Future intentions of the New Zealand DHB-based senior medical workforce

HEALTH DIALOGUE
ISSUE 13 | JULY 2017

ASMS
TOI MATA HAUORA
www.asms.nz

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Foreword

Retention, retention, retention

Improving retention rates of New Zealand's current and future senior doctor workforce has never been more pressing. Medical Council data show much of the investment in training our future specialist workforce is lost by the time our medical graduates would be expected to be starting a career in the New Zealand specialist workforce. Within seven years of graduating, a quarter are lost to the country; a third are lost by year 10 post-graduation. Of those who stay and become vocationally registered, a further 10% are gone within three years. Of the international medical graduates (43% of our specialist work force) recruited to fill the gaps, 25% leave within three years of obtaining vocational registration. In summary, New Zealand gains around 480 specialists each year but at the same time loses about 245. Ministry of Health specialist workforce projections assume workforce entries will remain fairly constant while exits will increase to around approximately 315 per year by 2021.

This is the backdrop to the survey of Association of Salary Medical Specialist (ASMS) members on their career intentions, undertaken in August and September 2016, the findings of which are reported here. The key finding, that 24% of respondents say they intend to quit district health board (DHB) employment within the next five years, should come as no surprise considering the workforce demographics. Indeed the finding is consistent with Ministry of Health specialist workforce projections which cover both private and public sectors. The value of this study, aside from the additional statistical data it provides specific to the DHB workforce, is that it identifies the reasons why doctors are leaving and what inducements might encourage them to stay, providing insight for employers and policymakers as to what measures need to be taken to stem the outward flow.

That many senior doctors are approaching traditional retirement years is a major factor for leaving, as would be expected. But this study finds many of those older doctors would be more inclined to stay on longer with improved working conditions and job satisfaction. This reinforces the advice included in a report prepared for Health Workforce New Zealand (HWNZ) on retention issues for doctors in their 'third age'[1]. While there is little evidence that HWNZ has acted on that advice, strategies identified in the report for improving retention include intervention to reduce stress, changing work roles, introducing more part-time and job-share positions and more flexibility in work hours.

This study drills down further among those intending to leave, with respondents across all age groups identifying common issues such as disillusionment with management, heavy workloads, inadequate staffing, remuneration, feeling under-valued, and a sense of powerlessness to effect change.

When the findings of this study are set alongside those of other recent ASMS surveys of senior doctors showing high levels of burnout and 'presenteeism' in the workforce, and surveys of DHB clinical heads of department showing, in their assessments, significant staff shortages across most specialties, the picture is of a workplace environment caught in a vicious cycle that is unhealthy for patients and doctors alike. It is also unhealthy in terms of cost-efficiency. If there is anything surprising about a quarter of the surveyed workforce signalling intentions to leave in the next five years, it is that the proportion is not greater.

1 S Ineson. Retention of doctors in their third age. A report for Health Workforce New Zealand, May 2011.

This would be less concerning if there were signs of relief on the horizon, but the available evidence suggests if anything conditions could get worse.

While the Minister of Health regularly announces increasing numbers of specialists, as the ASMS has pointed out in earlier reports, the New Zealand's specialist workforce per population remains among the lowest in the OECD. To catch up with Australia by 2021, as was once agreed by DHBs to be a reasonable goal given Australia's specialist workforce numbers are below the OECD average, our current total (public and private) net growth rate of around 240 per year (including provisional vocational registrations), recorded by the Ministry, would need to increase to at least 400 a year. Instead, the Ministry's projections suggest a reduced growth rate of less than 200 a year.

By making a concerted effort into improving the retention rates of the trainee and specialist workforces it would be possible to start reversing the trends and building a more stable workforce with the capacity to address our growing health needs.

The results of this study provide a platform from which a long-overdue comprehensive and well-resourced retention strategy could be launched.

Dr Hein Stander
ASMS National President

Executive summary

How many senior doctors and dentists are likely to leave the district health board (DHB)-based workforce over the next five years? What factors are encouraging them to consider doing so and what might encourage them to remain? These are the questions at the heart of this report into the future intentions of the DHB-based senior medical workforce.

This report describes and discusses the findings of a survey on future intentions of members of the Association of Salaried Medical Specialists (ASMS), who are medical and dental specialists and other non-vocationally registered doctors and dentists employed primarily by New Zealand's 20 DHBs. For ease of description, these ASMS members are referred to throughout this report as senior doctors or as the senior medical workforce.

The survey focused on three possible scenarios that may see individuals exit the DHB-based workforce: those considering leaving medicine entirely either because they wish to retire, or because they wish for a career change, those who intended working in medicine but not in a DHB-setting and those who may be contemplating leaving New Zealand permanently to work in medicine overseas. The report finds that approximately 24% of the 2424 DHB-based senior doctors (63% overall response rate) were either likely or extremely likely to leave DHB-based employment over the next five years. Nearly half of respondents aged 55 and over were unlikely or extremely unlikely to continue with some form of DHB-based employment.

The research finds that the most significant factors associated with intentions to leave are increasing age and low job satisfaction. Men had on average a higher full-time equivalent (FTE; a measure of hours worked per week) than their female counterparts but were more likely to signal an intention to leave DHB-based employment. There was also significant variation in intentions to leave across all three scenarios by medical specialty, whether respondents had dependents, and by the FTE of respondents.

For the remaining workforce who did not signal an intention to leave DHB-based employment, a significant proportion would like to reduce their involvement in the DHB-based workforce, either by reducing their FTE or by reducing the amount of on-call or night-shift work components. Forty percent indicated that they would like to reduce their FTE, 30% indicated that they would like to reduce their after-hours on-call or shift work, and 8% indicated that they would like to cease on-call or shift work duties altogether. There was significant variation in intentions regarding both changes to FTE and on-call and shift work duties according to level of job satisfaction and gender.

The research details important demographic detail of the specialist medical workforce; 36% of respondents were aged 50 and over and 18% were aged 60 and over. The report finds this association between increasing age and increasing rates of intentions to leave accords with other research in this field. Older respondents intending to remain were more likely to signal an intent to reduce their level of involvement in the workforce. The association between decreasing job satisfaction and increasing intentions to leave mirrors trends in other research and, importantly, suggests that many could be encouraged to remain should levels of job satisfaction increase.

Feelings of disillusionment and frustration are acting as potential disincentives for senior doctors to continue working.

This research highlights potentially significant specialist workforce attrition over the next five years unless interventions are made to improve working conditions.

The qualitative analysis provides context for and insight into these patterns and details the reasons why senior doctors are contemplating leaving.

Of key significance are the findings that feelings of disillusionment and frustration are acting as potent disincentives for senior doctors to continue working, particularly for those in the older age groups.

This suggests that there may be many competent older doctors who are considering leaving not simply because of their age, but because of growing feelings of disenfranchisement and dissatisfaction.

Conversely, the qualitative analysis finds that provision of flexible working hours, including the ability to take leave, as well as improvements to management and DHB culture, could encourage many to remain. Quantifying the main reasons for leaving and the main factors that could encourage retention finds that 73% of the overall 24% intending to leave could be encouraged to remain if improvements were made. As such, the report highlights that while aging is an incontrovertible reality, there are many competent older senior doctors as well as senior doctors across the younger age-spectrum who could be encouraged to remain working. Initiatives to improve conditions of work – for example, strategies to provide recognition for good work and increase clinical involvement in decision making – are likely to pay dividends in terms of improving levels of job satisfaction and, in turn, increasing the likelihood of specialist retention. Attending to the core areas of dissatisfaction highlighted by this research and expanded on in the qualitative comments would be a sound place to start.

Overall, the report suggests that existing specialist shortages across the board may continue to affect DHBs and specialties in the future. For small DHBs and sub-specialties with existing low numbers, the future is of concern. For smaller rural DHBs such as Wairarapa, the research suggests the rates of retirement and attrition affect a significant proportion of the existing workforce and will require future monitoring. Acute shortages are already well documented for specialties such as forensic pathology, and it is well established that proportionate specialist numbers in New Zealand are low by OECD standards.

This report is focused on the rates of those intending to leave and understanding the reasons why. As a consequence of this emphasis, the report does not consider how those likely to leave the DHB-based workforce may balance against those entering the specialist workforce and the demographic patterns therein. Further work is needed to consider future workforce input requirements, but the first step must be to ensure every effort is made to retain the experienced senior doctors we already have.

This research highlights potentially significant specialist workforce attrition over the next five years unless interventions are made to improve working conditions.

Future workforce input needs will be shaped by the timely implementation of successful policies to improve job satisfaction to support and retain many more of the existing specialist workforce in New Zealand.

Key statistics

- Across all age groups, 23.9% (n=546, 95% CI 22.2 to 25.7%) of respondents (n=2281[2]) were unlikely or extremely unlikely to continue with some form of DHB-based employment.
- 44.7% (n=365, 95% CI 41.3 to 48.1%) of all respondents aged 55 and over (n=816) were unlikely or extremely unlikely to continue with some form of DHB-based employment compared with 12.4% (n=181, 95% CI 10.7 to 14.2%) of all respondents aged 54 and younger (n=1465).
- 38.1% (n=311, 95% CI 34.8 to 41.5%) of all respondents aged 55 and over (n=816) intended to leave medicine entirely, compared with 4.1% (n=60, 95% CI 3.1 to 5.2%) of the 1465 aged 54 and younger who intended to leave medicine entirely.
- 56% of all respondents scored as dissatisfied with the level of recognition they received for good work. This increased to 79% dissatisfaction for those respondents intending to leave DHB-based employment. Other core areas of dissatisfaction included ability to choose method of working, hours of work, and remuneration.
- For all respondents, the top five themes cited as justification for not wishing to continue with DHB-based employment in some form were:
    1. age (n=217)
    2. disillusionment with DHB management and the direction of the New Zealand public health system (n=82)
    3. exhaustion, burnout and pressure of work (n=74)
    4. low morale, poor job satisfaction and feeling unable to institute change (n=70)
    5. wanting more time for leisure or other interests (n=51).
- The top 5 themes cited as possible inducements to remain were:
    1. provision of flexible working hours or part time work (n=71)
    2. better management culture and less bureaucracy (n=66)
    3. better resourcing and staffing levels (n=56)
    4. reduced on-call, shift work and after hours (n=54)
    5. more respect, greater professional freedom (n=35).
- 35% of comments suggested that nothing would induce them to remain.
- Significant correlations were found across all three scenarios between intending to leave, increasing age and low levels of job satisfaction. There was also significant variation in intentions to leave across all three scenarios by medical specialty, whether respondents had dependents, and by the FTE of respondents.
- For the remaining workforce who did not signal an intention to leave DHB-based employment, 40% indicated that they would like to reduce their FTE, 30% indicated that they would like to reduce their after-hours on-call or shift work, and 8% indicated that they would like to cease on-call and shift work duties altogether.

2 Of the 2424 respondents, 2281 provided complete intentions-to-leave data.

Introduction

Ensuring New Zealand retains competent doctors of all ages is a vital enterprise. New Zealand needs a ready supply of young doctors entering the health system, as well as experienced competent older doctors to provide essential training, mentoring and support.

Most importantly, New Zealand needs a balanced flow of those entering and leaving and a system that supports and provides for the needs of all. In the words of Davidson, Lambert et al. (2001), this problem can be summed up as the need to ensure "the right numbers of doctors, in the right specialties, in the right places" (p323).

International research suggests that attrition in medical workforces is an issue in many countries but particularly problematic in countries where there are existing workforce shortages (Degen, Li et al. 2015). In New Zealand, research released by the Medical Council of New Zealand (MCNZ) suggests that while the absolute numbers of senior doctors are increasing year on year, in proportionate terms, the number of specialists per head of the New Zealand population remains one of the lowest in the OECD (OECD 2014). In addition, New Zealand has one of the highest rates of reliance on international medical graduates (IMGs), who currently represent around 43% of the senior medical workforce (MCNZ 2016). Retention rates of these IMGs remain poor (ASMS 2017). Other demographic data reveals an aging medical workforce in New Zealand; the average age of DHB-employed senior doctors is 49.9 years (DHBSS 2016) and 40.1% of all doctors are aged 50 and over (MCNZ 2016).

Other research conducted by the ASMS has found that some district health boards (DHBs) are, in the views of clinical leaders, severely under-staffed (ASMS 2016), a trend which is evidenced most keenly by the growing number of New Zealanders who are unable to access the health care that they need (Bagshaw, Bagshaw et al. 2017). In addition, recent research conducted by the ASMS has shown that New Zealand's senior medical workforce is experiencing high rates of working through illness, or 'presenteeism' (Chambers, Frampton et al. 2017), as well as high rates of burnout (Chambers, Frampton et al. 2016). These trends are concerning as they suggest that not only are senior doctors under increasing pressure and struggling to cope, but that the public health system is functioning at the expense of the health and wellbeing of its workforce. Moreover, international research suggests clear associations between stress and burnout and increased intentions to leave (Zhang and Feng 2011, Tziner, Rabenu et al. 2015). Other research has suggested that burnout is also implicated in leaving medicine entirely (Shanafelt 2009, Rudman, Gustavsson et al. 2014).

Alongside these trends, data released by the MCNZ (2014) indicates a significant proportion of the New Zealand specialist workforce work in both private and public sectors. Opportunities for non-DHB based work, which may include private practice, are attractive for a variety of reasons to the senior medical workforce in New Zealand. Approximately 19% of specialists work in the private sector as their main employment, 31% are engaged in the private sector as their secondary employment, and 9% work in the private sector as their third site of employment. The extent of double and triple counting in these figures, however, is not possible to calculate from the available MCNZ data. A relatively small number of specialists also work in the government sector, university employment and for professional bodies.

Attrition in medical workforces is an issue in many countries but particularly problematic in countries where there are existing workforce shortages.

We need to understand the factors shaping the future intentions of those currently working in New Zealand's senior medical workforce.

Data from the ASMS burnout study (Chambers, Frampton et al. 2016) found lower burnout scores commensurate with increasing private hours worked. Similarly, research by Ashton, Brown et al. (2013) found senior doctors were generally more satisfied with their conditions of work in the private sector with the limited managerial control and greater specialist autonomy.

A recent *Research Brief* published by the ASMS (2017) notes that one in six New Zealand-trained doctors are working overseas (OECD 2016), which is one of the highest expatriation rates for doctors in the world (Zurn and Dumont 2008). Higher incomes and new experiences are readily available for New Zealand-trained doctors overseas, and Australia has been particularly attractive historically due to its close proximity (MoH 2009). These patterns of expatriation and IMG reliance, as well as the aging demographic of the specialist workforce, have a large impact on the composition of New Zealand's senior medical workforce (ASMS 2017). Attaining insight as to what the senior medical workforce may look like in the future is both timely and of great relevance. We need to understand how demographic and other factors are combining to shape the future intentions of those currently working in the New Zealand senior medical workforce.

This *Health Dialogue* presents findings from research into the future intentions of the DHB-based senior medical workforce. The core aim of this research is to assess how senior doctors and dentists currently working in New Zealand DHBs may change their levels of involvement in DHB-based employment over the next five years. Although prospective, analysing trends and patterns in workforce intentions will provide a better understanding of the proportion of the DHB-based workforce who may be at risk of leaving. Many may be intending to leave because they have reached a natural end-point in their medical careers. However, there may be others leaving prematurely. Understanding who is leaving and why is therefore crucial. We need to know what interventions could be made to encourage those who may intend to leave, to remain.

Finally, for those who do intend to remain in the DHB-based workforce, is there intent to change their level of involvement? As noted by Coombs, Hooker et al. (2013), many may choose to remain in the medical workforce but wish to reduce their workload or tweak certain aspects of their involvement. Older senior doctors, for example, may find the burden of night work in the form of on-call or scheduled shifts tiring and onerous and may wish to limit this aspect of their work. Doing so, however, would potentially impact on younger senior doctors; these issues are complex and contested and require careful consideration. In the context of this research, we defined future work intentions to include changes that may be sought in the course of work but have not yet been formalised and, indeed, may not occur or be possible for a variety of reasons. As a prospective study, this is one of the key limitations of the research: what people might like to do in the future may not happen or may not be possible. Nevertheless, it is vital to understand how people feel about different aspects of their involvement in the DHB-based workforce. Any changes to the level of involvement will have repercussions for the wider specialist workforce. We need to know how many would like to pull back their involvement, in what way, and why.

The specific aims of this research were as follows:

1. To assess rates of intentions to change level of involvement in DHB-based employment for all ASMS members within the next five years

2. To understand various factors that may shape these intentions
3. To understand whether there are associations between these intentions and various independent factors, including full-time equivalent (FTE) (a formalised measure of weekly hours of work), age, gender, dependents, medical specialty, IMGs, health status and level of job satisfaction.

In this *Health Dialogue*, we first outline the research design and methodology before presenting the demographic characteristics of the 62% of the ASMS membership who responded to this survey. We then consider the associations between each of three intentions-to-leave scenarios and various independent variables before turning to the analysis of the qualitative reasons why respondents intend to leave and what factors or changes may induce them to remain. Finally, we consider the intentions of the respondents who intend to remain in DHB-based employment in terms of how they would like to change their FTE and on-call/shift work arrangements.

Research design and methodology

The survey focused on three possible scenarios that may result in current members of the ASMS leaving DHB-based employment. The first scenario sought to capture those individuals who may be considering leaving medicine entirely either because they wish to retire, or because they wish for a career change. The second scenario sought to capture those who intended working in medicine but not in a DHB-setting – for example, working in private practice or in a university setting. The third scenario sought to capture those who may be contemplating leaving New Zealand permanently to work in medicine overseas.

Rittenhouse, Mertz et al. (2004) caution against reading too much into self-reported intentions to leave as a measure of attrition. Nevertheless, other studies support the use of a prospective approach due to strong associations discovered between intentions to leave and acting upon this intent (Sibbald, Bojke et al. 2003, Hann, Reeves et al. 2011, Zhang and Feng 2011). Indeed, research cited in Degen, Li et al. (2015) suggests that actual rates of leaving in some instances may be significantly higher than the rates of intentions to leave. For example, Hann, Reeves et al. (2011) found 11.8% of doctors signalled an intention to leave in the next five years, whereas 16.5% were found to have left at the end of that five-year period. Data on numbers of those who leave is clearly more definitive and accurate than prospective data. Nevertheless, from a research perspective, once an individual has left their place of work or retired entirely it can be challenging to gain access to the individuals to understand their reasons why and provide remedy where possible or appropriate (Griffeth, Hom et al. 2000).

With respect to understanding contributing reasons shaping decisions regarding intentions to leave, Degen, Li et al. (2015) recommend the use of qualitative data to fully probe and provide vital contextual detail alongside quantitative data and trends. This combination of quantitative and qualitative approaches is adopted in research by Brett, Arnold-Reed et al. (2009), who replicate the approach of Davidson, Lambert et al. (2001). Both studies request explanations as to why respondents are considering leaving as well as factors that might encourage them to stay working, although Davidson et al. do so by providing a list of options rather than analysing free-text comments. Qualitative approaches to understanding intentions to leave are also used in Sansom, Calitri et al. (2016). This study aims to build upon previous attempts to combine quantitative data with qualitative analysis to fully probe correlations between independent variables, intentions to leave and personal context for respondent's intentions.

Age is likely to be an important factor in shaping intentions to leave the workforce, with intentions to leave for older doctors likely to act as a proxy for intentions to retire. Research has found variously that older age is a key predictive factor in intending to leave medicine (Sibbald, Bojke et al. 2003), whereas other studies have found some trends for younger doctors to intend to leave medicine at higher rates than their older counterparts (Heponiemi, Kouvonen et al. 2009). Other studies find doctors are more likely to continue working past what many would consider the age of retirement. American research by Petterson, Rayburn et al. (2016) found that 40% of primary care physicians were still involved in direct patient contact at age 75, and there were still active practitioners aged 85 and over. Some research suggests that women may leave medicine earlier than their male counterparts (Eagles, Addie et al. 2005). Research on general practitioners, however, suggests that men are more likely to signal an intention to leave medicine earlier than their female counterparts (Davidson, Lambert et al. 2001). Degen, Li et al. (2015) conclude in their

review of gender trends in intentions to leave, that variation in age and gender trends may reflect country-specific issues. To date, there have been no studies on the relationship between intentions to leave in senior doctors and associated trends in age and gender in the New Zealand context.

Other studies have found significant associations between intentions to leave and demographic variables such as the presence of dependents and health status. For example, some research suggests that those with young dependent children are less likely to signal an intention to leave than those without (Fuss, Nubling et al. 2008), but these individuals are likely to cite higher rates of work–family conflict (Mache, Bernburg et al. 2015). Other significant factors known to influence intentions to leave or intentions to retire from the medical profession include poor health (Heponiemi, Kouvonen et al. 2008) including health status of spouse (Bahrami 2003), financial preparedness or levels of retirement savings (Davidson, Lambert et al. 2001, Brett, Arnold-Reed et al. 2009) and higher levels of burnout (Van Greuningen, Heiligers et al. 2012).

Levels of job satisfaction have also been cited as a key antecedent in predicting turnover intentions (Coomber and Barriball 2007, Hann, Reeves et al. 2011). High levels of job dissatisfaction have been shown to be a key predictor of intentions to leave (Sibbald, Bojke et al. 2003), and other research has suggested that high rates of intentions to leave reflect high levels of dissatisfaction with the workplace (Rittenhouse, Mertz et al. 2004). Research in job satisfaction suggests that the use of a multi-factor measure, such as the Warr–Cook–Wall scale (1979), provides a robust way of assessing job satisfaction when compared to a single-item measure (Konrad 2015).

This research sought to assess intentions to leave combined with an analysis of core demographic trends, including age, gender, self-rated health status and level of job satisfaction. In so doing, this research provides an important snapshot of the senior medical workforce and provides insight into which groups are at greatest likelihood of leaving.

Data collection and survey design

A total of 3926 DHB-based members of the ASMS were asked by email to participate in an anonymous online survey between August and September of 2016. The survey, hosted by Survey Monkey, was open for one month with four reminders sent out to encourage completion. Participation was voluntary, and no incentives for participation were provided. The survey was designed to gain insight into the future intentions of the DHB-based specialist workforce, with a specific focus on the likelihood of respondents remaining in the DHB-based workforce over the next five years.

The research focused on three possible scenarios that may see individuals exit the DHB-based workforce:

- Scenario 1) those considering leaving medical practice entirely, possibly to retire or to change career – "Within the next five years, how likely are you to leave medicine entirely?"
- Scenario 2) those remaining in medical practice but intending to exit from DHB-based employment possibly to take up private practice, or non DHB-based medical work – "Within the next five years, how likely are you to continue with some form of DHB-based employment?"
- Scenario 3) those considering leaving New Zealand permanently to practise medicine overseas – "Within the next five years, how likely are you to leave New Zealand to practise medicine abroad?"

Respondents were asked to answer these questions by selecting from a 5-point Likert scale ranging from 'extremely likely' to 'extremely unlikely'

High levels of job dissatisfaction have been shown to be a key predictor of intentions to leave.

with the mid-point of 'unsure'. Note that the second scenario was reverse worded so that those intending to leave were required to select 'extremely unlikely' or 'unlikely'. A full copy of the questionnaire is provided in Appendix 1.

These scenarios were deemed mutually exclusive and the survey structured accordingly so that if an individual indicated that they were likely or extremely likely to leave medicine entirely, they were not asked whether they would continue with DHB-based employment or go overseas. Similarly, those indicating an intention to leave DHB-based employment were not asked if they intended to go overseas.

This structuring of the survey (while based on a relatively arbitrary assumption) was necessary to prevent double counting of individuals who may be leaving. It also allowed an analysis of trends between the different 'leaving' scenarios and independent and demographic variables.

