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Review of Voluntary Bonding Scheme for Veterinarians

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Review of Voluntary Bonding Scheme for Veterinarians

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Aim of Review

As part of its responsibilities MPI regularly examines its portfolio of investment programmes. It therefore decided to review the Voluntary Bonding Scheme (VBS) to ensure it was effectively meeting both the scheme's objectives, and the wider strategic objectives of MPI and the Government. In this context this review seeks to address key questions about whether the VBS is still relevant and appropriate in addressing rural veterinary staff shortages. It also investigates whether its objective is being met effectively and in a financially responsible and accountable way and what changes, if any, might be appropriate.

Voluntary Bonding Scheme (VBS) for Veterinarians

The VBS for veterinarians has been in operation since 2009. It is an incentive of $11,000 per annum. up to a maximum of $55,000 in total, before tax which is paid directly to graduate vets to encourage them to work in rural vet practices focused on servicing production animals. It aims to change the willingness of graduate vets to work in these eligible practices. It is normally open to 30 veterinary science graduates from Massey University per year who are New Zealand citizens or permanent residents. Including the 2019 application round, there have been 318 VBS applicants approved in total since the scheme's inception. 31 per cent of these graduates have been paid their full $55,000 so far while 43 per cent are still progressing through the scheme. 26 per cent withdrew before reaching the end of the five year programme but only 5 percent did not get any payment as they did not remain in the scheme serving production animals for at least 3 years.

Findings

To be effective, the VBS should have changed the willingness of graduate vets to work in eligible production animal focused practices. These practices should, as a result of the VBS, have less gaps in their staff line up than they otherwise would have had and be better able to service their farming clients.

The limited available data, interviews and a survey of eligible vet practices supports that the VBS has had a positive impact and has changed retention in eligible practices in particular. It is likely to have had less impact on attracting graduate vets to such practices.

The VBS is likely to have had a number of benefits that are open to some quantitative estimation including:

- Production and welfare losses avoided
- Prevention and production optimisation consultations undertaken
- Recruitment costs avoided
- Training costs avoided
- Staff productivity benefits gained through avoiding higher staff turnover

It also is likely to have had a number that are less tangible, qualitative benefits such as:

- Less burn out potential for existing vet staff including mental health problems
- Increased opportunity to fit in and get comfortable in a rural community

- More eyes and ears to detect biosecurity, animal welfare and food safety threats

The benefits of the VBS that are open to some quantitative estimate suggest that it is likely to cover its costs of circa $1.2 million per annum. This conclusion is strengthened if the qualitative benefits are included.

Is the objective of addressing rural veterinary shortages still relevant and appropriate and being met effectively? (Questions One & Two)

Unfortunately, there is a lack of suitable or reliable metrics for assessing the impact of the VBS on any shortage of rural vets. This left interviews and surveys as the best option for exploring these questions. The evidence from these showed that there is likely to be continued difficulties employing rural vets which would be made more acute if the VBS scheme were not in place and that those difficulties are likely to be more acute in more isolated areas.

Does the VBS's net economic benefits outweigh its costs? (Question Three)

Interviews and the survey of VBS eligible practices were also used to explore and estimate this. Several possible implications of not having the VBS were identified including:

- Staff shortages of graduates
- Burn out of existing staff
- Less focus on prevention and production optimisation
- Less time for managing the practice and higher recruitment costs
- Poor retention resulting in more time training and poorer returns on investment in training new staff
- Less resources for control of biosecurity, animal welfare & food safety risks.

Using data on vet wages, practice mark ups and recruitment and training costs it was possible to make assumptions to explore what level of effects would need to exist for the benefits of the VBS to outweigh its costs.

This exploratory breakeven analysis showed that the VBS was likely to cover its costs even if quite low levels of these listed implications were to result from not having a VBS. All of them would only need to affect around 10 per cent of eligible practices each year, at the amounts assumed, for the VBS to cover its costs. The survey of eligible practices suggested these effects would be much higher than 10 per cent without the VBS.

Possible Changes to the VBS? (Question 4 continued)

Improvements could be possible for the VBS. These include better targeting of the VBS, possibly by using an isolation index to define eligible practices similar to the approach taken by the education VBS. It may also be possible to use a two-tier system that targets the more isolated rural practices as priorities for the VBS incentive. Such changes could be combined with changes to who is targeted by the VBS.

It might also be worth considering allowing VBS applications from people who are returning from overseas after a few years away. This could increase the pool of eligible vets who could both provide

vet services in eligible practices and help pay back their student loans. This could be achieved by allowing a longer window of time in which graduates can apply.

As increasing numbers of women graduate as vets it may be worthwhile considering a more lenient definition of full-time work to assist them post maternity leave. Some deferral of VBS payments to match the difference between full time and part time hours worked might be one way of fairly achieving this.

The fairness of the balloting process that occurs when the 30 annual VBS places are oversubscribed was challenged by many of those surveyed and interviewed. This could be addressed by approaching the forecasting and budgeting of VBS costs more flexibly to allow some increases in numbers from time to time, as has occurred in the 2019 VBS selection process. Alternatively, a merits-based system which takes graduates in descending order of grades from Massey in their final year or some similar approach could be considered.

The question of the tax status of the VBS is another feature of the scheme that engendered a lot of feedback. This feedback could be addressed, and administrative costs from queries potentially reduced, if the transparency of the tax status of the VBS were improved. Changing the way the VBS quantum is described from a pre-tax, to a post-tax, basis could help achieve this.

Is the shortage of rural vets sufficient to justify retaining the VBS and does it continue to align with Government policy objectives, MPI strategy, and the national interest? (Question Four)

The analysis of net benefits shows that the VBS appears to be meeting its narrow objectives of cost effectively encouraging vets to work in rural practices and making a significant contribution to repayment of student loans. Adding in the qualitative benefits strengthens the case that the VBS continues to be aligned with Government policy objectives, MPI strategy and the national interest.

Lessons from the VBS programme that could be applied to MPI's wider portfolio of investments? (Question Five)

The lack of good data makes it difficult to monitor the performance of the VBS. Having data from well conducted surveys undertaken at the outset of a programme and then done periodically as the programme progresses are of significant value and could be considered in future programmes.

The other VBS programmes are much larger than the MPI VBS. For example, the health VBS with an annual budget of circa $7 million. It is possible that the MPI VBS could find helpful synergies or more cost-effective processes by regular catch ups and comparisons with the other two VBSs.

Review of Voluntary Bonding Scheme for Veterinarians

Aims and scope of this review

1. As part of its stewardship responsibilities MPI regularly examines its portfolio of investment programmes. Some preliminary analysis indicated that the VBS scheme would benefit from closer review to ensure it was effectively meeting both the scheme's objectives, and the wider strategic objectives of MPI and the Government. In this context this review seeks to address the following key questions:

    - Is the scheme still relevant and appropriate in addressing rural veterinary staff shortages?
    - Is the objective being met effectively by the current scheme?
    - Is the scheme meeting this objective in a way that is financially responsible and accountable? and
    - Where these conditions are currently not, or are only partially being met, what changes could be made?

2. This review does not consider whether veterinary para-professionals might be included in the scheme.

Information provided to the reviewer

3. The reviewer appraised a wide range of information about the VBS provided by Investment Programmes, MPI. These are listed in Appendix C: This list included the preliminary evaluation report conducted by IPD of MPI and copies of resources used in this investigation and historical MPI documents relating to the scheme, including cabinet papers. Further documents including letters from practice managers referring to staff shortages, and some job advertisements were also provided by MPI.

Method used

Inception Meeting Tuesday 20th of August

4. An inception meeting was held with MPI on Tuesday the 20th of August. The agenda was to discuss and confirm the review objectives, method and approach; timeframes, list of stakeholders and the terms of reference interview questions.

Stakeholder interviews

5. Questions were framed using those set out in the terms of reference as our focus. Semi-structured interviews with key stakeholders and other relevant parties were undertaken as listed on page 3 of the terms of reference and set out in more detail in the document titled "List of Stakeholders for VBS Review."

Listed interviewees

6. The ten key people on page 1 of the "List of Stakeholders for VBS Review" were interviewed with one exception[1]. Some of those interviewed suggested following up with other stakeholders so the number of interviews was extended to include a representative of the Allied Veterinary Professional Regulatory Council, another Vet Council of NZ representative and a vet from the Rangitikei who had recently written a report on retention of rural vets as part of the Kellogg scholarship programme.

7. MPI sent out an email to VBS graduates and VBS eligible practices informing them of this review of the VBS. As a result of this email 19 vets proactively contacted Sapere. Seventeen of these people were interviewed, mostly by phone but a few in person[2]. 173 veterinary practices were also surveyed on their views about the performance of the VBS. These were drawn from email addresses provided by MPI that were not repeated on a fuller list of 215 email addresses. Forty vet practice representatives responded to the survey[3].

8. In all interviews a wider set of views were explored.

Synthesis and analysis

9. Notes were taken of the stakeholder interviews and cross referenced with the evidence from the document review, the MPI survey of VBS recipients and the survey of VBS eligible vet practices to formulate overall findings. Conclusions were developed against each of the review questions and used to validate findings.

Objective of the VBS

10. A key question to consider in investigating the performance of the VBS is, "what is its objective?"

11. In 2008 the Government committed to establishing a voluntary bonding scheme (VBS) to provide financial incentives to address specific workforce shortages in the teaching, medical and veterinary professions[4]. In January 2009 a briefing for the then Minister of Agriculture, Forestry and Biosecurity explained the aim of the VBS for graduating veterinarians as:

> **"to support retention of veterinarians in understaffed, rural areas, to assist New Zealand to retain world class standards in biosecurity, animal welfare and food safety."**[5]

[1] One person suggested that she was a bit out of date about the scheme, so we didn't interview her.
[2] Messages were left for the remaining two on at least two occasions. They two may have participated in the survey of vet practices.
[3] The response rate is challenging to calculate because the same people were emailed twice in some cases as they had different email addresses and a number of those emailed would have responded on behalf of the vet practice. It is therefore likely that the response rate was somewhere between 23 per cent and 30 per cent.
[4] Source: file Cab paper CBC (08) 544.pdf, 12 December 2008, Page 29
[5] Source: file "Briefing B08-381.pdf", 21 January 2009, Page 6

12. It also stated that:

> **"Recruitment and retention difficulties are characterised by difficulty filling vacancies and retaining staff within an employment organisation. For veterinary practices in areas of greatest need this may be due to remoteness, practice size and other factors.** [6]

13. The VBS for graduating veterinarians began in February 2009[7]. The MPI website describes the purpose of the VBS as:

> **"to help ease the shortage of rural veterinarians working with production animals, the Ministry for Primary Industries (MPI) set up the Voluntary Bonding Scheme for Veterinarians. The scheme aims to attract and retain graduate vets into rural practice. It provides a payment to recently graduated vets who work in an eligible practice with a primary focus in production animals."**

14. The terms and conditions for the VBS for the 2019 application round[8] contained a statement under the heading 'Background' that included the aim stated in paragraph 10 above as well as the following:

> **"The Scheme also aims to make a significant contribution to repayment of student loans for those Graduates who have them but will be available to those without loans or those who have already paid off their loan."**

15. Drawing on the statements above about the scheme's goals, it could be summarised as: "*to support retention of veterinarians in understaffed, rural areas, to assist New Zealand to retain world class standards in biosecurity, animal welfare and food safety.*" and "*For veterinary practices in areas of greatest need this may be due to remoteness, practice size and other factors*." The problem is defined as a lack of vets in rural areas due to remoteness etc. The action is to use the VBS to attract and retain vets, graduate vets specifically, to these areas. The wider policy objective is explicitly to retain world class standards in biosecurity, animal welfare and food safety. In addition, it is to make a significant contribution to repayment of student loans for graduates who have them but is still paid to those without them. Commercial gains by practices or farmers are not explicitly cited. The focus on production animals rather than any other animals is clear.

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[6] Source: file "Briefing B08-381.pdf", 21 January 2009, Page 7
[7] See file "Research Doc B15-323_Meeting with NZ Veterinary Association.docx", Page 9
[8] Voluntary Bonding Scheme for Veterinarians, Terms and Conditions, Page 1, see https://www.agriculture.govt.nz/dmsdocument/36762-2019-vet-bonding-scheme-terms-and-conditions-pdf

Features of the VBS

16. Currently the VBS is normally open to 30 veterinary science graduates from Massey University per year who are New Zealand citizens or permanent residents, who have been offered work[9] at an eligible practice and who graduated in the 12 months prior to submitting their applications.

17. Eligible practices are required to have:

- a production animal[10] focus (greater than 60 percent of the turnover generated by the Practice is generated from production animals)[11]; and
- good employment practices, including having systems in place to support a graduate's personal career development[12]

18. The programme runs for 5 years unless a participant leaves it earlier. Participants receive a first payment of $33,000 after 3 years, and further payments of $11,000 after the fourth and fifth years in the scheme.

19. Other key features of the VBS are:

- The annual amount of the payment incentive of $11,000 is taxable with the balance being credited to the student loan, if the student has a loan, or directly to the student.
- It has a receipt date for first applications for each round (for the 2019 round applications opened on 12 August 2019 and closed at 3pm on 26 August 2019)
- It has a list of eligibility criteria for the graduates and the veterinary practices.
- It has a guideline for processing all applications up until the cap of 30 graduates is reached.
- It also has a guideline for handling applications received after the cap is reached. This involves holding another ballot of remaining applicants to make a secondary list of candidates. If someone leaves the scheme in their first 2 years or there aren't enough applicants in the next application round the first eligible person on the secondary list will be asked to join the scheme.

[9] Full-time means employment for at least 35 hours per week, see VBS Ts & Cs, Page 1 Definition of Terms.
[10] Production Animal means an animal that is farmed for food or fibre, including but not limited to, cattle, sheep, goats, poultry, deer and pigs, and excluding horses. See VBS Ts & Cs, Page 1 Definition of Terms.
[11] Overall Production Animal Focus means that servicing production animals is a core focus of the practice either because it is the only practice servicing production animals and/or working dogs in the area or because more than 60 percent of the turnover generated by the practice is from servicing production animals and/or working dogs.
[12] Good employer practices mean that the practice follows generally accepted guidelines for being a good employer, such as those published by the Department of Labour. This will include having a system in place whether formal or informal to ensure that there is support for the graduate in their transition from study to work. see VBS Ts & Cs, Page 1 Definition of Terms

- It has guidelines for assessing whether taking parental leave or transferring practices allows a recipient to remain eligible for the scheme.
- International students are excluded. [13]

20. There is an appropriation in place of $1.65 million per year under Vote: Primary Industries to fund the VBS. The initial funding for the VBS was through fiscally neutral transfers across Vote Agriculture and Forestry, and Vote Biosecurity.[14]

VBS Participants

21. Figure 1 below sets out the numbers of VBS recipients in each year's application round since the VBS began in 2009. It shows that up to and including this year's application round there have been 318 applicants approved in total. Of these 31 per cent, or 98 graduates have so far been paid their full $55,000 while 43 per cent are still progressing through the scheme. 26 per cent or 83 applicants have withdrawn before reaching the end of the five year programme.

Figure 1 : VBS Recipients Data

Year	Total Approved	Total Finished VBS Paid $55K	In Progress	Total Withdrawn		Withdrawn in first 3 years Not Paid VBS$	Withdrawn after 3 years Paid $33K	Withdrawn after 4 years Paid $44K
2009	23	16		7		2	2	3
2010	22	15		7			4	3
2011	31	20		11			9	2
2012	30	17		13		2	6	5
2013	30	17		13		4	7	2
2014	30	13	1	16		2	11	3
2015	30		17	13		4	8	1
2016	30		27	3		2	1	
2017	30		30					
2018	30		30					
2019	32		32					
Totals	**318**	**98**	**137**	**83**		**16**	**48**	**19**
	100%	31%	43%	26%		5%	15%	6%
		Per cent of Withdrawals Only		100%		19%	58%	23%

22. The data shows that there tends to be very few withdrawals from the VBS in years 1 to 3. However, withdrawals lift in the years 4 and 5. Of those that withdrew, only 20 per cent or 16 applicants left before reaching three years in the scheme and therefore did not receive any VBS funding; 58 per cent, or 48 applicants, reached three years on the programme and a further 23 per cent or 19 reached four years.

