retested once this has resolved [231].

The following section uses the B4 School Check Information System to review hearing screening outcomes for children undergoing a B4 School Check, while a later section reviews the outcome of vision screening.



Data Sources and Methods

Indicators

1. Proportion of children who required hearing rescreening

Numerator: Number of children recorded as requiring hearing rescreening in the B4SC-IS

Denominator: Number of children who had a hearing screening outcome recorded in the B4SC-IS

2. Proportion of children who failed audiometry and required hearing rescreening

Numerator: Number of children who failed audiometry in one or both ears and who were recorded as requiring hearing rescreening in the B4SC-IS

Denominator: Number of children who had a hearing screening outcome recorded in the B4SC-IS

3. Proportion of children who failed audiometry and required referral

Numerator: Number of children who failed audiometry in one or both ears and who were recorded as requiring a referral in the B4SC-IS

Denominator: Number of children who had a hearing screening outcome recorded in the B4SC-IS

Data Source

B4 School Check Information System (B4SC-IS)

Notes on Interpretation

Note 1: Indicator 1 includes those children who underwent audiometry and were recorded as requiring rescreening, as well as those who did not undergo audiometry (e.g. as a result of developmental or behavioural issues, or for other reasons) but were recorded as requiring rescreening.

Note 2: Children whose caregivers declined the B4 School Check or its hearing screening component were excluded from all analyses, as were those who were already under care for hearing problems.

Note 3: DHB is DHB of service rather than DHB of residence

Note 4: The term *High deprivation* refers to those residing in NZ Deprivation Index decile 9–10 areas, while the term *Low-Average deprivation* refers to those residing in decile 1–8 areas.

Note 5: While information on a wide range of ethnic groups was available in the B4SC-IS, this analysis has been restricted to three broad ethnic groups: Māori, Pacific, and European/Other, in order to ensure comparability with the previous section on the B4 School Check (which explored coverage and timeliness).

Note 6: Care should be taken when interpreting DHB vs. New Zealand differences or trends over time, as it is likely that many of these differences arise from local variations in service delivery, or the way DHBs record information in the B4 School Check Information System, rather than from real differences in the prevalence of hearing problems or middle ear disease in the community.

Note 7: Because of the live nature of the B4SC-IS, the number of children requiring rescreening and referral may vary over time, as in some DHBs, staff update the B4SC-IS (to either pass or refer) once the outcome of the rescreen is known. In other DHBs however, the field is left unchanged (as rescreen). While the B4SC-IS generally becomes more stable with time (as the results of children's rescreens are entered) differences in the way DHBs update the B4SC-IS following rescreening may be responsible for some of the differences seen.

New Zealand Distribution and Trends

New Zealand Trends

In New Zealand during 2012–2014 (years ending 7 July), the proportion of children requiring rescreening because of failed audiometry was lower than the total rescreen rate, presumably as many children were unable to complete their initial audiometry (e.g. as a result of developmental, behavioural or other issues). While total and failed audiometry rescreen rates both declined during this period, the proportion of children requiring referral following failed audiometry was more static (5.5% in 2012 and 5.8% in 2014) (**Figure 9**).

Trends by Ethnicity

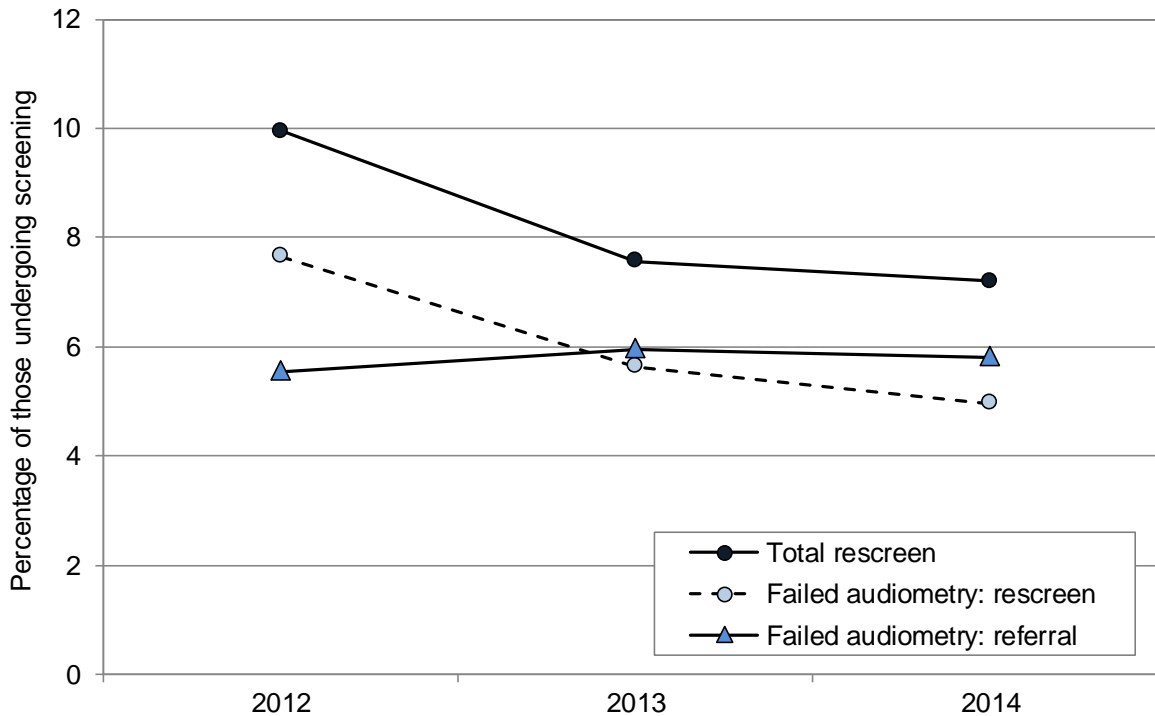
During 2012–2014 (years ending 7 July), a *significantly higher* proportion of Pacific, than Māori, than European/Other children required rescreening or referral following failed audiometry (**Table 1**). Rescreening rates declined for all ethnic groups during this period, while referral rates for Pacific and European/Other children were more static (**Figure 10**).

