

## Original Article

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# A cross-sectional study of the first two years of mandatory training for doctors participating in voluntary assisted dying

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**Abstract**

**Objectives.** Voluntary assisted dying (VAD) was legalized in Victoria, Australia, in June 2019. Victoria was the first jurisdiction in the world to require doctors to undertake training before providing VAD. This study examines data from doctors who completed the mandatory training in the first 2 years of the VAD system's operation (up to 30 June 2021). It describes the doctors who are undertaking VAD training, their post-training attitudes toward VAD participation, and their experiences of the mandatory training.

**Methods.** Through the online training, doctors completed a short demographic survey and undertook formal assessment of knowledge (90% pass mark). They also were invited to complete an optional survey evaluating the training.

**Results.** In total, 289 doctors passed the training, most commonly males (56%) aged 36–65 years (82%) from an urban location (72%). Most were more than 10 years post fellowship (68%) and practising as general practitioners (51%) or medical oncologists (16%). The training most commonly took 6 h (range 2 h to over 9 h). Most doctors passed the assessment at the first (65%) or second (19%) attempt. Almost all participants (97%) found the training helpful or very helpful and most reported being confident or very confident in their knowledge (93%) and application (88%) of the VAD legislation.

**Significance of results.** Doctors reported the training was helpful and improved their confidence in knowing the law and applying it in clinical practice. The profile of trained doctors (particularly their location and specialty) suggests continued growth of participating doctors is needed to facilitate patient access to VAD. It is important that this safeguard does not discourage doctors' participation.

**Introduction**

There is a growing international trend to legalize voluntary assisted dying (VAD) (White and Willmott, 2018). This includes in Australia where, over the last 4 years, VAD has been legalized in five of its six States: Victoria, Western Australia, Tasmania, South Australia, and Queensland. The term VAD is used in Australia to refer to euthanasia and physician-assisted dying, though different terminology is used elsewhere in the world.

When contemplating reform, law-makers must be satisfied there are sufficient safeguards to ensure only eligible individuals can access VAD. One safeguard which is now an established part of the Australian VAD model is legislatively-mandated training of health professionals prior to assessing eligibility for VAD or providing it [Department of Health and Human Services, 2017; Western Australia Voluntary Assisted Dying Bill, 2019; Voluntary Assisted Dying Act, 2021 (SA)].

Mandated training aims to ensure that health professionals are familiar with their legal duties (Department of Health and Human Services, 2017). This ensures standardized baseline knowledge, improving the quality and consistency of health professionals' decision-making and the safety of the system (White et al., 2021). These Australian training programs include an assessment module which must be passed, providing a formal means of ensuring competence.

While VAD training occurs internationally, there is variability in the degree to which it is formalized. The Netherlands and Belgium have programs which provide training for doctors who act as independent second consultants in euthanasia requests (Van Wesemael et al., 2009; Cohen et al., 2014). These doctors receive training in palliative care, relevant law, and patient communication skills (Van Wesemael et al., 2009; Cohen et al., 2014). In Canada, training is available through professional development (Ding et al., 2019), including education provided

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by the Canadian Medical Association and the Canadian Association of Medical Assistance in Dying Assessors and Providers.

Research from Belgium and the Netherlands suggests that training is beneficial, and may improve the quality of euthanasia consultations (Jansen-van der Weide et al., 2007; Van Wesemael et al., 2009; Cohen et al., 2014). There are calls for expanded and more formalized training of doctors in Canada (Hogg et al., 2018; MacDonald et al., 2018) and Belgium (Cohen et al., 2014) particularly for junior doctors (Ding et al., 2019), and as part of undergraduate and postgraduate medical education for all health professionals (Downar and Francescutti, 2017; Brown et al., 2020). Some Canadian commentators suggest that training and education should focus more on regulatory aspects of medical assistance in dying (Downar et al., 2018; MacDonald et al., 2018; Ding et al., 2019).

Victoria was the first Australian state to legalize VAD. Its mandatory training was developed during an 18-month implementation period, and became available approximately 2 months prior to the legislation commencing (White et al., 2021). This ensured some doctors would be trained (a legal requirement to be involved in VAD in Victoria) when the law started operation, differing from other jurisdictions such as Belgium and Canada where VAD legalization preceded systematic training efforts (Van Wesemael et al., 2009; Downar et al., 2018).