[13] Source: file "Research Doc Letter re 2009 VBS Review.docx", Page 5
[14] See file "Cab paper SOC (09) 6.pdf", 16 February 2009, Page 2

23. Earlier research[15] identified that the recurring reasons for withdrawal have included:

- Moving overseas with no intention to return within 12 months.
- Moving to a new role where either role or practice is not eligible (e.g. not production animal focused).
- Returning to work on a part time basis after taking 12 months parental leave.
- Not returning to work after taking parental leave.
- Health reasons preventing ability to remain working with large animals.

24. It is notable that over the last 5 years the VBS scheme has received around 30 applicants. However, in the 2013 round 38 eligible applications were received but 30 were selected through a ballot process.[16]

Background: VBS origins, previous reviews, consultations and amendments

25. This section addresses how and why the VBS was established and how it has changed over time in response to previous reviews and consultations.

Early history of the VBS

26. Cabinet originally agreed that the annual amount of the incentive payment for veterinary graduates and those in the health and education sectors would be within a band of 10 to 20 percent of the average graduate student loan. The levels of the payments were set so that the average student loan for each profession could be repaid within five years and better recruitment and retention outcomes could be achieved in hard-to-staff and understaffed areas. For veterinary graduates the payment was set at $11,000/year pre-tax, estimated at $7,150/year after tax, with data from students who last studied in 2007 used to calculate an average year 5 graduate student load of $62,900. Based on these figures the after-tax payment was 11.3 percent of the average student loan and this average loan would be repaid in the first half of the 6th year from starting in the VBS.[17]

27. As requested by Ministers, MAF (MPI's predecessor) tackled defining 'hard-to-staff' and 'understaffed' and the point that someone was no longer considered a graduate and retraining and parental leave provisions etc.[18]

28. MAF relied on information from the NZ Veterinary Association (NZVA), Veterinary Council of NZ (VCNZ) and Massey University Veterinary School to implement the VBS and set its parameters.

[15] See "Research Doc VBS Industry meeting 9.6.16.docx, Page 2
[16] See "Research Doc Basic Facts on VBS.docx, Page 2"
[17] See file "Cab paper SOC (09) 6.pdf", 16 February 2009, Page 10 & 11
[18] Source: Ibid, Page 31

Different approaches to setting graduate eligibility were explored. These included geographic area and practice type as opposed to demonstrating hard to staff positions[19].

29. In early 2009 in the transition period MAF proposed that an "understaffed rural area" should be defined as:

- a rural area (less than 30,000 people);
- where there were a low number of veterinarians to livestock units compared to the rest of New Zealand; and
- where veterinary practices had the greatest difficulty recruiting & retaining the number of veterinarians necessary to service the livestock-based industry needs[20][21][22].

30. It stated that this definition of "rural" excluded main urban areas which were defined by Statistics New Zealand as large and centred on a city or main urban centre with a minimum population of 30,000. Therefore, the scheme did not exclude satellite or independent urban areas such as Feilding, Rangiora and Bulls.

31. Based on this definition MAF proposed that for the transition period the areas determined as "understaffed, rural areas" be defined as:

- the territorial authority of Gisborne EXCLUDING the main urban area of Gisborne;
- the territorial authority of Wairoa;
- the territorial authority of Central Hawkes Bay;
- the territorial authority of Tararua;
- the West Coast region of the South Island covering the territorial authorities of Buller, Grey and Westland; and
- the territorial authorities of Southland and Gore.[23]

32. Under these transition rules if a graduate was accepted into the VBS and an understaffed, rural area changed, the student would remain eligible[24]. It also noted that "*Given the aim of the scheme, MAF is also exploring the possibility of providing the opportunity for eligible graduates to undertake animal welfare and biosecurity response training each year that they are eligible for the scheme.*"[25]

33. Veterinary graduates were defined as those graduates who had completed their veterinary science qualification within 12 months of applying for the scheme[26]. Leave provisions were

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[19] Source: file Cab paper CBC (08) 544.pdf, Page 25
[20] Source: file "Briefing B08-381.pdf", 21 January 2009, Page 3
[21] Source: file "cab min SOC (09) 2-1.pdf", Page 3
[22] Source: file "Cab paper SOC (09) 6.pdf", 16 February 2009, Page 12
[23] Source: file "Briefing B08-381.pdf", 21 January 2009, Page 7
[24] Source: file "Cab paper SOC (09) 6.pdf", 16 February 2009, Page 26 (electronic page numbering)
[25] Source: "Briefing B08-381.pdf", 21 January 2009, Page 8
[26] Except in the transition year when graduates since 2005 would be eligible if they were working in an understaffed, rural area at the time that the scheme was introduced.

defined as a minimum of 14 weeks of parental or retraining leave (consistent with wider paid parental leave regulations). Also, absences of up to 14 weeks in a 12 month period would not affect the time period a graduate needed to complete to receive the incentive payments. If the graduate still held an employment agreement, any additional absence over 12 weeks would be a pause in completing scheme requirements.[27]

2013 VBS review

34. The scheme was last reviewed in 2013. The review found that anecdotal evidence provided by the NZVA and Veterinary Council that specific regions were understaffed was not supported by data from the Veterinary Council's workforce survey. This review caused changes to the terms and conditions which had been requested by the NZVA and VCNZ. These included the process for applicants who missed out on a place in the scheme.[28]

NZVA views December 2015

35. The same views that the VBS may not be addressing the needs of some of the more remote areas of New Zealand were expressed in 2015 by the NZVA[29]. However, data again did not appear to suggest that there was an obvious imbalance in the location of participants in the scheme, between those who had worked at practices in New Zealand's more remote regions, and those closer to major centres.[30]

Issues raised in 2016

36. After about 5 years the NZVA wanted MPI to review the VBS. It argued that the scheme should prioritise applicants who worked in practices in regions that were 'hard to staff'. Some of the Association's members had expressed concerns that applicants who were based close to major centres were receiving places at the expense of applicants working in more remote areas. At the time MPI didn't support a review on the basis that there wasn't much evidence of such an effect and that the number of applicants had only marginally exceeded the number of annual vacancies in each of the preceding three years[31].

Industry discussions in 2016

Balloting system

37. In 2016, industry discussions debated the balloting system. Under the VBS if there are 30 eligible applicants, they each receive $55,000 (before tax) over the 5 year period. If there are less than 30, they still each receive $55,000. If there are more than 30 applicants, a random

[27] Source: "file "Cab paper SOC (09) 6.pdf", 16 February 2009, Page 13 (electronic page numbering)
[28] See file "Research Doc B15-323_Meeting with NZ Veterinary Association.docx", Page 10
[29] The NZVA was established in 1923 and has a membership of 2,000 New Zealand veterinarians. It aims to promote excellence in the veterinary profession.
[30] Source: "Research Doc B15-323_Meeting with NZ Veterinary Association.docx", Page 5
[31] Source: "Research Doc Basic Facts on VBS.docx", Last printed 25 November 2015, Page 1

ballot is held, and the first 30 names picked are accepted into the scheme.[32] A suggestion was made at the meeting that if there were less than 30 applicants, the fund could be divided evenly between those who applied, and each would receive a higher grant; and conversely if there were more than 30 applicants, the fund would once again be divided evenly between them, but each would receive a smaller grant. A subsequent poll of Massey students showed more support for the funding amount to remain the same ($55,000) rather than to have the amount received diluted but with a more robust assessment process and this was supported by NZVA and VCNZ.

38. It was thought that a randomised ballot was not the most effective way to choose participants in rounds where there were more than 30 eligible applicants. This method led to some remote practices missing out, even though they possibly had more difficulty recruiting new staff. Although since 2014 there had been exactly or close to 30 eligible applications. It was thought that when job market improved, or if the timing of the fund round changed, this issue was likely to become more problematic again.[33]

Timing of VBS application rounds

39. Another area of discussion was the timing of the VBS application round which was in February each year. It was suggested that a large proportion of potentially eligible students were not able to secure jobs by then. Discussion was held about whether changing the timing of the funding round would be more appropriate.[34]

Total income vs professional fees

40. Discussions in 2016 also covered the fact that some practices clearly had a production animal focus even though they would not meet the criteria of 60 percent of professional fees being generated through servicing production animals. It was pointed out that some practices had a reasonably large proportion of their professional fees generated through small animals, but most of their total turnover came from production animal servicing. It was suggested that the criteria be changed to include practices which generated a minimum of 60 percent of total turnover through the servicing of production animals. It was thought that this might be more equitable.[35] This was confirmed by a subsequent poll of the NZVA which supported this approach[36]

Consultations and changes in 2017

41. After consultations with the sector in 2016 a number of changes were made to the VBS in 2017. At that time industry representatives had said that they preferred a prioritisation process so

[32] Source "Research Doc VBS Industry meeting 9.6.16.docx", Page 3. Other options are discussed here.
[33] Ibid, Page 3
[34] See "Research Doc VBS Industry meeting 9.6.16.docx", Page 4
[35] See "Research Doc VBS Industry meeting 9.6.16.docx", Page 4
[36] See "Research Doc Memo to Director regarding 2017 VBS changes.doc", Page 2

graduates would be more likely to be accepted in the most hard-to-staff areas relative to those areas that were more attractive to graduates[37]. Another option giving higher levels of funding to applicants from prioritised areas, and less funding to applicants from low priority areas was also discussed. It was agreed that this would be more difficult to manage as people within each cohort would be receiving different amounts of funding.[38]

42. In January 2017 following feedback from the sector, MPI Investment Programmes proposed changing the timing of the VBS funding round from February 2017 to 14-25 August. This timing reflected feedback from graduates and was more in line with when most graduates had employment confirmed. It had no impact on other funding rounds within investment programmes.[39] At the same time, MPI proposed amending the target of 60 percent of professional fees for practices focused on production animals to 60 percent of total turnover. This reflected the 2016 feedback from the industry and was designed to allow some practices that might have otherwise been very close to the criteria to be eligible.[40]

Farm dogs

43. Feedback from the sector also questioned whether farm dogs were defined as small animals versus contributing to production animal work on farms. It was commented that several more remote practices serviced a lot of small animals, but the majority of these were working farm dogs which were critical for production animal farming.[41] As a consequence MPI Investment Programmes proposed including farm/working dogs as eligible work for VBS graduates and practices. The following definition of a working dog was developed in consultation with NZVA and VCNZ:

"Working dog (also known as 'herding' or 'stock dog') means a dog for which the primary purpose is to work on the farm to assist in shifting or herding livestock. This excludes dogs that live on farm but are primarily kept as pets."[42]

Key Issues raised by 2019 Survey of VBS recipients

44. MPI carried out an on-line survey to check on whether the VBS was meeting its purpose in early 2019. The survey was sent to 284 recipients on 8 February 2019 and one further recipient on 27 February. 142 surveys were started and 134 completed – a 47 percent completed response rate. The last question sought general feedback on the VBS. 88 VBS recipients responded – 31 percent.

45. Respondents were overall very positive about the VBS. Two problem areas stood out above others for VBS recipients:

[37] Source: "Research Doc Memo to Director regarding 2017 VBS changes.doc", Page 2
[38] Source: "Research Doc Memo to Director regarding 2017 VBS changes.doc", 26 January 2017, Page 1
[39] Source: "Research Doc Memo to Director regarding 2017 VBS changes.doc", Page 2
[40] Ibid, Page 2
[41] Ibid, Page 2
[42] Source: "Research Doc Memo to Director regarding 2017 VBS changes.doc", Page 2

- ***Tax*** : 22 VBS recipients commented that the grant should not be taxed, and if so not as a secondary tax.
- ***VBS targeting***: 15 VBS recipients felt that if the scheme is over-subscribed the truly isolated rural areas should be ranked and funded first rather than the ballot system which treats every application as equal. Areas like the South Island, West Coast and Southland, and North Island East Coast, Northland and Taihape were cited as rural, with grads requiring incentives to stay. Hamilton, Taupo and Auckland were cited as not rural. It was thought that preference should be given to more rural positions.

46. The early history and earlier reviews, consultations and amendments provide the background against which this review is taking place. In the following sections each question from the terms of reference is addressed in turn.

Question One: Is the objective of addressing rural veterinary shortages still relevant and appropriate?

47. Question one addresses whether the objective of addressing rural veterinary shortages still relevant and appropriate and was accompanied by five subsidiary questions as follows:

- *Which indicators, if any, signal that there is a shortage of rural veterinarians?*
  - *What are the potential consequences of any such shortage?*
  - *Is any such shortage uniform around rural New Zealand, or is it concentrated in particular practice types, geographies or regions, farm systems, etc.?*
- *Have any such indicators changed since the introduction of the scheme?*
- *Is the goal of addressing staff shortages still aligned with the Government's policy objectives, MPI's strategy, and the interests of Aotearoa New Zealand?*

48. The relevant papers from the VBS's establishment in 2008/09 do not provide a statistical basis to allow monitoring over time of any shortage of rural veterinarians. Discussions with Statistics NZ indicates that there is a lack of statistics on veterinarians. The 2018 census relates that there were 2,475 veterinarians and 2,145 veterinary nurses counted in the section on occupation.[43] This level of granularity cannot assist in investigating whether there is a shortage of rural veterinarians. Given this, the best source of alternative data is that collected by the VCNZ in its annual "Workforce Reports" with the latest being for 2017/18.[44] These summarise the results of the VCNZ's workforce surveys. This data is collected from questionnaires sent to veterinarians at the time they apply for their Annual Practising Certificates (APCs) and completed by them voluntarily.

[43] Covers the employed usually resident population count aged 15 years and over.
[44] For example see http://www.vetcouncil.org.nz/pubs.php

49. Two recent analyses by MPI[45] have explored whether the data in the VCNZ workforce reports could throw any light on the question of whether there was a shortage of rural vets. The first of these analyses focused on the potential to measure variables such as:

- The percentage of graduate vets completing the VBS requirements compared to total concurrent vet FTEs
- FTEs in qualifying practices
- FTEs in defined regions
- Value of stock saved

50. This first paper viewed the following data as being of relevance to the performance of the VBS:

- Animal Practice Certificates (APCs) issued per financial year for the 73 territorial land authorities (TLAs).
- Livestock units (LSUs)[46] per financial year for the TLAs.
- Retention rates for NZ graduates (measured by number of graduates taking out APCs each year after their graduation) note that only 2002 to 2011 data was available.

51. This analysis concluded that to answer questions about the performance of the VBS it would be ideal to measure demand (vet hours required) and supply (vet hours available) at the TLA level. But it noted that the Vet Council's data was not detailed enough to do that. This paper did observe that since 2009, when the VBS commenced, livestock numbers had declined while vet numbers had increased (measured as FTE's x average weekly hours). It commented that the downward trend in LSUs was driven by the decline in sheep numbers. It also noted that there had been a steady increase in the number of veterinarians working less than 40 hours per week (mainly to carry out family care).

52. Importantly, this MPI analysis found that the retention rate of VBS grads in the veterinary profession was greater than that for all Massey grads for the first 3 years of work but there was no significant difference by the fifth year. This comparison covered the period between 2002 and 2011. Finally, the paper averred that the VBS's attraction objective was probably superfluous as graduates were already committed to the rural practice.

53. The second MPI VBS 'Options" paper concluded that "*ultimately, none of the [measurement] options offer a straightforward and reliable way to measure the impact of the scheme in the long-run and none are likely to be found. However, there are methods that improve on [the] status quo.*" The methods that it proposed that might improve on the status quo were the same metrics bulleted in paragraph 49 above.

