A media content analysis of New Zealand’s district health board Population-Based Funding Formula
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ABSTRACT

AIM: The Population-Based Funding Formula (PBFF) has a significant impact on health funding distribution between New Zealand’s 20 district health boards (DHBs) yet is subject to little independent oversight or public scrutiny. There has been widespread dissatisfaction among DHBs with the allocation process; however, there are limited formal avenues available for DHBs and the public to discuss the PBFF. As such, the news media has become a key platform for voicing concerns. This study aims to gain a better understanding of how the PBFF is portrayed in the news media and of perceptions of funding allocations across the country.

METHOD: We conducted thematic analyses of 487 newspaper articles about the PBFF, published over 13 years from 2003–2016. We then identified trends in the data.

RESULTS: Typically presented in a negative light, the PBFF was commonly framed against a background of financial struggle and resultant impacts on health services and staff. The effect of factors driving DHB allocations and the PBFF process itself were also key themes. There were significant regional and temporal variations in reporting volume, with most articles focusing on South Island DHBs and occurring during the introduction of the PBFF and at the time of the most recent review.

CONCLUSIONS: The findings suggest general discontent with the PBFF model across the DHB sector and a sense that the PBFF has failed to address various challenges facing DHBs. The geographic imbalance in reporting volume suggests that frustration with the PBFF is particularly keenly felt in the South Island. Although the PBFF is a lightning rod for frustrations over limited health funding, the findings point to the need to improve transparency and dialogue around the formula and to monitor of the impact of PBFF allocations throughout the country.

New Zealand’s Population-Based Funding Formula (PBFF) was implemented by the Fifth Labour Government on 1 July 2003, as part of major health system reforms at the turn of the millennium. The Ministry of Health (MoH) uses the PBFF to distribute funding among the nation’s 20 district health boards (DHB), which in turn provide or fund health services within their districts. The allocation that each DHB receives is determined by the number of people in their catchment areas, their ethnicity, sex, age and relative deprivation. Adjustors are also included to account for diseconomies of scale related to rurality, overseas visitors and unmet need. The formula controls almost three quarters of Vote Health, the main source of funding for New Zealand’s health system, making it one of the single largest determinants of government expenditure ($11.72 billion in 2015/16). The PBFF is reviewed by the MoH every five years, with the most recent review taking place in 2015 in concert with the belated 2013 Census. Despite periodic internal review, there have been calls for a comprehensive and independent review of the PBFF amid concern over a lack of...
transparency surrounding the PBFF. It has been argued that such a review would allow greater public discourse around this issue of national interest, as occurs in other nations which have greater transparency around their health funding formulae.

Since the formula’s advent there has been widespread dissatisfaction among DHBs with the allocation process. This is fuelled in part by considerable variations in financial performance across the DHB sector, coupled with growing disparities in access to health services. These issues are compounded by a lack of transparency surrounding the methodology underpinning the formula, along with limited formal avenues available for DHBs to express their concerns and a corresponding limit on public engagement. Thus, media reporting on the PBFF provides DHBs with an important social platform to voice their concerns about how the formula is operating. It is also the key avenue for the public to gain knowledge about a salient issue which has considerable impact on the level of healthcare services they receive. Since health is a key political concern among the New Zealand public, the PBFF has received widespread coverage in the media. However, New Zealand’s print media is dominated by regional news outlets. These print sources tend to offer regionally focused views reflecting how favourable the PBFF has been to their respective DHB.

Fragmented media coverage presents significant challenges to understanding both the perceived and real impacts of the PBFF model across the DHB sector. The focus on regional issues means it is difficult to gain a complete perspective of the key issues surrounding PBFF and the common threads emerging with respect to health funding throughout the country. At the same time, media coverage has been shown to play a key role in steering public perceptions and health funding decisions. This in turn drives political discourse and ultimately influences the policy decisions surrounding resource allocation. However, news media tends to sensationalise health funding issues and does not necessarily drive health policy in the direction of efficacy and pragmatism.