As more jurisdictions contemplate enacting VAD laws, the need to educate doctors (and other health professionals) about law and policy, and how best to do this, is becoming increasingly prominent (Fujioka et al., 2019; White et al., 2019). This paper describes the early experience in Victoria of the world's first legislatively-mandated VAD training for doctors. It reports on who has undertaken and passed the training and is therefore eligible to participate in VAD, and their willingness to perform various VAD roles. We also describe participating doctors' observations on the training, and their post-training confidence in knowing and applying the VAD legislation. This work was not a formal evaluation of the mandatory training.

## Methods

### Training content and delivery

The VAD training is provided in an online e-learning format and comprises nine modules including an assessment module. The design and development process, and training content, delivery and operation have been reported elsewhere (White et al., 2021). The training focuses on the legal requirements of the VAD law including doctors' roles, duties, and legal protections. Content also includes relevant clinical skills, particularly decision-making capacity assessments and screening for potential abuse. Each module links to additional clinical resources. Training is intended to take approximately 6 h to complete.

Doctors must pass the assessment comprising 30 multiple-choice questions, drawn from a bank of 90 questions. The pass mark is 90% and doctors have five attempts to pass the assessment. Training completion is registered in the learning management system when a doctor has completed the online modules and successfully passed the assessment. After completing the training, doctors are invited to answer an optional cross-sectional post-training survey.

### Study design

We examined responses from the post-training survey along with data collected during training and assessment (demographic questions and assessment results). We identified characteristics of doctors who undertook and passed the training. We also examined the experience and attitudes of participants regarding the training.

### Setting

This study draws on data from the first 2 years of VAD operation (19 June 2019 to 30 June 2021). This includes doctors who completed the training prior to 19 June 2019 as the training was available from 15 April 2019.

### Inclusion criteria

The training can only be completed by medical specialists, including vocationally registered general practitioners, who are eligible to participate in VAD in Victoria. We retrospectively identified all doctors who undertook the training in the specified timeframe. For inclusion in the study, doctors had to have completed the training and passed the assessment.

### Data sources/measurement

The principal data source was the post-training survey comprising 14 questions on training content and functionality. Questions could be skipped. They measured self-reported time to complete the training, its helpfulness, knowledge of the *Voluntary Assisted Dying Act 2017* (Vic) ("VAD Act"), and confidence in applying it, main reason for undertaking the training, willingness to participate in VAD and in what capacity, conscientious objection to VAD practice(s), change of opinion on willingness to provide VAD due to the training, and opinions on unclear or challenging parts of the VAD Act. Open-ended comments were sought on how training could be improved, what aspects should be retained in future iterations, and general feedback.

In addition, information on doctors' demographics and professional background (seven questions) was collected at the start of the training. Variables were gender, age, state, location (rural/town/city), work setting, specialist medical college (and specialty if a physician), and years since fellowship.

A third data source included post-program assessment data. This included doctors' score for each assessment attempt and the number of attempts to pass the assessment.

### Analysis

Quantitative data were managed and analyzed using SPSS 25 (IBM Corp., Armonk, NY, USA). Descriptive statistics (frequencies and percentages) were examined to explore the characteristics and distribution of all variables. We examined patterns of missing data (item and unit nonresponse) and potential presence of non-response bias. To examine whether respondents and nonrespondents differed on demographic, professional, assessment, and attitudinal variables, we used *t*-tests and cross-tabulations with Chi-squared and Fisher-Freeman-Halton exact tests. Statistical significance was set at  $P \leq 0.05$ .

We also looked at associations between perceived helpfulness of training and participants' confidence in knowing and applying the Act using the Fisher-Freeman-Halton exact test.

Excel (Microsoft Corporation, Redmond, WA, USA) was used to manage qualitative data, and verbatim survey responses were classified, coded, and grouped into themes using thematic analysis (Braun and Clarke, 2006).

### Ethical considerations

This research was approved by human research ethics committees at the Queensland University of Technology and the University of Queensland. Potential participants were provided with an information sheet explaining the research and inviting their participation and asked if they consented to their demographic and assessment data (already being collected in the training) to being further analyzed for research purposes. Only data provided by doctors who provided this consent are analyzed and reported here. For the post-training survey, participants provided informed consent to participate by submitting their completed survey.