Trends by NZ Deprivation Index Decile

During 2012–2014 (years ending 7 July), a *significantly higher* proportion of children from the most deprived areas (NZDep deciles 9–10 vs. deciles 1–8) required rescreening or referral following failed audiometry (**Table 1**). Rescreening rates declined for both socioeconomic groups during this period, while referral rates were more variable (**Figure 11**).



Figure 9. Percentage of children who failed hearing screening and who required rescreening or referral, New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: Excludes children already under care for hearing problems

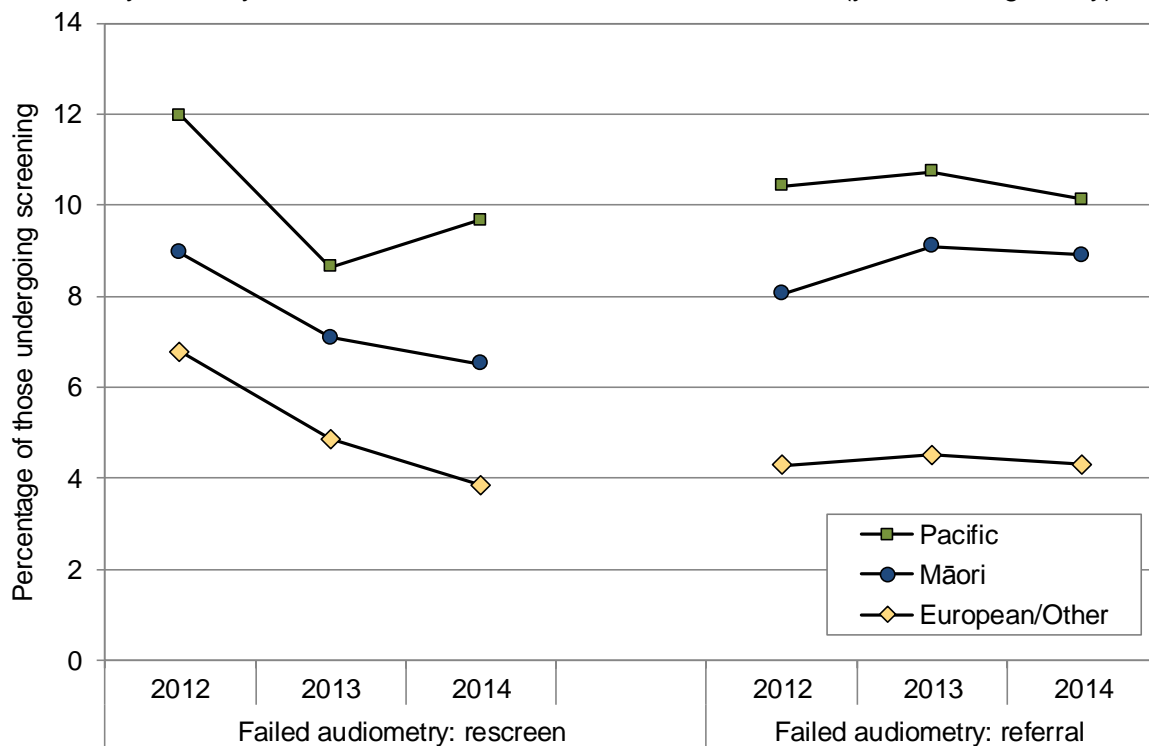
Table 1. Children who failed audiometry and who required rescreening or referral, by ethnicity and NZ Deprivation Index Decile, New Zealand B4 School Check 2012–2014 (years ending 7 July)

Variable	Number: total 2012–2014	Number: annual average	%	Rate ratio	95% CI
Failed audiometry: rescreen					
NZ Deprivation Index decile					
Deciles 1–8 (low-average deprivation)	6,374	2,125	5.48	1.00	
Deciles 9–10 (high deprivation)	2,722	907	7.79	1.42	1.36–1.49
Ethnicity					
Māori	2,203	734	7.43	1.46	1.39–1.53
Pacific	1,412	471	10.03	1.97	1.86–2.08
European/Other	5,481	1,827	5.09	1.00	
Failed audiometry: referral					
NZ Deprivation Index decile					
Deciles 1–8 (low-average deprivation)	5,739	1,913	4.93	1.00	
Deciles 9–10 (high deprivation)	3,001	1,000	8.59	1.74	1.67–1.82
Ethnicity					
Māori	2,584	861	8.71	2.00	1.91–2.09
Pacific	1,464	488	10.40	2.38	2.25–2.52
European/Other	4,692	1,564	4.36	1.00	

Source: B4 School Check Information System; Note: Excludes children already under care for hearing problems; European/Other includes European, Asian/Indian, MELAA, Other, Not stated, and Declined to state