Given the significant pecuniary impact of the PBFF on the health sector and, correspondingly, its considerable political and social relevance, there is a need for a greater understanding of patterns and content of the media discourse surrounding the PBFF. This study aims to fill this gap by exploring how the PBFF has been represented in the media throughout New Zealand for the 13 years from its introduction in 2003 through to 2016. Specifically, this study aims to explore variations in regional coverage of the PBFF over time and to identify key commonalities and differences in the issues reported across the DHB sector. In doing so, this study contributes to a growing body of research surrounding population-based health funding models within New Zealand, offering insights into the context, perceptions and impact of the PBFF throughout the country.

Materials and methods

New Zealand print media ownership is dominated by two public companies, NZME and Fairfax, which hold a duopoly on the market at 89.3% of circulation. Allied Press, a privately-owned company with a focus on the Southern regions, constitutes the bulk of the remaining market share at 8.4% of circulation. Collectively, Fairfax, NZME and Allied Press own all of New Zealand’s major newspapers. We searched for stories related to the PBFF in the Newztext and Factiva online newspaper databases, which collectively cover these major print sources. The first author led data collection and analyses with oversight from the second and third authors.

The search parameters included a pragmatic timeframe from 1 January 2003 to 1 October 2016. This allowed us to focus on the established formula rather than its development or previously used formulae. Our search terms were: ‘population-based funding formula’ OR ‘DHB AND funding AND formula’ OR ‘population based funding’ OR ‘needs based funding’ OR ‘capitation’ OR ‘rural adjuster’. Our criterion for analysis was broad and included any story related to the PBFF. Articles which did not specifically mention New Zealand’s DHB PBFF were excluded from the study.

We used a qualitative descriptive approach to our analysis, which focused on the content of the data to identify key
themes within the articles. Coding was led by the first author. Coding was data driven with codes for each idea developed with oversight from the second and third authors. We then reviewed these codes to identify overarching themes and went on to discuss each of them in turn. We also recorded the DHB at the focus of each article and the status of that DHB's share of Vote Health, be it increased, decreased or unstated. We recorded any attitudes expressed towards the formula, which were gauged as positive, negative or neutral. The attitude assigned to each article was based on comments of key interest groups therein, with DHBs' comments taking precedence over other groups (ie, if a DHB had misgivings with the PBFF, yet the MoH gave a glowing appraisal, the attitude was recorded as negative). We noted which groups or individuals were commenting on the formula and recorded any relevant comments therein.

**Results**

**Search results**

The Newztext and Factiva databases held 487 articles relevant to the PBFF, published between 1 January 2003 and 1 October 2016. The Newztext database search returned 435 articles; 12 were duplicates and 113 were irrelevant, giving 310 relevant articles in total. The Factiva database search returned 197 articles; 20 were irrelevant, leaving 177 relevant articles.

**Regional and temporal trends**

The number of articles published about the PBFF reduced over the 13 years, from a maximum of 93 in 2003 to a low of 19 in 2013. In 2015, there was a sharp spike of 47 articles published. Figure 1 shows there was a clear regional bias in reporting, with the South Island's five DHBs the focus of 78.6% of all articles; whereas the North Island's 15 DHBs were the focus of only 21.4% of articles. The Southern DHB and its predecessors (Otago and Southland) were the focus of almost half (47.4%) of articles. The Southern DHB and its predecessors (Otago and Southland) were the focus of almost half (47.4%) of all articles; whereas the North Island's $5.2 million budget blowout at Christchurch Hospital—it faced an even bigger challenge from July, when its annual funding increases start to shrink. The Ministry of Health estimates that the DHB is $42m over-funded under the new population-based funding model. That means it will get a smaller share of funding over the next six years as other DHBs are paid more to catch up to Canterbury.

Likewise, more recent coverage (2015) in the Taranaki Daily News prefaced a comment around Taranaki DHB's $2.32 million deficit by noting that:

“Reduced funding from July will severely squeeze an already cash-strapped Canterbury District Health Board (CDHB), health bosses warn...despite a projected $5.2 million budget blowout at Christchurch Hospital—it faced an even bigger challenge from July, when its annual funding increases start to shrink. The Ministry of Health estimates that the DHB is $42m over-funded under the new population-based funding model. That means it will get a smaller share of funding over the next six years as other DHBs are paid more to catch up to Canterbury.”