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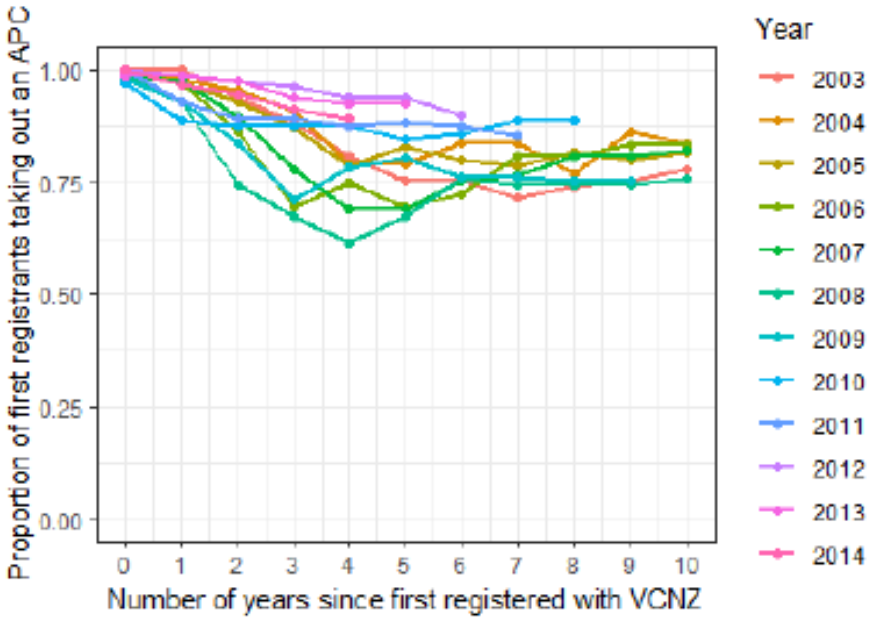
[45] "Analysis of VBS performance based on Vet Council data" file name "VBS performance v3 (1)" and "Possibilities for measuring VBS performance" file name "VBS Option". Both appear to have relied on work by Matt MacFarlane. Both documents are not dated but were probably written in late 2018 or early 2019.

[46] LSU was defined as having an annual feed requirement of a "standard" 55 kg breeding ewe rearing a single lamb of 520 kg of good quality pasture dry matter per year. Beef and dairy cattle are between 4 to 8 LSUs per animal while sheep range from 0.7 to 1.3 LSUs.

54. This review agrees that the available metrics are not straightforward or reliable for assessing the impact of the VBS on any shortage of rural vets. Trends in LSUs compared to vet workforce numbers and hours are too removed from a direct measure of any shortage of vets working on production animals. The LSUs are an average that obscures this sort of detail. For example, the gulf between the relatively low demand for vets on sheep and beef farms, compared to high demand for vets on dairy farms is not visible, but servicing dairy farms is a major demand pressure on many production animal focused practices. Vets with mixed time allocation between production animals and other animals is also likely to complicate the data. As the analysis attempts to focus in on only rural areas by, for example, excluding TLAs based solely in cities, the amount of data on which to attempt to do statistical analysis falls and the risks of anomalies in the data rises.

55. The MPI analysis also utilised VCNZ retention data that tracks vets keeping their annual APCs current. Figure 2 below repeats a chart from the VCNZ's Workforce Report 2017–18 which maps the proportion of New Zealand veterinary graduates taking out an Animal Practice Certificate with the VCNZ one to 10 years following their first year of registration between 2003 and 2014. This covers all vets. The impact of the VBS on this data set is therefore likely to be significantly diluted. However, it does appear to show some level of improved retention of vets overall since 2009. Retention of vets taking out their APCs who started doing so in 2010 onwards appear to have higher retention rates than those before the VBS was put in place in 2009.

Figure 2 : Retention of NZ Vets in the veterinary profession.



Source : Veterinary Council of New Zealand Report "Workforce Report 2017–18", Page 20.

56. However, a variety of other factors may have influenced this result including the impact of the Global Financial Crisis (GFC) in 2008. In interviews a number of vets commented that the GFC meant less opportunity for young vets to work overseas for a few years after 2008. This would have improved the number staying in New Zealand. So Figure 2 can only suggest that the VBS

may have had a positive impact but it is not possible to separate out other influences in the data.

57. For these reasons this review also concurs that it does not appear that suitable metrics are likely to be found given the limited granularity of Statistics NZ on vets. Because of this, it is not possible to address the subsidiary questions about the potential consequences, nature, location or trends in any shortage of vets by using analysis of statistics. This leaves interviews and surveys as the best option for exploring this question. The interviews and a survey of eligible vet practices did provide some backing that the VBS has had a positive impact and has changed retention in eligible practices, in particular.

58. The following are typical quotes from the interviews:

> **"It's an important part of the package that attracts and retains"[47]**
>
> **"It may not be the deciding factor but if it wasn't available it would make a difference."[48]**
>
> **"Without the VBS we'd be in the dog box."[49]**
>
> **"Graduate vets ask you if you're rural bonded. It's very important to them".[50]**
>
> **VBS has certainly made rural practice a much more attractive option.[51]**

59. The final subsidiary question asks "*Is the goal of addressing staff shortages still aligned with the Government's policy objectives, MPI's strategy, and the interests of Aotearoa New Zealand?*" We explore the degree to which the VBS is aligned with these goals as we address the costs and benefits of the scheme and potential changes in upcoming sections of this report.

Question Two: Is this objective being met effectively by the current scheme?

60. Question two addressed whether the objective of the VBS was being met effectively by the current scheme. It was accompanied by six subsidiary questions as follows:

- *If any, which improvements in shortage indicators can be attributed to the scheme? To what extent?*
  - *Are there any unintended/spill-over consequences (including beneficial ones) from the scheme that can be identified?*

[47] Taranaki rural vet practice interview
[48] Ibid
[49] South Island rural vet practice interview
[50] Ibid
[51] South Island Veterinary Director

    - *Is the scheme effectively incentivising veterinarians who would otherwise practice in ineligible practices to practice in eligible ones, and to what extent do these veterinarians continue to practice in rural practices during their careers (based on available data to date)?*
    - *Are there any notable factors external to the scheme that have contributed to or hindered the achievement of the scheme's purpose?*
- *Are any such improvements uniform across rural Aotearoa New Zealand, or do they accrue to particular practice types, geographies, regions, farm systems, etc.?*
- *Are any such improvements likely to continue in the medium and long run under the status quo?*

61. Lack of pertinent data for analysis of any shortage in rural veterinarians makes addressing the main question, and subsidiary questions on this theme, challenging. However, the other subsidiary questions covering unintended/spill-over consequences, the VBS incentivising vets to go to and stay at eligible practices, and the impact of external factors, are more open to being addressed. We tackle these in the next section which addresses the net economic benefits of the VBS. We also attend to the question of the extent to which the VBS helps to attract and retain graduate vets in the section headed "Question Four: What changes could be made to the scheme?" subheading "Continued justification for the VBS".

Question Three: Is the scheme meeting this objective in a financially responsible and accountable way?

62. This section investigates the net economic benefits of the VBS and subsidiary questions. The subsidiary questions were as follows:

- *How can the net economic benefits of the scheme be meaningfully measured?*
- *By these measures, what are the net economic benefits of the scheme?*
- *To whom are the economic benefits of the scheme accruing?*
    - *In particular, has the scheme been subsidising the Veterinary practices' labour costs?*
    - *Has the scheme been subsidising the income of individuals who would have pursued practicing veterinary medicine on production animals in an eligible rural practice even in the absence of the scheme?*
- *How are the benefits distributed between practice owners, participating veterinarians, farmers and rural communities, and wider society?*
    - *Are any such economic benefits likely to continue in the medium and long run under the status quo?*

63. Firstly, we set out the costs of the VBS and we then examine the economics of the VBS as a subsidy using a standard economic model. This suggests possible answers to the subsidiary questions under questions 2 and 3 about who is benefiting from the VBS.

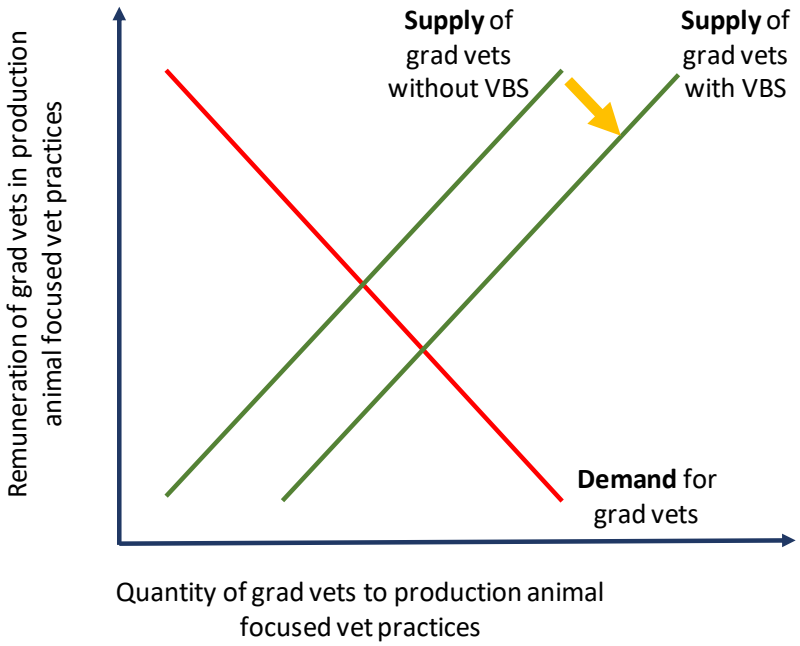
Economics of the VBS as a subsidy

64. Subsidies are money given directly to people or entities by governments to encourage production and consumption of goods and services. They are designed to encourage economic transactions that would not have otherwise occurred. This is the case for the VBS as it was designed to provide more graduate vets to understaffed vet practices focused on servicing production animals than were previously available. This was due to the Government's view that veterinary practices in rural areas were understaffed and suffered from recruitment and retention difficulties. This was most acute in remote and smaller practices[52]. Cabinet papers and other relevant documents from VBS establishment in 2008/09 show that it was the Government's assessment that prior to the VBS, the market was not providing enough veterinary services, provided by graduate vets, in these areas.

65. Because the VBS incentive is paid directly to graduate vets to work in vet practices with a primary focus on production animals, it acts as an indirect wage subsidy that aims to affect the labour market for graduate vets in such vet practices. To be effective, the VBS should have changed the willingness of graduate vets to sell their labour to these production animal focused practices. These practices should, as a result of the VBS, have less gaps in their staff line up than they otherwise would have had.

66. Figure 3 below helps to explore how the VBS subsidy is likely to have affected the market for graduate vets.

Figure 3 : Economics of VBS (partial equilibrium approach)



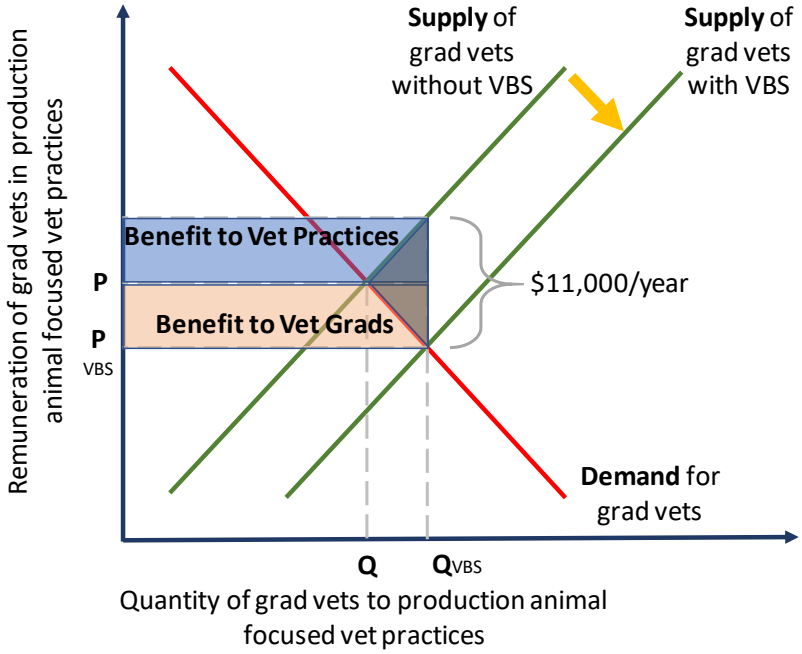
[52] See section "Objective of the VBS"

67. Figure 3 shows the standard supply and demand model adapted for graduate vets in production animal focused practices. In this example, applying the VBS increases the supply of graduate vets to these practices compared to the situation before the policy was introduced. VBS graduates receive $11,000 per year over 5 years[53] if they stay working for production animal focused practices. Graduates not working in such practices do not receive this funding. This is likely to lower supply of graduates to urban companion animal vet clinics by some marginal amount. However, there are other sources of graduate vets, particularly from offshore.

68. To provide some context, the current recommended starting wage for a graduate vet is $60,000 per year.[54] So the $11,000 per year represents circa 18 per cent of the base starting rate. Based on interviews of a range of eligible practices, starting employment packages for graduate vets can also include other components of value such as access to housing and vehicles, training and payment of professional fees. So, in pure monetary terms the VBS is likely to make up something less than 18 per cent of annual first year graduate vet income.

69. This approach also provides a way of thinking about who may have gained and lost from the VBS as shown in Figure 4.

Figure 4 : Economics of VBS allocation of benefits



70. Figure 4 takes the averaged and generalised supply and demand model a step further. The increase in the number of graduate vets working in eligible practices is represented by the quantity increases from Q to Q_{VBS}. This suggests that there would be more staff in these practices, than there otherwise would have been. These extra staff can be used to service the

[53] Paid in instalments of $33,000 after 3 years, a further $11,000 after 4 years and a final $11,000 after 5 years.
[54] Based on the March 2019 Salary Scale Review following negotiations between the Association of Rural Veterinary Practices and Club Practitioners Branch of the New Zealand Veterinary Associate (NZVA).

demand for veterinary services in the area covered by these practices. This was the original intention of the VBS.

71. Figure 4 shows that the VBS could be expected to benefit both eligible vet practices and graduate vets. How the benefit of the subsidy is shared out between practices and grads will depend on the slope (or elasticity) of supply and demand (how responsive supply and demand for graduate vets are to changes in remuneration). In reality, it is not possible to accurately estimate these elasticities. This is because, as discussed earlier, basic key data is not available, let alone the data needed to estimate elasticities. To capture such data would require frequent surveying of all relevant practices so that the situation at each practice could be summed to an average supply and demand for all eligible practices.

72. The third subsidiary question on the net benefits of the VBS concerned *"To whom are the economic benefits of the scheme accruing?"* and whether the scheme "*has been subsidising the income of individuals who would have pursued practicing veterinary medicine on production animals in an eligible rural practice even in the absence of the scheme*". The model used in Figure 4 shows how the VBS is likely to be subsidising graduate vets who would have wanted to practice on production animals anyway. In Figure 4 the area marked as "Benefit to vet grads" covers both those grads who would have serviced production animals anyway, as well as those who might not have otherwise done so. Within the area marked "Benefit to vet grads" the space to the left of Q represents those who would have serviced production animals anyway, whereas the space to the right of Q represents those who might not have.

73. This representation of the VBS subsidy is likely to be accurate in showing that the majority of the 318 VBS recipients since 2009 might have practiced on production animals anyway. The MPI survey of VBS recipients would support this view as nearly 93 per cent of those who answered the question "*Would you have chosen employment in a rural practice servicing production animals if the VBS grant was not available?*" answered yes[55]. However, a static economic model representing one moment in time does not help to separate out the VBS's effect on attracting vets to eligible practices from retaining them in those practices. This is explored in greater detail later in this report when the results of the interviews and the survey of vet practices is discussed.

74. In economic theory the total surplus in a market is lower when a subsidy is applied than when a market can freely function. This is because subsidies cause economic inefficiency, known as deadweight loss. The subsidy's deadweight loss in Figure 4 is represented by the dark shaded triangle. It exists because this analytical approach suggests that it costs a government more to enact a subsidy than it creates in extra benefits. However, subsidies can negate their deadweight losses and increase total surplus or wellbeing when there are market failures, when there are positive externalities created or when fairness or equity issues are factored in.

[55] Question 14 of the MPI survey. 129 answered "Yes", 10 answered "No". See file "VBS Online Survey Analysis Raw Data (3).docx"

Possible market failure benefits of VBS

75. Normally, in a free market situation, it could be expected that if it was difficult to attract and retain graduate vets in these practices then the remuneration provided by the practices would have to rise.[56] This would bring in the staff needed to profitably service the animals in the areas covered by production animal focused practices. Vet fees charged to clients by practices would build in these extra employment costs. However, it is also possible that vets' clients could resist paying these extra amounts due to their limited incomes and so the servicing of animals in these areas could fall. This would be a higher risk when there was a downturn in the prices of animal sourced commodities.