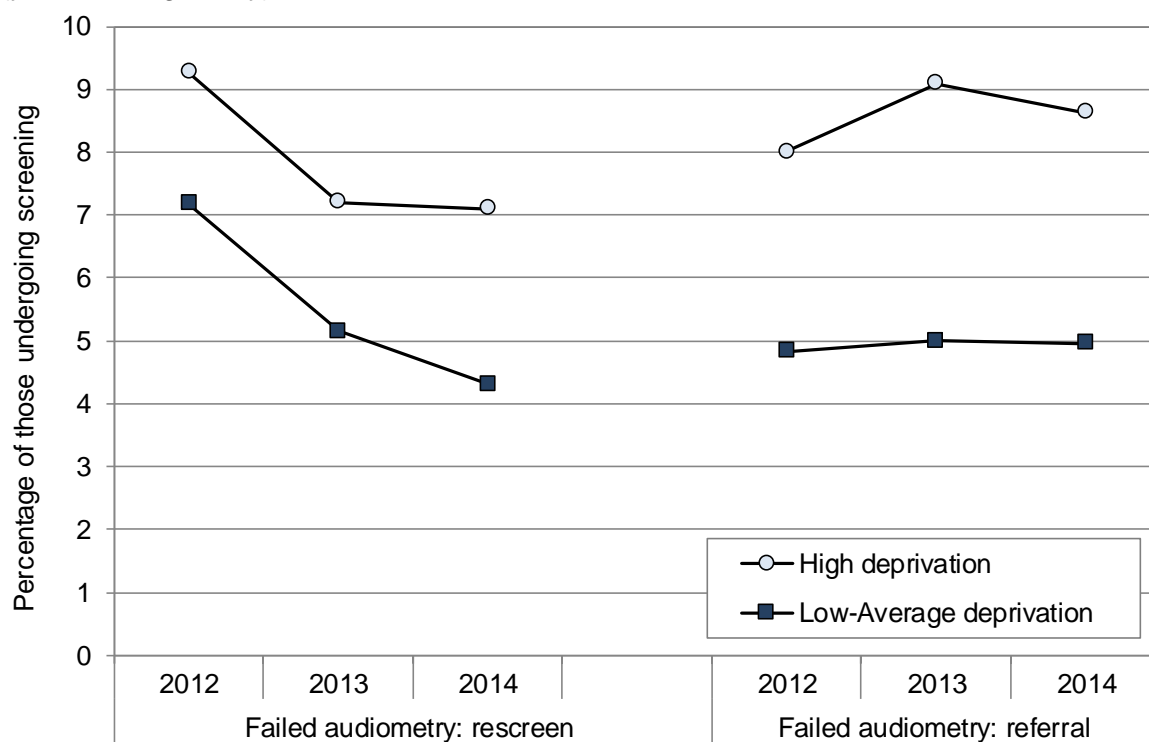


Figure 10. Percentage of children who failed audiometry and who required rescreening or referral, by ethnicity, New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: Excludes children already under care for hearing problems; European/Other includes European, Asian/Indian, MELAA, Other, Not stated, and Declined to state

Figure 11. Percentage of children who failed audiometry and who required rescreening or referral, by NZ Deprivation Index Decile, New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Excludes children already under care for hearing problems; High deprivation is NZDep deciles 9–10, Low-Average deprivation is NZDep deciles 1–8



South Island DHBs Distribution and Trends

South Island DHBs Trends

In Nelson Marlborough during 2012–2014 (years ending 7 July), the proportion of children requiring rescreening or referral following failed audiometry was consistently lower than the New Zealand rate. In Southern DHB, the proportion of children requiring rescreening was lower than the New Zealand rate, while the proportion requiring referral was similar/higher. The remaining South Island DHBs were more variable over the period (**Figure 12**).

Note: Care should be taken when interpreting DHB vs. New Zealand differences or trends over time, as it is likely that many of these differences arise from local variations in service delivery, or the way DHBs record information in the B4 School Check Information System, rather than from real differences in the prevalence of hearing problems or middle ear disease in the community.

Distribution by Ethnicity

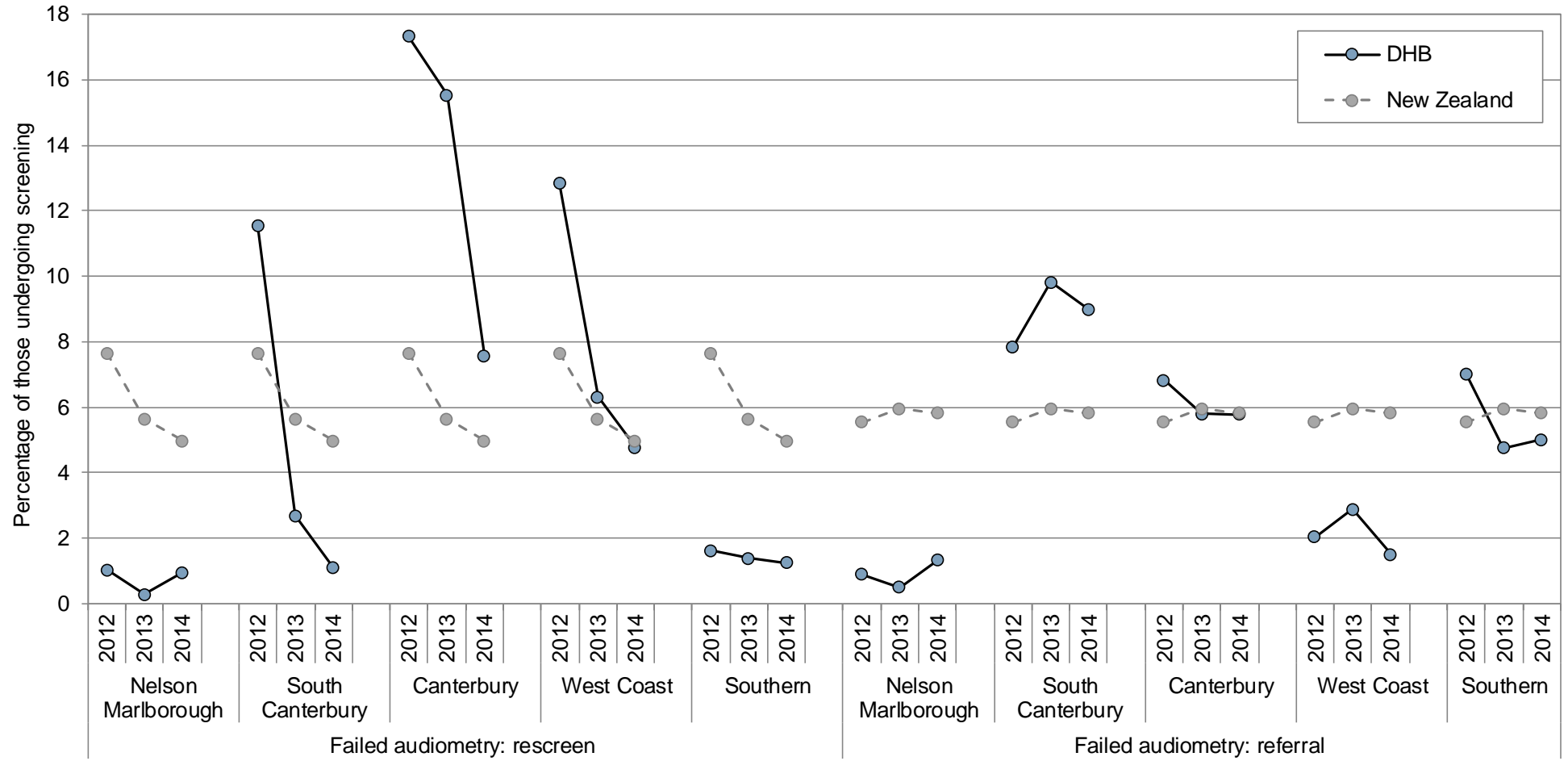
In the Canterbury during 2012–2014 (years ending 7 July), a higher proportion of Pacific and Māori children than European/Other children required referral following failed audiometry, while in Nelson Marlborough and Southern DHB a higher proportion of Māori than European/Other children required referral, while the ethnic differences were less consistent in the West Coast and South Canterbury (**Figure 13**).