The respondents who selected 'extremely likely' or 'likely' for the first and third intentions-to-leave scenarios or 'extremely unlikely' or 'unlikely' in the second scenario were then jumped to a section of the survey where they were asked to state the reasons why they intended to leave as well as to explain briefly what might encourage them to stay.

Finally, the survey sought to focus on the future work intentions of those individuals who were not considering changing their involvement in DHB-based employment. Those who intended to remain were asked whether they would like to change their current level of work by querying whether they would seek to either increase, decrease or not seek to change their FTE over the next five years. Respondents were also asked whether they would like to increase, decrease, not change or cease their on-call and shift work duties altogether. A final section of the survey sought open-ended comments from all respondents on any remaining thoughts.

Independent variables

Independent variables were taken from responses to the World Health Organization's self-health assessment tool (a single-item measure of health) and demographic data including gender, age (according to five-yearly age brackets), FTE (excluding hours on-call), primary DHB and medical specialty. The survey also requested the number of dependent children and other dependents living in respondents' households and the country of primary medical qualification.

Level of job satisfaction was queried with the Warr–Cook–Wall job satisfaction scale (Warr, Cook et al. 1979), which has been extensively validated as a sound measure of job satisfaction with applicability to the medical context (Konrad 2015). Answers in this section were scored on a 5-point Likert scale where 5 is extremely satisfied and 1 is extremely dissatisfied. A total overall average score was calculated and proportionate satisfaction/dissatisfaction calculated by counting all the scores above the mid-point of 3 as signalling satisfaction and those scores less than or equal to three as dissatisfaction. This scale was modified from the original 10-item to a 9-item job satisfaction scale and scored based on a 5-item Likert scale as opposed to the 7-item scale in the original.

Quantitative data analysis

The associations between the independent variables including the responses to the World Health Organization's self-health assessment tool and demographic data including gender, age, FTE, primary DHB and medical specialty and the intention-to-leave measures were tested using chi-square tests of independence and one-way analysis of variance (ANOVA) as appropriate to the form (categorical or continuous) of the independent variables. The extent to which the gender and specialty profiles of the respondents match those for all salaried medical staff was quantified and tested using the chi-square goodness-of-fit test. A two-tailed p-value <0.05 is taken to indicate statistical significance.

Qualitative data analysis

Open-ended responses were imported into NVivo and coded with initial reference to a coding frame

based on findings from Joyce, Wang et al. (2015) and Davidson, Lambert et al. (2001). This coding frame was expanded to accommodate additional recurring themes arising out of the qualitative material. Where possible, consistency in the coding frame was maintained between intentions-to-leave scenarios to allow for comparative analysis.

Comparative analysis was performed between themes to examine whether there were any differences in how themes were expressed or the frequency of thematic expression. Prevalence of thematic expression was undertaken by counting the number of instances certain themes were mentioned. Many comments referenced more than one theme simultaneously, in which case each theme was counted separately. Patterns arising from the correlation analysis in the quantitative data were also explored by cross-cutting the comments left by respondents according to key variables. Comments selected for inclusion in the final report were those that best expressed the various themes. Comments were transcribed directly, and where sections were omitted, ellipses ('…') were used to signify the break. Any words replaced or altered to preserve anonymity or correct for tense or sense are noted within square brackets ('[ ]').

Limitations to the approach

Limitations with the prospective approach have already been noted. There are, however, additional limitations associated with the scenario approach adopted. For example, it was noted that for those in the second scenario, it could have been made clearer that the question was seeking intentions to leave all forms of DHB-based employment, and not whether they intended to move from their current DHB. Analysis of the qualitative material suggests that this possibility for misinterpretation was minimal, but it remains a limitation of the approach. Secondly, it is arguable as to whether the order of the second and third scenarios should be reversed; analysis of the qualitative data suggests that some individuals were leaving DHB-based employment to go overseas. Future research in this regard may need to consider changing the order to enable greater prevision in understanding the specific intentions of individuals. Finally, it would have been helpful to have coded the qualitative reasons with reference to key demographic variables, including age and gender and IMG status. This would have enabled more trends to be discerned in the data, but limitations with the NVivo programme made this goal challenging. Future research may need to consider a different mode of coding the data to include this additional detail.

Results

Demographics

A total of 2424 of the 3926 DHB-based ASMS members responded to the survey, giving a 62% response rate. Of the 2424 respondents, 2281 provided full demographic data as well as complete intentions-to-leave answers. Analysis was based on the most complete data available. Consequently, the number of responses used in the analysis varies according to the most complete data available. The number of responses included in analyses is specified throughout.

Age and gender composition

The demographic composition of these respondents is described in detail below. Overall, the responses were a reasonable match between observed and expected; a chi-square goodness-of-fit test showed slight variation for gender (3.6, p=0.035) but there was no difference between observed and expected for DHB (17.4, p=0.067).

The gender split of the survey respondents was broadly representative of the specialist medical workforce data acquired in previous surveys, reflecting the shifting demographic profile of the specialist workforce in New Zealand and the historical preponderance of men. The survey respondents were 38% women and 62% men, with actual gender split in the ASMS membership around 40:60. The largest age group of doctors responding to the survey was 45–49 years, with 18.4% of the survey respondents falling in this age category. The largest pool of female respondents was in the 45–49-year-old age bracket (21.1%), with the largest proportion of male respondents falling in the 55–59-year group (20.2%) (Figure 1).

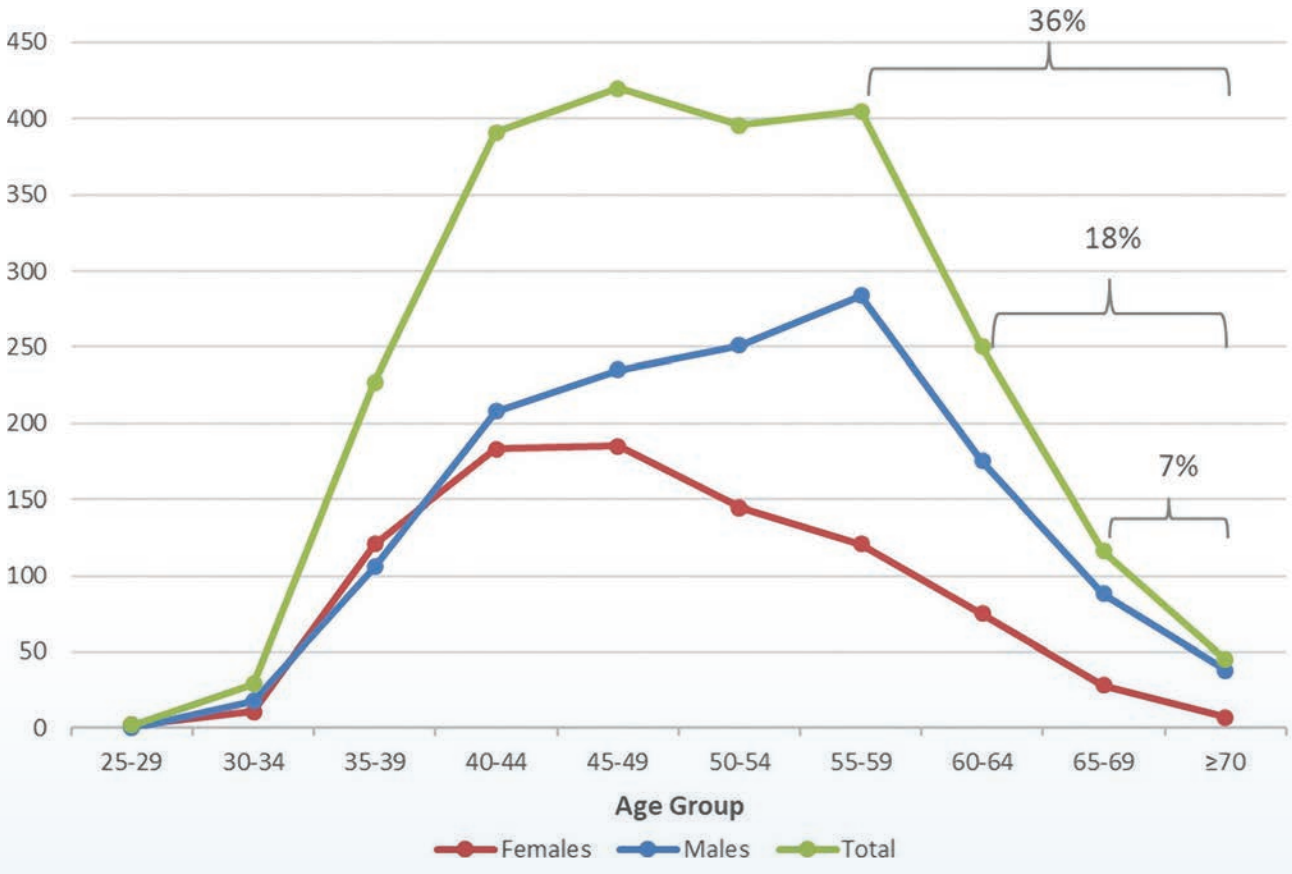

FIGURE 1: AGE AND GENDER DISTRIBUTION OF SURVEY RESPONDENTS (N=2319)

As illustrated in Figure 2, nearly 36% of respondents were aged 55 and over, 18% of survey respondents were aged 60 and over, 7% were aged 65+, and only 2% of respondents were in the 70+ age group. The relative proportion of men to women in these older age groups was significantly different, with only 12.5% of women respondents aged 60+ compared with 21.5% of men. This trend is consistent with historical proportionate gender patterns within the senior medical workforce (MCNZ 2016).

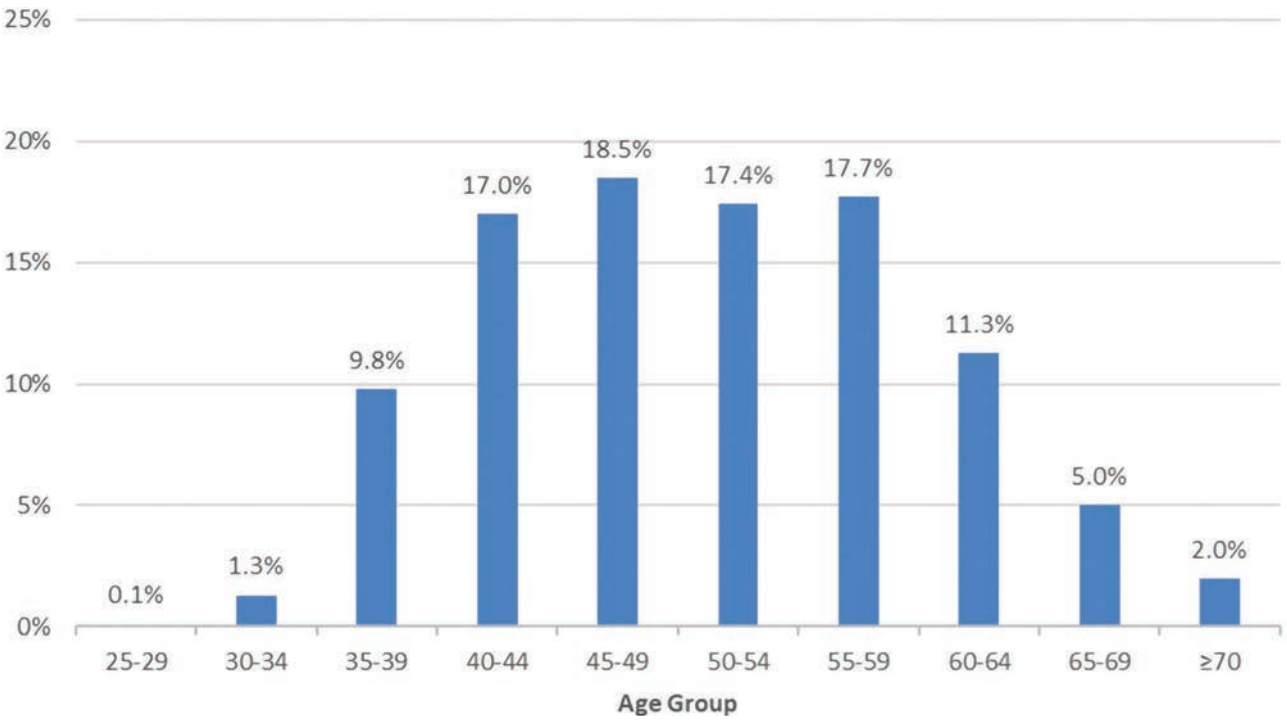

FIGURE 2: PROPORTION OF RESPONDENTS BY AGE GROUP (N=2319)

Proportion of international medical graduates

Of the 2401 respondents who left data regarding their country of primary medical qualification, 1357 (56.5%) were New Zealand trained and 1039 (43.3%) were IMGs. This pattern is a close match to proportionate IMG data released by the MCNZ which found that 43% of medical specialists currently working in New Zealand are IMGs (MCNZ 2016). The majority of IMGs responding to the survey were from the UK, South Africa and the USA. The 10 most common countries of primary medical qualification are listed in Table 1.

TABLE 1: TOP 10 COUNTRIES OF RESPONDENTS' PRIMARY MEDICAL QUALIFICATION

COUNTRY OF PRIMARY MEDICAL QUALIFICATION	n
United Kingdom of Great Britain and Northern Ireland	415
South Africa	182
United States of America	82
India	80
Germany	47
Australia	43
Sri Lanka	19
Ireland	14
Canada	13
Fiji	12

The distribution of IMGs across New Zealand's DHBs is illustrated in Figure 3. Notable is the higher proportions of IMGs in the smaller regional DHBs such as Whanganui, Tairawhiti and Wairarapa. This is in direct contrast to the lower ratio of IMGs to New Zealand-trained senior doctors at the larger metropolitan centres of Capital & Coast and Auckland. This distribution pattern of IMGs is a good match with the latest quarterly workforce report released by DHBSS (2016).

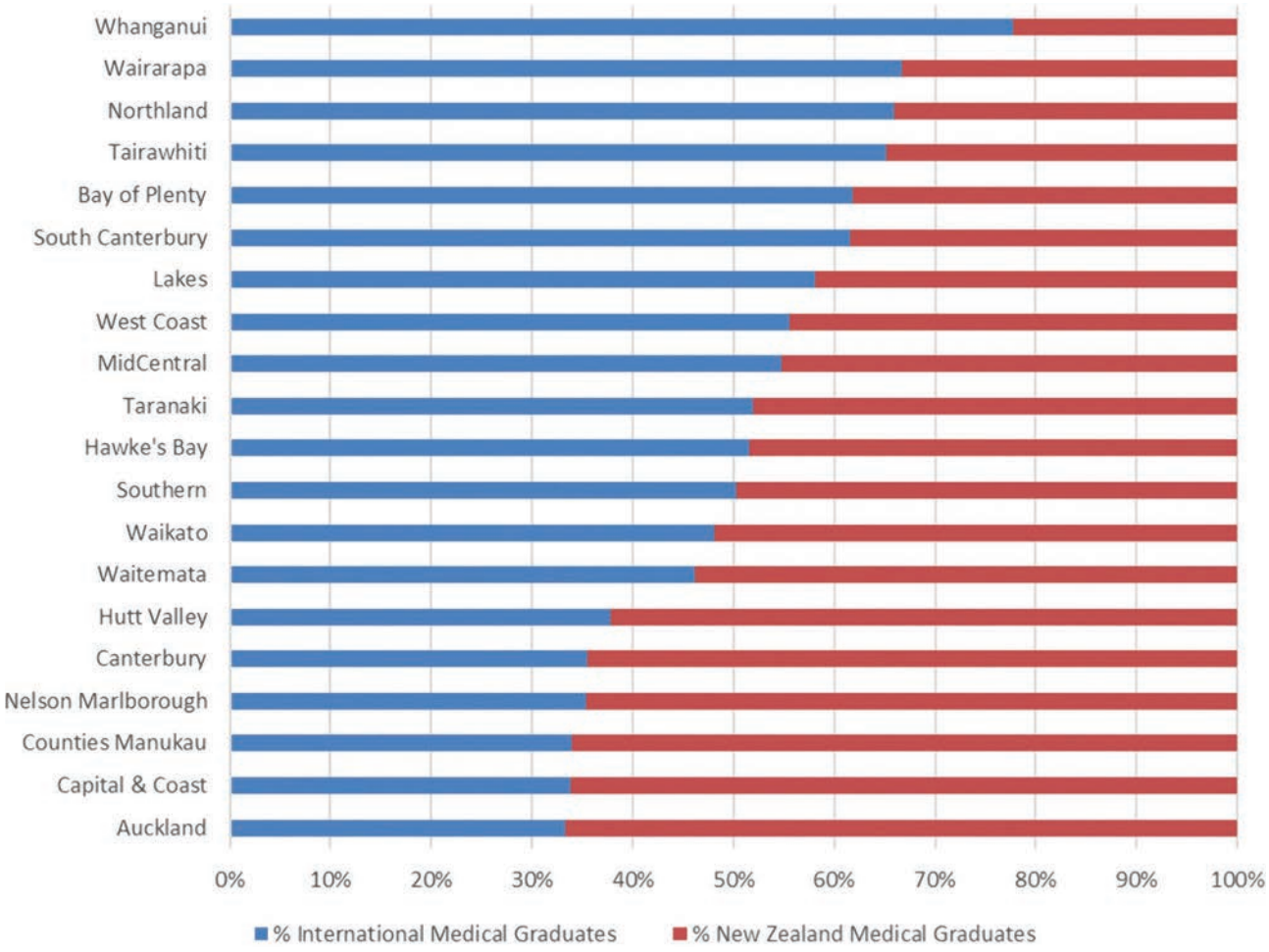

FIGURE 3: PROPORTION OF INTERNATIONAL AND NEW ZEALAND-TRAINED MEDICAL GRADUATES BY DHB (N=2401)

Full-time equivalent (FTE) data

As detailed in Table 2, there were differences in the average FTE between age groups and by age group and gender. Women had on average a lower FTE than their male counterparts except for women aged 30–34, who had a slightly higher than average FTE (0.96). FTE dropped off significantly for both genders after the age of 69. The average FTE for all survey respondents was 0.89, with women averaging 0.83 FTE and men averaging 0.93 FTE (Figure 5). This trend was broadly consistent with FTE data for senior medical staff from the latest DHBSS September 2016 quarterly report, which found a combined average FTE for all senior medical staff of 0.84 FTE (women 0.81 FTE and men 0.87 FTE) (DHBSS 2016). This pattern also matches trends in a recent Australian study that found 66.7% of those respondents aged 65+ were working less than 40 hours a week (ie, less than 1 FTE) (Wijeratne, Earl et al. 2017).

TABLE 2: AVERAGE FTE BY AGE AND GENDER (N=2319)

AGE GROUP	FEMALE	MALE	ALL
30–34	0.96	0.93	0.95
35–39	0.88	0.99	0.94
40–44	0.83	0.98	0.90
45–49	0.84	0.98	0.91
50–54	0.84	0.94	0.89
55–59	0.82	0.92	0.87
60–64	0.79	0.90	0.85
65–69	0.79	0.83	0.81
≥70	0.66	0.66	0.66
Total mean	**0.83**	**0.93**	**0.89**

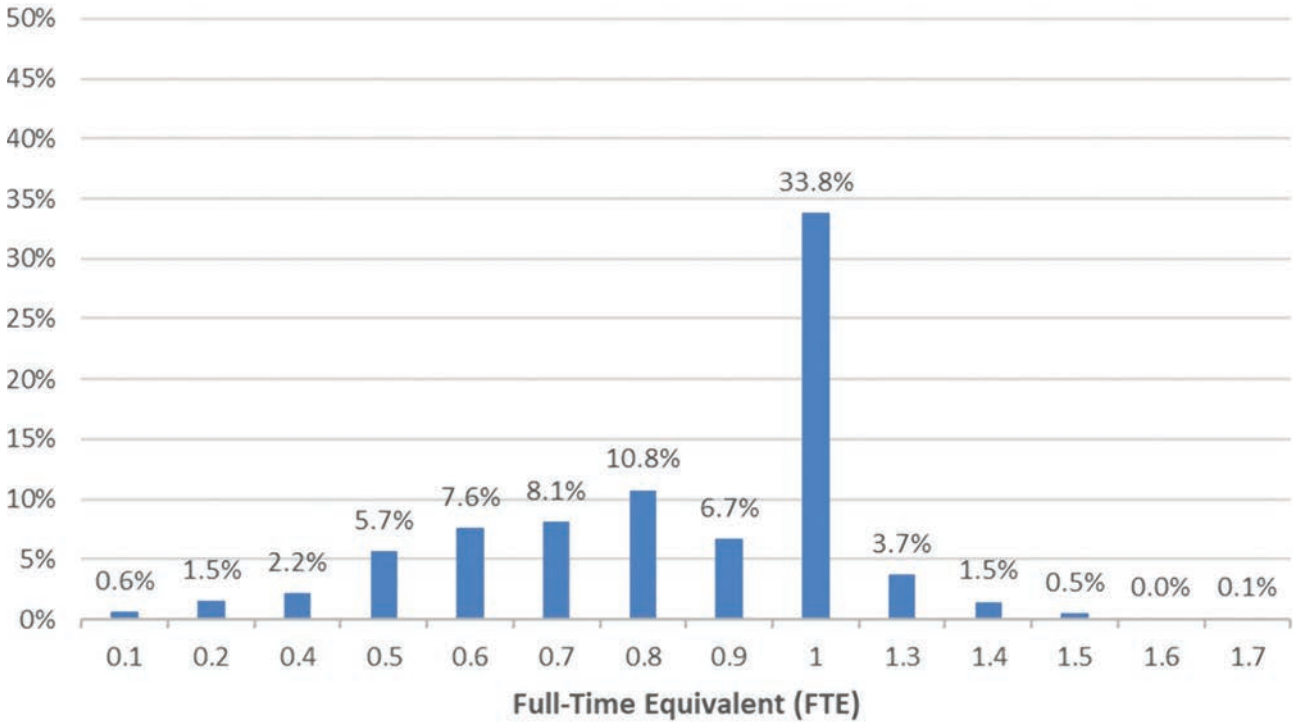

FIGURE 4: DISTRIBUTION OF FTE (N=2405)

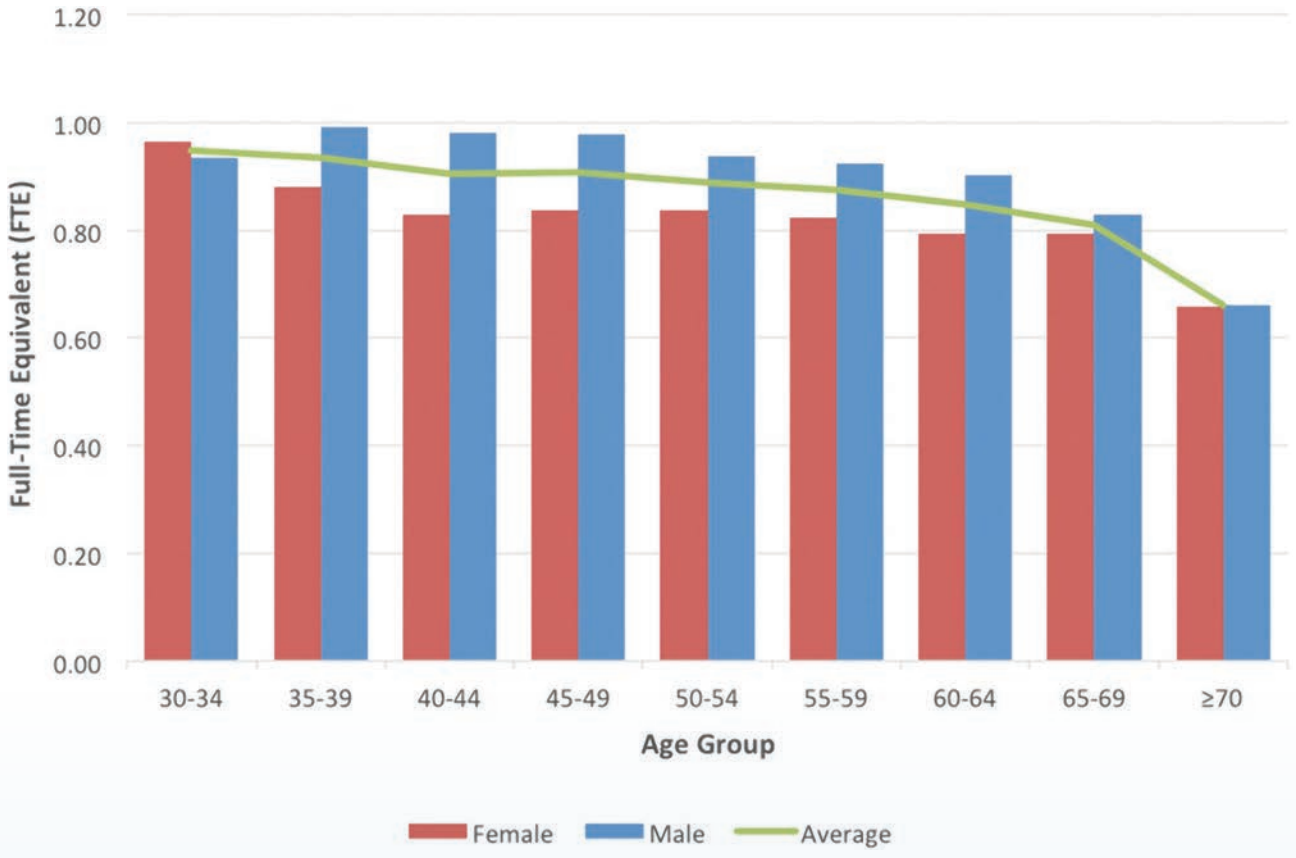

FIGURE 5: AVERAGE FTE BY AGE GROUP AND GENDER (N=2319)

Vocational specialty and numbers of dependents

Where it was possible to know the actual number of senior doctors in each medical specialty, the representativeness of the data was assessed through chi-square goodness-of-fit testing. The observed number of respondents by specialty and sub-specialty were broadly representative of the expected, although a few were both under- and over-represented (166.5, p=7.98). Given the importance of understanding workforce intentions by specialty, it was decided not to aggregate specialties, even with very low numbers of responses, to present the fullest possible picture. A summary of responses by specialty is provided below in Table 3.