76. It is also possible that the market for graduate vets in eligible practices does not function properly for some reason. So, for example, lack of good information through the primary production supply chain, or lags in adjustments to changing interconnected markets could cause problems. It might cause the supply of graduate vets to not align well with changing demand from practices' clients which would in turn be driven by changing demand for the clients' primary production on world commodity markets. The swings in the price for dairy products in recent years is one example of major market changes that would have fed through in some form to demand for veterinary services and on to demand for graduate vets. However, attempting to accurately forecast these factors so that any subsidy was directed when and where needed to avert any such possible market failures would be unworkable.

Possible positive market externality benefits of VBS

77. It is also possible that the VBS could create positive externalities that outweigh its deadweight loss. These could occur where there is wider value to New Zealand that is not incorporated in the various markets in the animal production value chain. Examples of possible positive externalities are biosecurity, animal welfare and food safety benefits. These could occur where the VBS leads to increased staff or staff time available to detect and respond to biosecurity, animal welfare and food safety risks more effectively than if the VBS were not in place.

Costs of the VBS

78. The VBS has cost the Government on average around $908,000 per year. This is based on the costs from its first year in 2009 up until and including 2017.[57] This cost has been higher in recent years as over the period from 2017 to the payment due in 2020 it may average $1,280,000. This represents the sum paid to recipients.

79. To fully cost the VBS the fact that it is financed from taxation can be incorporated to ensure that all effects are factored in. Taxes encourage people to move away from activities and items that are taxed and toward activities and items that are not taxed or are more lightly taxed. Because of this, people's consumption choices are distorted. This has an adverse welfare effect which is

[56] There is evidence from the interviews that

[57] See MPI file "VBS data to support Benefits Realised A3 (1)".

additional to the direct amount of the tax. This is known as the deadweight cost of taxation. Treasury Cost Benefit Analysis guidance suggests that if using a deadweight cost of taxation, then a rate of 20 per cent should be the default, if no alternative evidence based value exists. Therefore, the VBS cost could be multiplied by a factor of 1.2 to incorporate the effects of the deadweight loss of taxation. Including this would raise the expected average cost of the VBS from 2017 to 2020 to $1.54 million.

80. However, the VBS is taxed in the hands of its graduate vet recipients. The incidence of this tax will depend on the circumstances of each recipient but is likely to average the marginal tax rate for people estimated to be paid $70,000 plus $33,000 in their third year in the VBS and $11,000 per annum in years 4 and 5. That rate is likely to be around 33 per cent. So, on average the Government is likely to recoup an amount through tax of about $507,000 per year.[58] Net of this tax, the average cost of the VBS is around $1,030,000 per annum.

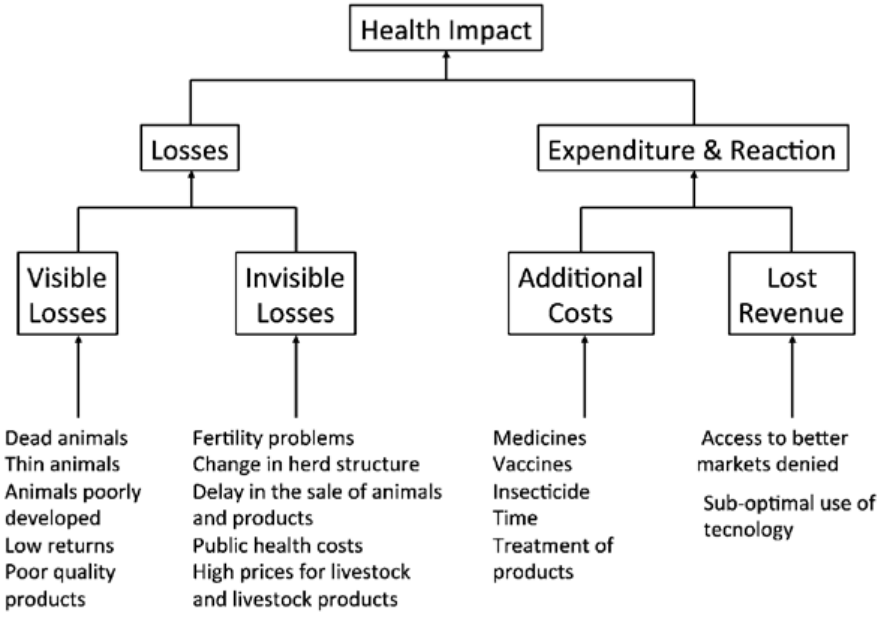
81. Finally, MPI faces costs of managing the VBS. This could see the final total cost of the VBS at around $1.2 million per year.

VBS benefits

Avoidance of costs of livestock diseases

82. If the VBS incentive were not in place it is possible that a number of economic costs of livestock diseases could be more prevalent. An approach to mapping out the economic costs of animal diseases is set out in Figure 5 below.

Figure 5 : Impacts of production animal diseases



[58] $1,540,000 x 0.33 = $508,000.

Source : Economics of production animal health by Rushton, J. , Jackson, E. , Häsler, B. & Redmond, E.F. , Page 4. They adapted from Rushton et al, 1999; Rushton, 2009.

83. Figure 5 shows that some animal disease and health problems cause visible impacts, such as animal deaths and weight and/or production loss. These losses are likely to spark a call to a vet. A visit from the vet is likely to result in additional expenditure on medicines and vaccines in order to manage the problem.

84. Other more invisible losses can be caused because some diseases can reduce fertility leading to less young being produced each year. Poorer fertility will mean more breeding animals are needed for every unit of meat, milk etc produced, thereby lowering the productivity of the system overall. These effects are much more difficult to measure.

85. Disease in a population of animals can also limit market access, if absence of the disease is needed. This reduces revenues. Finally, there are more indirect effects. For example, the presence of disease, and the lack of possible technologies to manage it, can cause livestock owners to choose livestock breeds and livestock production technologies that lower the disease risk and reduce the losses. But these actions can also lower production overall.

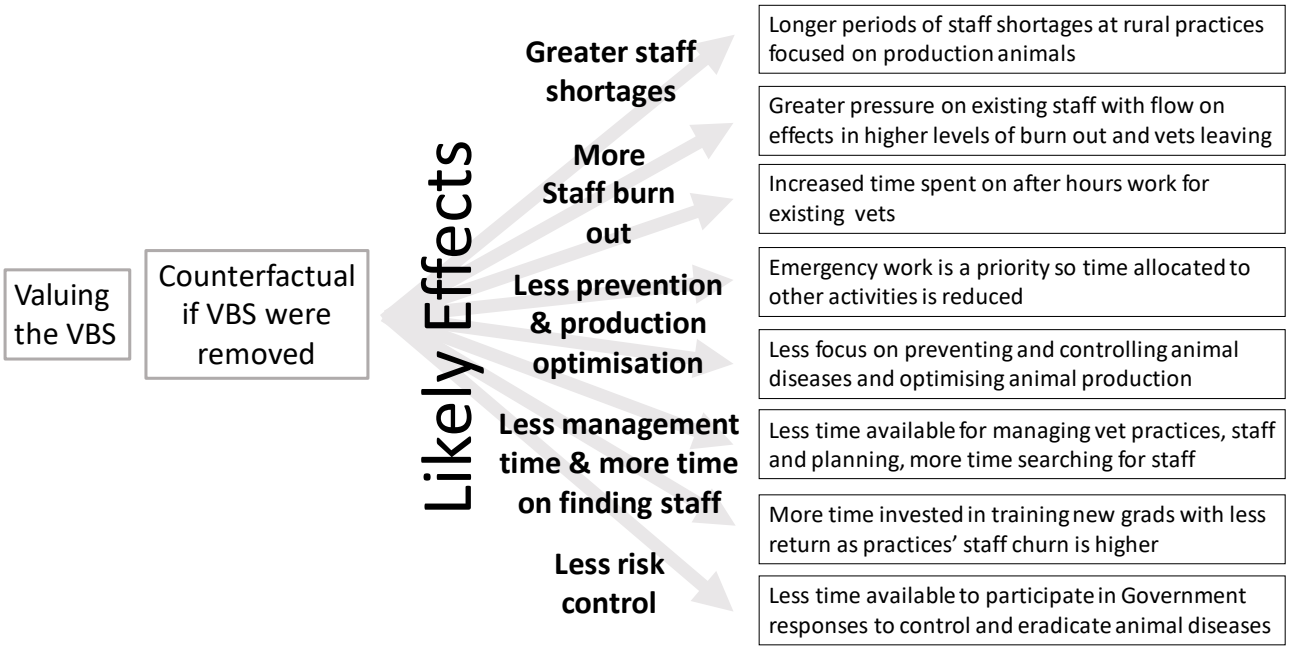
86. As shown in Figure 5 the effect of livestock diseases can be complex and cause a range of human reactions such as animal health interventions, market changes and changed technology choices. The extent to which these costs could be mitigated by the VBS scheme is explored below.

Effects if the VBS were not in place

87. Investigating the likely differences between the current situation with the VBS - (the factual), and a hypothetical situation of not having a VBS - (the counterfactual) is one way to value the VBS and see whether its benefits exceed its costs of circa $1.2 million per year.

88. As discussed earlier, there is a lack of detailed data that might allow a more precise calculation of the benefits of the VBS. Given this, interviews of VBS recipients and vet practices, as well as a survey of VBS eligible practices, were used to explore and estimate these benefits. Those interviewed and surveyed highlighted a number of possible implications of not having the VBS. These are summarised in Figure 6 below:

Figure 6 : If there were no VBS (the counterfactual)



89. Each of these is now discussed in turn.

Staff shortages

90. The survey of vet practices and interviews suggested that if the VBS were removed staff shortages and other flow on effects could occur in most eligible practices. These effects would be likely to be more acute in some more isolated and smaller vet practices.

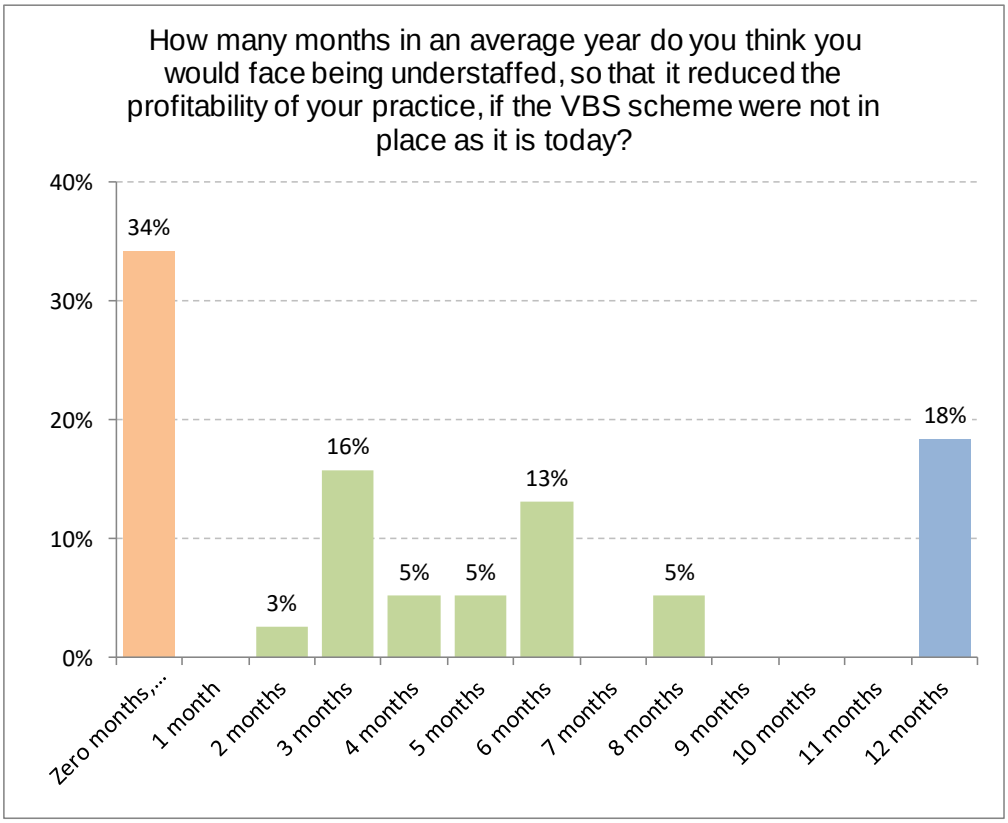
91. Vet practices surveyed answered a question - *if the VBS scheme did not exist, would you face periods of being understaffed or longer periods of being understaffed?* Seventy-seven per cent of respondents answered 'yes' while 23 per cent answered 'no'.

92. The 77 per cent who answered 'yes' were asked two follow up questions. These were:

- *"If you answered Yes to Question 10, what effects would this have? How would you reprioritise the work of the practice? (For example, it's effect on emergency work, preventative animal health consulting, pressure on existing staff, after-hours roster, management and training time etc.)? and*
- *"How many months in an average year do you think you would face being understaffed, so that it reduced the profitability of your practice, if the VBS scheme were not in place as it is today?"*

93. Figure 7 below shows the responses to the second of these follow up questions.

Figure 7 : Survey results to question about how many months in an average year practices would face being understaffed, so that it reduced profitability, if the VBS scheme were not in place



Source : Sapere survey of eligible vet practices October 2019

94. Of those who thought they "*would face periods of being understaffed or longer periods of being understaffed*" two thirds thought they would face some months understaffed. The other third thought they would not experience shortages of staff. Commonly the latter group believed that they would cover for any additional pressures through other means such as working the existing team harder, including through more time on the after-hours roster and less time on lower priority activities.

95. This was also a common view of those interviewed. Where they didn't believe that they would have a shortage of staff that reduced the profitability of their practices, they said that generally calls would be responded to, but other important activities would get put on hold or would not get done. These would include work on prevention of animal health problems, development of animal health plans, management and practice planning etc. However, those interviewed thought that a higher proportion of time spent on emergencies would cause extra pressure on existing staff in a vet practice.

96. Of the two thirds who did think they would face some months understaffed, 18 per cent thought that they would face shortages of staff that reduced the profitability of their practices for 12 months in a year, i.e. they would continuously face these problems Their comments highlighted problems such as increased work load on existing staff, more use of vet techs, less time for proactive growth of the practice and profession, less time for preventative herd health

and real problems having professional staff available for biosecurity duties. Eighteen respondents thought that they would face between two and eight months of being understaffed if there were no VBS.

97. A shortage of staff could have flow on effects in rural areas by causing poorer production and worse animal health results as set out in Figure 5. When asked about this possibility many of those interviewed had similar views to a third of those surveyed and commented that when there was a shortage of staff in a practice, there was a reprioritisation of the practice's workload. Emergency call outs were a priority and allowances were made so that such work was done. This is because in the VCNZ's Code of Professional conduct vets in clinical practice must always make an emergency service available. This service is required so that their clients' animals can receive essential veterinary treatment in order to relieve unreasonable or unnecessary pain or distress.[59] Some of those interviewed commented that when there was pressure on staff, less in person visits would occur and more would be done over the phone with greater chances of less helpful advice being provided. Some thought that the extra pressure on rural practices caused by staff shortages could result in visits to farms not happening.

98. If the quality of animal health advice was poorer, or not provided, due to pressures on veterinary staff, this could have a direct impact on animal production. Generally, it could be expected that farmers call vets expecting an animal welfare or production benefit or some mix of the two. It could be assumed that farmers would expect the benefit to outweigh the cost of the invoice for calling out a vet. We understand that call out invoices vary widely depending on the specific circumstances of the job, but fees are generally around $200 to $300/hour so a 20 minute to half hour call out might cost in the order of $100.

Staff burn out

99. As discussed above, a common view of those interviewed and surveyed was that without the VBS there would be additional pressure on existing staff. For example:

> **"Without the VBS the others would have to work harder so it would impact everyone else".[60]**
>
> **"This leads to a cascade of issues. The understaffing puts constant time pressure on all other staff which then leads to the possibility of them leaving."**[61]

100. An important way that this could occur was by increasing the amount of time existing vets were likely to spend on after-hours call outs. This might increase from, for example, one weekend in four to one weekend in three in smaller rural practices. Vets in such situations are required by their Code of Professional Conduct to provide an emergency service that is sufficiently resourced, so that except in extraordinary circumstances, all veterinary emergencies involving

[59] See VCNZ's Code of Professional Conduct 7 available at http://www.vetcouncil.org.nz/CPC/VetServices/CPC_VetServices.php
[60] South Island Veterinary Director
[61] Northland Veterinary Director

clients' animals are attended in reasonable time to ensure the welfare of the animals. The meaning of "reasonable time" does take into account the type of practice and the locality but these services will come under pressure if there are staff shortages. This would be likely to increase stress on existing staff and heighten the likelihood these staff could seek less stressful work in urban practices with better coverage of after-hours work pressures.