Distribution by NZ Deprivation Index Decile

In all five of the South Island DHBs during 2012–2014 (years ending 7 July), a higher proportion of children from the most deprived areas (NZDep decile 9–10 vs. decile 1–8) required referral following failed audiometry, although rates were variable for Nelson Marlborough and West Coast (**Figure 14**).

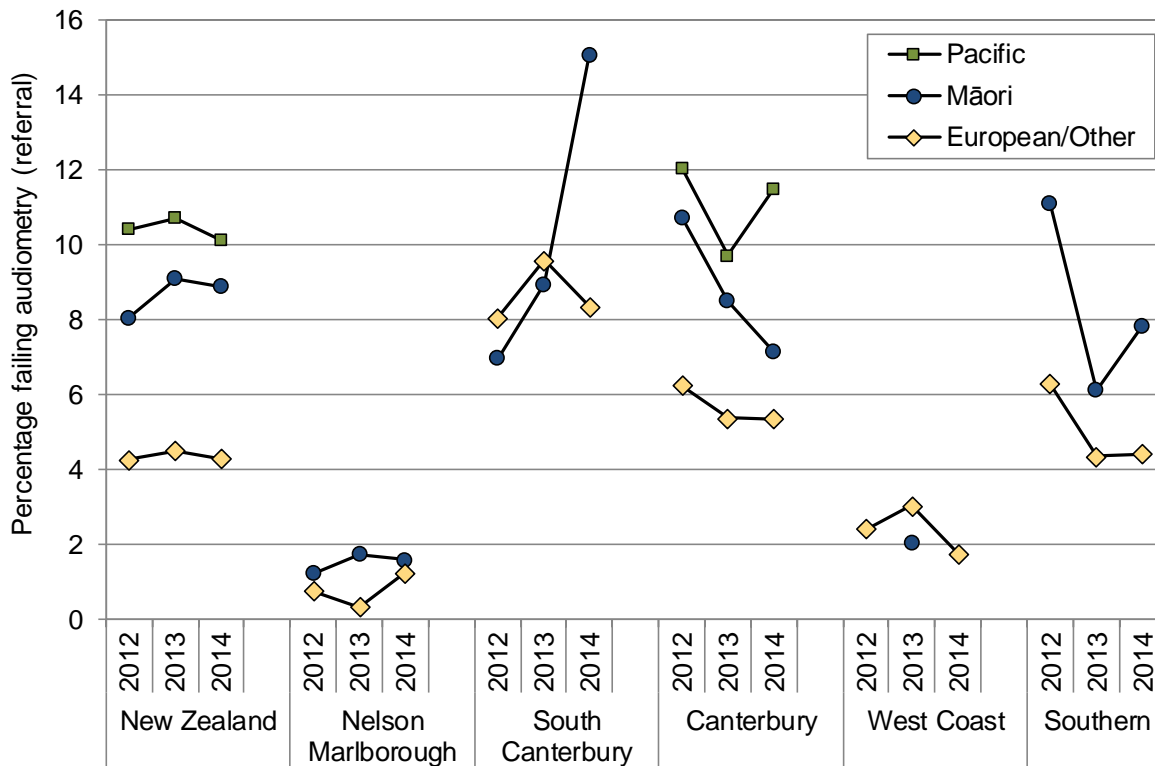


Figure 12. Percentage of children who failed audiometry and who required rescreening or referral, South Island DHBs vs. New Zealand B4 School Check 2012–2014 (years ending 7 July)



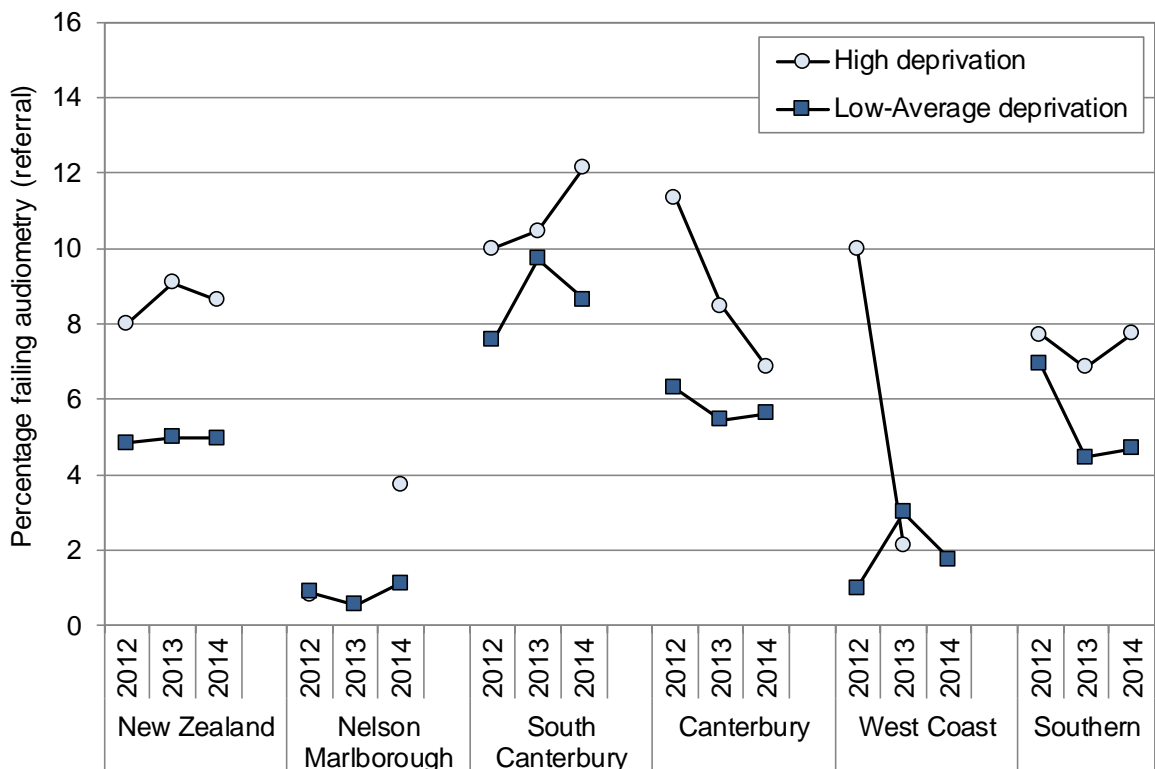
Source: B4 School Check Information System; Note: Excludes children already under care for hearing problems