The survey also sought data on the number of dependent children and 'other' dependents that respondents are responsible for and who live in the same household (see survey wording in Appendix 1). As detailed in Figure 6, up to 84% of those aged 40–44 have dependent children, and 30% of those aged 70 and over have 'other' dependents for whom they are responsible.

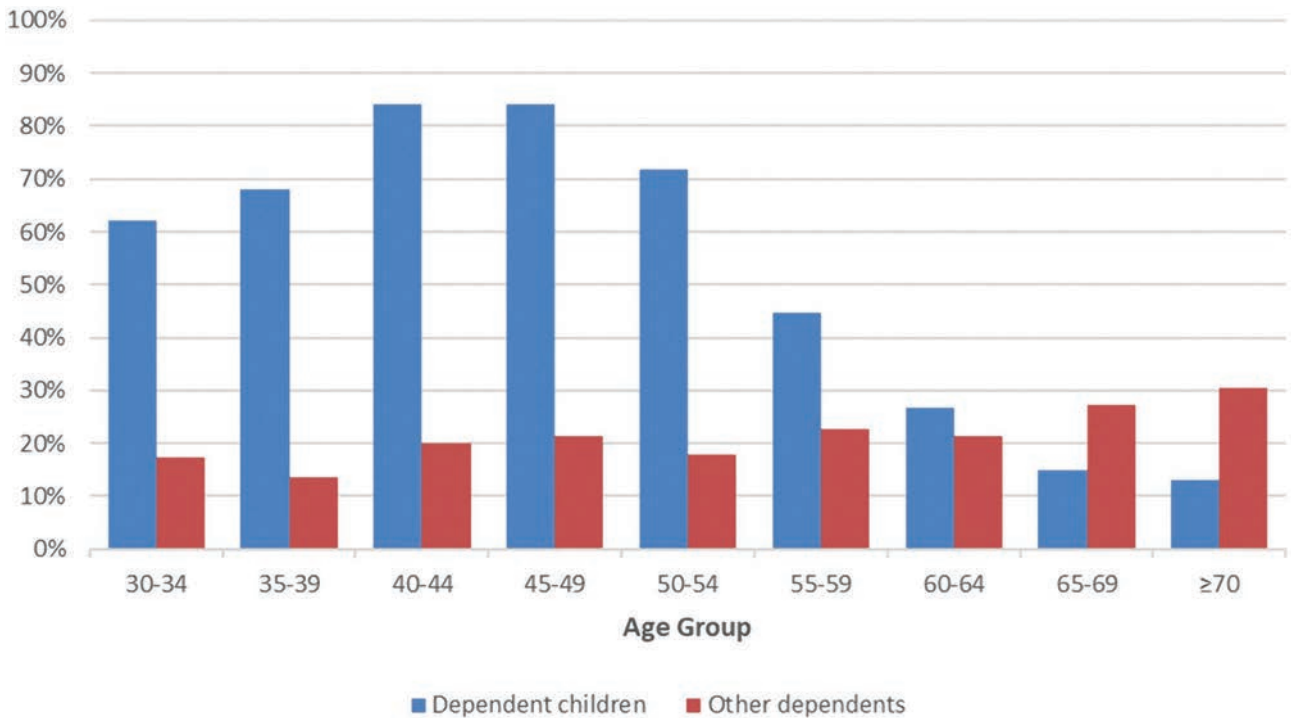

FIGURE 6: PROPORTION OF RESPONDENTS WITH DEPENDENT CHILDREN AND 'OTHER' DEPENDENTS BY AGE GROUP (N=2319)

TABLE 3: SPECIALTIES AND SUB-SPECIALTIES AND NUMBER OF RESPONDENTS (N=2416)

SPECIALTY/SUB-SPECIALTY	n
Accident & medical practice	7
Addiction medicine	16
Anaesthesia	327
Cardiology	67
Cardiothoracic surgery	8
Clinical genetics	8
Clinical pharmacology	1
Dentistry	50
Dermatology	17
Developmental paediatrics	3
Diagnostic & interventional radiology	126
Emergency medicine	163
Endocrinology	25
Family planning & reproductive health	3
Forensic pathology	4
Gastroenterology	37
General medicine	95
General practice	18
General surgery	78
Geriatric medicine	60
Haematology	27
Immunology	6
Infectious diseases medicine	18
Intensive care medicine	51
Management	2
Medical administration	10
Medical oncology	31
Medicine	12
Musculoskeletal medicine	1
Neonatology	24
Nephrology	26
Neurology	22

SPECIALTY/SUB-SPECIALTY	n
Neurosurgery	5
Nuclear medicine	2
Obstetric medicine	3
Obstetrics/gynaecology	99
Occupational medicine	1
Ophthalmology	44
Oral & maxillofacial surgery	8
Oral medicine	2
Orthopaedic surgery	77
Other (please specify)	25
Otolaryngology	33
Paediatric cardiology	6
Paediatric haematology	4
Paediatric oncology	8
Paediatric palliative care	1
Paediatric rheumatology	1
Paediatric surgery	6
Paediatrics	135
Pain medicine	7
Palliative medicine	13
Pathology	63
Plastic & reconstructive surgery	16
Psychiatry	283
Public health medicine	53
Radiation oncology	33
Rehabilitation medicine	11
Respiratory medicine	27
Rheumatology	25
Rural hospital medicine	29
Sexual health medicine	16
Urology	24
Vascular surgery	13
TOTAL	**2416**

Self-rated health status

The survey requested self-rated health status as it was possible that there would be correlations between decreasing health status and increasing intentions to leave. The proportion of respondents rating their health as 'excellent' in this survey was nearly 40%. There were also very few respondents self-reporting with 'poor' health in this survey. Analysed by age group, respondents aged 45–49 reported the highest rate of 'fair' health, and those aged 35–39 reported the highest rate of 'excellent' health (Figure 7). The reasons for these trends were not clear or readily explicated given the focus of the survey. In particular, the higher proportions of 45–49-year-olds self-rating their health as 'fair' deserves further consideration. As outlined in the following sections, there were associations between self-rated health status and intentions to leave.

TABLE 4: SELF-RATED HEALTH STATUS OF SURVEY RESPONDENTS (N=2408)

HEALTH STATUS	n	%
Excellent	947	39.3
Very good	922	38.3
Good	429	17.8
Fair	100	4.2
Poor	10	0.4

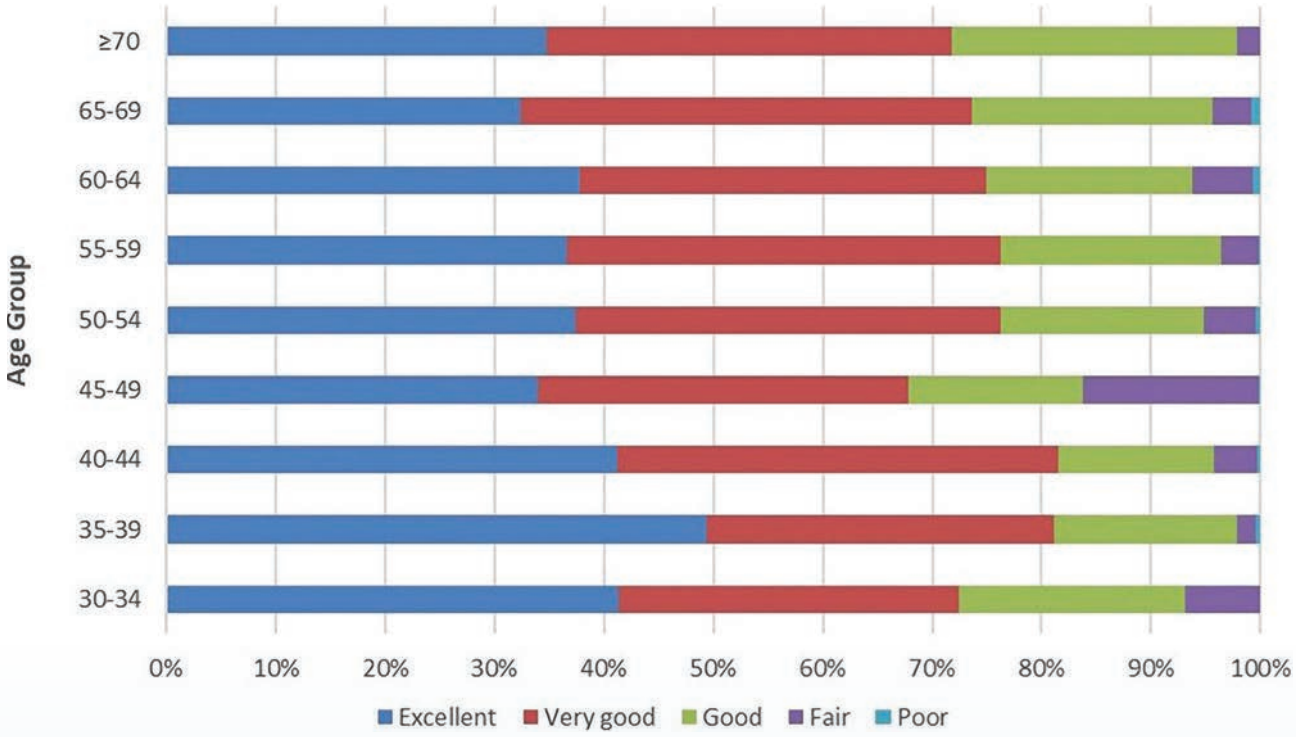

FIGURE 7: HEALTH STATUS BY AGE GROUP (N=2371)

Levels of job satisfaction

The survey also assessed overall job satisfaction by assessing satisfaction with nine aspects of work, each rated on a five-point Likert scale as per the Warr–Cook–Wall job satisfaction questionnaire (Warr, Cook et al. 1979). As outlined in the 'Research design and methodology' section, answers were scored from 1 to 5, where 5 is extremely satisfied and 1 is extremely dissatisfied. A total overall average score was calculated and proportionate satisfaction/dissatisfaction ratio attained by counting all the scores above the mid-point of 3 as signalling satisfaction and those scores less than or equal to three as dissatisfaction.

Of the 2354 responders who answered this section in full (blanks or incomplete answers were not counted), 81% scored as having overall job satisfaction, with 19% scoring as overall dissatisfied. The overall average job satisfaction score was 3.56 (range 1–5). Respondents were most satisfied with their interactions with colleagues and fellow workers (84% satisfied) and least satisfied with the level of recognition they get for good work (54% dissatisfied), their hours of work (44% dissatisfied), and their remuneration (43% dissatisfied) (Figure 8). Further detail on how job satisfaction relates to intentions to leave is detailed in the following sections.

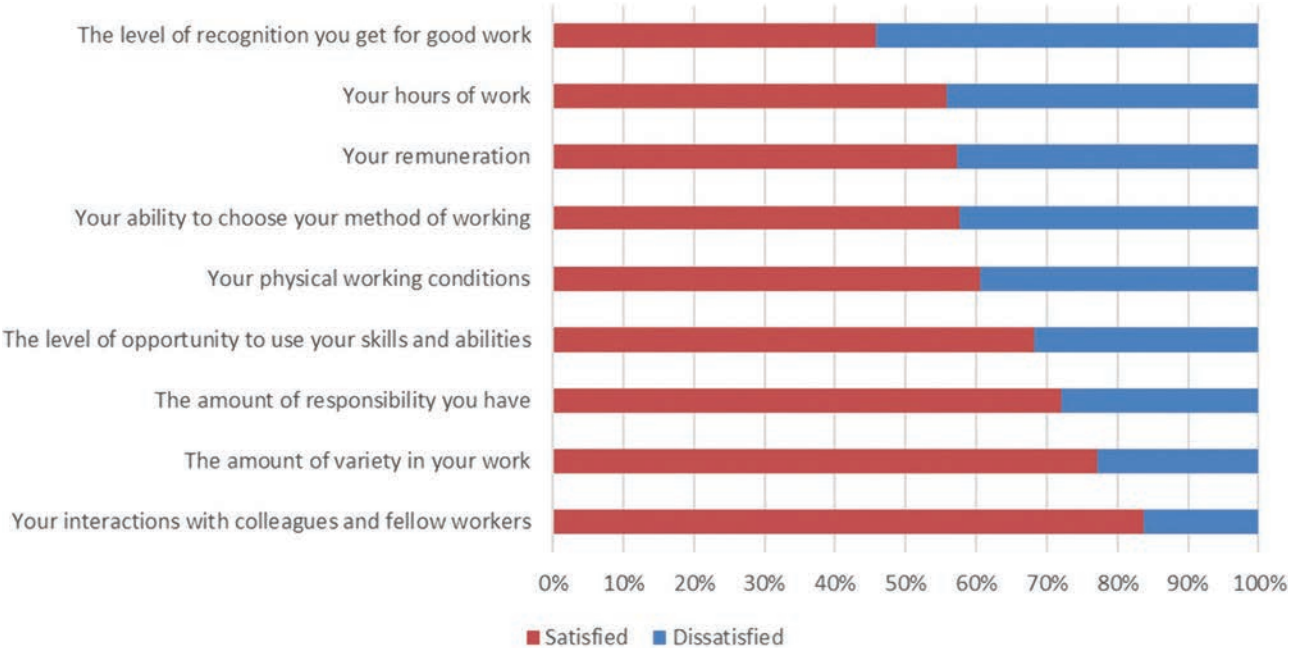

FIGURE 8: PROPORTIONATE SATISFACTION AND DISSATISFACTION OF RESPONDENTS FOR THE SUB-SCALES OF THE WARR–COOK–WALL JOB SATISFACTION SCALE (N=2354)

Respondents' future intentions regarding participation in the DHB-based senior medical workforce

As outlined in the 'Research design and methodology' section, the research focused on three possible scenarios that may see ASMS members currently employed by DHBs leave the DHB-based workforce in New Zealand. Figure 9 details the proportions of the survey respondents signalling intentions to leave.[3] The graph shows that of the 24% total signalling an intention to leave, 16.3% intend to leave medicine entirely over the next five years, 5.4% intend to leave DHB-based employment, and 4.1% intend to leave New Zealand permanently to work in medicine overseas.

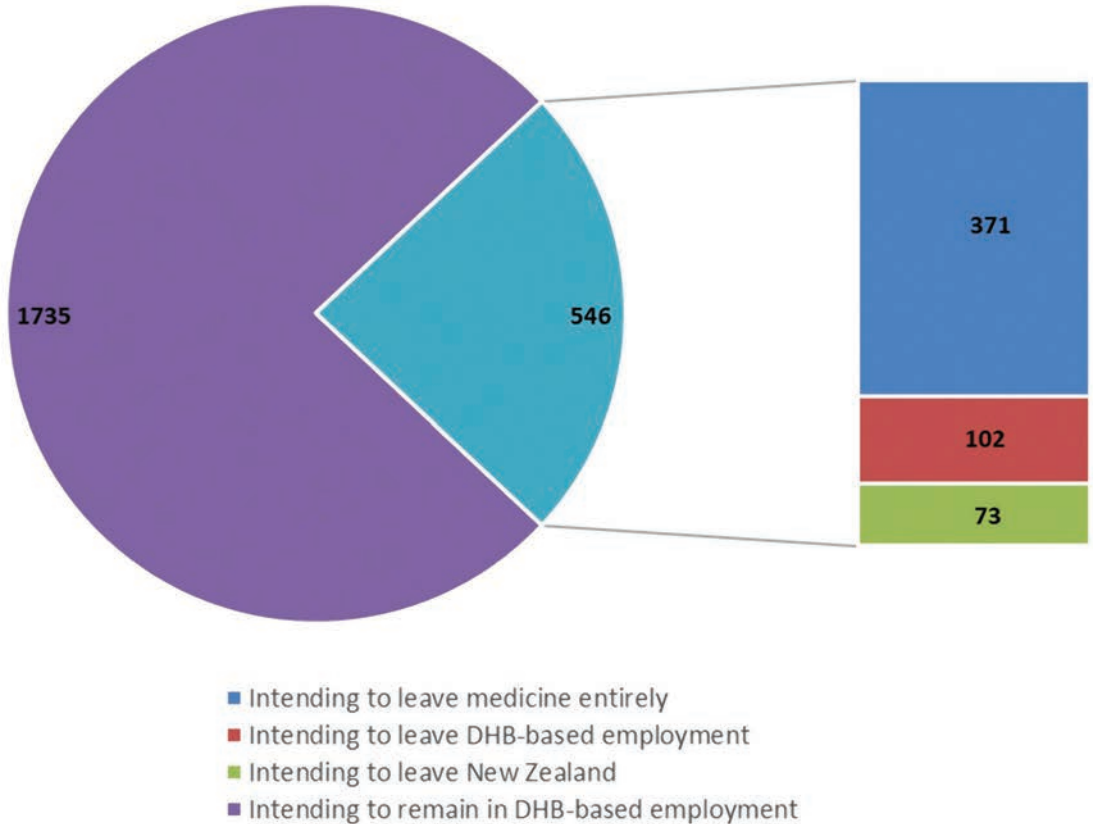

FIGURE 9: SUMMARY OF RESPONDENTS' FUTURE INTENTIONS REGARDING PARTICIPATION IN THE DHB-BASED SENIOR MEDICAL WORKFORCE (N=2281)

Figure 10 breaks this intentions data down further to include those who are 'unsure' as to what they intend to do over the next five years. This 'unsure' figure peaks at 12.1% for those contemplating whether they intend to remain in their current DHB-based employment. For ease of display, the wording for the negatively phrased 'intention to remain in current DHB-based employment' has been reversed.

3 Note that this graph displays a lower total (n=2281) as it is restricted to the respondents who also provided age data (2390 answered the intentions-to-leave questions entirely).

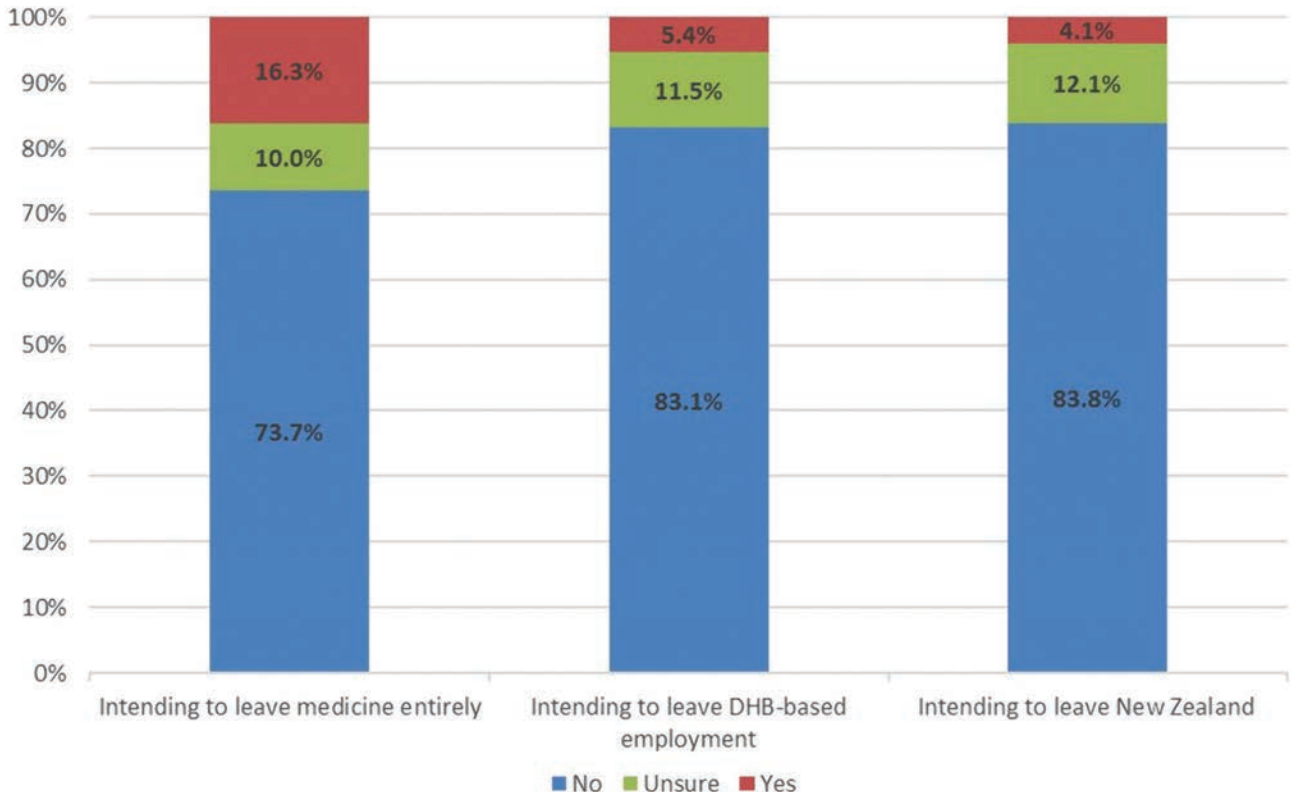

FIGURE 10: PERCENTAGE OF RESPONDENTS' INTENTIONS FOR ALL THREE INTENTIONS TO LEAVE DHB-BASED EMPLOYMENT SCENARIOS.
(Note: The percentages are of the dynamic totals for each scenario of all responses. See 'Research design and methodology' for a fuller explanation.)