101. Pressures on rural vets was discussed by Kristina Dykes in her Kellogg Rural Leadership Programme Report[62]. In that report she stated that 27 per cent[63] of respondents had mentioned that they had left rural clinical practice in part because of the impact of stress, anxiety and poor coping mechanisms. Kristina quoted studies by Bartram and Baldwin[64], and Fitch[65], showing that rural vets had a higher risk of suicide and poorer mental health and well-being than most professional groups. She also suggested that the harsh emotional stress, the financial burden, the odd working hours and, potentially, the normalisation of euthanasia, formed a picture of the pressures on vets. The VBS is likely to alleviate these significant pressures on the well-being of vets. This could be seen as a positive unintended consequence of the VBS.

102. Some of those interviewed highlighted that work pressures such as the after-hours roster were a particularly important consideration for the growing number of young women graduating from Massey. For example, exposure to frequently needing to work after-hours or weekends did not combine well with raising young families so young female vets often sought part time work or to work in practices which had less demanding after-hours rosters.

103. Kristina Dykes also identified the pressure of after-hours work in smaller rural practices as an important factor in vets leaving rural practices[66]. She wrote that 23 of the 44 vets who had left rural practice mentioned after-hours work as a reason. If the VBS were not in place this pressure on rural vets would be likely to increase and potentially cause more to leave and increase pressure on their well-being.

104. So, the VBS is likely to prevent the loss of a greater number of experienced staff from production animal focused practices. If the VBS were not in place, the result would probably be increased gaps in providing services to farmers and increased costs in searching for replacement staff. Gaps in providing services to farmers would be more serious for these experienced vets, than for new graduates, due to their greater skills and experience and generally higher productivity.

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[62] Kristina Dykes, Kellogg Rural Leadership Programme, Course 36, 2017, "The Time for Change is Now", Pages 19 and 20.
[63] 12 out of 44, see pages 25 and 26 of
[64] Bartram D and Baldwin DS. (2008). Veterinary surgeons and suicide: influences, opportunities and research directions. Veterinary Record 162, Pages 36-40.
[65] Fitch, KJ. (2006). Welfare of the veterinary kind. Proceedings of the Society of Dairy Cattle Veterinarians Annual Conference. 113-119
[66] Kristina Dykes, Kellogg Rural Leadership Programme, Course 36, 2017, "The Time for Change is Now", Pages 19 and 20.

Less prevention or production optimisation focus

105. As mentioned above, if the VBS were not in place several of those interviewed and surveyed thought that there would be less focus on prevention of animal health problems as well as optimising animal production. This could include, for example, less consulting work on animal health plans, heifer rearing and in-calf advice, managing lameness as well as advice on nutrition and drenches. It was also emphasised that often this sort of work has very good long run returns, especially to farmers, but these are often invisible as depicted in Figure 5.

106. A good example of the potential high returns from these sorts of prevention and production optimisation consulting services was evident in Dairy NZ programmes designed increase the numbers of heifers mated at good body weights and improve the national 6 week in- calf rate.[67] Dairy NZ has been encouraging farmers to improve their performance, including indirectly through increasing the consulting skills of vets, because it has estimated that nationally $100s of millions per annum that could be earned if heifer metrics were improved across the New Zealand dairy herd. This is the sort of activity that would not get priority if rural practices were facing a lack of graduate vets and greater pressure on existing staff.

107. It is not possible to accurately estimate the extent to which this sort of value would be lost if the VBS were not in place. However, it is possible to test what this value might be by using an estimate based on the actual costs of invoices for veterinary services. For example, it could be assumed that without the VBS gaps in staffing of both graduate and more experienced vets would result in value forgone. This would result both from a poorer quality of animal health advice and, on some occasions, advice not provided as discussed above. But it is also likely to result from less advice on prevention or production optimisation that would reduce returns to farmers.

108. To test the potential value of the VBS, we assume that the combined value of these effects is equivalent to the value farmers get from paying for vet call outs. Across a year in a production animal focused veterinary practice, this is analogous to the annual fees that a graduate vet and a more experienced vet could be expected to earn that practice. A graduate vet's base rate is $60,000 per year[68] although those interviewed also pointed to higher starting salaries particularly in production animal focused practices. We understand that a vet with 5 years of experience could expect to earn around $100,000 per year. Moreover, the fees that could be expected to be earned from those vets by the practice might be an increment of 40 per cent on these salaries.[69]

Less management time

109. Management of production animal focused practices could also be made more challenging because of an increase in the turnover of staff. A few of those interviewed and surveyed

[67] See https://www.dairynz.co.nz/animal/heifers/
[68] Based on the March 2019 Salary Scale Review following negotiations between the Association of Rural Veterinary Practices and Club Practitioners Branch of the New Zealand Veterinary Associate (NZVA).
[69] Source : interview of business manager of large veterinary practice.

mentioned that without the VBS pressures to deal effectively with priorities such as emergency call outs would reduce time that could be spent managing the practice and planning its future. Practice managers would also have to put more time into recruitment more frequently.

110. We understand that recruitment costs are generally around 15 per cent of the annual salary. The recruitment costs for new graduates are therefore in the order of $9,000, while for a vet with 5 years' experience it is likely to be circa $15,000. Avoiding these costs is a benefit of the VBS for practices, but as is clear in the earlier standard supply and demand model economic analysis of the VBS, this benefit would also flow through to others in the animal production value chain including staff and farmers.

111. Discussions with the Ministry of Health underlined the value of avoided recruitment costs in its VBS scheme. The Ministry of Health has estimated that in the part of its VBS that covers nurses, its VBS saves health sector employers more than the cost of the whole scheme. This analysis was possible because almost 4,000 nurses have benefited from its scheme since 2009 and good data and the relatively high numbers had allowed more detailed statistical analysis. Another factor is that the amounts paid to nurses is relatively low in comparison to doctors and vets. However, avoided recruitment costs is another saving for vet practices from the VBS.

Poorer retention resulting in more time training & poorer returns on that investment

112. Many vet practices interviewed emphasised the importance of the VBS in retaining graduate vets. One rural South Island practice's experience over the last decade pointed clearly to a benefit in retention from the VBS. The average retention of VBS graduates for this practice was around 3 years and 8 months whereas the average retention of its Australian graduates was 19 months.[70] Although this is anecdotal information, other rural practices interviewed and surveyed related similar experiences and a similar retention advantage for VBS graduates.

113. The evidence of the retention value of the VBS is also supported by the data in Figure 1, which shows that of the 318 recipients of the VBS since its inception, only 5 per cent have withdrawn before their first payment at 3 years into the scheme. The results of the MPI survey of VBS graduates also supports a view that the scheme is effectively helping to retain graduates in rural practices. Although there is no control group to compare against, in that survey 55 VBS recipients or 40 per cent had stayed a full 5 years in the scheme and three out of four of these were still in a practice servicing production animals. Of this group who were still in rural practices, almost half were still in such rural practices 3 years or more later.[71]

114. Many of those interviewed also emphasised the importance of receiving their first payment under the scheme at three years both for the vet practice and for the graduate. For the vet practice having an average of 95 percent of their VBS graduates stay at least three years[72]

[70] The Australian graduates' experiences in the rural South Island is likely to be comparable with that a vet graduate originating in the North Island as links with family and cost of travel home are likely to be comparable. However, there could be some additional dislocation pressure due to swapping countries.
[71] Questions 1, 2 and 3 of the MPI survey. See file "VBS Online Survey Analysis Raw Data (3).docx"
[72] Unless they leave for another production animal focused practice.

means that they mostly get a return on their investment in training their new graduates. If these graduates left after shorter stints in the practice, for example 19 months, graduate training would have to be repeated more frequently and the practice would earn materially less fees from their graduates. Many commented that a first year graduate would not be assigned to more difficult tasks, and where they were, they would have a more experienced vet with them. Their productivity wouldn't be 100 percent until the third year on average. So, a benefit of having the VBS in place for rural practices is less time and effort invested in training and greater returns from this training.

115. One vet interviewed commented that:

> **"The 3rd year is hugely valuable, in the 1st year they cost you, in the second they pay their way hopefully, but it's the 3rd year that counts"[73]**

116. Many commented that receiving their first payment under the scheme at three years also benefits the graduates beyond the money paid to them. They pointed out that when a new graduate arrives in a rural practice it takes a couple of years for them to learn their job, build rapport with their farmer clients and get to know and join in with the local rural community. Receiving their first payment under the scheme at three years encourages them to stick at the job where they might otherwise leave and by the end of three years they are more integrated into their job and their community. Some vets said that even where VBS graduates have left at the end of three years to travel etc they have often come back to the same practice later. Some of that can probably be explained by having had a good grounding in servicing production animals at the outset.

117. Avoiding more frequent training of, and less productivity from, graduates is a cost to practices that is mitigated by the VBS. Inquiries of vets and business managers suggest that training costs are likely to be in the order of $15,000 to $20,000 per graduate vet.

118. Another benefit of the VBS is that productivity losses are avoided. Without the VBS higher staff churn would be likely to occur. If new graduates were lost after 19 months there would be a need to fill those positions with other graduates which would depress practices' earnings materially compared to if graduates stayed at least three years. A conservative estimate of the forgone fees between 19 months and three years would be in the order of $20,000.[74]

[73] West Coast South Island vet interview.

[74] This assumes a starting salary of $60,000 rising to $100,000 by year 5. It assumes practice fees earned of 40 percent on top of the salary. It also assumes that without the VBS average retention is 18 months while with the VBS average retention is 3 years. The practice would need to restart training every 18 months and would not get the benefit of the earning value of the new graduate between 18 months and three years.

Less risk control

119. Finally, some of those interviewed mentioned that if the VBS were not in place there would be less veterinary resources in production animal focused areas to help deal with biosecurity, animal welfare and food safety risks which could occur. One vet we interviewed said:

"Vets are the eyes and ears of the biosecurity, animal welfare and food safety system"[75]

120. He stated that early detection of serious problems avoided much greater costs to New Zealand. He commented that the *Mycoplasma bovis* and the herbicide tolerant swedes outbreaks were detected by having vets on the ground. If the VBS were not in place there was real potential that the pressures on rural practices would have made discovery of these threats to New Zealand's animal production less likely and/or less timely. As discussed, pressure on rural practices would be likely to cause less time on farm, more diagnosis and advice by phone and some missed consultations. This could see delays in the discovery of material animal health outbreaks including zoonotic diseases with potentially serious implications for people.

121. It is very difficult to value outbreaks as each will have often random probabilities of arrival in New Zealand, specific costs, threat profiles and contagion risks. However, it is a potential benefit of the VBS that low probability, but potentially high value events could be averted or mitigated. This also needs to be factored into a full analysis of the scheme.

Net benefits of the VBS

Quantitative

122. In the discussion above we identified a number of VBS benefits that could be quantified to some degree. These were:

- Production and animal welfare losses avoided
- Prevention and production optimisation consultations undertaken
- Recruitment costs avoided
- Training cost avoided
- Staff productivity benefits gained through avoiding higher staff turnover

Qualitative

123. We also identified a number of less tangible, qualitative VBS benefits as follows:

- Less burn out potential for existing vet staff including mental health problems
- Increased opportunity to fit in and get comfortable in a rural community

[75] Mark Bryan interview 16 October 2019

- More eyes and ears to detect biosecurity, animal welfare and food safety threats

124. The next section explores what would need to be believed about those benefits that can be quantified to an extent, to believe that the VBS benefits exceed its cost of circa $1.2 million per year. This forms an approximate breakeven analysis of the net benefits of the scheme.

125. Figure 8 sets out input data that is used in Figure 9 to examine what needs to be believed for the VBS scheme to pay for itself. This input data was gathered from a range of those interviewed and is approximate.

Figure 8 : Breakeven Analysis Input Data

	Cost of VBS	**$1,200,000**
	INPUT DATA	
Graduates		
	First year Grad wage	$60,000
	First year Grad wage practice fees	$84,000
	Y1 Grad fees per month	$7,000
	Recruitment costs	$9,000
	Training costs avoided	$16,667
	Practice fees forgone from greater staff turnover	$20,000
Experienced Vets		
	Five years experience Vet wage	$100,000
	Five year Vet wage practice fees charged	$140,000
	Five years experience Vet fees per month	$11,667
	Recruitment costs	$15,000
Other	**Wages to fees adjustment**	40%

Figure 9 : Breakeven Analysis of VBS Benefits

		Estimated Total of Eligible Vet Practices	**150**	
		OUTPUT ESTIMATES		
	Graduate Impacts		**Number of Events/Year**	**Per cent of eligible practices affected**
1	Months of grad vet wages lost in any one year across all eligible vet practices that is equivalent in value to missed consultations, poorer advice, missed preventative and production optimising consulting advice	$105,000	**15**	**10%**
2	Number of graduate recruitment searches avoided in any one year	$135,000	**15**	**10%**
3	Training costs avoided	$250,000	**15**	**10%**
4	Productivity losses from more frequent staff churn	$300,000	**15**	**10%**
		$790,000		
5	**Experienced Vet Impacts**			
	Months of experienced vet wages lost in any one year across all eligible vet practices that is equivalent in value to missed consultations, poorer advice, missed preventative and production optimising consulting advice	$175,000	**15**	**10%**
6	Number of experienced vet recruitment searches avoided per year	$225,000	**15**	**10%**
		$400,000		
	Breakeven Total Benefits	**$1,190,000**		

126. Figure 9 sets out potential benefits of the VBS that are to an extent quantifiable. It then tests these against what proportion of eligible vet practices would have to experience these beneficial effects to believe that the VBS covers its costs. The beneficial effects result both from the effects of graduates attracted and retained in eligible practices and from the effects this has on reducing pressures on existing veterinary staff. The potential benefits are numbered on the left-hand side of Figure 9 from 1 to 6. Taking each of these in turn:

Benefits from Graduates

1) This represents the combined value of missed consultations, poorer advice and missed preventative and production optimising consulting advice, if the VBS were not in place. It is calculated from a month of graduate vet wages plus practice fees ($7,000). It assumes that farmer clients would be prepared to pay for these services because they value them for the animal welfare or productivity gains they would bring. However, without the VBS they would either not be delivered or delivered at a lower quality. This represents 15, or 10 per cent of eligible practices experiencing a loss in invoicing opportunities and lower production for farmers equivalent to $7,000, once per year[76]. Ten percent is significantly lower than eligible practices that thought they would face actual gaps in staffing in the survey. The survey found two thirds of respondents believing that they would face staff shortages of between two and twelve months a year that would affect their practice's profitability. Even adjusting for potential overstatement due to self-interest this is a significant difference.

[76] This assumes one month of a lack of available graduate vet fees per affected practice.

2) The second potential benefit stems from avoided graduate vet recruitment costs. Without the VBS in place it is assumed that 15 graduate recruitment searches costing $135,000 would otherwise occur each year. These recruitment searches would affect 10 percent of eligible vet practices per year.

3) The third benefit derives from training costs avoided. If the VBS were not in place it is assumed that eligible vet practices would spend more time training new graduates because turnover of new graduates would be higher. So, for example, where an eligible practice might train one graduate per year over five years it might have to train two new graduates over 5 years to maintain its staffing resources. Again, it is assumed that 15 eligible vet practices per year are affected in this way which costs $16,667 each or a total of $250,000 which represents 10 per cent of eligible practices.

4) The fourth benefit originates from greater losses in productivity from more frequent staff churn without the VBS in place. This greater churn means that vet practices are unable to get a return from practice fees charged to customers from graduate vets who have become more productive members of the practice's team after completing their third year of work. Without the VBS in place, more of these graduates would have left and practices would get lower productivity, on average, from the graduates they employ[77].

Benefits from more experienced veterinary staff

5) The fifth source of potential value from the VBS stems from fewer graduate vets causing greater pressure and workloads on existing staff. This increased workload would include increased time on the after-hours roster and more time focused on emergencies during normal work hours. This increases turnover of these more experienced staff which results in missed consultations, poorer advice and missed preventative and production optimising consulting advice. As for graduates discussed in 1) above, it is assumed that this value is equivalent to 15 months of wages across all 150 eligible practices of vets with five years of working experience or $11,667/month with practice fees included. This represents ten percent of practices experiencing these sorts of losses in invoicing opportunities and farmer production losses from preventative and production optimising advice not provided each year (This again assumes these losses are distributed as one month of lack of available experienced vet fees per affected practice).