### Role of the funding source

The Victorian Government funded the design and development of the mandatory training but did not fund this research. All training material was initially designed and drafted by the project team. The Victorian Government reviewed and commented on drafts of the training modules, assessment questions and the demographic and post-training surveys; set the assessment pass mark; and approved all final documents. It was not involved in the data collection or analysis but reviewed a draft manuscript.

## Results

### Missing data analysis

Eighty-one percent of the doctors who completed the training in the study period (233/289) completed the survey. Ninety-two percent of doctors (266/289) provided consent to analysis of demographic and assessment data for research purposes.

The characteristics of survey nonrespondents were like respondents with respect to gender, age, state, location, physician specialty, and total attempts to pass the assessment. The two groups differed with respect to work setting ( $P = 0.005$ , survey respondents were less likely to work in specialist rooms) and college ( $P = 0.006$ , survey respondents were less likely to be members of Australian College of Rural and Remote Medicine or Royal Australasian College of Surgeons and more likely to be members of Royal Australian College of General Practitioners).

Doctors who consented to their demographic and assessment data being analyzed for research purposes were representative of all doctors who completed the training in the study period with respect to demographic, professional, assessment, and attitudinal variables.

Missing data for survey questions was in the range of 0–4% for all but one question, participants' main reason for doing the training (52% missing data). The characteristics of item nonrespondents differed from respondents on several variables, suggesting that data were not missing at random. Hence, this variable was removed from the analysis. Doctors' demographic and assessment information did not contain any missing data.

### Who has undertaken and passed this training?

Table 1 provides demographic information for the 266 doctors who completed the training and assessment and consented to

their demographic and assessment data being used for research. Fifty-six percent of doctors were male, reflecting the medical profession (56% male) in Victoria (Medical Board of Australia, 2019). Most participants (82%) were aged between 36 and 65 years. Almost all doctors had a primary practice address in Victoria, and 72% were from cities with a population of 100,000 or more. Doctors primarily worked in general practice (52%) or hospital (35%) settings. General practitioners (47%) and medical oncologists (16%) were the most common specialties completing the training. Doctors were most often more than 10 years post fellowship (68%).

Sixty-five percent of doctors passed the training on their first attempt (19% passed at the second attempt, 10% at the third attempt, 5% at the fourth attempt, and 1% at the fifth and final attempts).

### Attitudes toward participating in VAD

To provide context for the below data, in Victoria, a "co-ordinating doctor" has overall patient responsibility from patient's first request to prescribing the VAD medication (and, in limited circumstances, administering the VAD medication). The "consulting doctor" is only responsible for undertaking the second eligibility assessment. If eligible, a patient will self-administer the VAD medication or, if unable to self-administer or digest the medication, practitioner administration is permitted.

Of the doctors who completed the post-training survey ( $n = 233$ ), most (80%) reported willingness to participate in VAD (2% unwilling and 18% unsure) (Table 2). Eighty-five percent of these willing doctors reported being willing to act as a co-ordinating medical practitioner for self-administering patients; this reduced to 44% for practitioner administration (2% reported being willing to act as a co-ordinating medical practitioner but did not provide further detail). Sixty percent were willing to be the consulting practitioner.

Most doctors (76%) did not have a conscientious objection to participating in any VAD practice (11% had a conscientious objection and 12% unsure). Among those with a conscientious objection ( $n = 26$ ), willingness to participate in VAD practices corresponded to the degree of involvement, with 4% objecting to providing information about VAD and 85% objecting to administering VAD medication.

### Attitudes toward training

The training most commonly took 6 h to complete (range 2 h to over 9 h). Almost all participants (97%) found the training helpful or very helpful. Following training, participants were generally confident (69%) or very confident (24%) in their knowledge of the Act (7% neutral). Participants were generally confident (66%) or very confident (22%) in their ability to apply the Act (11% neutral and 2% not confident). There was a significant positive association between perceived helpfulness of the training and participants' confidence in both knowing and applying the Act (both  $P < 0.001$ ). Twenty-three percent of participants reported that the training had changed their opinion on willingness to provide VAD in general or some aspect of it (none of these participants were unwilling to participate in VAD though 36% were unsure).