Associations with intentions to leave, age and gender

Of the 24% who signalled a likelihood of intending to leave DHB-based employment in the next five years, there was clustering of higher rates of intentions to leave for respondents aged 60 years and over (Figure 11). Increasing age was strongly associated with increasing intentions to leave across all three scenarios (p=0.001). This trend is in accord with other international research into intentions to leave medicine, which finds rising intentions to leave concurrent with increasing age (Sibbald, Bojke et al. 2003, Estryn-Behar, Fry et al. 2011). Some research, however, has found increasing rates of intentions to leave in younger doctors, although some of these studies involved recent graduates who may be contemplating career change (see Degen, Li et al. 2015). There was a slight above-average increase in intentions to leave for women aged 35–39 (14.5%). It is worth noting that women in this age group had the highest rates of burnout in a previous study on the ASMS membership (Chambers, Frampton et al. 2016).

As illustrated in Figure 11, there were high proportions of women aged 65 and over signalling an intention to leave, and all female respondents aged 70 or over were intending to leave over the next five years. Overall, however, men on average were more likely to signal an intention to leave than their female counterparts, and this trend for men to be more likely to leave was statistically significant for all scenarios except for those signalling an intention to leave New Zealand.

This pattern for men to have a higher rate of intentions to leave is consistent with research by Davidson, Lambert et al. (2001), which found women more likely to intend to continue in primary care than their male counterparts. This trend differs to other research on the relationship between

gender and intentions to leave of consultant psychiatrists in Scotland, which found women significantly more likely to retire earlier than their male counterparts (Eagles, Addie et al. 2005). The authors cite the importance of women having family commitments (for example, grandchildren) as influencing this decision, as well as the tendency for women to experience greater levels of stress than their male counterparts. It would be interesting to interrogate these trends further as qualitative data obtained in this study did not include gender identifiers but may provide useful context.

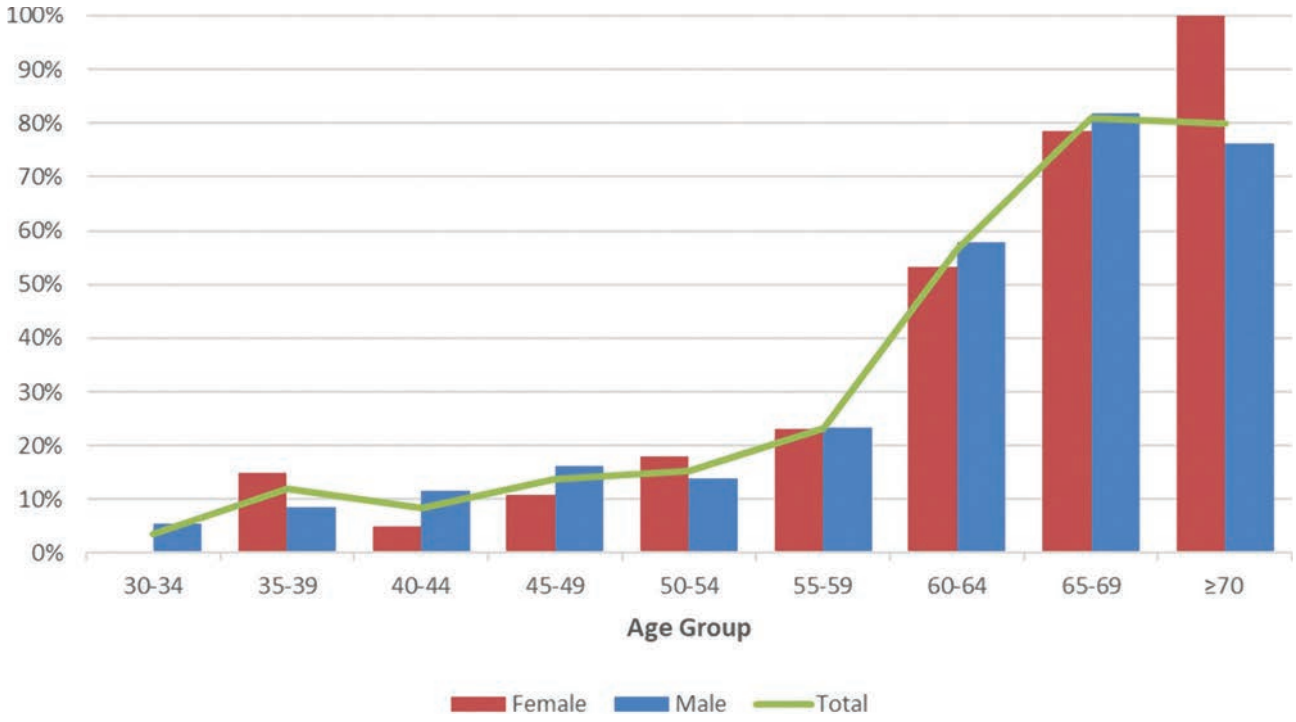

FIGURE 11: PERCENTAGES OF ALL RESPONDENTS IN EACH AGE AND GENDER CATEGORY SIGNALLING AN INTENTION TO LEAVE (N=546/2281)

Associations with intentions to leave and job satisfaction

Poor job satisfaction was significantly correlated with increasing intentions to leave across all three scenarios. Figure 12 details the proportionate levels of job satisfaction amongst those intending to leave for all three scenarios. The figure shows that job satisfaction is lowest for those intending to leave DHB-based employment, while for those intending to leave medicine entirely, most were scoring as satisfied with the different satisfaction sub-scales except for 'level of recognition for good work'. This factor was scored with the highest proportionate dissatisfaction across all three scenarios, with dissatisfaction scores ranging from 60% for those intending to leave medicine entirely to 79% dissatisfaction for those intending to leave DHB-based employment. Respondents were most satisfied with their interactions with colleagues and fellow workers in all three scenarios. Job satisfaction scores for each scenario are discussed in more depth later in the report.

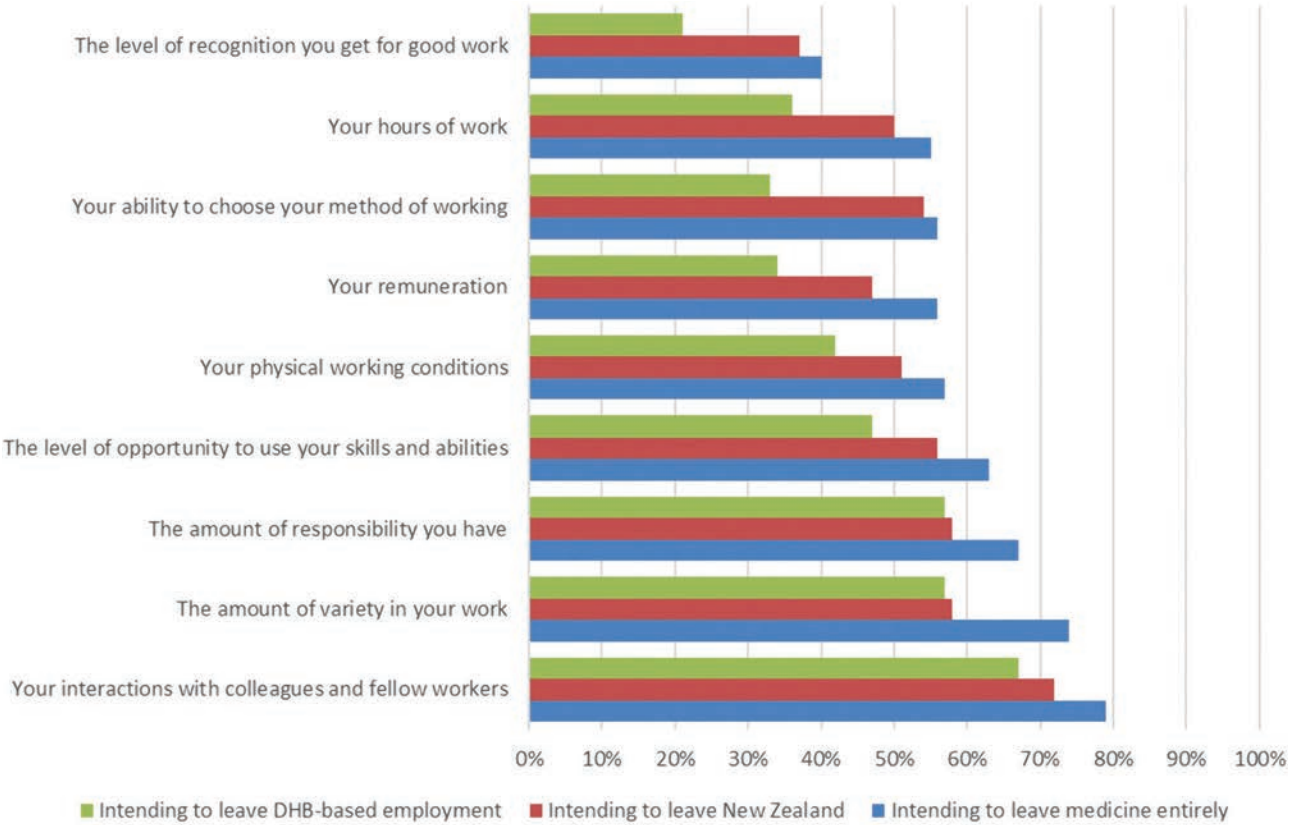

FIGURE 12: PROPORTIONS OF RESPONDENTS SCORING AS SATISFIED WITH THE SUB-SCALES OF THE WARR–COOK–WALL JOB SATISFACTION MEASURE BY THE THREE INTENTIONS TO LEAVE DHB-BASED EMPLOYMENT SCENARIOS (N=2354)

Associations with intentions to leave and dependents

The other independent variable that was significantly correlated with increasing intentions to leave across all three scenarios was having 'other' dependents. Having children was significantly correlated with not intending to leave. As outlined in the 'Research design and methodology' section, other dependents were defined as any dependents other than children for whom people are responsible and who live in the same household. The proportion of respondents with 'other' dependents by age group was fairly consistent but appeared to increase according to age (Figure 6). There is little in the wider research on 'other' dependents other than to note that intentions to leave are lowest for those with dependent children. Additional perspective is provided by some comments in the qualitative section, which referenced intentions to leave motivated by the need to care for sick spouses or aging relatives, which was felt to be incompatible with the rigours of being a specialist:

"I work shifts and [I am] responsible for one in-home dependent. My job is exhausting and 'costs' me physically, emotionally and in terms of my whanau. I am responsible for one independent living older person who needs variable support. My job is reasonably good financially but hard."

Further research would benefit from analysing the proportion of those with 'other' dependents by gender, specialty and age to see if further explanation emerges.

OLDER DOCTORS' FTE AND INTENTIONS TO LEAVE

An analysis of the average FTE for this older age cohort of respondents provides some interesting detail. There was statistically significant variation in FTE according to intentions to leave for all three scenarios. As suggested in Table 5, those considering leaving medicine entirely appear to have a slightly lower average FTE than those intending to remain except for those aged 65–69, where there was negligible difference. For those considering their future with DHB-based employment, those considering leaving DHB-based employment had a slightly lower average FTE. There was no definitive pattern for these age groups with the final intention-to-leave scenario. If we take FTE as a proxy for the level of involvement in the medical workforce, these trends suggest that those intending to leave have a lower level of involvement, and conversely, those intending to carry on working do so at a higher rate. Recent research published on retirement intentions of older Australian doctors found that doctors aged 65 and older were more likely to retire if they had achieved financial security (Wijeratne, Earl et al. 2017). Other studies suggest that individuals without adequate savings for the future are more likely to remain in the workforce (Davidson, Lambert et al. 2001; Luce, van Zwanenberg et al. 2002). There is no way to interrogate this trend with our data, but financial need could be a factor in the mix.

TABLE 5: AVERAGE FTE FOR RESPONDENTS AGED 60–70 BY INTENTION-TO-LEAVE SCENARIO

AVERAGE FTE FOR ANSWERS TO 'WITHIN THE NEXT 5 YEARS, HOW LIKELY ARE YOU TO LEAVE MEDICINE ENTIRELY?'			
Age group	**Likely and Extremely Likely**	**Unsure**	**Unlikely and Extremely Unlikely**
60-64	0.64	0.58	0.86
65-69	0.86	0.86	0.87
70 plus	0.77	1	0.89
AVERAGE FTE FOR ANSWERS TO 'WITHIN THE NEXT 5 YEARS, HOW LIKELY ARE YOU TO CONTINUE WITH SOME FORM OF DHB-BASED EMPLOYMENT?			
Age group	**Likely and Extremely Likely**	**Unsure**	**Unlikely and Extremely Unlikely**
60-64	0.88	0.89	0.69
65-69	1.02	0.96	0.72
70 plus	0.95	0.65	-
AVERAGE FTE FOR ANSWERS TO 'WITHIN THE NEXT 5 YEARS, HOW LIKELY ARE YOU TO LEAVE NEW ZEALAND TO PRACTISE MEDICINE ABROAD?'			
Age group	**Likely and Extremely Likely**	**Unsure**	**Unlikely and Extremely Unlikely**
60-64	1.0	0.8	1.01
65-69	0.88	1.1	0.89
70 plus	-	0.60	1.02

Associations with intentions to leave and DHB

Figure 13 displays the relative proportions of the 572 respondents with intentions to leave by DHB (note the higher total figure due to the exclusion of age/gender information). The variation between the different rates of intentions to leave by DHB was only statistically significant for those signalling an intention to leave medicine entirely (see Table 6). Figure 13 suggests that the largest proportion of respondents intending to leave medicine entirely is at Wairarapa DHB, where nearly 50% may leave medicine entirely and a further 10% intend to leave the DHB over the next five years. The highest proportion of respondents signalling an intention to leave DHB-based employment was found at Southern DHB (11.5%), followed by Tairawhiti (11.1%). At Nelson Marlborough DHB, 8.8% of respondents intended to leave New Zealand to work overseas in the next five years.

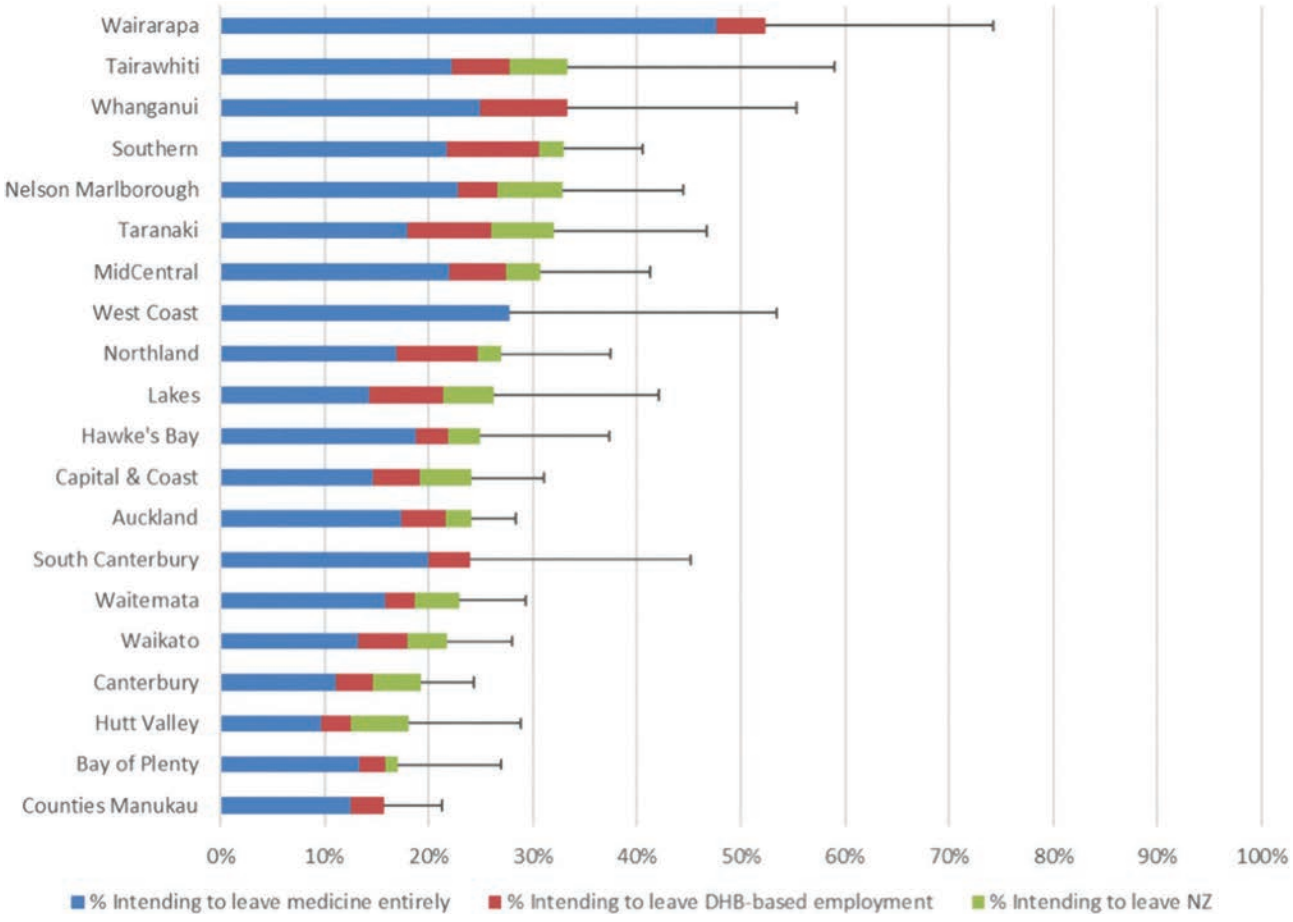

FIGURE 13: PERCENTAGE OF RESPONDENTS SIGNALLING INTENTIONS TO LEAVE BY DHB (N=572), WITH CONFIDENCE INTERVAL BARS (CI=95%)

Associations with intentions to leave and specialty

There were statistically significant variations for all three possible intentions-to-leave scenarios by medical specialty. Figure 14 displays intentions-to-leave scenarios for the larger medical specialties with 25 or more respondents in this survey. Figure 15 depicts intentions for the smaller sub-specialties with low numbers of respondents. Due to the very low numbers of respondents from these smaller sub-specialties, these findings must be treated with caution. Nevertheless, if there are only a handful of senior doctors working in these smaller sub-specialties, then the impact of having just one departure is likely to be significant for the specialty as a whole.

The results further suggest that some specialties may have potentially significant numbers exiting out of the DHB-based workforce in the next five years. All specialties surveyed will be affected to a varying degree by numbers of senior doctors intending to leave medicine entirely. By contrast, intentions to leave New Zealand to work in medicine overseas was signalled by a much smaller range of specialties. The following two figures present all specialties with respondents signalling an intention to leave in some form. Specialties with respondents not signalling an intention to leave were omitted for ease of display.

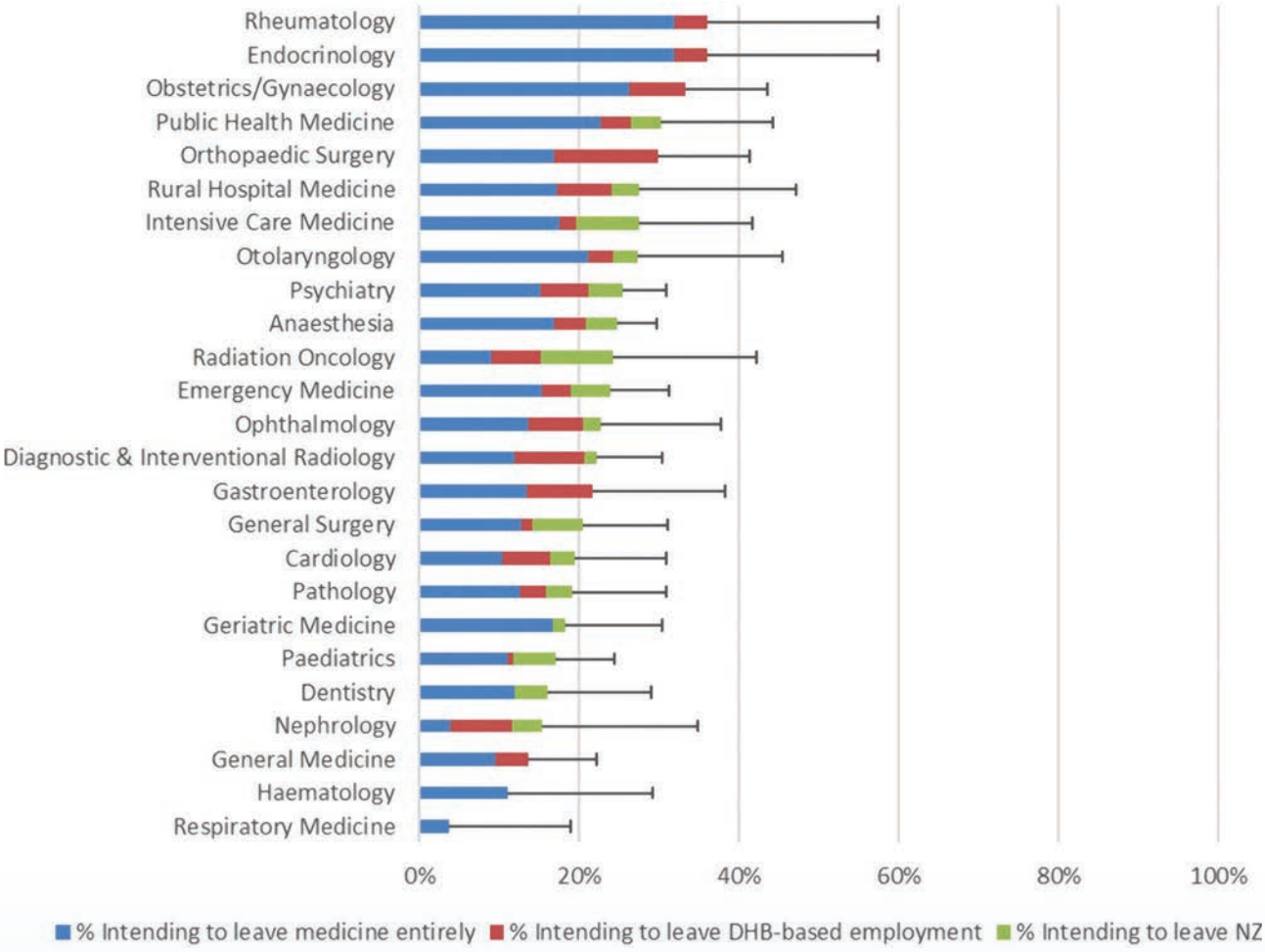

FIGURE 14: ALL INTENTIONS-TO-LEAVE SCENARIOS FOR MEDICAL SPECIALTIES WITH ≥25 RESPONDENTS, WITH CONFIDENCE INTERVAL BARS (CI=95%)

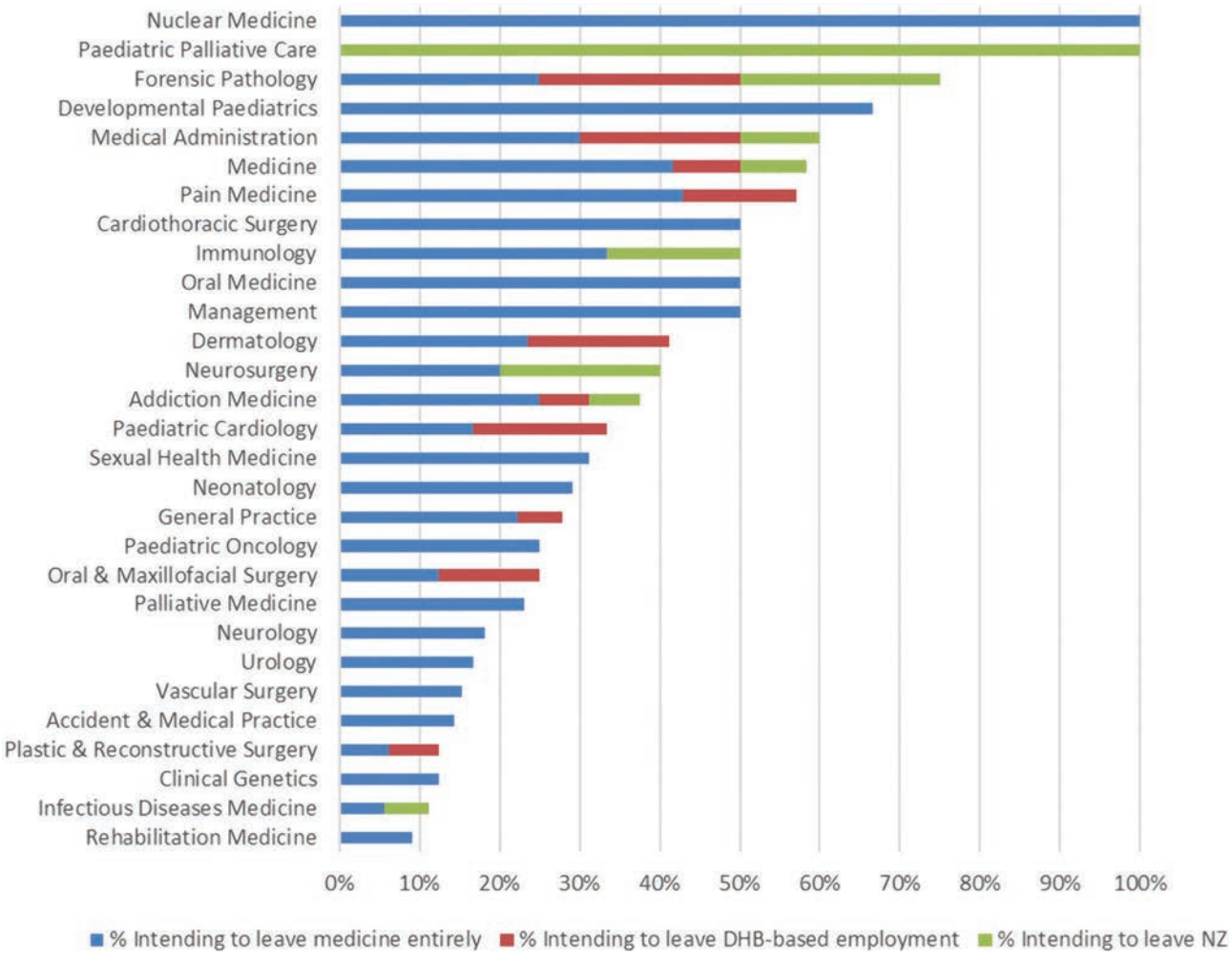

FIGURE 15: ALL INTENTIONS-TO-LEAVE SCENARIOS FOR SPECIALTIES WITH <25 RESPONDENTS.
(Note: The low numbers preclude the reporting of confidence intervals.)