Figure 13. Percentage of children who failed audiometry and who required referral, by ethnicity, South Island DHBs vs. New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: Excludes children already under care for hearing problems; European/Other includes European, Asian/Indian, MELAA, Other, Not stated, and Declined to state

Figure 14. Percentage of children who failed audiometry and who required referral, by NZ Deprivation Index decile, South Island DHBs vs. New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: High deprivation is NZDep deciles 9–10, Low-Average deprivation is NZDep deciles 1–8



Vision Screening

Approximately 10–15% of preschool children are estimated to have visual deficits, with around 1–3% having amblyopia (lazy eye) which can lead to permanent vision loss in one eye if it is not treated early. Distance visual acuity is measured as part of the B4 School Check at four years of age with a view to [231]:

1. Identifying children who may have amblyopia at an age when it may still be treatable
2. Referring children who are unable to complete the screen for further assessment

Children missing this component of the B4 School Check are checked at school entry. However, if the child is under the care of an ophthalmic/optometric practitioner, screening is unnecessary, whether the child wears glasses or not [231].

In the B4 School Check, distance visual acuity is measured using either Parr letter-matching vision charts or Sheridan Gardner charts. Screening has three possible outcomes [231]:

1. A **Pass** is recorded if the child's vision is 6/9 or better in both eyes
2. A **Rescreen** within three to six months is recorded if the child's vision is 6/9 in one eye and 6/6 in the other (as one eye may be improving or one eye getting worse and a rescreen will distinguish between the two)
3. A **Refer** is recorded if the child's vision is 6/12 or worse in one or both eyes. Referrals are made either to an ophthalmologist or an optometrist, depending on practitioner availability and parental preference.

The following section uses the B4 School Check Information System to review vision screening outcomes in this age group.

Data Sources and Methods

Indicator

1. *Proportion of children not already under care for vision problems who were recorded as having a visual acuity of 6/12 or worse in one or both eyes*

Numerator: Number of children with a visual acuity of 6/12 or worse in one or both eyes recorded in the B4SC-IS, who were not already under care for a vision problem

Denominator: Number of children who had a vision screening outcome recorded in the B4SC-IS and who were not already under care for a vision problem

Data Source

B4 School Check Information System (B4SC-IS)

Notes on Interpretation

Note 1: Children whose caregivers declined the B4 School Check or its vision screening component were excluded from all analyses, as were those who were already under care for a vision problem.

Note 2: DHB is DHB of service rather than DHB of residence

Note 3: The term *High Deprivation* refers to those residing in NZ Deprivation Index decile 9–10 areas, while the term *Low-Average Deprivation* refers to those residing in decile 1–8 areas.

Note 4: While information on a wide range of ethnic groups was available in the B4SC-IS, this analysis has been restricted to three broad ethnic groups: Māori, Pacific and European/Other, in order to ensure comparability with the previous section on the B4 School Check (which explored coverage and timeliness).

Note 5: Care should be taken when interpreting ethnic and socioeconomic differences as it is unclear whether they reflect real differences in the underlying prevalence of vision problems, or differences in early identification and access to care (as children already under care for a vision problem have been excluded from the analysis).

Note 6: Care should be taken when interpreting DHB vs. New Zealand differences or trends over time, as it is likely that many of these differences arise from local variations in service delivery, or the way DHB staff record information in the B4 School Check Information System, rather than from real differences in the prevalence of vision problems in the community.