6) The last benefit is the number of experienced vet recruitment searches avoided per year. Without the VBS in place it is assumed that 15 recruitment searches for experienced vets costing $15,000 each and totalling $225,000 would otherwise occur each year. These recruitment searches would affect 10 percent of eligible vet practices per year.

127. As shown in Figure 9, based on these assumptions, the potential benefits of the VBS at almost $1.2 million are likely to cover its costs of approximately the same amount. The VBS also has

[77] This assumes starting salary of $60,000 and progression to $100,000 salary by year 5 with 40 percent mark up to practice fees. The counterfactual without the VBS assumes a graduate vet is lost at 18 months so there is a value differential between 2 graduates working to 18 months compared to 1 graduate working to at least 3 years of $20,000. This occurs across 15 vet practice per year which is 10 per cent of eligible vet practices.

qualitative benefits as discussed above which are additional to this breakeven analysis. As discussed in paragraph 123 these consist of mental health, social integration and public good benefits including better management of biosecurity, animal welfare and food safety threats.

Question Four: What changes could be made to the scheme?

128. This section discusses what changes could be made to the VBS and associated subsidiary questions. The subsidiary questions were as follows:

- *Is any shortage of rural veterinarians sufficient to justify retaining the scheme?*
- *Is addressing any such shortage still sufficiently aligned with Government policy objectives, MPI strategy, and the national interest to justify retaining the scheme?*
- *Are there any modifications to the criteria or design of the scheme that could leverage or optimise the identified benefits of the scheme? In particular, the objective of the scheme to attract and retain graduate vets into rural practice?*
- *Are there any modifications to the criteria or design of the scheme that could mitigate any identified negative unintended consequences? Could any identified positive unintended effects be leveraged or optimised to increase benefit?*
- *Could any modifications to the criteria or design of the scheme be made that would change how benefits are distributed to increase overall total net benefit? In particular, are there any modifications that could improve the targeting of the scheme without significant unintended consequences?*
- *Could any modifications to the scheme be made in anticipation of medium to long run threats or opportunities?*
- *Are there any issues of fairness or equity which could be addressed while maintaining or improving overall benefits?*

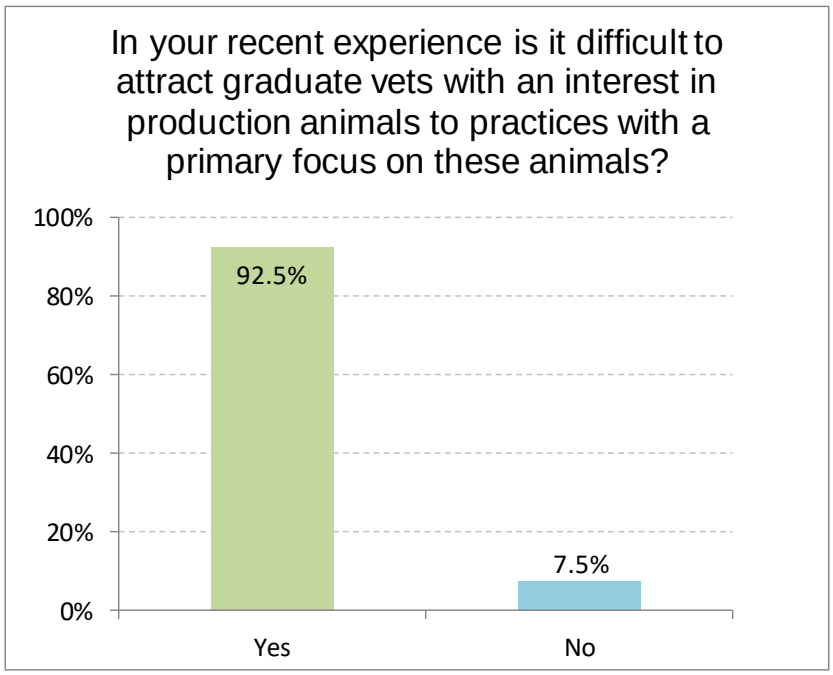
Continued justification for the VBS

129. The first subsidiary question deals with retention of the VBS in light of any shortage of rural veterinarians. As discussed in the sections that addressed Questions 1 and 2, there was a lack of data on the shortage of vets in rural areas at the outset of the VBS and that remains the case now. However, interviews and a survey of eligible vet practices support a thesis that there is a recurring problem attracting and retaining vets into these practices.

Attraction

130. In our survey of eligible practices, a clear majority found it difficult to attract graduate vets to their practices.

Figure 10 : Attracting graduate vets to eligible practices



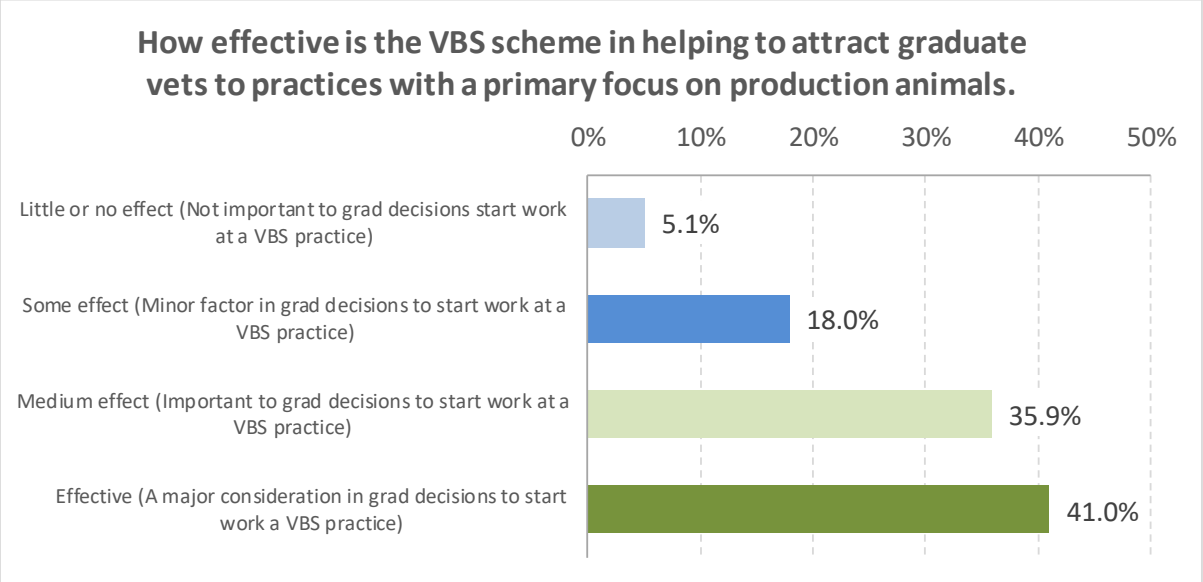
Source : Sapere survey of eligible practices October 2019

131. The key factors cited by respondents were their isolated location and small practices along with higher after-hours load and the loss of links to family and peers. However, a few respondents also thought that there was a lack of graduates interested in working in production animal practices or that most graduates wanted to work with a more mixed animal workload. The three who didn't find it difficult to attract graduate vets cited reasons such as their scholarship program, support of learning and mentoring and having a vibrant team of other young vets with a well-documented programme of induction.

132. Figure 11 below shows the data collected when respondents were asked about the degree to which the VBS helped to attract graduate vets to eligible practices. Seventy seven per cent answered that it either had a 'Medium effect', meaning that it was important to graduate decisions to start work at a VBS practice, or it was 'Effective', meaning it was a major consideration in graduates' decisions to start work a VBS practice. Only 5 per cent thought it had 'Little or no effect'. However, as discussed earlier in paragraph 73 the MPI survey of VBS recipients found nearly 93 per cent of respondents believed they "*Would you have chosen employment in a rural practice servicing production animals if the VBS grant was not available?*"[78].

[78] Question 14 of the MPI survey. 129 answered "Yes", 10 answered "No". See file "VBS Online Survey Analysis Raw Data (3).docx"

Figure 11 : Degree of effect of VBS on attracting graduate vets



Source : Sapere survey of eligible practices October 2019

133. The results do point to both problems in attracting graduate vets to eligible practices and to the effectiveness of the VBS in helping to attract graduates. There was no control group of non-eligible vet practices included in the survey to answer the first question about problems attracting graduate vets. However, we are not aware of problems attracting graduate vets to urban companion animal focused vet practices.

134. One comment from the interviews highlighted the view point of those in the 54 per cent in the middle of the range of answers to this question who thought that the VBS has 'Some effect' or a 'Medium effect'. This vet pointed out that :

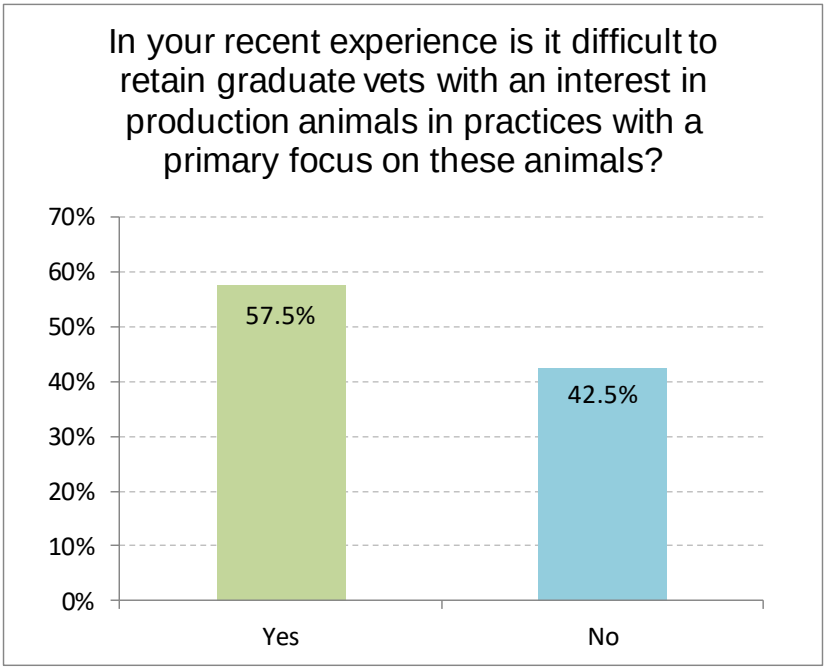
> **"Other factors attract vet grads to rural practices such as work life balance, skiing, fishing & tramping"[79]**

Retention

135. A majority also found it difficult to retain graduate vets in eligible practices by 57.5 per cent who did and 42.5 per cent who didn't.

[79] Interview of vet with many years of experience in the south of the South Island.

Figure 12 Retaining graduate vets in eligible practices

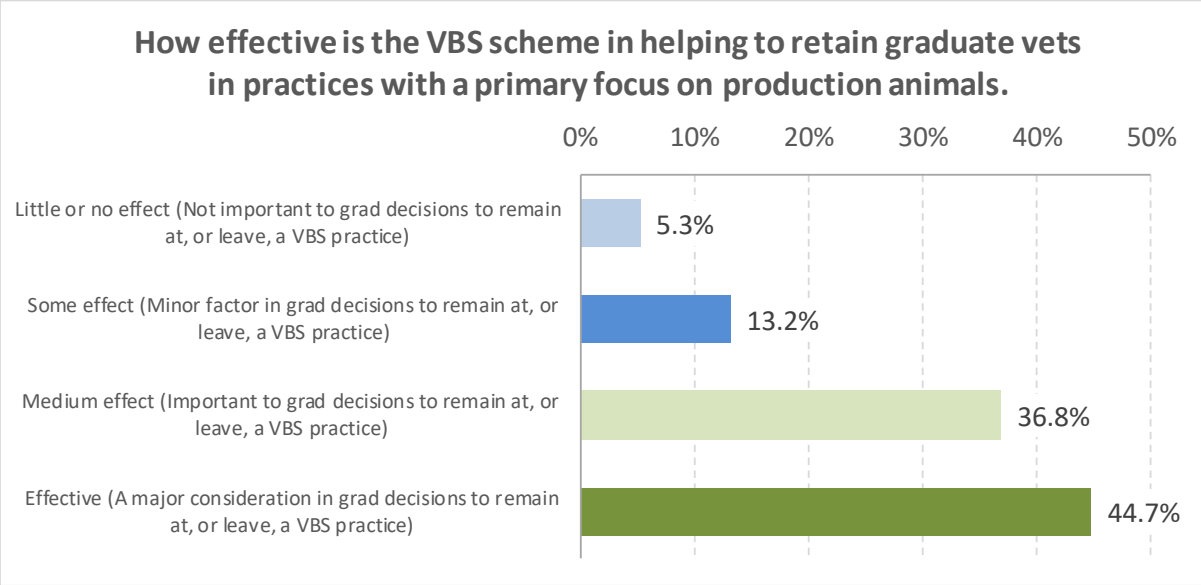


Source : Sapere survey of eligible practices October 2019

136. Those that thought that retention was difficult pointed to factors such as their isolated location, the desire of graduate vets to travel, the repetitive nature of production animal work, and lack of work opportunities for partners/husbands/wives, social pressures and lower job satisfaction. Many respondents that didn't believe that retaining graduate vets was difficult emphasised the assistance of the VBS as well as other factors such as their good mentoring and support.

137. When asked about the degree to which the VBS helped to retain graduate vets in eligible practices, respondents answered as shown in Figure 13 below. The results on the value of the VBS for retention were marginally higher than those for attraction. Eighty two per cent answered that it either had a 'Medium effect', meaning that it was important to graduate decisions to remain at, or leave, a VBS practice, or it was 'Effective', meaning it was a major consideration in graduates' decisions to remain at, or leave, a VBS practice. Similar to the responses to the question about attracting graduate vets, only 5 per cent thought it had 'Little or no effect'.

Figure 13 Degree of effect of VBS in retaining graduate vets



Source : Sapere survey of eligible practices October 2019

138. The results strongly support the value of the VBS in retaining graduate vets in eligible practices. The VBS recipients' data in Figure 1 also backs up the effectiveness of the VBS on retention as only 5 per cent of the total of 318 VBS recipients left before serving 3 years in eligible practices. In addition, the interviews and survey of eligible practices provided many examples supporting a real retention benefit as discussed in paragraph 112. Again, there was no control group to give a comparison about retention of graduate vets in urban practices. However, we are not aware of problems retaining graduate vets in urban vet practices either.

139. While those interviewed and surveyed stand to gain from the VBS, their responses were consistent. The only notable variance in their responses was that a few in really isolated areas such as the West Coast and Southland said they often resorted to recruiting graduate vets from offshore because, even with the VBS in place, they had difficulties attracting New Zealand trained graduates.

140. Veterinarians are on Immigration's Long-Term Skill Shortage List (LTSSL)[80] suggesting an ongoing shortage of vets. Immigration NZ stated that the last time Veterinarian category was reviewed was in 2009. It provided an extract from a report on the 2009 Review of the Essential Skills in Demand lists for Veterinarians. That showed qualitative evidence of a continued shortage of vets at that time. This included a view from Federated Farmers that there may have been a shortage of veterinarians, particularly those who specialised in large animals. Retaining vets on the LTSSL was also supported by VCNZ which also provided some evidence to Immigration NZ. It noted continuing difficulties recruiting vets and survey data from Massey

[80] See https://www.immigration.govt.nz/about-us/policy-and-law/how-the-immigration-system-operates/skill-shortage-lists and Appendix A: for more information.

University showing a shortage and pointing to a global shortage. It also emphasised the low number of vets per 100,000 livestock units compared to international data. In addition, VCNZ provided data from a survey showing a lot of repeat advertising for veterinary positions.

141. Internationally trained vets continue to make up an important part of the New Zealand veterinary workforce. The VCNZ Workforce Survey shows that in 2018 the percentage of international graduates (veterinarians who obtained their primary veterinary qualification in a country other than New Zealand) was 30.5 percent[81]. This has only risen slightly from a low of 28.1 per cent in 2012. The highest number of international graduates are from the United Kingdom at 10 per cent and Australia at 6 per cent.

142. Figure 14 shows new registrants as vets in New Zealand. In the period between 2010 and 2017/18, graduates from overseas varied between around half and two thirds of all new vet registrations.