There are associations between intentions to leave DHB-based employment and specialties that have opportunities for private practice in New Zealand. For example, the specialty with the highest proportion of respondents signalling an intention to leave was orthopaedic surgery (13%), followed by diagnostic and interventional radiology (9%). In the smaller sub-specialties, 25% of forensic pathologists who responded to the survey may leave DHB-based employment in the next five years, and 18% of dermatologists indicated similar intentions. According to data released by the MCNZ, the specialties with the largest number of senior doctors working in the private sector as their main place of employment were diagnostic and interventional radiology, ophthalmology, obstetrics and gynaecology, pathology and orthopaedic surgery. Overall, the trends in intentions to leave DHB-based employment as they relate to specialty may suggest that some of those intending to leave DHB-based employment may be doing so to move into private practice.

Scenario 1) Intentions to leave medicine entirely and associations with independent variables

The intention to leave medicine entirely differed significantly by gender (men more likely to signal an intention to leave than their female counterparts (p=0.001)) and age (older respondents more likely to signal an intention to leave (p=0.000)). A total of 38% of respondents aged 55 and over were either likely or extremely likely to intend to leave medicine entirely. Of this age group, 62% were either unsure or unlikely/extremely unlikely to leave medicine entirely. This contrasts with recently published research into retirement intentions of Australian medical practitioners, which found only 38% of those aged 55 and over were unsure about retiring or did not intend to retire (Wijeratne, Earl et al. 2017).

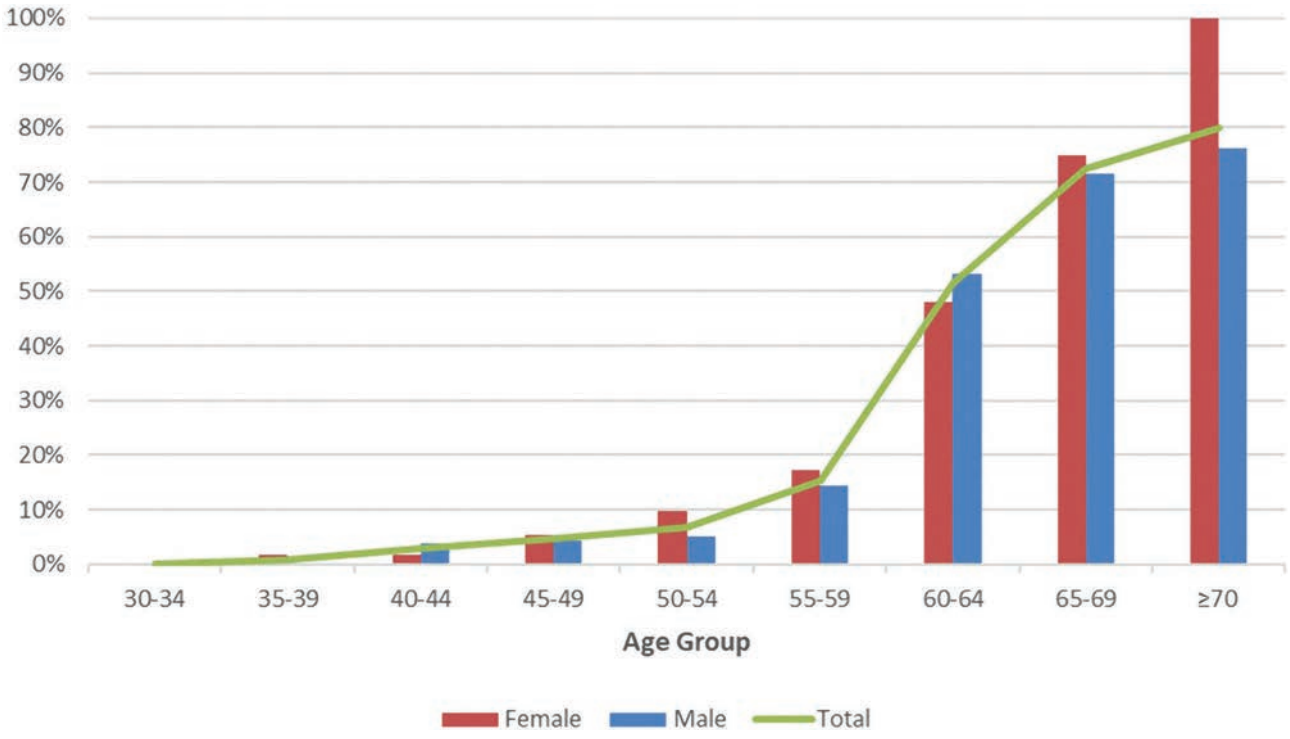

FIGURE 16: AGE AND GENDER DISTRIBUTION OF RESPONDENTS SIGNALLING AN INTENTION TO LEAVE MEDICINE ENTIRELY (N=371/2281)

There were significant associations between increasing intentions to leave with all the independent variables. These trends are summarised below in Table 6. Respondents who signalled an intention to leave medicine entirely had statistically lower scores for level of satisfaction for the amount of responsibility they have as well as the level of recognition they receive for good work than those who were intending to stay (p=0.048 and p=0.002 respectively). Overall, of those signalling an intention to leave, 78% were scoring as satisfied with their job, which was close to the proportionate overall job satisfaction ratio of 80% satisfied, 20% dissatisfied.

The relationship between intentions to leave and the absence of dependent children accords with other international research which suggests that absence of dependent children is strongly correlated with increasing intentions to leave medicine (Sibbald, Bojke et al. 2003). Similarly, having additional dependents, possibly grandchildren or other family members, was significantly correlated with intending to leave medicine entirely, which also follows international trends.

The weak correlation between increasing intention to leave and being an IMG may reflect the large proportion of IMGs at some of the DHBs that have higher intentions to leave than others. For example, Wairarapa had both the highest proportion of survey respondents signalling an intention to leave medicine entirely and had 67% of respondents identifying as an IMG.

TABLE 6: RELATIONSHIP BETWEEN INDEPENDENT VARIABLES AND INTENTIONS TO LEAVE MEDICINE ENTIRELY

VARIABLE	Trend	p-value
DHB	Significant variance by DHB and intention to leave.	0.003
Dependent children	Respondents who don't have dependent children are more likely to signal an intention to leave.	0.000
Other dependents	Respondents who have other dependents are more likely to signal an intention to leave.	0.004
Health status	Respondents with better health scores are less likely to signal an intention to leave.	0.000
IMG	Respondents trained overseas are more likely to signal an intention to leave.	0.042
Job satisfaction	Respondents with lower job satisfaction scores are more likely to signal an intention to leave.	0.009
Medical specialty	Significant variance by medical specialty and intention to leave.	0.001
FTE	Respondents with lower FTE are more likely to signal an intention to leave.	0.001

Scenario 2) Intentions to leave DHB-based employment and associations with independent variables

There was significant variation in intentions to leave DHB-based employment according to age group (p=0.001), and men were more likely to signal an intention to leave DHB-based employment than women (p=0.012) (Figure 17). Those with children were more likely to signal an intention to leave than those without (p=0.018).

This contrasts directly with the relationship between dependent children and intentions to leave medicine entirely, potentially suggesting that those leaving DHB-based employment are intending to continue working – for example, in private practice, where they can continue to earn a good income. Those with poorer job satisfaction (ie, job satisfaction scores less than or equal to 3) were more likely to signal an intention to leave than those who scored with higher job satisfaction (p<0.000). There was also significant association between the current FTE of respondents, with those more likely to signal an intention to leave if they had a lower FTE (p=0.001).

Within the job satisfaction variables, there were statistically significant differences in job satisfaction scores between those who signalled an intention to leave DHB-based employment and those who signalled an intention to stay (p=0.001 for all nine variables).

As depicted in Figure 12, the proportionate rates of job dissatisfaction for those intending to leave DHB-based employment were the worst of all three scenarios and were particularly poor for level of recognition, ability to choose methods of working, and remuneration. Only 52% of those intending to leave DHB-based employment were scoring as satisfied overall, and 'satisfaction' was only reached in four of the nine job satisfaction variables.

Other studies have suggested that feeling under-recognised and lacking in autonomy and control are known antecedents for burnout and can also lead to increased rates of job turnover (Tziner, Rabenu et al. 2015). The high dissatisfaction scores for these respondents suggests that retention may be improved if work was undertaken within DHBs to improve these specific areas of concern.

Respondents with children were more likely to signal an intention to leave than those without.

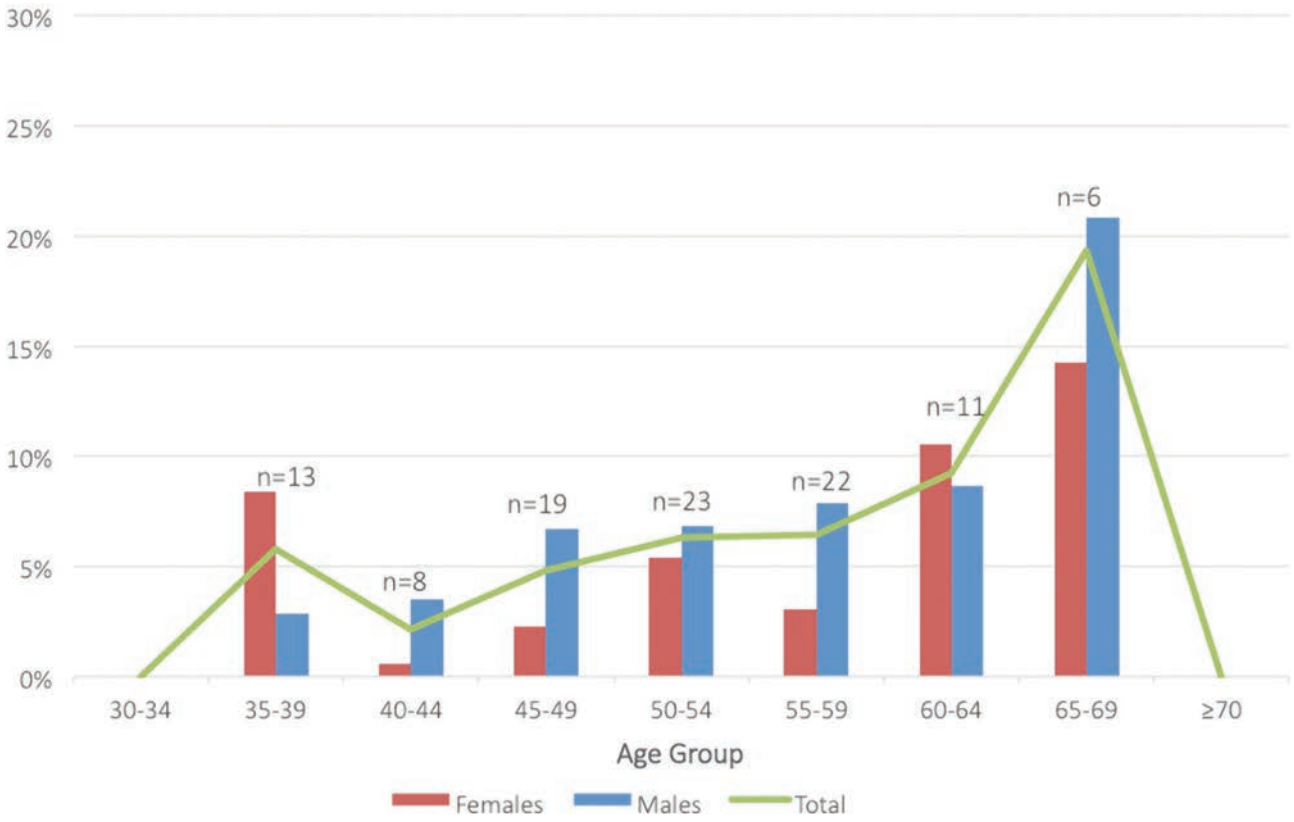

FIGURE 17: PERCENTAGES OF RESPONDENTS SIGNALLING AN INTENTION NOT TO CONTINUE WITH SOME FORM OF DHB-BASED EMPLOYMENT AS A PROPORTION OF EACH AGE AND GENDER CATEGORY (N=102/1892). TOTAL NUMBERS FOR EACH AGE CATEGORY ARE NOTED AS CONTEXT FOR THE PERCENTAGES.

Scenario 3) Intentions to leave New Zealand and associations with independent variables

There was no significant variance regarding intentions to leave New Zealand to practise medicine abroad by gender, but there was a significant variation in intentions by age (p=0.001) (Figure 18). Note that the spike in the proportion of respondents intending to leave in the 65–69-year-old category is high because of the relatively low numbers of respondents remaining in this age group. Respondents were more likely to signal an intention to go overseas if they had other dependents (p=0.04). Those with lower job satisfaction and with higher FTE were more likely to signal an intention to go overseas (p=0.000 and p=0.006 respectively).

There was statistically significant variance in job satisfaction according to intention to leave New Zealand. People intending to leave New Zealand had lower satisfaction with the level of recognition they received for good work, their hours of work and remuneration. Overall, 67% of those intending to leave New Zealand scored as satisfied.

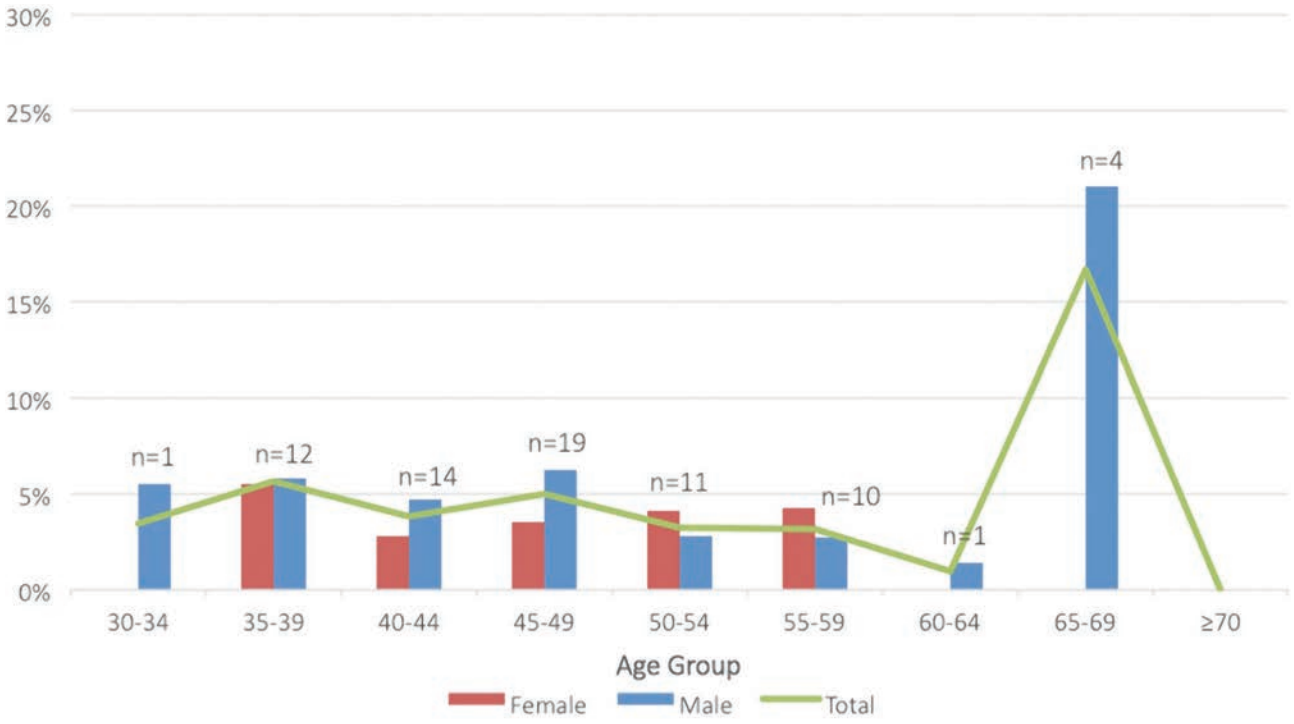

FIGURE 18: PERCENTAGES OF RESPONDENTS SIGNALLING AN INTENTION TO LEAVE NEW ZEALAND PERMANENTLY AS A PROPORTION OF EACH AGE AND GENDER CATEGORY (N=73/1773). TOTAL NUMBERS FOR EACH AGE CATEGORY ARE NOTED AS CONTEXT FOR THE PERCENTAGES.

Qualitative insights into reasons for leaving and inducements to remain for all scenarios

Reasons for leaving for all scenarios

As outlined in the 'Research design and methodology' section, those who signalled either a likelihood or extreme likelihood of intending to leave in the next five years were asked to give a brief explanation as to the key reasons why, as well as explaining any factors that may cause them to change their minds. The explanations were then open-coded by core themes repeatedly arising from this qualitative data, and the number of times the themes were expressed was quantified for an idea of prevalence.

Many comments referenced more than one reason simultaneously, suggesting that there are a variety of reasons that combine to encourage intentions to leave. The top five reasons cited across all three scenarios are summarised in Figure 19. Here we can see that for many their intention to leave is precipitated by their age or a desire to retire. This reflects the demographic composition of the survey respondents, and particularly the larger proportion of those aged 55 and over intending to leave medicine entirely. What is significant is that age is perceived as a baseline against which negative working conditions are less readily tolerated. As articulated by one respondent, having reached retirement age, negative working conditions "don't exactly encourage me to continue":

"I will have reached retirement age and my job is pretty intense acute stroke call, telemedicine etc – you are either doing it full on or should stop. I'm not leaving for these reasons, but they don't exactly encourage me to continue: Organisation of the hospital is poor, administrative assistance minimal, and the time spent on administrative tasks diverted to doctors steadily increases with no effort to rein it in – just the opposite. Getting off label medicines for seriously ill patients is frustrating. Important decisions affecting service development are made by managers with no commitment to the development of services, short half lives in their current job appointed with their mission solely to save money. The culture of not doing things (rejecting referrals) is quietly corrosive and frustrating. Getting patients with serious problems investigated promptly is difficult. No one really seems to have the time to be committed to the long-term interests of individual patients in primary or secondary care. Somehow despite all this reasonable care quality results."

Interwoven with age in many instances was feeling disillusioned with DHB management and the New Zealand public health system – a theme common to all three scenarios. This was closely followed by feeling burnt-out and exhausted from the pressure of work. The emphasis on these two factors reflects the significant association between poor job satisfaction and an increased likelihood of intending to leave across all three scenarios. As one respondent summed up:

"[M]edicine has been getting faster and harder to do as each year goes by, as we can now do much more than we could in the past. However, the number of staff around to do the work has not kept pace. It is just getting too much for me now! Coupled with the often cripplingly low standard of health service managers, our lot is getting more and more unhappy. I don't hold out much hope for the future, so will be leaving medicine soon to live out a longer life than I would if I stayed."

FIGURE 19: SUMMARY OF MOST FREQUENTLY EXPRESSED REASONS FOR INTENDING TO LEAVE ACROSS ALL THREE SCENARIOS

Research by Davidson, Lambert et al. (2001) found the top three reasons for retiring amongst older UK-based general practitioners were 1) the pressure of work, feeling exhausted and burnt-out, 2) family reasons or wanting time for other interests, and 3) reduced job satisfaction and feelings of disillusionment with the National Health Service (p325). Other qualitative research into quit intentions emphasised the importance of growing workloads, aging and ill health, and reduced morale and emotional resilience (Sansom, Calitri et al. 2016 p3). Excluding age (both these studies focused on older medical practitioners), there are strong similarities between the reasons cited in the literature and in this study, which supports associations substantiated in the wider literature between burnout, low job satisfaction and greater likelihood of turnover intentions and rates of attrition (Griffeth, Hom et al. 2000, Coomber and Barriball 2007, Zhang and Feng 2011, Tziner, Rabenu et al. 2015).

Inducements to remain for all scenarios

Pooled analysis of the factors cited as inducements to remain in DHB-based employment reflect the emphasis on age as a main reason for leaving; many stated that 'nothing' would encourage them to remain (Figure 20). In both the 'leave medicine entirely' and 'leave DHB-based employment' scenarios, a total of 154 comments stated 'nothing' in various guises. If this reason is deemed to be mutually exclusive to all other factors – that is, it is assumed that these respondents will leave no matter what changes are instituted – this suggests around 27% of the 572 total respondents signalling an intention to leave DHB-based employment will leave. Conversely, this suggests that around 73% of those considering leaving, or 17.5% of the overall 2390 respondents, may be induced to remain if certain things change.