**Key themes**

Over the 13-year period, media coverage largely centred around four major themes: DHB financial positions, the impact of the PBFF on DHBs, factors affecting PBFF allocations and the PBFF policy process. Table 1 shows these themes and the major sub-themes identified in our analysis.

**Financial position of DHBs**

The PBFF was typically mentioned in the context of financial constraints or difficulties faced by a given DHB and the resultant impact on availability of health services and staffing. DHB deficits were the most significant factor driving media coverage on the PBFF and were mentioned in over a quarter of articles. Deficits were a common theme throughout the country. However, they received particular attention in the South Island where 88.5% of articles mentioned deficits. Discussion of deficits was frequently accompanied by information regarding the share of funding or the size of budget increase a DHB received, often couched in comparison to other DHBs across the country. For example, early coverage (2004) of the PBFF model in The Christchurch Press noted:

“Reduced funding from July will severely squeeze an already cash-strapped Canterbury District Health Board (CDHB), health bosses warn...despite a projected $5.2 million budget blowout at Christchurch Hospital—it faced an even bigger challenge from July, when its annual funding increases start to shrink. The Ministry of Health estimates that the DHB is $42m over-funded under the new population-based funding model. That means it will get a smaller share of funding over the next six years as other DHBs are paid more to catch up to Canterbury.”

Likewise, more recent coverage (2015) in the Taranaki Daily News prefaced a comment around Taranaki DHB's $2.32 million deficit by noting that:

“Taranaki's share of the nation's health budget is likely to be reduced after changes were made to the formula used to allocate the money. Health funding is distributed among the 20 district health boards (DHBs), but after changes to the population-based formula, four DHBs—Taranaki, Nelson Marlborough, Otago and...”

36.3% of articles. Of 487 articles, 438 were news articles and 49 were opinion pieces.
Auckland and Wairarapa—are likely to receive a smaller share from July 1. Seven DHBs are likely to get an increase.”

Impact of PBFF allocations on DHBs

The impact or relationship between health funding allocations and DHB performance was also a persistent theme. Health funding crises linked to funding allocations were frequently cited as the cause of health services being cut or stretched. The abolition or reduced funding of aged care services was a prominent example of this, with headlines such as “Knife Taken To Elderly Services” and “Elderly Health Care Fears.” The rising cost of staff wages were frequently tied to financial crises faced by DHBs, which in turn were linked to budget allocations. In order to balance the books, DHBs were reported to be grappling with job cuts, under-staffing or cutting back health services. The pressure placed on doctors due to insufficient staffing was also cited, especially in rural areas such as South Canterbury or Ashburton.

Factors affecting PBFF allocations

Technical descriptions of the PBFF in media articles were limited and, where present, tended to be presented in relatively simple terms. However, discussion surrounding the factors underpinning PBFF allocations, such as population size and composition and their relationship

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**Figure 1:** The number of newspaper articles published about New Zealand’s Population-Based Funding Formula per district health board between 1 January 2003 and 1 October 2016.

*Auckland and Southland DHBs were amalgamated to form Southern DHB in 2010.*
with funding allocations were identified as issues in a number of DHBs. Population age was cited as an issue related to demand for health services for six DHBs, including Canterbury, MidCentral, Southern, South Canterbury, Nelson Marlborough and Waitemata. With the exception of Waitemata, these DHBs had older populations than the national average. Although also included as factors within the PBFF, concerns surrounding deprivation and ethnicity appeared less frequently. Similarly, although also adjusted for within the formula, unmet need and the effect of overseas visitors received less attention.

In contrast, rurality was a commonly raised issue, particularly among South Island DHBs. As with DHBs, political parties often cited rurality as an issue facing the PBFF, with the relationship between rurality and difficulty recruiting medical staff frequently linked to funding. An enduring opinion was that the PBFF model did not fit the unique needs of DHBs with large rural areas such as the West Coast or the Southern District Health Board. For example, the Southland Times wrote: “King [New Zealand Labour Party Health Spokeswomen] said the current population-based funding formula was not providing enough funding for big rural areas such as the Southern District Health Board, which faced massive deficits and was replaced with a Commissioner this winter.”