Figure 14 : NZ trained vs International trained new registrants each year

	2017/18	2016/17	2015/16	2014	2013	2011	2010
NZ (Massey)	80	91	82	91	81	113	72
Overseas	159	128	119	142	130	108	96
Total	239	219	201	234	211	221	168
Massey grads	33.5%	41.6%	40.8%	38.9%	38.4%	51.1%	42.9%

Source : VCNZ data analysed by Jenny Weston, Dean of School of Vet Science, Massey University

143. The VCNZ Workforce Survey also shows that internationally trained vets are a greater proportion of vets focused on production animals than their proportion of the NZ veterinary workforce overall. For example, they comprised 42 per cent of beef cattle vets and 36 per cent of dairy cattle compared to 29 percent of all vets in 2017. This tends to support the commentary from the more isolated practices that they rely a lot on attracting foreign trained graduates.

144. The survey responses, interviews of vets and vet practice management and the VCNZ data all provide evidence that there is a shortage of rural veterinarians.

Alignment with Government policy, strategy and national interest.

145. The second subsidiary question covered the VBS's alignment with Government policy objectives, MPI strategy, and the national interest as a justification for retaining the scheme. The breakeven analysis suggests that the VBS's various potential benefits are likely to exceed its costs even if only ten per cent of eligible practices are affected as described above in the

[81] VCNZ Workforce Survey Page 15, (Table 12, 842 of 2760 vets)

section "Net benefits of the VBS". If a large proportion of eligible practices are affected, the VBS's benefits could significantly exceed its costs.

146. This indicates that based on the defined quantitative benefits, it appears to be meeting its narrow objectives of encouraging vets to work in rural practices cost effectively and make a significant contribution to repayment of student loans. Adding in the qualitative benefits strengthens the case that the VBS continues to be aligned with Government policy objectives, MPI strategy and the national interest. The VBS's potential public good benefits of better management of biosecurity, animal welfare and food safety threats are an important part of the qualitative benefits. This is because by providing more eyes and ears to detect biosecurity, animal welfare and food safety threats, the VBS adds a layer of additional protection against these generally low probability high impact events.

147. These threats are notoriously difficult to value and made doubly difficult when you have to consider the marginal value that some additional vets working in rural areas might add. A few of these vets might not have worked on production animals without the VBS.[82] Many more are likely to have stayed working longer in rural practices than they otherwise would have. By doing so, they were able to apply a greater level of skill and experience in these eligible practices than would otherwise have happened.[83] In addition some more experienced vets who might have otherwise left rural veterinary work due to higher work pressures are likely to have remained. These additional vets and higher level of skills and experience applied in rural areas provide extra eyes and ears on farm. It is conceivable that they could positively affect the outcome of some future biosecurity, animal welfare and food safety threats, potentially significantly.[84]

148. Discussions with the MPI animal welfare team indicated that there has been no discernible impact of the VBS in reporting of animal welfare incidents. However, given the vagaries of this data, this may not be surprising as the 318 VBS recipients make up only around 13 per cent of all 2,475 veterinarians (as recorded by the 2018 census). Separating out the impact of only those vets who made different employment decisions due to the VBS seems implausible even if the data were very good.

149. If it is accepted that the VBS's current funding is justified, another valid question is could an increase in funding also be justified. Given the paucity of data this is difficult to address. When

[82] How many is difficult to estimate but if the MPI survey of VBS recipients is accurate and representative then 7.2 per cent answered that they wouldn't have chosen employment in a rural practice servicing production animals if the VBS grant were not available. Applying this across the total of all 318 VBS graduates would result in an estimate around 23 who might have been swayed to production animals where they would not otherwise have been.

[83] Based on interviews of vet practices and data on the 318 recipients of the VBS to date around 300 graduates could have stayed perhaps up to twice as long as they otherwise would have e.g. at least 3 years.

[84] For example, there are estimates that eradicating *mycoplasma bovis* might cost $886 million over ten years. If it isn't eradicated, then over the long term it could cost $1.2 billion to manage and $1.3 billion in lost production long term. Although of low probability, because it would rely on another low probability high impact incursion occurring, it is possible that a similar outbreak could be detected and managed earlier than it otherwise could have been as a result of the VBS enabling a more thorough and experienced surveillance of production animals.

the VBS was established one annual payment was presumed to account for 11.3 per cent of the average vet graduate's student debt in 2007 on a post-tax basis.[85] This percentage has fallen over the last decade as the level of the incentive has not been inflation indexed or indexed to changing average graduating vet student loan balances. Ten years on, the average vet student loan debt for those completing their studies in 2018 was $91,849.[86] This is 46 per cent higher than the $62,900 average in 2007. The VBS is therefore likely to be having a declining effect on the employment decisions of graduate vets. A lessening effect of the VBS was commented on by a few of the eligible vet practices surveyed. In light of this, and if the scheme is viewed as a net positive benefit to New Zealand, there could be a case to reset the VBS to ensure that its annual payments after tax continue to cover 11.3 per cent of the average vet graduate's student debt.

150. An alternative point of view was expressed by one vet who suggested in a survey response that the VBS should be scrapped. This vet then suggested that the money be put into funding more locum support into rural areas because locums are experienced and can hit the ground running. This vet was one of the few who didn't see much value in the VBS.

151. Some of those interviewed suggested that the funding for the VBS could be increased and a couple of practices, in more isolated locations, suggested that they were not able to readily attract graduates to their practices even with the VBS in place. It seems intuitively logical that the degree of difficulty in attracting and retaining graduate vets is not linear across the country. This might suggest that there could be a case for a higher VBS amount for these sorts of isolated practices. However, there is only anecdotal evidence to support this view.

Potential changes to the VBS

Geographic targeting of VBS

152. Originally the VBS scheme had a transitional policy of targeting specific regions, for example the West Coast and Southland (see paragraph 31). It was then broadened out and refined further to include practices with 60 per cent or more of turnover from production animals. There was a lot of feedback on the targeting of the VBS from those interviewed and surveyed. For example, in the MPI survey of VBS graduates 21 respondents specifically raised aspects of targeting of the VBS as additional feedback.[87] A lot of this commentary focused on concerns about the balloting system that has been used in the past when the number of applications for the VBS exceeded the 30 places available. Anecdotally, this had led to situations where two graduate vets have sat side by side in rural practices, with the same workload, but one has a VBS incentive while the other doesn't due to the bad luck of missing out in the ballot.

153. Another common criticism of the VBS, which was again rooted in the results of the balloting process, was that graduate vets should not miss out on the scheme when working in isolated places such as Riverton or Westport, while others working in places close to major population

[85] See paragraph 26
[86] Of those students who had student loans, excluding a couple that didn't. Source, Jenny Weston.
[87] Question 21 of the MPI survey. See file "VBS Online Survey Analysis Raw Data (3).docx"

centres such as Otorohonga or Pukekoe get the scheme. These opinions stemmed from a view that if the VBS was designed to alleviate shortages of graduate vets in hard to staff rural practices, then localities that were genuinely remote and hard to staff were missing out, while those that were situated closer to main centres were not.

154. We understand that the balloting process has not been used in any significant way since the 2011 to 2014 period. From 2015 onwards there have been approximately 30 valid applications for 30 available places. However, in 2019 applications from 32 graduates were accepted because additional funding was available for an extra two.[88]

155. People who raised the issue of the balloting process often held strong views about it being unfair and giving results contrary to the purpose of the VBS. There is some validity in this observation. The evidence from interviews and the survey of eligible practices suggests that the difficulties in staffing the more isolated practices is more acute than for areas closer to major population centres. The balloting process will also result in applicants missing out due to bad luck rather than any other relevant basis for their selection.

156. Other schemes have addressed selection and targeting in different ways. The Ministry of Education's (MoE) VBS costs a similar amount to the MPI VBS. It had 237 new applicants in the 2018/19 year at a cost of $1,001,000 (not including tax gains or deadweight tax losses)[89]. Geographic targeting is also part of the MoE's VBS. Key criteria for receiving the MoE's VBS are that the teacher is working in:

- Eligible decile 1 schools (which have on-going eligibility)
- Eligible isolated schools (which also have on-going eligibility)
- Eligible Auckland region schools from decile 2 and 3, (which is a VBS expansion for graduate teachers starting work in 2018 & 2019 only)

157. The MoE's isolated schools are defined using an index calculated based on the distances and travel times from population centres with 5,000, 20,000 and 60,000 inhabitants.[90]

158. The Ministry of Health's (MoH's) VBS also has elements of geographic targeting. It has become more evidence based over time with a greater focus on data and workforce modelling but is a much larger scheme with a budget around $7 million with around three quarters of that amount funding nurses.

159. Devising an index based along the lines of that used by the MoE is an approach that MPI could consider. It might be possible to test different applications of the same index on current

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[88] See Appendix B:

[89] $1,228,500 in 2017/18, 323 new applicants in that year.

[90] Isolation index value = $\frac{(0.8 \times d5) + d20 + (0.4 \times d60) + (0.8 \times t5) + t20 + (0.4 \times t60)}{200}$ Where:

d5 = distance in km to population centre of at least 5,000 people, t5 = driving time in minutes to population centre of at least 5,000 people, d20 = distance in km to population centre of at least 20,000 people, t20 = driving time in minutes to population centre of at least 20,000 people, d60 = distance in km to population centre of at least 60,000 people, t60 = driving time in minutes to population centre of at least 60,000 people
Schools with an isolation threshold of 2.1 or greater are eligible for VBS.

eligible vet practices. However, it would need to be carefully analysed to ensure that it was fit for purpose and there would inevitably be difficulties if practices that are currently eligible were to become ineligible as a result of such a change. An index approach might also have the advantage of reducing administrative costs for MPI and vet practices because there would no longer be a need to provide evidence of actual or likely future staff shortages or of their turnover focused on production animals.

160. Another option would be to introduce a two-tier system. This could involve a list of areas or regions which would receive VBS graduates on a priority basis due to their more acute isolation and another group that would pick up the places left unfilled from the first tier. Again, the MoE's isolation index could provide a way of identifying isolated practices. However, this could see the balloting problem persist for graduates applying for practices not defined as isolated. Valid applications could continue to be turned down if significantly more than 30 graduate vets applied each year.

Targeting of who receives the VBS

161. Currently the terms and conditions of the VBS state that an eligible graduate must:

- be a New Zealand citizen or permanent resident
- have a Bachelor of Veterinary Science from Massey University
- be registered by the Veterinary Council of New Zealand (VCNZ) to practice as a vet in New Zealand, hold a current practicing certificate issued by the VCNZ
- have or will have been offered a Permanent Full-Time position, or a Fixed Term Full-Time position with a contract period of no less than two years at an Eligible Practice and that is Predominately Focused on Production Animals and/or working dogs.
- apply for the VBS within 12 months of completing their Veterinary Science Qualification. [91]

162. The Ministry of Health's VBS scheme covers GPs, medical specialists of various sorts and nurses and midwives. If the veterinary VBS is targeting increasing availability of veterinary expertise in rural areas serving production animals perhaps this aim could be met by a scheme that cast its net more widely.

163. In our interviews the question of whether vet technicians or vet nurses could assist in reducing a skills shortage in rural areas was raised. Investigating this was supported by the Chair of the Allied Veterinary Professional Regulatory Council. However, this was not within the scope of this review and discussions with vet practices suggested that while there may be some argument for the potential to use more vet technicians, vets were the ones really needed to take the load off the after-hours roster and emergency care. Another view echoed by a number of vet practices was that there was not a shortage of vet nurses. There are 14 institutions

[91] Voluntary Bonding Scheme for Veterinarians, Terms and Conditions, Page 2, see https://www.agriculture.govt.nz/dmsdocument/36762-2019-vet-bonding-scheme-terms-and-conditions-pdf

training vet nurses around the country and a number of those interviewed commented that they were unaware of any difficulties employing effective vet nurses.

164. Whether vet technicians or nurses could be included in any amended VBS would depend on the nature of any skill shortage in rural areas and the legal ambit and practical spread of roles within vet practices. The Chair of the Allied Veterinary Professional Regulatory Council pointed out that the levels of use of vet technicians and nurses was low in New Zealand compared to internationally. It is unclear why this is the case, but it might stem from regulations and codes defining and governing the roles of vets.

165. The requirement to apply within 12 months of completing a Veterinary Science Qualification appears to restrict the number of vets that could assist in servicing production animals in rural practices. A few of those interviewed stressed that it was not graduate vets who were hard to find but more experienced vets. It may be that graduates who might travel and work overseas immediately after graduating and would therefore be unlikely to meet the VBS's terms and conditions, could still return and be attracted and retained in eligible practices. Such vets could make a useful contribution to the objectives of the scheme, including the objective to make a significant contribution to repayment of student loans. Many graduates do want to travel after leaving university but the terms and conditions of the VBS discourage this. It is likely that young vets returning from travel could make an equivalent contribution to staffing eligible practices although a few of those interviewed commented that it was rare to have such graduates return with directly relevant production animal experience.

166. A couple of vet practices wondered why qualified foreign vets could not benefit from the scheme if the objective was to increase veterinary services from production animal focused practices. These comments were from vets in relatively isolated practices who had had challenges attracting VBS recipients. However, including foreign vets would not meet the subsidiary objective of making a significant contribution to repayment of New Zealand student loans.

167. The Ministry of Education's (MOE's) VBS scheme has similar eligibility requirements to those of the veterinary VBS but is more permissive in a couple of ways. For example, to get the full benefit of the scheme you must apply for your first payment within 12 months of finishing your third year of teaching, and then again at the end of each of your fourth and fifth years of teaching. However, it is also possible to apply and receive lesser amounts of support in the fourth and fifth years. MOE's requirements also only entails confirmation that an applicant was employed for at least 0.5 FTTE in an eligible school.[92]

168. Both approaches could benefit the veterinary VBS. It might also be worth considering expanding on the MoE approach by allowing VBS applications from people who are returning from overseas and weighing up what sort of vet practice to apply for. This could increase the pool of eligible vets who could both provide vet services in eligible practices and help pay back

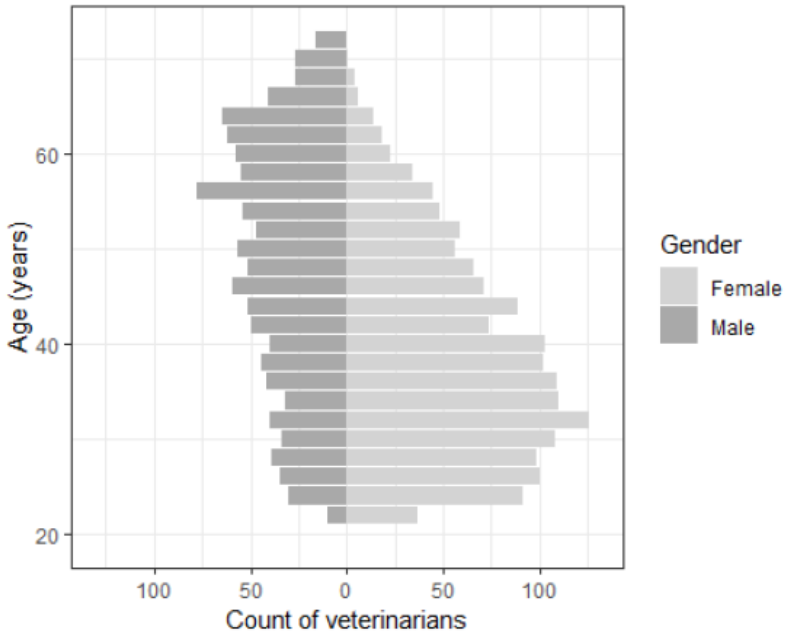
[92] See Ministry of Education, Voluntary Bonding Scheme Guide, Page 4

their student loans. Those returning from OE might get only the opportunity to receive say three years of VBS payments after three years of service on production animals.

Adapting VBS to the increasing proportion of women veterinarians

169. The MOE's requirement that an applicant was employed for at least 0.5 FTTE in an eligible school is also something that might need to be considered by the MPI VBS. The number of women graduating with a Bachelor of Veterinary Science from Massey University has expanded significantly over recent decades. This is clear in Figure 15 below.