Analysis of the core themes emphasises the importance of changes such as having flexible

working hours, the ability to take leave, and more part-time work opportunities. This was closely followed by the desire for improvements to management culture in DHBs and less bureaucratic approaches, and improvements to staffing levels and resourcing. As one respondent summed up:

"More REAL doctors (not bureaucratic doctors masquerading as real doctors) involved in the decision-making process. Everyone is paying lip service to the clinical governance issue starting from top government level. I see no movement here as the bureaucracy have a firm hold and use bullying tactics to hold onto their power. [Until] this changes the medical workforce will remain frustrated and unhappy. The management seem to think it is their right to impose extra duty on the senior and specialist workforce by taking advantage of the fiduciary attitudes of the senior doctors. Burnout is inevitable unless we walk away from a job we inherently love and have often sacrificed our families and lives for. At 64 I am facing these issues every day. I am thinking about succession planning on behalf of my employer, the DHB should be talking to me about it. It should be the other way around. Not threatening me with cutting tenths if I don't do what they want me to do. DHBs are hell bent on crisis management rather than forward planning. Sadly, much of it is due to poor leadership at top level, no transparency with staff, lack of understanding of the real coalface issues and the staff that work there. Basically 'they could not care less'."

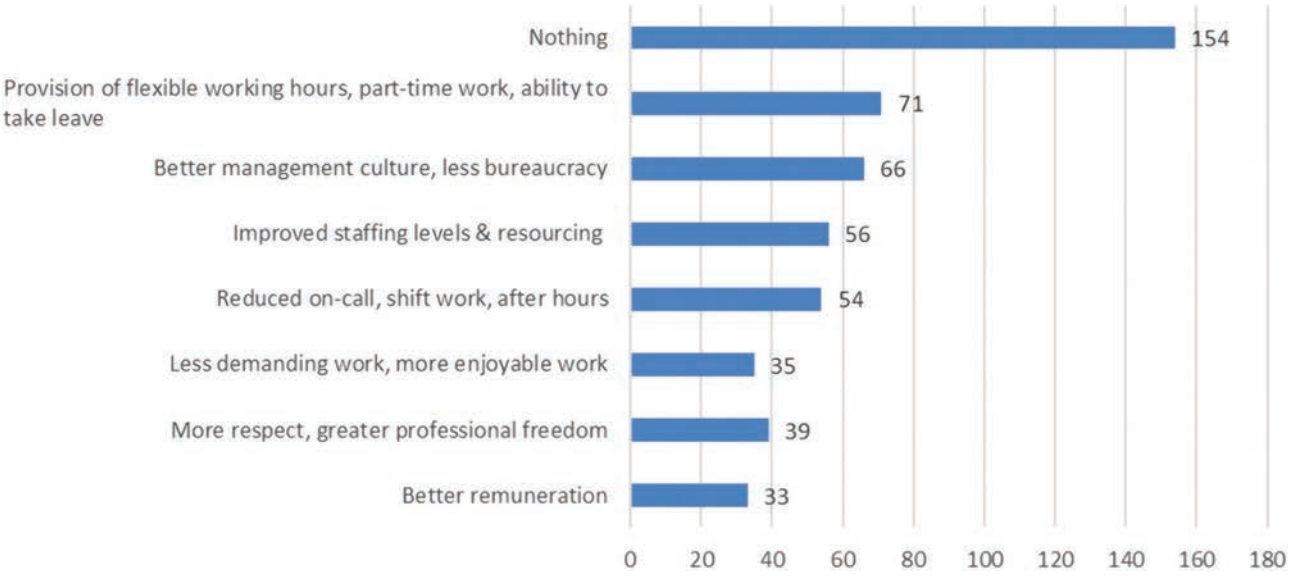

FIGURE 20: SUMMARY OF MOST FREQUENTLY EXPRESSED POSSIBLE INDUCEMENTS TO REMAIN IN DHB-BASED EMPLOYMENT ACROSS ALL THREE SCENARIOS

The emphasis on these factors mirrors findings from the Davidson, Lambert et al. (2001) study where the most often cited factors that might encourage respondents to remain were flexible working hours and a reduction in workload. 'Nothing' was cited by 21% of respondents. Similar themes were echoed in an Australian study by Brett, Arnold-Reed et al. (2009), which found better remuneration, better staffing levels and more general support was emphasised, followed by providing flexible or part-time working opportunities or a reduction in workload (p76). 'Nothing' was a factor cited by only around 10% of respondents. The strong emphasis on 'nothing' in this current study is likely to reflect age-related considerations but also suggests a concerning number who feel that things are beyond redress in terms of working conditions and DHB culture. For example, one respondent stated that

there are no changes "…that have a chance of ever happening". In the following sections, the core reasons cited for intending to leave are explored, followed by a consideration of the factors that may assist with incentivising doctors to remain in New Zealand DHB-based employment.

Scenario 1) Reasons cited for intending to leave medicine entirely

For those signalling an intention to leave medicine entirely, the single most common reason cited was age (60% of comments), followed by feeling exhausted or burnt-out from the pressure of work (17%). In general, the emphasis on age, work pressures and other issues such as wanting time for other interests triangulate with the demographic trends that suggest intentions to leave medicine entirely is greater in older respondents. Recent studies focused on quit intentions of older doctors have emphasised that concerns around aging, health, workloads, and family and domestic circumstances combine as key influences around leaving medicine (Sansom, Calitri et al. 2016, Wijeratne, Earl et al. 2017). Figure 21 shows the relative frequency of the 11 themes expressed.

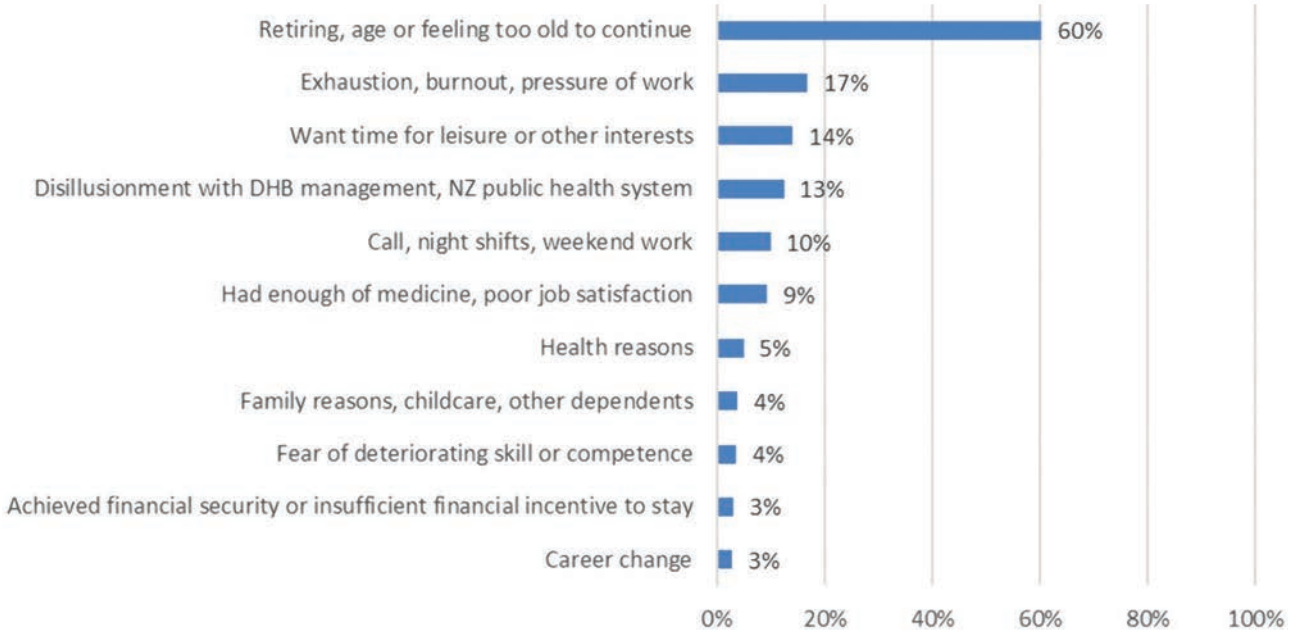

FIGURE 21: REASONS CITED FOR INTENDING TO LEAVE MEDICINE ENTIRELY (N=360)

For many respondents the themes were closely interwoven, with many comments referencing increasing age as a baseline against which demanding work and the specifics of the respondent's specialty were felt to be incompatible. For example, one respondent noted, *"[I'm] getting close to retirement age. Nights on call are busy and draining. [I'm] getting worn out. Front line anaesthesia is clinically demanding and stressful and there are no easy ways of doing a less demanding job".*

Other comments interweaved feelings of disenfranchisement and exhaustion with the medical profession alongside the notion that they have reached the end of their medical career:

"[I] have done my dash. Politics and the extra factors required to practice such as remembering [continuing medical education] points, constant change without defined reason, medical council expectations. I always wanted to just see patients – I don't feel I make a difference any longer."

Relatively few respondents spoke to feelings of concern over competence (n=13), although a number referenced having achieved financial stability as an enabler to leave medicine (n=11): "[I] am developing other interests outside medicine. [I am] becoming financially independent and intend to retire while still physically active and capable of doing other things". Table 7 presents a summary of illustrative comments for the core themes.

TABLE 7: SUMMARY OF MAIN REASONS CITED FOR LEAVING MEDICINE ENTIRELY WITH ILLUSTRATIVE COMMENTS

CORE THEME	Illustrative comment
Retiring, age or feeling too old to continue (n=217)	"Increasing age. Desire to finish work while reputation intact. Loss of confidence in staying up-to-date. Long post-acute ward rounds becoming more physically and emotionally demanding. Desire to commence retirement in good health and fitness."
Exhaustion, burnout, pressure of work (n=61)	"Exhausted, need a life, lots to do before medicine kills me, no recognition for all my hard work, no recognition that I am overloaded, they just keep piling it on despite my protestations."
Time for leisure or other interests (n=51)	"40 years is enough! It will be wonderful to have time to follow other interests."
Disillusionment with DHB management and New Zealand health system (n=45)	"[I'm] over the management at the DHB, no one listens to the physicians/ surgeons... it is all about saving money. Our CEO does what exactly????? How does he justify such a large salary????? No gratitude at all for what we do, terrified to make a mistake or get a complaint from patient/colleague with absolutely no support from the department. Our DHB just doesn't get it – keep sick patients in the localities/community to avoid admission... our population is poor with terrible health. The variation of practice between the GPs is too large and thus standardisation of care cannot ever be achieved. CEO getting all his mates from the UK the top jobs over here while all the locals are busting their guts in the hospital to make sure patients don't come to harm. If you complain or suggest anything against the grain, consider yourself targeted."
Call, night shifts, weekend work (n=36)	"I do not have the option to come off a punishing out of hours' roster after 35 years. 10 hour plus days preceding 26 hours on call followed another 10-hour day. And that is for week nights on call. Much worse for weekends."
Had enough of medicine, poor job satisfaction (n=34)	"Falling job satisfaction and increased employer preoccupation with outcomes unrelated to patient care and with disregard for safety and satisfaction consequences. An utter obsession with short term outcomes and horizons."
Health reasons (n=18)	"Medicine has consumed the last 30 years. It has disadvantaged my health and my family. I am over it!"
Family reasons, childcare, other dependents (n=14)	"… I work shifts and [I am] responsible for one in-home dependent. My job is exhausting and 'costs' me physically, emotionally and in terms of my whanau. I am responsible for one independent living older person who needs variable support. My job is reasonably good financially but hard."
Fear of deteriorating skill or competence (n=13)	"[I'm] slowing up, harder to multi task. Risk of mistakes – probably not more frequent, but more likely to be attributed to age."
Achieved financial security or insufficient financial incentive to stay (n=11)	"I am over 50, I have enough assets and savings, and I don't want to spend the next 13 years overworked, stressed, and unhappy."
Career change (n=10)	"[I'm] approaching 60, I have other things that I want to achieve and do while I am still fit to do so. Also change in career and lifestyle to agricultural sector. I find some of the clinical days demanding and exhausting."

Scenario 1) Factors that may encourage retention

Reflecting the emphasis on age as a key reason for intending to leave medicine entirely, over a third of respondents (n=122) suggested that nothing would induce them to stay on in medicine. For example, many simply stated 'no' or 'none', although one respondent qualified "Absolutely not – why would I work like I do when I can sell real estate with no qualifications for triple+ the money? This country is totally screwed." Nevertheless, many comments noted the difference that provision of flexible working hours or part-time work would make in terms of encouraging them to reconsider their intention to leave. As one respondent stated, it would make a difference if there was "…a system that can let the ageing intensivist share their experience and skills in a less stressful environment – like dayshifts in HDU/ICU or teaching".

A similar number (n=39) emphasised the difference that not having to do on-call or evening shift work sessions would make, although they also noted that this would be difficult to achieve in practice and may disadvantage younger practitioners. For example, one respondent stated they would remain if certain conditions were met:

"If I can find a role that does not have after hours work, that provides the weekday flexibility, team environment and interest of my current role. However, I don't think it's fair to expect my colleagues to carry me as a weekday only person and load up the after hours on the younger people."

A summary of the main reasons cited is presented in Figure 22 with illustrative comments in Table 8.

FIGURE 22: SUMMARY OF FACTORS THAT MAY ENCOURAGE RECONSIDERING LEAVING MEDICINE ENTIRELY (N=344)

TABLE 8: SUMMARY OF FACTORS THAT MAY ENCOURAGE RECONSIDERING LEAVING MEDICINE ENTIRELY WITH ILLUSTRATIVE COMMENTS

CORE THEME	Illustrative comment
Nothing (n=122)	"No. Age is an unescapable biological fact."
Provision of flexible working hours, part-time work (n=50)	"Fewer clinical hours; better support from the DHB; a role that recognizes my abilities and experience."
Not having to do on-call, shift work, evenings (n=39)	"Not doing night call would certainly allow me to work longer as I enjoy my work but would like the flexibility to reduce nights."
Improvements to remuneration, staffing levels, resourcing (n=38)	"Better staffing with more FTEs to achieve targets for seeing patients and starting treatment."
Improvements to management culture, less bureaucracy (n=30)	"Lack of recognition and persistent failures by management to involve medical staff in decision making about issues vital to our service."
Financial necessity (n=26)	"If I needed to continue for financial reasons."
Less demanding work, more enjoyable work (n=23)	"If I am allowed to work to the specifications of my contract, and not be expected to do more and more and more by emotional blackmail, and if I raise questions about that, then I am the bad guy, I would gladly stay. I used to love my work, but now all I basically want to do is get through the day so I can go to sleep. I have no life."
Career change, non-clinical opportunities (n=21)	"If I could stay on in a non-clinical role I might keep working."
More respect, greater professional freedom (n=19)	"Improvement in working condition. Getting more control of my own working, increase remuneration, address clinical staff/SMO shortage, having manageable case load, having at least some participation in decision making."
Continued good health, improvements to health (n=18)	"Continued good health and ability to work reduced hours."
Clinical need, sense of duty to patients (n=12)	"If leaving meant patients would go untreated because of staff shortage."
Attaining New Zealand residency or staying in New Zealand (n=3)	"If I am still fit and the country gives me permanent residency/citizenship."

Scenario 2) Reasons cited for intentions to leave DHB-based employment

The reasons given by those considering leaving DHB-based employment echoed similar themes to why people were intending to leave medicine entirely, although age was not cited as a core factor and there was greater emphasis placed on feelings of disillusionment with DHB-management, associated low morale and feelings of powerlessness (Figure 23). This different emphasis reflects the strong association between poor job satisfaction and intending to leave DHB-based employment, with many comments reflecting common themes of low job satisfaction, including feeling under-recognised, unsupported and undervalued.

Although there was no statistically significant variation in intention to leave DHB-based employment by DHB of the respondent, the largest proportion of respondents intending to

leave DHB-based employment was from Southern (11.5%). Two comments referenced conditions at this DHB directly: "The management at the Southern DHB make the environment so toxic that continued employment isn't an option" and "I'm likely to move into private [practice] as Southern DHB is an absolute nightmare to work for." Research by Ashton, Brown et al. (2013) published in the *New Zealand Medical Journal* found that average levels of job satisfaction were higher amongst senior doctors working in the private sector in the New Zealand context. Main sources of dissatisfaction cited in their study were workload pressures and undue interference from managers in the DHB setting.

Unsurprisingly, justifications for this intention-to-leave scenario appear to reflect disenfranchised respondents rather than those who are necessarily at the end of their medical careers. As one respondent summarised:

"Management are uncompromising and don't listen; my department [is] so understaffed [that] everyone [is] under pressure. I feel powerless to change this as [there is] no unity within my department. [I] find it difficult to turn work off because [I] have so much work left after every working day. I have plenty of other options in [the] private sector."

Table 9 presents illustrative comments for each of the nine core themes.

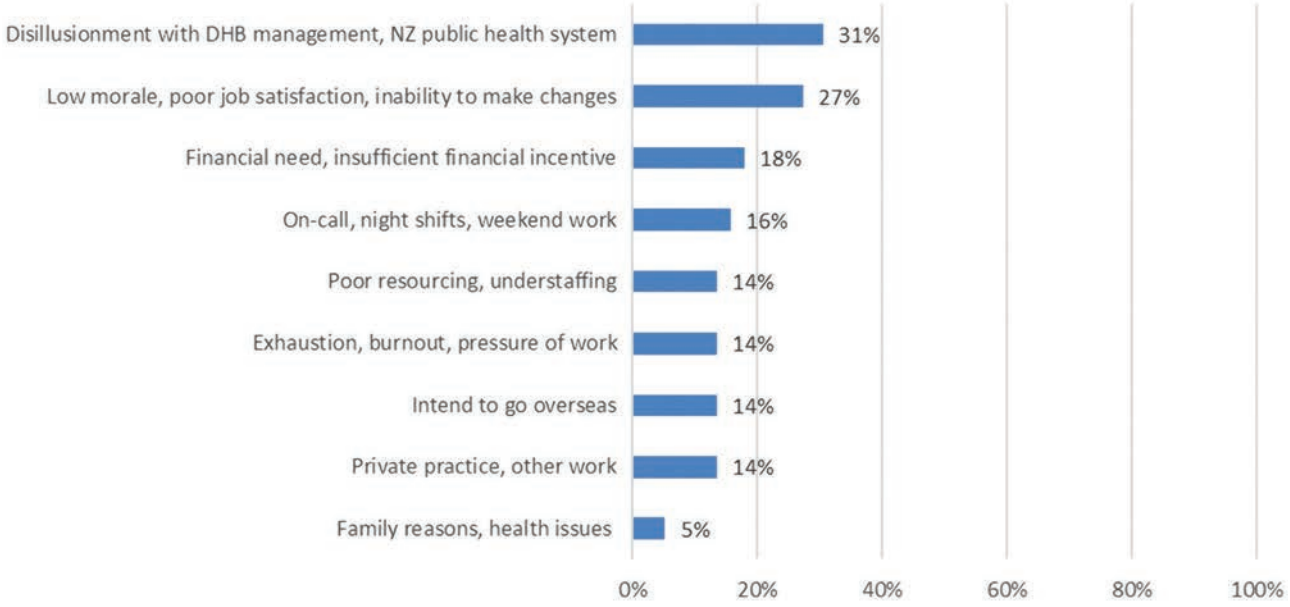

FIGURE 23: REASONS CITED FOR INTENDING TO LEAVE DHB-BASED EMPLOYMENT (N=95)

TABLE 9: SUMMARY OF REASONS CITED FOR INTENDING TO LEAVE DHB-BASED EMPLOYMENT WITH ILLUSTRATIVE COMMENTS

CORE THEME	Illustrative comment
Disillusionment with DHB management, New Zealand public health system (n=29)	"The management politics make the place a very malignant practice with high level of frustration."
Low morale, poor job satisfaction, inability to make changes (n=26)	"I feel undervalued and taken for granted. There is a constant drive for more for less which is incredibly draining. We are asked to make savings when in psychiatry we truly believe we require more resources not less. Rates of methamphetamine and general referrals to mental health are increasing. We believe deprivation is increasing in our DHB. Why stick in out when I can earn more and work less in private practice. My only concern is I will truly miss working in a team and teaching medical students, junior doctors and allied staff."
Financial need, insufficient financial incentive (n=17)	"Poor [funding], poor recognition of clinical needs by DHB management, poor remuneration for the effort put in to the service, lack of clinical influence in management decisions."
On-call, night shifts, weekend work (n=15)	"I would like to work fewer hours, which will probably be difficult to do in the DHB environment. I would also like to give up acute on-call work."
Poor resourcing, understaffing (n=13)	"My DHB is under resourced, understaffed disinterested and hostile towards my specialty."
Exhaustion, burnout, pressure of work (n=13)	"DHB work is increasing unsatisfying – managerial interventions often seem obstructive, change for the sake of change, and unpleasant interpersonally. I'm reaching an age where preserving energy to use for good purpose has more appeal than the constant struggle."
Moving overseas (n=13)	"Better package in Australia."
Private practice, other work (n=13)	"Better professional opportunities elsewhere. The public system is too slow and far too restrictive."
Family reasons, health issues (n=5)	"Tired, niggly unwellness. [Want] to pursue other opportunities. Spend more time with kids."

Scenario 2) Factors that may encourage retention

Reflecting the core trends in this theme, the most common factor cited by respondents that might encourage them to reconsider their intentions to leave DHB-based employment was if there were improvements to the DHB management culture or a reduction in bureaucracy. Comments from respondents noted readily attainable changes such as improving working conditions, having "contracts compliant with union regulations" and attaining "greater control over service delivery". Respondents also emphasised the importance of autonomy, being able to institute change and having adequate resourcing for the job at hand.

There are notable similarities between these factors and antecedents of burnout. Research by Zhang and Feng (2011), for example, found that there were significant correlations between Chinese physicians scoring with burnout, job dissatisfaction and turnover intentions. Existing research suggests that a high proportion of the ASMS membership is currently suffering from burnout symptoms, with 42% of respondents in a recent survey attributing this burnout directly to conditions of work (Chambers, Frampton et al. 2016). It is feasible to suggest, then, that attending to the workplace conditions cited as factors encouraging individuals to consider leaving DHB-based employment may also assist with reducing the propensity for this workforce to

experience burnout (see for example Kumar, Sinha et al. 2013). Ashton, Brown et al. (2013) further suggest that retention of doctors in the public system is likely to be higher if DHB management institutes positive change around core sources of dissatisfaction. In this study, those signalling an intention to leave DHB-based employment were least satisfied with the level of recognition they received for good work and their ability to choose their own methods of working. Low autonomy and feelings of control are also known antecedents for burnout (Shirom, Nirel et al. 2010).

The second most common theme cited by respondents was 'nothing', with many noting that there would be no reasons that would induce them to stay in DHB-based employment. For example, one respondent said, "Hardly likely any more. After years of trying, what should change?" Cross-cutting these responses by age reveals that half of these respondents were aged over 55, suggesting that increasing age combined with feelings of disenfranchisement are likely to encourage these doctors to leave, although in this scenario they may not leave medicine entirely. Wijeratne, Earl et al. (2017), for example, note that having fulfilling professional relationships was a key factor in encouraging older doctors to continue working; retaining these older doctors in a DHB setting is likely to require cultural change – for example, improvements with management relationships – as well as structural changes, such as improvements to staffing and resourcing. Figure 24 presents a summary of the relative frequency of these themes, which are also presented with illustrative comments in Table 10.