Population change was also identified as a problem. DHBs with small, relatively static populations were portrayed as struggling due to the comparatively small increases in funding under the PBFF model, which was seen as a problem confronting South Island DHBs in particular. Conversely, rapid population growth in the Auckland region DHBs was seen as creating a “gap” between increased demand for health services and funding allocations.

PBFF policy
A perceived lack of transparency surrounding the PBFF model and allocation process was discussed in 26 articles. Twenty-two (84.6%) of these articles mentioned the Southern DHB or its predecessors, suggesting transparency was a particular concern among DHBs in the South Island. Potential changes to the PBFF model and, correspondingly, DHB allocations, also catalysed considerable discussion in the South, with the MoH reviews of the PBFF featuring prominently in the ODT and the Southland Times. The bulk of these articles (34.1%) were printed in 2015 and coincided with the release of the Government's five-yearly review of the formula.

Attitudes and Vote Health
Most attitudes expressed towards the formula were negative (n=84, 96.6%). Many of the more antipathetic comments came from politicians. For example, one politician argued that “the government should reject this population-based funding formula that clearly isn’t working for our communities and fund services to the current need.”

At the same time, many DHBs displayed resigned acceptance of the PBFF’s realities, “Board chairman Syd Bradley insisted the CDHB [Canterbury DHB] would learn to live within its new budget...” The three positive attitudes all coincided with an increase in the share of Vote Health for the DHB concerned. In most articles (59.1%), the DHB’s share of Vote Health decreased, or there were issues with under-funding. Most (55.2%) of these articles were published in the two years after the formula’s introduction. In 2003, 12 (13.8%) negative attitudes were expressed towards the formula. This number decreased and plateaued over time, excepting a peak (n=19, 21.8%) in 2015, which coincided with the MoH review of the PBFF. South Island DHBs were the focus of most (83.3%) articles expressing negative attitudes towards the formula. Opinion pieces contained most negative attitudes (55.3%), compared with news articles (13.2%).

Interest groups
We identified 11 key interest groups in the media coverage, most prominently DHBs, the MoH and politicians—both in government and in opposition (Table 2). In terms of volume, the vast majority of comments on the formula were offered by individuals associated with DHBs, such as DHB board members, Chief Executive Officers or Planning and Funding staff. Many of these comments implicated the formula in financial woes. For example, one DHB board member blamed “The board's funding shortfall [on] general under-funding and the ‘adjusters' used in the Health Ministry's population-based funding..."
Table 1: Salient themes in newspaper articles about the Population-Based Funding Formula.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Meaning</th>
<th>n=487</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial position of DHBs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote Health share</td>
<td>A change in a DHB’s share of Vote Health was mentioned.</td>
<td>153</td>
<td>31.4</td>
</tr>
<tr>
<td>DHB deficit</td>
<td>DHB deficits were mentioned.</td>
<td>131</td>
<td>26.8</td>
</tr>
<tr>
<td>Impact of PBFF factors on DHBs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services stretched</td>
<td>DHB health services were stretched or compromised in relation to funding.</td>
<td>104</td>
<td>21.3</td>
</tr>
<tr>
<td>Services cut</td>
<td>DHB health services were abolished in relation to funding.</td>
<td>94</td>
<td>19.3</td>
</tr>
<tr>
<td>Impact on staff</td>
<td>DHB staff were impacted (eg, job loss) by changes to funding or underfunding.</td>
<td>81</td>
<td>16.6</td>
</tr>
<tr>
<td>Doctor recruitment</td>
<td>The recruitment of doctors was impacted by the formula.</td>
<td>18</td>
<td>3.7</td>
</tr>
<tr>
<td>Factors affecting PBFF allocations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>PBFF and health costs were affected by the age of a population.</td>
<td>71</td>
<td>14.5</td>
</tr>
<tr>
<td>Rurality</td>
<td>PBFF and health costs were affected by rural populations.</td>
<td>54</td>
<td>11.1</td>
</tr>
<tr>
<td>Population</td>
<td>Population size and changes to that size affected PBFF.</td>
<td>51</td>
<td>10.5</td>
</tr>
<tr>
<td>Unmet need</td>
<td>There was a level of unmet need in healthcare stemming from PBFF allocations.</td>
<td>22</td>
<td>4.5</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Ethnicity was an issue in relation to PBFF.</td>
<td>17</td>
<td>3.5</td>
</tr>
<tr>
<td>Deprivation</td>
<td>Deprivation was an issue in relation to PBFF.</td>
<td>13</td>
<td>2.7</td>
</tr>
<tr>
<td>Overseas visitors</td>
<td>Overseas visitors were affecting PBFF.</td>
<td>6</td>
<td>1.2</td>
</tr>
<tr>
<td>PBFF policy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review</td>
<td>Review of the PBFF was mentioned or advocated for.</td>
<td>40</td>
<td>8.2</td>
</tr>
<tr>
<td>Transparency</td>
<td>There was concern over a limited transparency around the PBFF and its workings.</td>
<td>26</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Abbreviations: PBFF, population-based funding formula; DHB, district health board.