New Zealand Distribution and Trends

New Zealand Trends

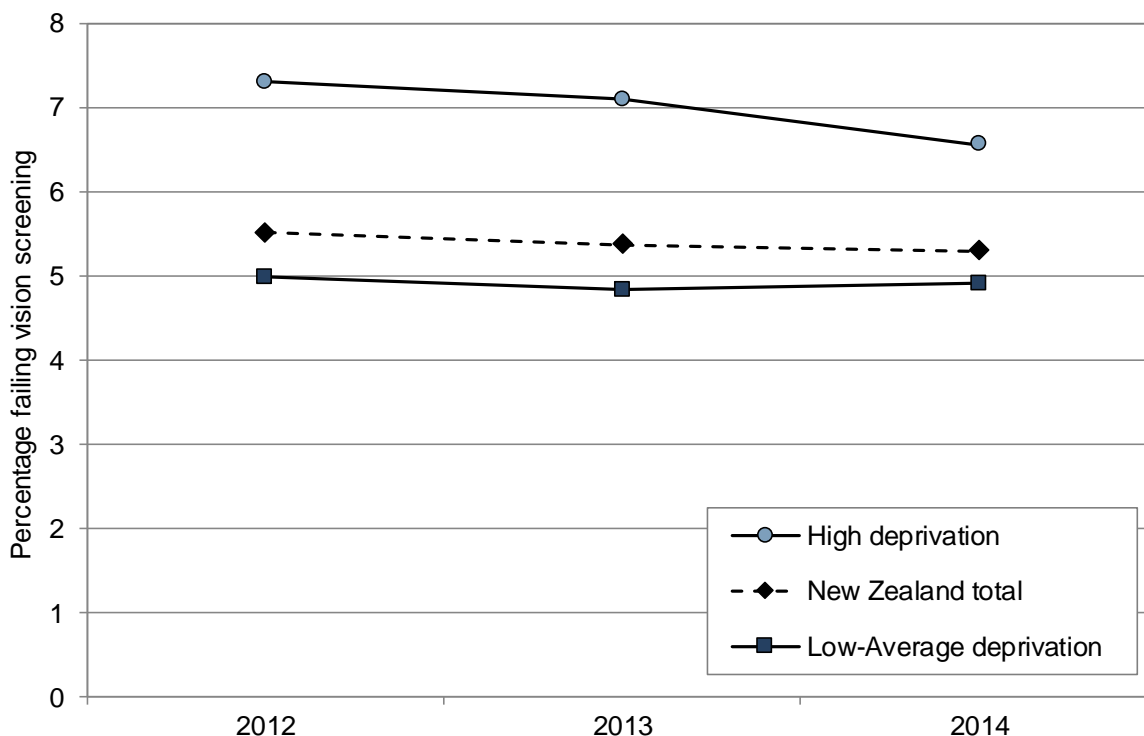
In New Zealand during 2012–2014 (years ending 7 July), the proportion of children not already under care with a visual acuity of 6/12 or worse in one or both eyes changed very little, being 5.5% in 2012 and 5.3% in 2014 (Figure 15).

Trends by NZ Deprivation Index Decile

In New Zealand during 2012–2014 (years ending 7 July), a *significantly higher* proportion of children from the most deprived areas (NZDep deciles 9–10 vs. deciles 1–8) had an untreated visual acuity of 6/12 or worse in one or both eyes (Table 2). However, rates for children from the most deprived areas declined during this period, while rates for children from less deprived areas were more static (Figure 15).

Note: Care should be taken when interpreting these differences as it is unclear whether they reflect real differences in the underlying prevalence of vision problems, or differences in early identification and access to care (as children already under care for a vision problem have been excluded from the analysis).

Figure 15. Percentage of children not already under care who had a visual acuity of 6/12 or worse in one or both eyes by NZ Deprivation Index decile, New Zealand B4 School Check 2012–2014 (years ending 7 July)



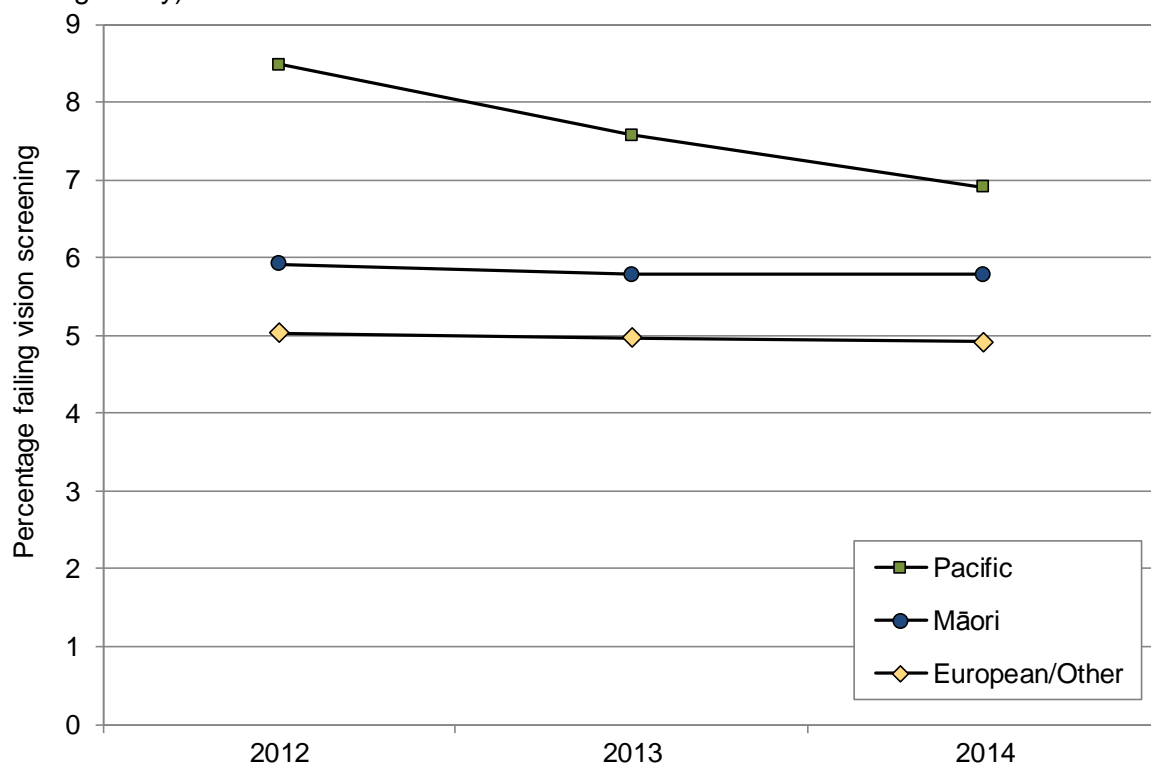
Source: B4 School Check Information System; Note: High deprivation is NZDep deciles 9–10, Low-Average deprivation is NZDep deciles 1–8

Trends by Ethnicity

In New Zealand during 2012–2014 (years ending 7 July), a *significantly higher* proportion of Pacific, than Māori, than European/Other children had an untreated visual acuity of 6/12 or worse in one or both eyes (Table 2). However, rates for Pacific children declined during this period, while rates for Māori and European/Other children were essentially static (Figure 16).