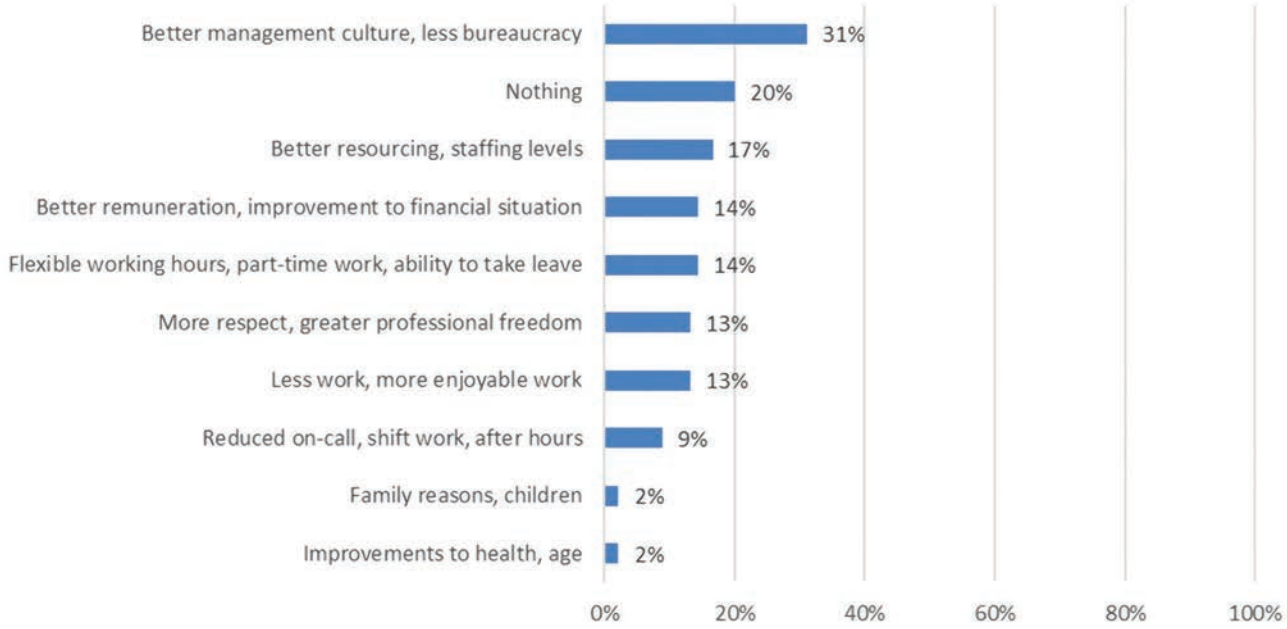

FIGURE 24: REASONS THAT MIGHT ENCOURAGE RESPONDENTS TO RECONSIDER INTENTIONS TO LEAVE DHB-BASED EMPLOYMENT (N=90)

TABLE 10: SUMMARY OF FACTORS THAT MAY ENCOURAGE RECONSIDERING LEAVING DHB-BASED EMPLOYMENT WITH ILLUSTRATIVE COMMENTS

CORE THEME	Illustrative comment
Better management culture, less bureaucracy (n=28)	"Managers who listen to and respect clinicians. Actually being able to achieve change without having to be difficult. A respectable job sizing offer. A decrease in clinical workload without then being asked to do more to meet FSA [First Specialist Assessment] targets when I already work 15–20 hours extra per week."
Nothing (n=18)	"Probably not. I have done my time."
Better resourcing, staffing levels (n=15)	"… My work would be more sustainable if we were adequately resourced. It has taken its toll on me physically and mentally."
Better remuneration, improvement to financial situation (n=13)	"Improved pay relative to output. Ability to take leave. Better departmental relationships."
Flexible working hours, part-time work, ability to take leave (n=13)	"Being allowed to work more flexibly."
More respect, greater professional freedom (n=12)	"Erosion of the independence of clinical roles by management. Main concern is the lack of autonomy of specialists and the constant change in DHB/ government led pressures on patient throughput. There is little consideration for pressure on SMOs and burnout would be the main reason, with being disenfranchised with lack of concern for welfare of SMOs."
Less work, more enjoyable work (n=12)	"Improvement in working conditions may allow me to continue."
Reduced on-call, shift work, after hours (n=8)	"More flexibility for time off and less on call."
Family reasons, children (n=2)	"If my kids had been through school."
Improvements to health, age (n=2)	"If my health permitted."

Scenario 3) Reasons cited for intentions to leave New Zealand

For those signalling an intention to leave New Zealand, there were some different reasons expressed. Nearly a third of respondents referenced a desire for better remuneration overseas, and a quarter of comments justified their intention to leave New Zealand to seek better opportunities, experiences and career prospects. Only three respondents were intending to leave New Zealand to return to their home country, and 12 responses cited family reasons (Figure 25). Only one respondent selecting family reasons was New Zealand trained; slightly less than half of the 79 total signalling an intention to leave New Zealand were IMGs.

Some comments in this theme noted that they had family overseas that they were required to relocate to care for. For example, one respondent noted that they "[n]eed to live elsewhere for family reasons – support children in higher education. [My current] city is unlikely to offer me satisfactory work opportunities. Also I need to support my elderly parents from closer proximity."

As highlighted in Table 11, this scenario appeared to capture many who leave New Zealand to progress their medical careers through exposure to new settings and opportunities. It is unclear as to whether these senior doctors intending to emigrate will return in the future, but it cannot be assumed that they will do so. Some respondents again spoke to the significance of leaving due

to feelings of disenfranchisement and burnout. For example, one respondent noted they were intending to leave because of "[p]oor pay, limited DHB support [and] risk of burnout". Another noted that they "[g]enerally feel unsupported by [the] DHB particularly around being able to build service to meet need and future-proof through succession planning".

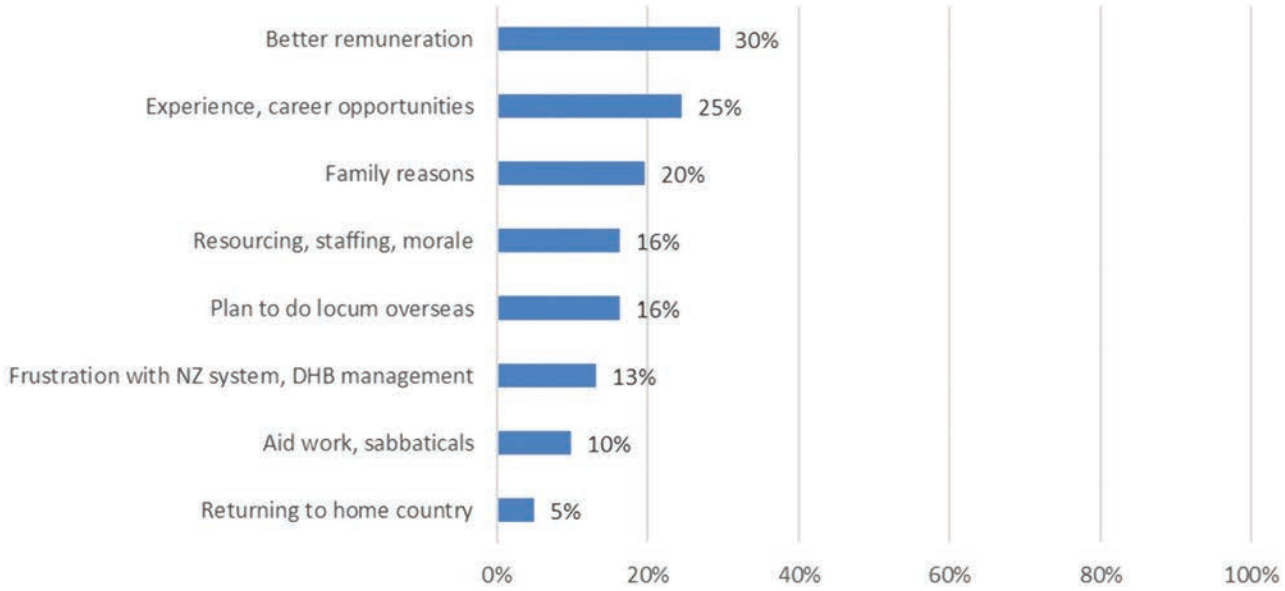

FIGURE 25: REASONS CITED FOR INTENDING TO LEAVE NEW ZEALAND (N=61)

TABLE 11: SUMMARY OF REASONS CITED FOR INTENDING TO LEAVE NEW ZEALAND WITH ILLUSTRATIVE COMMENTS

CORE THEME	Illustrative comments
Better remuneration (n=18)	"Better remuneration and variety of experience."
Experience, career opportunities (n=15)	"Better opportunities, exposure to advances in my specialty, work within a supportive framework."
Family reasons (n=12)	"[I intend to] relocate to Europe/Germany for private rather than occupational reasons."
Resourcing, staffing, morale (n=10)	"I am fed up of targets and chronic understaffing and lack of resources."
Plan to do locum overseas (n=10)	"I would like to explore other work place/health system and work as a locum."
Frustration with New Zealand system, DHB management (n=8)	"Generally [I] feel unsupported by [my] DHB particularly around being able to build service to meet need and future-proof through succession planning."
Aid work, sabbaticals (n=6)	"Developing country aid work."
Returning to home country (n=3)	"Intend to finish my career in my country of birth."

Scenario 3) Factors that may encourage retention

As with the other scenarios, a significant number of respondents responded that 'no' they would not consider staying, with one respondent writing: "Not really. However an ability to decrease one's work commitments with a minor decrease in income would be attractive." Other comments noted desires for improvements around DHB culture and working conditions, and a number emphasised the difference increased remuneration would make. As outlined in Figure 26, over half (53%) of those intending to leave New Zealand scored as dissatisfied with their level of remuneration, which was the second lowest source of satisfaction after 'level of recognition received for good work' (63% dissatisfied). In this group of respondents, improvements to remuneration was the most often cited factor that would induce them to consider staying in New Zealand.

A lower proportion of comments referenced better professional opportunities, improvements to flexibility and staffing, and improvements to management culture. This latter theme was reiterated in comments noting that they may reconsider leaving if they were "…able to be involved in the departmental developments" and if there was "less stressful work conditions [and] more support".

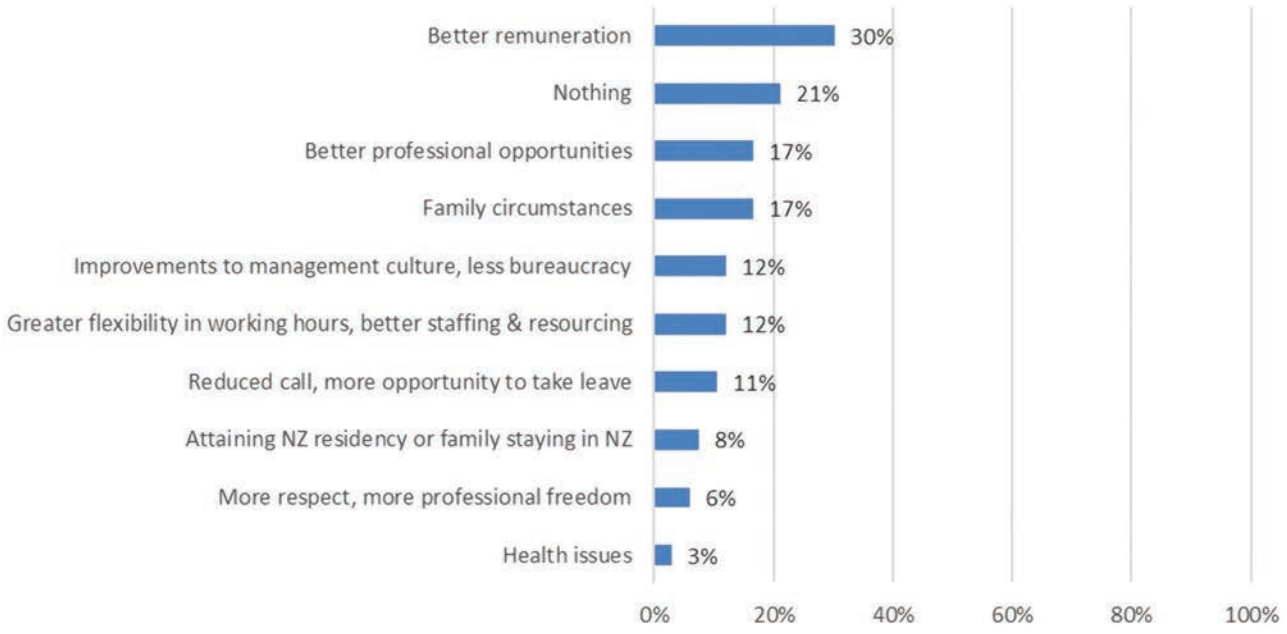

FIGURE 26: REASONS CITED THAT MAY ENCOURAGE RECONSIDERING LEAVING NEW ZEALAND (N=66)

TABLE 12: SUMMARY OF FACTORS THAT MAY ENCOURAGE RECONSIDERING LEAVING NEW ZEALAND WITH ILLUSTRATIVE COMMENTS

FACTORS CITED	Illustrative comment
Better remuneration (n=20)	"If I felt more secure about our retirement savings, I would stay in NZ. It took many years to pay off the student loan, then time out to have children has meant I do not have enough saved for our future."
Nothing (n=14)	"Not at this stage"
Better professional opportunities (n=11)	"More varied work, more global focus"
Family circumstances (n=8)	"[H]aving children living & working in NZ."
Improvements to management culture, less bureaucracy (n=8)	"If I found a job with very satisfying working conditions – mainly by being able to be involved in the departmental developments."
Greater flexibility in working hours, improved staffing levels and resourcing (n=8)	"If I could work less or more flexible times."
Reduced on-call, more opportunity to take leave (n=7)	"If I was able to have a job that was not full shift rosters with night duty. Night duty is not sustainable."
More respect, more professional freedom (n=4)	"Family, better recognition of my training, expertise."
Health issues (n=2)	"Illness or dependency amongst family members. Improved DHB approach to older SMOs."

Future intentions of respondents not intending to leave the DHB-based workforce

As outlined earlier in the report, three quarters of respondents (n=1818) were either likely or extremely likely to continue with DHB-based employment in the next five years. Those who signalled that they were 'unsure' as to their future intentions were also counted as amongst those intending to remain. Of these 1818 respondents, 1689 provided details for their age bracket and gender.

Figure 27 displays the demographic spread of the survey respondents intending to remain (green line) compared with the original 2281 respondents who provided demographic detail (purple line). The purple cross-hatched area displays those who are signalling an intention to leave. The figure also shows the demographic spread of the survey respondents intending to remain cut by age and gender.

Notable is the decrease in the percentage of the respondents aged 60+ from around 18% of respondents to just under 8% (n=146 reduction), as well as the 105 fewer respondents aged 55–59. The graph also suggests a slight change in the proportion of men to women in the respondents intending to remain, largely due to the higher rates of attrition in the male-dominated older age groups, with the resultant gender balance of respondents at 40% women to 60% men.

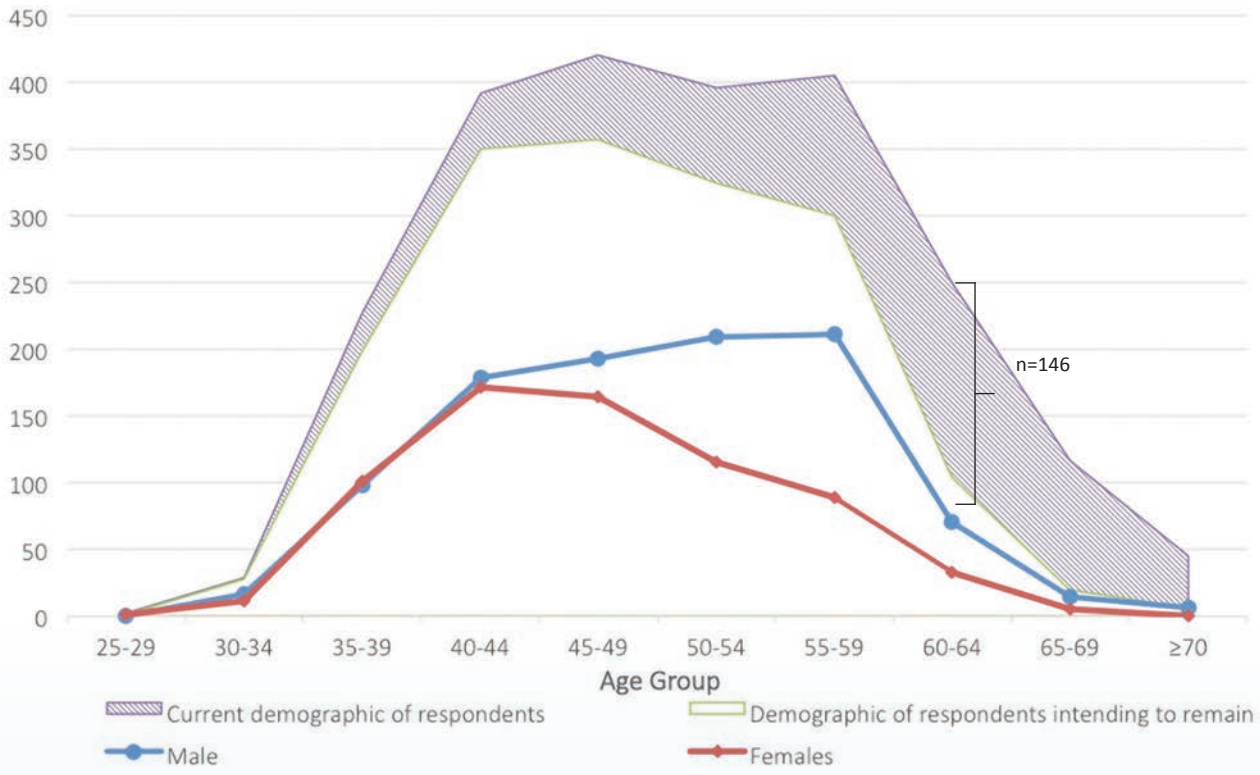

FIGURE 27: DEMOGRAPHIC COMPOSITION OF SURVEYED WORKFORCE INTENDING TO REMAIN IN DHB-BASED EMPLOYMENT (N=1689)

Importantly, this chart is restricted to detailing the potential loss in numbers, unless effective retention strategies are put in place. It includes those who signalled they were 'unsure' as to their future intentions who may decide to leave after all. It illustrates how the prospective losses from the DHB-based workforce will potentially affect all age groups, albeit most acutely in the older cohorts. The qualitative data in this study suggests effective retention strategies could mitigate this potential loss by up to 73%, though the data does not include the demographic detail to illustrate this by age group.

This research has not considered workforce input requirements to ensure a sustainable senior medical workforce. However, comparisons with Ministry of Health total (public and private) specialist workforce projections suggest the potential losses indicated in this research will reduce the annual growth rate of the public sector specialist workforce over the next five years. Further, what is clear from this research is that the extent to which effective retention measures are introduced will determine the workforce inputs required to replace the losses. Future input requirements, however, must also consider current workforce shortages and growing health service needs.

Intentions regarding changes to FTE and on-call/shift work commitments

The remaining survey respondents were asked how they might like to change their current FTE and on-call/shift work arrangements. While it may not be possible for these individuals to change these arrangements, these questions were designed to provide a level of insight as to how the remaining workforce may seek to change their work commitments in the future, and indeed, how they feel about their on-call and shift work components more generally. As detailed in Figure 28, nearly 40% would like to reduce their FTE, and over half would seek no change. A very small proportion would seek to increase their FTE. Figure 29 provides respondents' intentions with respect to their after-hours on-call/shift work components. While 60% would seek no change, nearly 30% would like to reduce this aspect of their work, and over 7% would seek no on-call or shift work commitments at all.

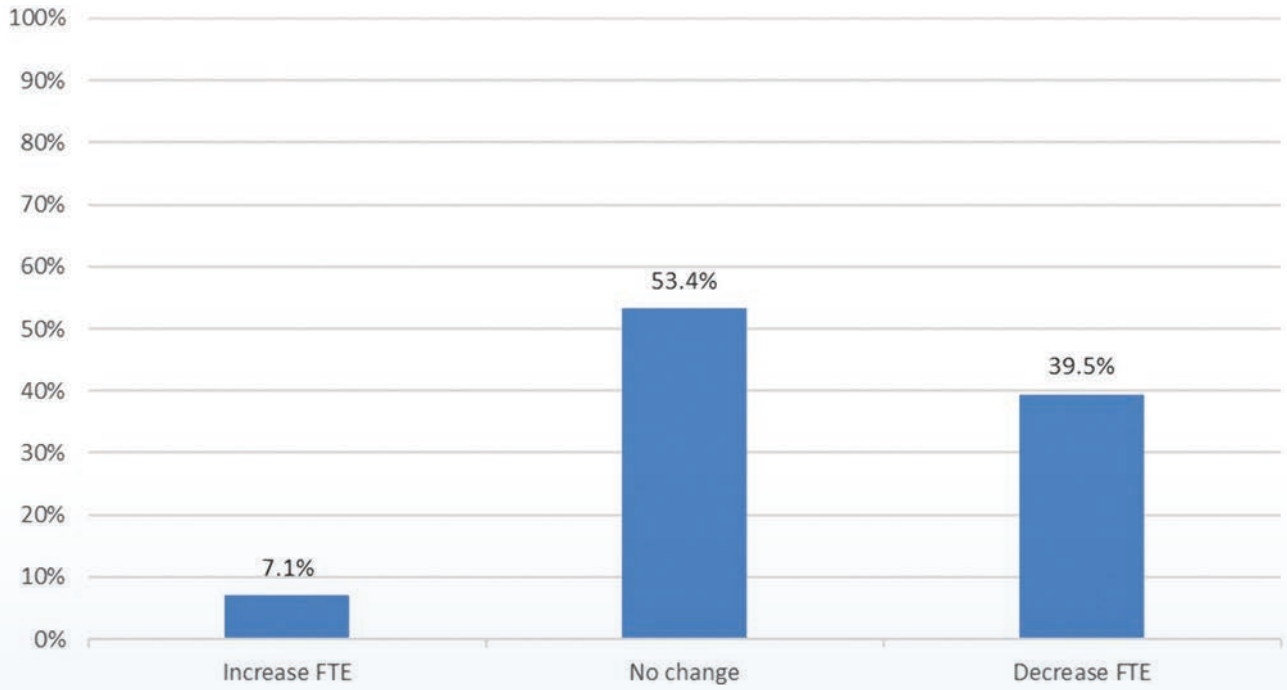

FIGURE 28: FUTURE INTENTIONS OF RESPONDENTS REGARDING THEIR FTE COMMITMENTS (N=1778)

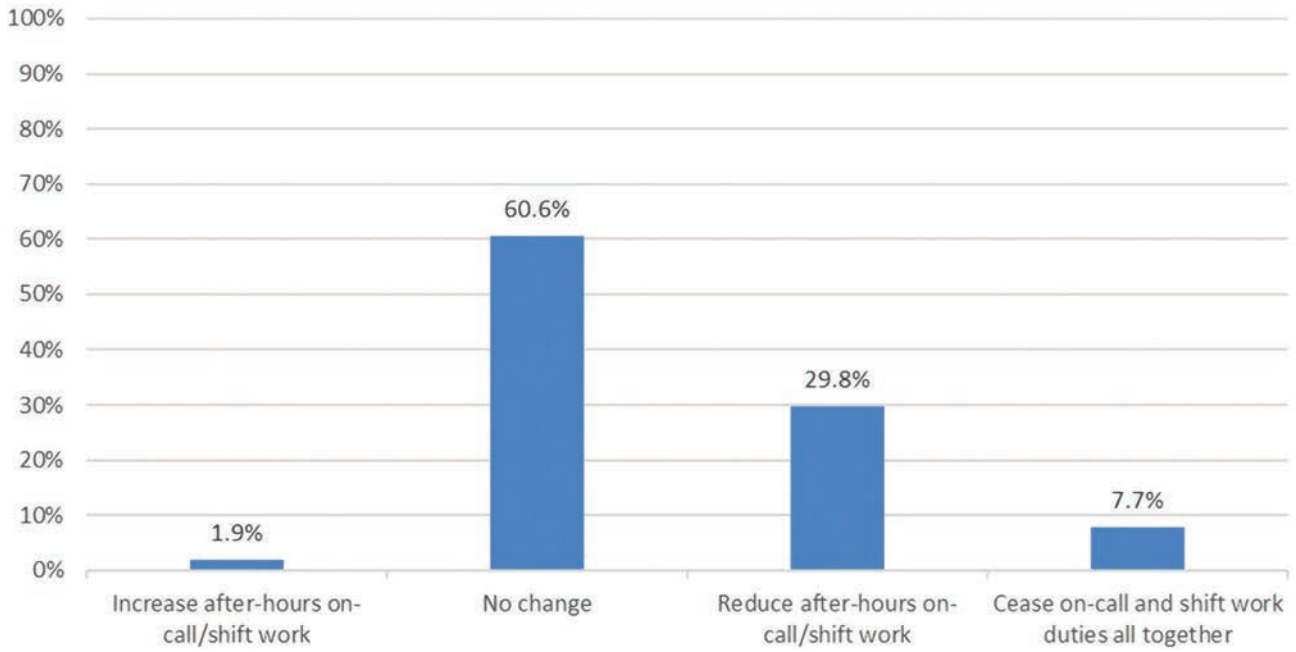

FIGURE 29: RESPONDENTS' INTENTIONS REGARDING AFTER-HOURS ON-CALL OR AFTER-HOURS SHIFT WORK COMMITMENTS (N=1770)

When these intentions were broken down by gender, there were more men seeking to decrease their current FTE and slightly more women than men seeking to increase their FTE (Figure 30). Overall, this variation by gender and FTE intention was statistically significant (p=0.000).