Table 2: Groups commenting on the Population-Based Funding Formula.

<table>
<thead>
<tr>
<th>Interested party</th>
<th>Number of articles group commented on (n=442)</th>
<th>Percentage of articles group commented on (n=487) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>District health boards</td>
<td>211</td>
<td>43.3</td>
</tr>
<tr>
<td>Ministry of Health</td>
<td>77</td>
<td>15.8</td>
</tr>
<tr>
<td>Politicians</td>
<td>50</td>
<td>10.3</td>
</tr>
<tr>
<td>Contracted providers</td>
<td>23</td>
<td>5.2</td>
</tr>
<tr>
<td>Professional groups</td>
<td>18</td>
<td>3.6</td>
</tr>
<tr>
<td>Medical professionals</td>
<td>14</td>
<td>2.8</td>
</tr>
<tr>
<td>Patient groups</td>
<td>14</td>
<td>2.8</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>2.8</td>
</tr>
<tr>
<td>Academics</td>
<td>12</td>
<td>2.5</td>
</tr>
<tr>
<td>Government (other than MoH)</td>
<td>6</td>
<td>1.2</td>
</tr>
<tr>
<td>Local body politicians</td>
<td>2</td>
<td>0.4</td>
</tr>
</tbody>
</table>

*Percentages do not add to 100%. Abbreviations: MoH, Ministry of Health.
method, particularly the rural adjuster, which included patient transport. They had not kept up with inflation and the adjuster did not cover costs.27 However, there was a dearth of explanations as to how the formula could be improved. Phrasing also appeared to erroneously imply that certain DHBs’ funding had been reduced in absolute terms. On the other hand, DHB representatives also often emphasised efforts to live within budgetary restrictions or refused to comment. Comment from the MoH tended to emphasise that funding allocations were never cut and were increased annually.

Political aspects

Following its introduction in 2003, the PBFF has remained in place largely unchanged during the period of analysis, bridging both Labour- and National-led governments. Correspondingly, consecutive Labour and National-led governments have defended the formula, though both parties have also criticised it during their time in opposition. While in opposition, National MPs highlighted the strain population-based funding placed on DHBs. Many of National’s comments focused on the formula’s effect on health services, where these services were generally being cut or compromised.28 After being elected in 2008, National appeared to change their rhetoric in defence of the formula. When facing criticism over the formula, National often rebutted that a Labour government introduced it.29 The Labour-led Government (1999–2008) advocated the formula as a method of fairly distributing funding across the country. While in opposition, Labour has called for comprehensive review of the formula and has criticised the funding levels received by certain DHBs and rural areas. In recent years, both National and Labour have acknowledged a lack of transparency surrounding the PBFF and health funding allocations and supported the need for greater clarity and public discussion around funding models.30,31

Discussion

The media has a well-established role in framing the debate on health policy, acting as a vehicle for both information and opinion on key policy issues.32–34 Internationally, analysis of news media coverage has been used to evaluate attitudes towards and the impact and success of health policies, including healthcare funding.32,33,35 The distribution of healthcare resources is of significant public interest in New Zealand and is often the subject of intense public debate.4,36 News media coverage has previously been used to explore the effects of variations in health policy decisions across the DHB sector,6 lending insights into the factors and circumstances affecting nationally consistent provision of health services. Viewing the PBFF through a news media lens, we sought to explore the contextual issues and perceptions surrounding the DHB funding allocations, developing a national picture of the impacts of the PBFF based on regional perspectives.