Figure 15 : Distribution of Men and Women in practising as veterinarians in New Zealand in 2018



Source : Workforce Report, Veterinary Council of New Zealand, Page 5, available at http://www.vetcouncil.org.nz/pubs.php

170. Full-time is defined in the veterinary VBS terms and conditions as "*employment for at least 35 hours per week*". The absences and leave provisions allow graduates to take up to 14 weeks leave in any one year without affecting their bonding date. If the graduate wishes to take a longer break, VBS payments can be deferred for periods between 14 and 24 weeks in a year. For periods over 24 weeks continued eligibility is at the discretion of MPI and there are provisions covering exceptional circumstances. Graduates are entitled to parental leave as set out in the Parental Leave and Employment Protection Act 1987 and remain eligible for the scheme. But, after parental leave they must return to full-time employment to remain eligible for the VBS.

171. A number of women vets interviewed raised the challenges of balancing family life with the requirements of the VBS. This point was also raised by a couple of participants in the MPI

survey of VBS recipients.[93] An apt comment from a surveyed veterinary practice in answer to a question about the factors that made it difficult to retain graduate vets was:

> **"Most of them want to do their OE. Because there are many female vets these days, a lot of them will have children and not come back. There is not enough flexibility around working part time yet. All but one of our smallies vets work part time and we have no problem to retain them, nor to employ new ones."[94]**

172. The MOE approach would appear to allow teachers more options for part-time work while remaining eligible for its VBS. As increasing numbers of women graduate as vets it may be worthwhile for MPI to consider a more lenient definition of full time work post maternity leave. Another option could be some deferral of VBS payments to match the difference between full time and part time hours worked.[95]

Balloting

173. The balloting process could be seen as a negative unintended consequence of the VBS. It certainly has caused a disproportionate number of negative responses given it has only been used for a few years early in the programme.

174. Currently the terms and conditions of the veterinary VBS include provisions for preferential listing. This allows MPI to place an applicant who might meet all the eligibility criteria but who misses out in the ballot, in a preferential list. If a selected applicant from the funding round leaves during the first two years or, if insufficient applications are received in the following funding round, then the first person from the preferential list is offered a position in the VBS.[96]

175. The MoH and MoE VBSs do not appear to include this sort of application balloting approach if applications exceed a set amount. In the case of the MoH, from 2009 to 2015, all applicants were accepted and approved directly by the Minister of Health. From 2016 to 2018 a cap and ballot system was in place but the 2016 and 2017 intakes were under-subscribed, so no issue arose. In 2018 MoH did use a ballot but it proved inflexible in practice and was not used in 2019. The current MoH process is that if an intake is financially oversubscribed, the Minister of Health decides which categories of registrants to decline, based on MoH advice.

176. Options to increase the numbers of eligible veterinary VBS applicants would increase the chances that balloting would have to be used again to allocate who receives it, and who doesn't, under the current VBS terms and conditions. If the scheme were broadened it may therefore be advantageous to change the eligibility criteria for the VBS. This could involve approaching the forecasting and budgeting of VBS costs more flexibly to allow some increases

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[93] Question 21 of the MPI survey. See file "VBS Online Survey Analysis Raw Data (3).docx"
[94] Waikato/BOP based clinic manager/large animal veterinarian
[95] A part time VBS recipient might therefore not receive their final payment until year 6 or 7 once their part time hours reached those of VBS recipients working at least 35 hours a week over 5 years.
[96] Voluntary Bonding Scheme for Veterinarians, Terms and Conditions, Page 2, see https://www.agriculture.govt.nz/dmsdocument/36762-2019-vet-bonding-scheme-terms-and-conditions-pdf

in numbers from time to time, as has occurred in the 2019 VBS selection process. Alternatively, if the budget is to be held static, try to find some other way to allocate VBS places.

177. An alternative to balloting could be a merits-based system which could take graduates in descending order of grades from Massey in their final year or some similar approach. This could be viewed as more understandable and fairer than the current system. Of course, if geographic priority regions were set to take some VBS places on a priority basis due to greater isolation, then this merits-based approach might only apply to the second tier of practices.

Communicate VBS incentive on a post-tax basis

178. The question of the tax status of the VBS is another feature of the scheme that has engendered a lot of feedback. It was the most common point made in the additional feedback provided in response to Question 21 of the MPI survey of VBS graduates with 25 comments on tax expressing differing degrees of disappointment about its impact on the VBS amounts paid.[97] Currently the tax status of the VBS is described on the MPI website as:

> **Participants eligible for $55,000 over 5 years**
>
> **People taking part in the scheme are eligible for $55,000 ($11,000 each year) over the 5 years of the scheme. MPI will pay the first instalment in your third year in the scheme, with the second and third instalments made after the fourth and fifth years respectively. MPI will contact you near to your anniversary date and send you an Eligibility for Payment form to complete.**
>
> **Tax and student loan deductions**
>
> **Income tax is deducted automatically, and if you have a student loan, MPI will pay Inland Revenue to pay off any outstanding loan. If you have no student loan, the balance (after income tax has been deducted) will be paid directly to you.[98]**

179. VBS recipients who proactively contacted Sapere and were interviewed also expressed a level of unhappiness with the post-tax amounts received compared to the pre-tax amounts advertised. A few of those interviewed said that they were aware of the VBS's tax status and were not surprised by it.

180. The website does inform VBS applicants that income tax will be automatically deducted. However, it is not as clear as it could be that the amounts received are likely to be materially less than the $55,000 that people in the scheme are eligible for. The impact of tax is evidently missed by many applicants as it is one of the most frequent gripes about the VBS. It therefore

[97] See file "VBS Online Survey Analysis Raw Data (3).docx"
[98] See https://www.agriculture.govt.nz/funding-and-programmes/farming/vet-bonding-scheme/

might be prudent, and potentially reduce administrative costs from queries etc, to improve the transparency of the tax status of the VBS.

181. This could be done by changing the way the VBS quantum is described from a pre-tax, to a post-tax, basis. The amount could be expressed on a post-tax basis and include a likely range from a lower bound amount to an upper bound amount based on advice from IRD. A further disclaimer could be added that the actual tax deducted would depend on each recipients' tax status and they should seek advice on that. This would ensure that people applying for the VBS have it quite clear what amounts they are likely to receive and manage misperceptions about the amounts due. The way the VBS benefit amounts are described could be changed collateral information, on the website and in the terms and conditions (Page 4, 4.2. Incentive Payment).

Question Five: Learnings?

182. This section discusses what could be learned from the last decade of operating the veterinary VBS. The subsidiary questions were as follows:

- *Are there any lessons from this review with regard to measuring net benefits that could be applied to MPI's wider portfolio of investments?*
- *Are there any other suggestions for improving MPI's performance of its stewardship role that can be demonstrated by this review?*

183. The first subsidiary question asks about any lessons on measuring net benefits from this review that might be applied to MPI's wider portfolio of investments. There is a lack of data available to help monitor a key objective of the VBS on the level of, and trends in, any shortage of skills and experience in rural vet practices. In our experience having data from well conducted surveys undertaken at the outset of a programme and then done periodically as the programme progresses are of significant value. Another approach could have been to work with the VCNZ to include questions in their annual APC surveys that sought to collect a timeseries of data on employment in rural practices. These sorts of approaches could have provided clear evidence of changes in employment behaviour by graduates and existing staff or a lack of it. Without this sort of information, it is necessary to resort to other methods such as the mix of thought experiment and break-even analysis used in this report.

184. In the case of the VBS before and after surveys could focus on rural practices and record snap shots in time of the staffing issues facing these practices. Once the VBS was operating these surveys could focus on the key questions, for example attraction of graduate vets by including questions such as question 14 of the MPI survey of VBS recipients. This could be combined with collection of some specific employment and career move data via the VCNZ survey which could gather key information about the retention of staff in rural practices compared to other practices.

185. Although the portfolio of MPI investments will encompass a wide range of differing activities, it is likely that many will face a dearth of good data. In these cases, periodic surveys and building cooperative relationships with industry bodies, such as VCNZ, that could assist in gathering useful data, may be of value.

Look for efficiencies across VBS agencies and potentially improve responsiveness

186. The second subsidiary question queried whether this review could suggest potential ways to improve MPI's performance of its stewardship role.

187. The MoH runs a much larger VBS with an annual budget of circa $7 million and a scheme that has handled around 5,000 recipients since 2009. It has developed spreadsheets and processes so it can manage approximately 600 payments a year with 1.2 FTE. It is possible that the MPI VBS could find helpful synergies or more cost-effective processes by regular catch ups and comparisons with the other two VBSs.

188. A few of those surveyed or interviewed raised concerns about finding information on the VBS and corresponding with MPI about it. These concerns were generally from earlier on in the decade in which the VBS has been running and probably reflect teething problems at the outset. Discussions with the MoH highlighted that its approach is to respond to specific queries about the VBS primarily through email to ensure communication is cost effective. It could be worth considering how queries about the VBS are handled and whether there is any need for more efficiency and clarity in MPI's communications about the VBS.

Recommendations

Broaden targeting of VBS

189. Consider devising an isolation index based along the lines of that used by the MoE and test different applications of this index against the location of current eligible vet practices. There is likely to be inevitable difficulties if practices that are currently eligible were to become ineligible as a result of such a change.

190. Explore introducing a two-tier system. This would involve a list of areas or regions which would receive VBS graduates on a priority basis due to their more acute isolation and another group that would pick up the places left unfilled from the first tier. An isolation index could provide a way of identifying isolated vet practices.

191. Investigate whether vet technicians could be included in the VBS.

192. Examine broadening the window in which graduates can apply for a VBS to 2 or 3 years after graduation to include applications from New Zealand graduates who are returning from overseas and weighing up what sort of vet practice to apply for. This could increase the pool of eligible vets who could both provide vet services in eligible practices and help pay back their student loans.

Avoid future use of the ballot for VBS allocation

193. Research the advantages of changing the VBS terms and conditions to remove the balloting approach to allocating VBS places.

194. Balloting is viewed very negatively by many stakeholders. It may therefore be advantageous to manage the VBS scheme to avoid using it in future. This could be achieved by building in a buffer within MPI's budget to retain greater flexibility to cover the 30 places.

195. Alternatively explore a merits-based system which could take graduates in descending order of grades from Massey in their final year or some similar approach.

Communicate VBS as a post-tax incentive

196. Explore changing the way the VBS quantum is described from a pre-tax, to a post-tax, basis. This could take the approach of stating that the amount on a post-tax basis including a range from a lower bound amount to an upper bound amount. These could be calculated based on advice from IRD.

Adapting VBS to the increasing proportion of women veterinarians

197. Consider a more lenient definition of full time work post maternity leave to improve the VBS's flexibility for those returning from maternity leave.

198. Another option would be some deferral of VBS payments to match the difference between full time and part time hours of work. (A part time VBS recipient might therefore not receive their final payment until year 6 or 7 once their part time hours reached those of VBS recipients working at least 35 hours a week over 5 years).

Investigate resetting VBS to retain its monetary value

199. The 2018 level of average graduating vet student loans is 46 per cent higher than the original base year of 2007. The VBS is therefore likely to be having a declining effect on the employment decisions of graduate vets. If the scheme is viewed as a net positive benefit to New Zealand, investigate resetting the VBS to ensure that its annual payments after tax continue to cover 11.3 per cent of the average vet graduate's student debt.

Introduce before and after surveys of similar programmes

200. Consider using surveys undertaken at the outset of a programme and then done periodically as the programme progresses in future similar programmes. This will allow improved monitoring of their net benefits.

201. Look for opportunities to work with industry bodies who collect data, like the VCNZ, to include questions in their annual surveys to build a timeseries to help collect monitoring data.

Improve responsiveness of MPI

202. Examine how queries about the VBS are handled and whether there could be greater clarity and efficiency.

Continue to look for synergies and learnings from other VBSs

203. Continue to meet from time to time with MoH and MoE to discuss respective approaches to these schemes and look for helpful synergies or more cost-effective processes.

Appendix A: Immigration Long Term Skill Shortage List

As of 27 May 2019 the skill of being a veterinarian is listed on the Long Term Skill Shortage List by Immigration NZ.[99] This list is updated every 6 months. It is commonly used in the Work to Residence instructions and in the Skilled Migrant Category[100]. A veterinarian was described as a skill at ANZSCO level 1 involving diagnosing, treating and preventing animal diseases, ailments and injuries. Registration or licensing is required. A NZ registration with the Veterinary Council of New Zealand is the Required standard. The qualification in this area of absolute skill shortage was described as: Bachelor of Veterinary Science (NZQF Level 7) see Note 5).

Note 5 states : Where New Zealand registration is specified as a requirement and states "a qualification(s) in this area of absolute skill shortage is/are", a person only needs to hold the particular New Zealand registration and to have undertaken any necessary work experience in order to meet the requirements of the List. In these cases, qualifications are listed only for the purposes of people applying for work visas under WF4.1.

[99] See https://skillshortages.immigration.govt.nz/veterinarian/
[100] See https://www.immigration.govt.nz/knowledgebase/kb-question/kb-question-1017

Appendix B: MPI press statement

Regional vet graduates to receive financial boost

Date: 30 Sep 2019, contact: MPI media team, Ph.: 029 894 0328, Email: media@mpi.govt.nz

Thirty-two graduate vets will receive a financial boost from the Voluntary Bonding Scheme for Veterinarians to help ease the shortage of veterinarians working with production animals in our regions, the MPI announced today.

"Our Voluntary Bonding Scheme for Veterinarians is designed to support and boost the number of graduate vets in our regions," says Steve Penno, director investment programmes at MPI.

"It's available for graduates who are working with production animals such as cows, sheep, and working dogs."

This year's successful recipients will receive funding of $55,000 over 5 years – a total of $1.76 million.

The scheme generally provides funding for 30 graduate vets a year, however additional funding was available this year for an extra 2. Since the programme started in February 2009 MPI has approved funding for 318 graduate vets.

"Vets play a vital role in our primary industries and rural communities," says Penno.

"The Voluntary Bonding Scheme for Veterinarians is a key way of attracting skilled workers to hard-to-staff veterinary practices in the regions, and giving graduates an early boost to their careers. **Further information about the Voluntary Bonding Scheme for Veterinarians.** Successful applicants in this year's application round are from:

Region	Number of graduates	
Canterbury	3	Waimate (2), Aorangi (1)
Manawatū/Whanganui	4	Hunterville (1), Dannevirke (1), Taumarunui (1), Feilding (1)
Marlborough	1	Blenheim (1)
Northland	1	Waipū (1)
Otago	6	Ōamaru (3), Ranfurly (1), Clutha (2)
Southland	4	Edendale (1), Winton (2), Gore (1)
Taranaki	1	Eltham (1)
Waikato	12	Te Awamutu (2), Tīrau (1), Taupiri (1), Taupō (2), Paeroa (1), Morrinsville (2), Kopu (1), Tokoroa (1), Hauraki (1)

Appendix C: Primary list of documents reviewed

Documents received from MPI 16 & 21 August 2019

Document
Briefing B08-381.pdf
Cab Min CBC Min (08) 32-14.pdf
cab min SOC (09) 2-1.pdf
Cab paper CBC (08) 544.pdf
Cab paper SOC (09) 6.pdf
List of Stakeholders for VBS Review.docx
Ministry of Health 2012 VBS Review Methodology.pdf
MInistry of Health 2012 VBS Review Scope - last page.pdf
Ministry of Health 2012 VBS Review Scope.pdf
MOE TOR.pdf
MPI TOR.pdf
Research Doc B15-323_Meeting with NZ Veterinary Association.docx
Research Doc Basic Facts on VBS.docx
Research Doc Conversation with Policy re VBS.msg
Research Doc Letter from NZVA Sept 2015.pdf
Research Doc Letter re 2009 VBS Review.docx
Research Doc Memo to Director regarding 2017 VBS changes.doc
Research Doc VBS Industry meeting 9.6.16.docx
ToR for VBS.pdf
VBS Options.docx
VBS performance v3 (1).docx
VBS 2018 Survey Analysis.docx
VBS data to support Benefits Realised A3.xlsx
VBS Online Survey Analysis Raw Data.docx
VBS Success rate analysis_Demi Kirkpatrick.docx
Vet Bonding Scheme Benefits Realised A3 - Feb 2018.pptx

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'Sapere' comes from Latin (to be wise) and the phrase 'sapere aude' (dare to be wise). The phrase is associated with German philosopher Immanuel Kant, who promoted the use of reason as a tool of thought; an approach that underpins all Sapere's practice groups.

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