Figure 16. Percentage of children not already under care who had a visual acuity of 6/12 or worse in one or both eyes by ethnicity, New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: European/Other includes European, Asian/Indian, MELAA, Other, Not stated, and Declined to state

Table 2. Percentage of children not already under care who had a visual acuity of 6/12 or worse in one or both eyes by ethnicity and NZ Deprivation Index decile, New Zealand B4 School Check 2012–2014 (years ending 7 July)

Variable	Number: total 2012–2014	Number: annual average	Rate per 100	Rate ratio	95% CI
Visual Acuity 6/12 or worse on one or both eyes					
NZ Deprivation Index decile					
Deciles 1–8 (low-average deprivation)	5,710	1,903	4.91	1.00	
Deciles 9–10 (high deprivation)	2,459	820	6.96	1.42	1.35–1.48
Ethnicity					
Māori	1,762	587	5.83	1.17	1.11–1.23
Pacific	1,077	359	7.59	1.53	1.43–1.63
European/Other	5,330	1,777	4.97	1.00	

Source: B4 School Check Information System; Note: European/Other includes European, Asian/Indian, MELAA, Other, Not stated, and Declined to state



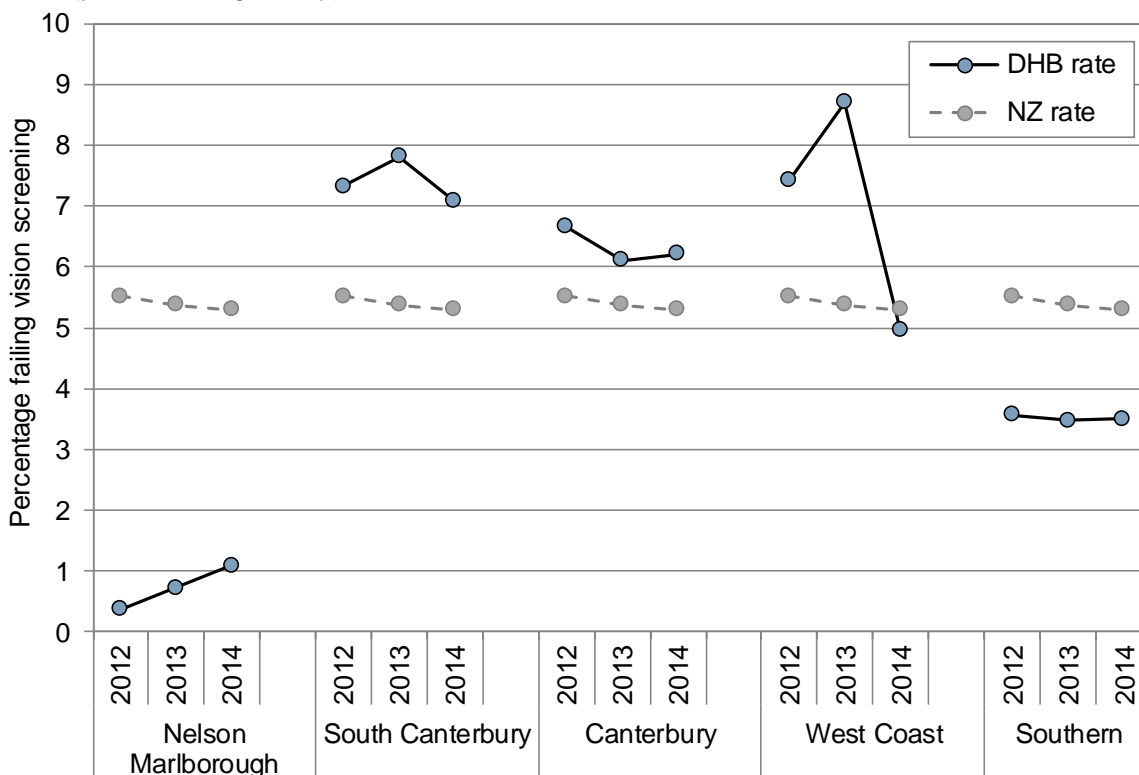
South Island DHBs Distribution and Trends

South Island DHBs Trends

In Nelson Marlborough and Southern DHB during 2012–2014 (years ending 7 July), the proportion of children not already under care who had a visual acuity of 6/12 or worse in one or both eyes was lower than the New Zealand rate, while in the remaining South Island DHBs the proportion was generally higher (**Figure 17**).

Note: Care should be taken when interpreting DHB vs. New Zealand differences or trends over time, as it is likely that many of these differences arise from local variations in service delivery, or the way DHB staff record information in the B4 School Check Information System, rather than from real differences in the prevalence of vision problems in the community.

Figure 17. Percentage of children not already under care who had a visual acuity of 6/12 or worse in one or both eyes, South Island DHBs vs. New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System