The patterns and content of media reporting on the PBFF have several implications. First, they suggest general discontent with the PBFF model across the DHB sector. Typically presented in a negative light, the PBFF was most commonly framed against a background of financial struggle and resultant impacts on health services and staff. The underlying reasons centred on the failure of the health funding model to adequately account for the pressures placed on DHBs as a result of various geographic and demographic characteristics. These issues tended to be characterised as idiosyncratic challenges facing a given DHB; however, aging populations and difficulties associated with either rapid or static population growth and rurality were common concerns. Although much was made of the balance sheets of DHBs, contrasting funding allocations across the DHB sector created a tacit atmosphere of ‘winners’ and ‘losers’ under the PBFF within the media coverage.

Second, the geographic imbalance in reporting volume suggests that frustration with the PBFF is particularly keenly felt in the South Island. One explanation for this regional bias may lie in the legacy of historic funding arrangements. The PBFF was introduced in an attempt to address historic imbalances in health funding between regions and to push newly established DHBs towards a position of funding equity. Funding allocations were imposed gradually with the proviso that no DHB would ever receive an absolute reduction in funding. However, those DHBs deemed to be over-funded under the new formula
received progressively smaller shares of funding relative to other DHBs. For some regions, such as Canterbury and Otago, this generated considerable concern around the impacts of a sinking fiscal lid in an already strained financial environment,37,38 as reflected in the media coverage. However, although contributing to the comparatively high volume of reporting in the South, financial pressures do not fully explain variations in media coverage across the country. The focus on Vote Health share reductions was concentrated early on in the analysis period and decreased over time as funding allocations reached target levels,39 suggesting DHBs adapted to the new funding arrangements. Furthermore, while many articles covering the PBFF mentioned DHB deficits in the South Island, they appeared far less frequently in articles about North Island DHBs, despite these DHBs posting numerous deficits over the past 13 years.40

The regional variation in media coverage was likely also influenced by the rurality of certain DHBs. Rurality is known to affect the accessibility of health services in New Zealand,41,42 and creates a diseconomy of scale for smaller DHBs (on a per capita basis).1,43 Some costs associated with rurality are adjusted for within the PBFF,2 though the numerous articles and comments identifying rurality as an issue suggests there may have been dissatisfaction with the level or manner of adjustment for these South Island DHBs. There also appeared to be a mismatch between those DHBs identifying rurality as an issue and those DHBs receiving the highest shares of the rurality adjustor. For example, Northland and Waikato DHBs received among the highest shares,2 yet neither identified issues with rurality in media coverage. These DHBs have enjoyed relatively strong financial health, which could have mitigated funding pressures associated with rurality.44,45 In contrast, South Canterbury and Taranaki DHBs receive relatively small shares of the rurality adjustor, yet both identified rurality as an issue. The prominence of the rurality theme is perhaps also related to the dominance of Southern reporting. As with rurality, ethnicity and deprivation are factors which may affect the access and use of health services in New Zealand,46–49 yet neither have featured prominently in media reporting on the formula. Unmet need features prominently outside of the context of the PBFF, though it likewise received relatively little attention in the context of the funding formula.50

Third, the weight given to opinions of key interest groups in the media points to the relative roles of different interest groups framing media coverage as well as implying partiality in media coverage. The dominance of opinions from those within the DHB sector suggests that DHBs themselves play an important role in influencing the media’s narrative.32,51 Although often critical of the PBFF, many DHB comments were also comparatively conservative, possibly pointing to acceptance of the PBFF within the sector or alternatively a symptom of political restraint. In comparison, the more incendiary comments offered by politicians illustrate the protean nature of politics, with political rhetoric linked to power. News media outlets may themselves have an interest in influencing health policy. One indication of this is the dominance of coverage by the Otago Daily Times (ODT) over the analysis period in combination with a particular focus on key themes including rurality, transparency and the PBFF review. The ODT is New Zealand’s only nationally-owned newspaper and has a strong focus on policy issues affecting the southern regions. While the large volume of articles in the ODT further highlights a sense of misgiving surrounding the PBFF model in the southern regions, it also supports the notion of mass media acting as policy contributors in the PBFF debate, rather than merely a conduit for the healthcare visions of other key interest groups.36,52 Notably, there was limited comment from independent commentators in the media, which may create barriers to impartial debate.32 Furthermore, in combination with a focus on financial and health services difficulties, the attention given by the media to voices with a vested interest indicates a tendency towards sensationalism in reporting on the PBFF.21