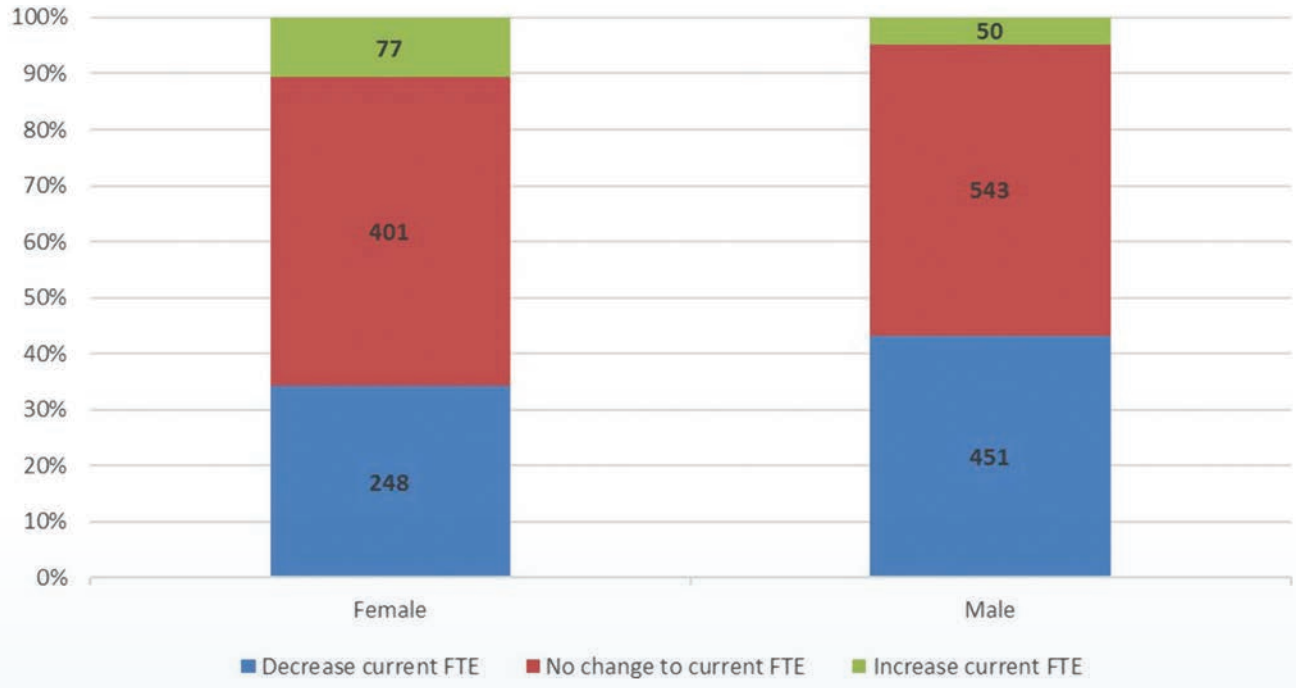

FIGURE 30: INTENTIONS REGARDING FTE BY GENDER (N=1770)

There was also statistically significant variation in intentions regarding FTE by age, as well as intentions regarding on-call and shift work by age. As suggested in Figure 31, greater numbers of younger respondents would like to increase their FTE, while this intention drops off for those aged 60 and over. Figure 32 suggests that desire to drop on-call duties grows with age. It is worth noting that there were very low numbers of respondents in the older age cohorts, which may limit the reliability of these trends in the two graphs. Nevertheless, the proportions of older age respondents indicating a desire to reduce their FTE and cease on-call and shift work duties altogether makes intuitive sense. It also follows research which acknowledges that aging has a significant effect on the ability of older doctors to cope with the rigours of night shift and on-call duties (Garfield, Garfield et al. 2012). Those seeking to reduce FTE are likely to be planning their gradual reduction in their work hours as they reach the end stages of their medical career. The proportion of those aged 70 and over who did not wish to change their current FTE or amount of on-call work was also noteworthy, although as specified in the graph, the actual numbers remaining in this age group were very low.

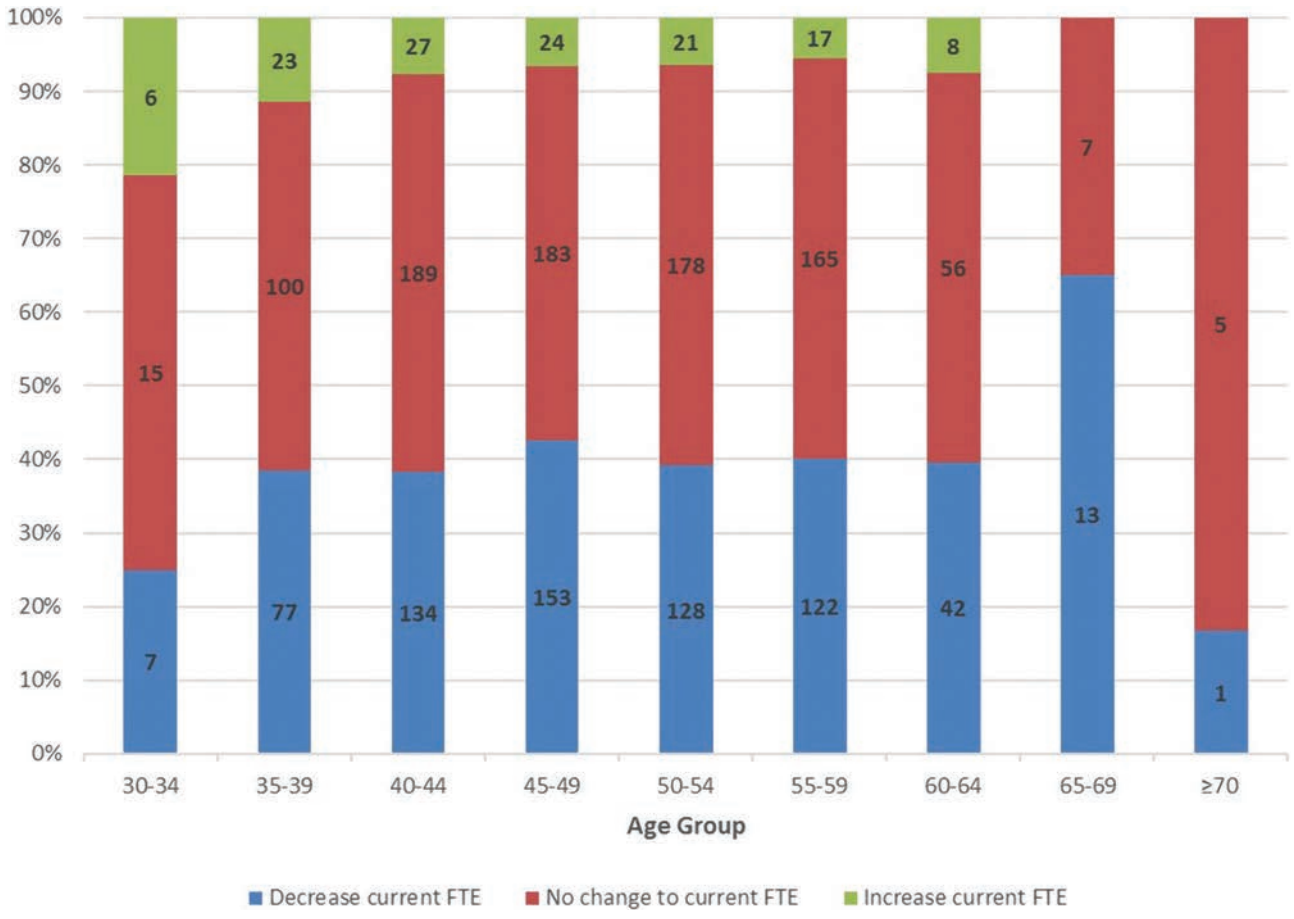

FIGURE 31: INTENTIONS REGARDING FTE BY AGE (N=1702)

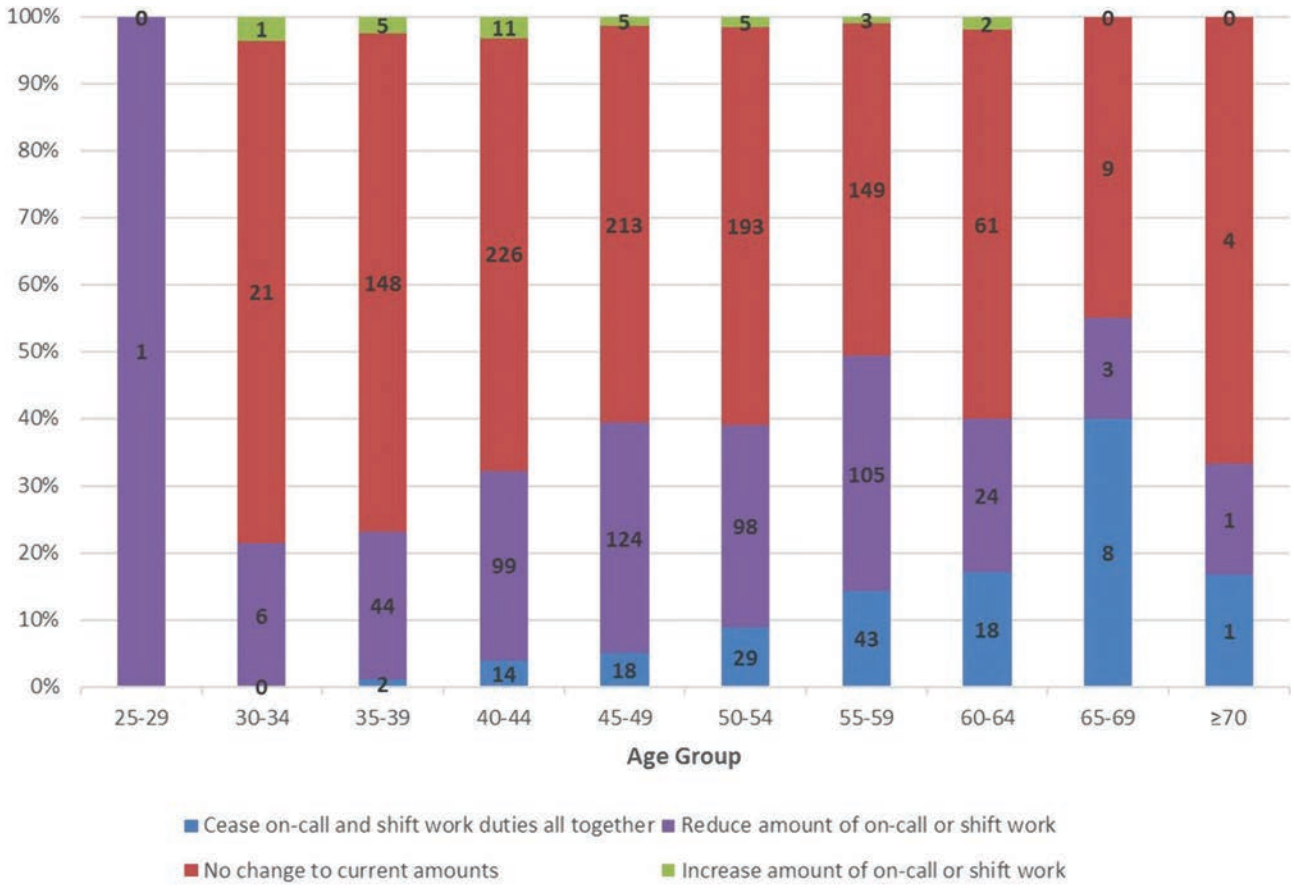

FIGURE 32: FUTURE INTENTIONS REGARDING ON-CALL AND SHIFT WORK DUTIES (N=1694)

There was a statistically significant variation in intention to change FTE by level of job satisfaction (Figure 33). There was a higher proportion of those scoring as 'satisfied' who were not seeking to change their current FTE. This intention category also had the lowest proportion of respondents scoring as dissatisfied. While directional causality cannot be inferred from this association, it does suggest that there may be increased job satisfaction amongst those who feel either that they are not working enough FTE or working too many hours. This latter trend is consistent with existing research that suggests high workload has a significant negative impact on levels of job satisfaction (Sibbald, Bojke et al. 2003).

A summary of the relationships between independent variables and intentions regarding FTE and shift work/on-call is provided in Table 13 with p-values where statistical significance was found.

FIGURE 33: INTENTION TO CHANGE FTE BY JOB SATISFACTION

TABLE 13: RELATIONSHIP BETWEEN INDEPENDENT VARIABLES AND INTENTIONS REGARDING FTE AND ON-CALL/SHIFT WORK DUTIES

VARIABLE	Trend	p-value
Job satisfaction	Highest job satisfaction with those not seeking to change current FTE or amounts of on-call or shift work.	FTE: 0.000 On-call/shift work: 0.001
Health status	Those with lower health status are more likely to intend to cease on-call and shift work, and those with higher health status are more likely to maintain their current on-call and shift work commitments. No variation by health status with FTE intention.	On-call/shift work: 0.008
New Zealand-trained versus IMG	Those trained overseas are more likely to intend to cease on-call and shift work, and those trained in New Zealand are more likely to maintain their current on-call and shift work commitments. No variation by IMG/NZ trained with FTE intention.	On-call/shift work: 0.035
Gender	More men than women seeking to decrease FTE. More women than men seeking to increase FTE. More men than women seeking to reduce amount of on-call/shift work. More women than men seeking no change to current amounts.	FTE: 0.000 On-call/shift work: 0.001
Age	FTE: No significant variation. Younger participants were more likely to increase or maintain their current on-call and shift work commitments, and older participants were more likely to decrease their commitments.	FTE: 0.75 On-call/shift work: 0.001

AVERAGE FTE FOR OLDER SENIOR DOCTORS

Average existing FTE of the remaining respondents was further explored by cutting the FTE by future intentions regarding changes to FTE and on-call and shift work. This data for two older aged cohorts of respondents is detailed in Table 14. Data for those aged 70 and over was excluded from analysis due to the very low numbers remaining in this age group. As well as exploring the average FTE for the remaining respondents, the survey also queried what their desired future FTE would be. As suggested in the reported 'desired future FTE', there appears to be an FTE 'sweet spot' for those aged 60–69 of around 0.66 FTE, both for those wishing to decrease their FTE and those wishing to increase their FTE (60–64-year-olds only).

While it is important to note that the numbers in this analysis are low, this suggests potentially useful information as to the ideal levels of involvement for older specialists. FTE could be tweaked for older medical senior doctors to ensure their ongoing presence in the medical workforce. Patterns around average FTE and intentions regarding on-call were less clear.

TABLE 14: AVERAGE FTE FOR RESPONDENTS INTENDING TO REMAIN IN DHB-BASED WORKFORCE BY AGE AND INTENTIONS REGARDING FTE AND ON-CALL/SHIFT WORK

	AVERAGE FTE	
	60–64-YEAR-OLDS (N=105)	65–69-YEAR-OLDS (N=20)
Total age group	0.85	0.81
Those wishing to decrease FTE	0.97 (Average desired FTE: 0.63)	1.06 (Average desired FTE: 0.67)
Those wishing to increase FTE	0.60 (Average desired FTE: 0.68)	No desire to increase
Those not wanting to change FTE	0.85	0.97
Those wishing to cease on-call or shift work altogether	0.94	1.05
Those not wanting change amounts of on-call or shift work	0.82	1
Those wishing to increase on-call or shift work	1	No desire to increase
Those wishing to reduce on-call or shift work	0.96	1.01

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Appendix 1

Introduction

This survey is to provide ASMS with insight into the future work intentions of the DHB-based senior medical workforce. Future work intentions includes changes you may wish to implement in your DHB work but have not yet formalised.

We are particularly interested in how DHB workforce capacity may be affected within the next five years given many ASMS members are approaching the age of 65. Accordingly, the survey focuses on intentions to leave the DHB based workforce, as well as possible changes to FTE.

Initial findings from this research will be presented at the November 2016 ASMS Annual Conference.

The survey is based on standardised, validated assessment tools. It also includes demographic questions that are used for correlation analyses. There is no way of personally identifying the respondent from this material as analyses are done on an aggregated basis. There are no right or wrong answers.

This survey will take approximately five minutes. **Responses are anonymous and confidential.**

If you have any questions, please feel free to contact Dr Charlotte Chambers at the ASMS: cc@asms.nz

Thank you for helping with this vital research.

Demographic information

This information is vital for correlation analysis. All data is anonymous and confidential and there is no way of personally identifying the respondent from this material as analyses are done on an aggregated basis.

Please select your gender:

☐ Male ☐ Female ☐ Undisclosed

Which DHB is your main employer:

In which country did you receive your primary medical qualification?

Are you a medical officer (i.e. a medical practitioner who is registered under the Health Practitioners Competence Assurance Act 2003 and who is NOT a medical specialist)?

☐ Yes ☐ No

What specialty area are you currently working in?

Please select your age bracket:

☐ <=24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐ 40-44 ☐ 45-49 ☐ 50-54

☐ 55-59 ☐ 60-64 ☐ 65-69 ☐ 70+

How many dependent children are you responsible for and live in your household?

☐ None ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ More than 4

How many other dependents (eg, elderly) are you responsible for and live in your household?

☐ None ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ More than 4

In general, how do you rate your overall health?

☐ Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor

Please enter your current paid Full Time Equivalent (FTE) per week, EXCLUDING hours on-call. Please only specify the FTE that you are employed for, not actual hours worked.

In general, being employed to work a 40 hour week is equivalent to 1.0 FTE.

Levels of satisfaction

Please consider how satisfied you are with the following aspects of your DHB-based employment at this present time?

	Extremely dissatisfied	Dissatisfied	Neither dissatisfied or satisfied	Satisfied	Extremely satisfied
Your physical working conditions	☐	☐	☐	☐	☐
Your ability to choose your method of working	☐	☐	☐	☐	☐
Your interactions with colleagues and fellow workers	☐	☐	☐	☐	☐
The level of recognition you get for good work	☐	☐	☐	☐	☐
The amount of responsibility you have	☐	☐	☐	☐	☐
Your remuneration	☐	☐	☐	☐	☐
The level of opportunity to use your skills and abilities	☐	☐	☐	☐	☐
Your hours of work	☐	☐	☐	☐	☐
The amount of variety in your work	☐	☐	☐	☐	☐

Future intentions

Within the next five years, how likely are you to leave medicine entirely?

Extremely unlikely	Unlikely	Unsure	Likely	Extremely likely
☐	☐	☐	☐	☐

Within the next five years, how likely are you to continue with some form of DHB-based employment?

Extremely unlikely	Unlikely	Unsure	Likely	Extremely likely
☐	☐	☐	☐	☐

Other (please specify)

If you answered 'unlikely' or 'extremely unlikely', please briefly explain your reasons why you don't intend to continue with DHB-based employment?

Are there any factors that might encourage you to reconsider your decision to cease DHB-based employment?

Within the next five years, how likely are you to leave New Zealand to practise medicine abroad?

Extremely unlikely	Unlikely	Unsure	Likely	Extremely likely
☐	☐	☐	☐	☐

If you answered 'likely' or 'extremely likely', please briefly explain the main reasons why you intend to leave New Zealand to practise medicine abroad in the next five years?

Are there any factors that might lead you to reconsider your intention to leave New Zealand and practise medicine abroad?

If you answered likely or extremely likely, please briefly explain the main reasons why you are intending to leave medicine entirely?

Are there any factors that might make you reconsider your intention to leave medicine entirely?

The following questions pertain to your intentions regarding your future DHB-based employment:

Within the next five years, would you be seeking to change your FTE?

☐ Increase current FTE ☐ No change to current FTE ☐ Decrease current FTE

Within the next five years, would you be seeking to change your after-hours on-call or after-hours shift work commitments?

☐ Increase amount of call or shift work ☐ No change to current amounts

☐ Reduce amount of call or shift work ☐ Cease call and shift work duties all together

Please enter the future DHB-based FTE per week, EXCLUDING hours on call that you seek:

Will this revised FTE have a formalised non-clinical component eg, teaching, research, supervision or leadership roles? If so, please provide details below.

We welcome any additional information or thoughts you may have about the future workforce capacity of the DHB-based senior medical workforce. Thank you for participating in this survey.

ASMS services to members

As a professional association, we promote:

- the right of equal access for all New Zealanders to high quality health services
- professional interests of salaried doctors and dentists
- policies sought in legislation and government by salaried doctors and dentists.

As a union of professionals, we:

- provide advice to salaried doctors and dentists who receive a job offer from a New Zealand employer
- negotiate effective and enforceable collective employment agreements with employers. This includes the collective agreement (MECA) covering employment of senior medical and dental staff in DHBs, which ensures minimum terms and conditions for more than 4,000 doctors and dentists, nearly 90% of this workforce
- advise and represent members when necessary
- support workplace empowerment and clinical leadership.

Other services

www.asms.nz

Have you visited our regularly updated website? It's an excellent source of collective agreement information and it also publishes the ASMS media statements.

We welcome your feedback because it is vital in maintaining the site's professional standard.

ASMS job vacancies online

jobs.asms.org.nz

We encourage you to recommend that your head of department and those responsible for advertising vacancies seriously consider using this facility.

Substantial discounts are offered for bulk and continued advertising.

ASMS Direct

In addition to The Specialist, the ASMS also has an email news service, ASMS Direct.

How to contact the ASMS

Association of Salaried Medical Specialists
Level 11, The Bayleys Building,
36 Brandon St, Wellington

Postal address: PO Box 10763,
The Terrace, Wellington 6143

P 04 499 1271
F 04 499 4500
E **asms@asms.nz**
W **www.asms.nz**
www.facebook.com/asms.nz

Have you changed address or phone number recently?

Please email any changes to your contact details to:
asms@asms.nz

Previous Health Dialogues are available from the ASMS website at
https://www.asms.org.nz/publications/health-dialogue/

Recent issues include:

"Tired, worn-out and uncertain" – Burnout in the New Zealand public hospital senior medical workforce.

Superheroes don't take sick leave – Presenteeism in the New Zealand senior medical workforce.

Proposed privatisation of hospital laboratories: weighing the risks of unintended consequences.

Reality Check: the myth of unsustainable health funding and what Treasury figures actually show.

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