Distribution by Ethnicity

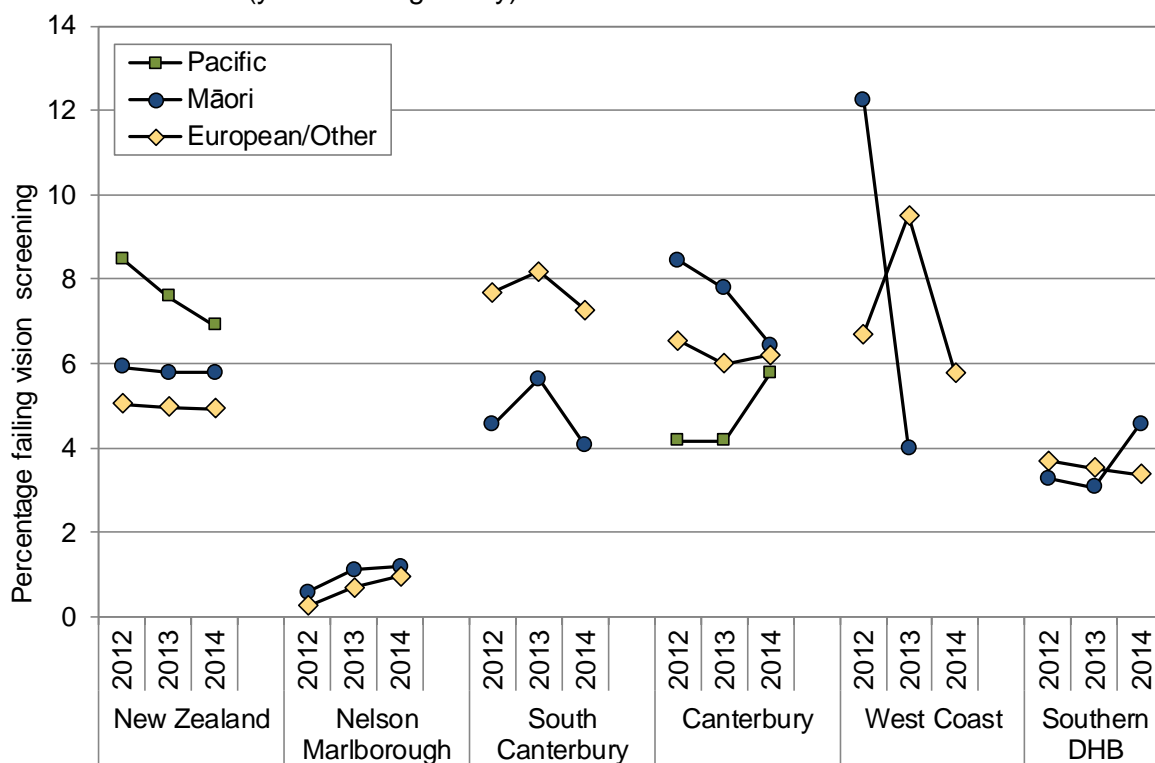
In Nelson Marlborough and Canterbury during 2012–2014 (years ending 7 July), a higher proportion of Māori than European/Other children who were not already under care had a visual acuity of 6/12 or worse in one or both eyes, although there were no consistent ethnic differences in the remaining South Island DHBs (however, rates for European children in South Canterbury were higher than for Māori children) (**Figure 18**).

Distribution by NZ Deprivation Index Decile

In Canterbury, the West Coast, and in Southern DHB during 2012–2014 (years ending 7 July), a higher proportion of children from the most deprived areas (NZDep deciles 9–10 vs. deciles 1–8) who were not already under care had a visual acuity of 6/12 or worse in one or both eyes. The pattern was inconsistent in Nelson Marlborough and South Canterbury (**Figure 19**).

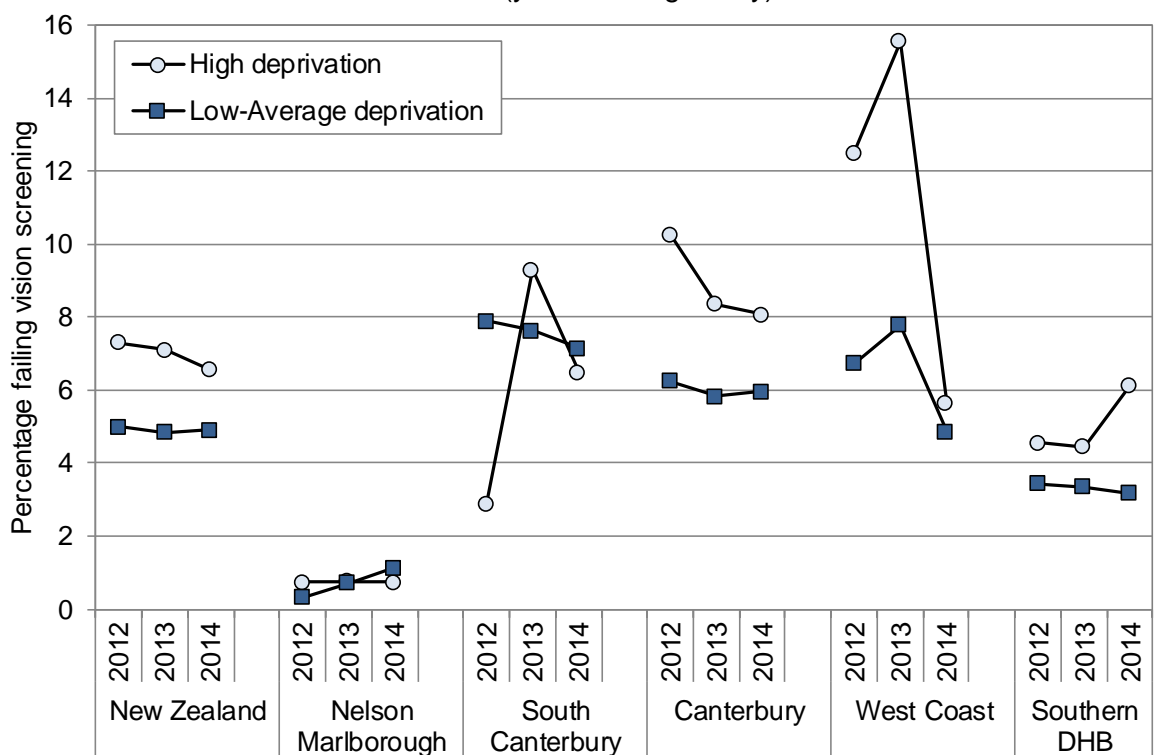


Figure 18. Percentage of children not already under care with a visual acuity of 6/12 or worse in one or both eyes by ethnicity, South Island DHBs vs. New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: European/Other includes European, Asian/Indian, MELAA, Other, Not stated, and Declined to state

Figure 19. Percentage of children care not already under who had a visual acuity of 6/12 or worse in one or both eyes by NZ Deprivation Index decile, South Island DHBs vs. New Zealand B4 School Check 2012–2014 (years ending 7 July)



Source: B4 School Check Information System; Note: High deprivation is NZDep deciles 9–10, Low-Average deprivation is NZDep deciles 1–8