Fourth, temporal patterns in media reporting suggest DHBs and politicians and the media may be using pivotal points in the policy process to advocate for change to the PBFF model. The first peak in media attention coincided with the introduction of the PBFF. Nationally, this period also corresponded
with the greatest emphasis on Vote Health share reductions in the media, drawing public attention to the potentially detrimental effects of the new policy on DHBs.

The second spike in the number of articles and negative attitudes recorded coincided with the release of the Government's most recent review of the PBFF; over a third of articles mentioning a review were published in that year alone. This period represented a key window in which change to the PBFF was under consideration. The previous review, conducted in 2007, failed to elicit a comparable spike in media attention, perhaps indicating rising interest and levels of unease with the current healthcare funding paradigm.

**Strengths and limitations**

Our findings contribute to a growing body of research on funding allocations in New Zealand, capturing a comprehensive picture of reporting on the PBFF over the majority of its lifetime and across the country. The combination of qualitative and quantitative data offers insights into the key patterns and themes surrounding the PBFF as it is reported in the media, enhancing our understanding of the state of health funding in New Zealand and how the PBFF has been presented to the public. Our methodology is comparable to other media content analyses. While some authors have argued that codes should only be created a priori to avoid the introduction of observer bias, our justification for a data-driven method of creating codes is the need for flexibility in a poorly researched area where existing literature could not guide us on the themes and issues we were likely to encounter. Although our study included all available news media stories over the 2003–2016 period, scarce media coverage of some North Island DHBs makes it difficult to identify issues and trends in those regions. Furthermore, the relatively small amount of research on the PBFF creates difficulties when comparing our data and conclusions with other studies. Nevertheless, our findings are consistent with international literature, demonstrating the importance of the news media in framing health funding policy debates.

**Conclusion**

At the nexus of the themes emerging from media coverage of the PBFF lie perceptions of fairness of the model. Although the role of the media in steering policymaking is controversial it plays a crucial role in influencing perceptions of the public. The PBFF may be intended as an impartial mechanism for the distribution of health funding throughout the country, but public acceptance of resource allocation decisions hinge on value judgements and a sense that they result from a fair process. Our findings show that media coverage consistently links the PBFF to the cause and effects of financial pressures experienced by DHBs throughout the country, creating a sense that funding allocations are inequitable and that DHBs are not entirely comfortable with the PBFF model and its impacts on DHB income. The persistently high volume of reporting in the southern regions implies that the formula has been particularly poorly perceived in the South Island. At a national level, the pattern of media reporting and the themes identified suggest the PBFF has failed to keep pace with the challenges facing DHBs such as aging populations, the diseconomies of scale related to rurality and health workforce recruitment and retention.

While the PBFF may act as somewhat of a lightning rod for frustrations over financial strain in the DHB sector, the media narrative points to a number of lessons for policymakers. First, it highlights the need for transparency around the PBFF model and the process and principles underpinning PBFF allocations. Second, the dearth of independent comment within the media is an argument for policymakers to support the development of independent expertise on the PBFF model in order to provide credible and balanced viewpoints on the distribution of health funding. Lastly, in light of ongoing financial disparities across the DHB sector, it reinforces the importance of monitoring of the impact of PBFF allocations throughout the country. With increasing healthcare costs combined with an ageing population, a growing prevalence of chronic illness and persistent disparities in healthcare access and outcomes, it will become increasingly important that Vote Health is distributed as fairly and as effec-
tively as possible. A greater understanding of the interplay between the PBFF and other factors which may contribute to DHB financial strife would be useful in furthering this goal and in optimising New Zealand’s healthcare system.

**Competing interests:**
Nil.

**Acknowledgements:**
This study was funded by the University of Otago Dunedin School of Medicine.

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