### Qualitative data

Common themes were that the training was high-quality, thorough and comprehensive. Many doctors reported that it was time-

**Table 1.** Characteristics of doctors who completed the training and assessment ( $n = 266$ )

Variable	<i>n</i>	%
<i>Gender</i>		
Male	150	56.4
Female	116	43.6
<i>Age (years)</i>		
35 or under	27	10.2
36–45	66	24.8
46–55	81	30.5
56–65	70	26.3
>65	22	8.3
<i>Location</i>		
City (100,000 + people)	191	71.8
City (50,000–99,999 people)	14	5.3
City (20,000–49,999 people)	12	4.5
Town (10,000–19,999 people)	16	6.0
Rural or town (<10,000 people)	33	12.4
<i>Setting</i>		
General practice	139	52.3
Hospital	92	34.6
Outpatient clinic	23	8.8
Community based	5	1.9
Other	7	2.7
<i>College</i>		
Royal Australian College of General Practitioners	124	46.6
Royal Australasian College of Physicians	92	34.6
Australian and New Zealand College of Anaesthetists	10	3.8
Australian College of Rural and Remote Medicine	12	4.5
Royal Australasian College of Surgeons	5	1.9
Royal Australasian College of Medical Administrators	3	1.1
Royal Australian and New Zealand College of Obstetricians and Gynaecologists	5	1.9
Royal Australian and New Zealand College of Radiologists	4	1.5
Royal Australian and New Zealand College of Psychiatrists	3	1.1
College of Intensive Care Medicine of Australia and New Zealand	1	0.4
Other	5	1.9
<i>Specialty (Royal Australasian College of Physicians fellows only)</i>		
Medical oncology	42	15.8
Neurology	11	4.1
Geriatric medicine	8	3.0
Respiratory medicine	4	1.5
Clinical haematology	7	2.6
Palliative medicine	6	2.3

(Continued)

**Table 1.** (Continued.)

Variable	<i>n</i>	%
General and acute care medicine	6	2.3
Cardiology	3	1.1
Infectious diseases	3	1.1
Nephrology	2	0.8
<i>Years since fellowship</i>		
<5	49	18.4
5–10	37	13.9
>10	180	67.1

consuming; this was seen as both positive (helpful and necessary) and negative (repetitive content and length as a potential barrier to undertaking training). Several doctors wanted more information on procedural and clinical aspects of VAD and suggested training include copies of required forms. Some doctors sought more information on the VAD medication including potential adverse reactions and their management. Assessment was perceived as difficult but necessary to ensure sufficient knowledge.

## Discussion

### *Availability and willingness of doctors needed to provide VAD*

VAD is a new medical practice in Victoria, and patient access to it requires willing and qualified doctors (Hanssen-de Wolf *et al.*, 2008; Oliver *et al.*, 2017; Rutherford *et al.*, 2021). The legal requirement to undertake rigorous training is a safeguard in the Victorian system but it has implications for the availability of qualified doctors.

In Victoria's first 2 years of operation, 331 individuals received VAD (Voluntary Assisted Dying Review Board, 2021) requiring at least 662 eligibility assessments. Other individuals, beyond those 331 who received VAD, would also have been assessed: patients assessed as eligible but who died from their underlying illness or withdrew from the process; and patients who were assessed as ineligible. As of 30 June 2021, 289 doctors had passed the training, so were eligible to provide VAD. Data are not available on whether some patients could not access VAD due to a lack of qualified doctors. There is, however, anecdotal evidence that a few doctors have taken on a large number of VAD cases to meet demand. Further research on this issue is critical to ensure that the safeguard of mandatory training does not dissuade doctors from becoming VAD providers (Rutherford *et al.*, 2021; Sellars *et al.*, 2021).

An associated issue is doctors' willingness to be involved. Although doctors may be "qualified" to provide VAD, "willingness" to participate is a more realistic measure of doctor availability. Of the 233 doctors who completed the survey, 80% reported willingness to participate. Of this cohort, 85% were prepared to be a co-ordinating doctor for self-administration, but only 44% for practitioner administration. As of 30 June 2021, 185 trained doctors had been involved in one or more cases as either a co-ordinating or consulting medical practitioner (Voluntary Assisted Dying Review Board, 2021). The finding that willingness to participate in VAD practices corresponds to the degree of involvement (including a strong preference for self-

**Table 2.** Attitudes toward participating in voluntary assisted dying (VAD) among doctors who completed the training and assessment ( $n = 233$ )

Variable	No. of observations	Frequency	Valid %
<i>Willingness to participate in VAD</i>			
Yes	226	180	79.6
No	226	5	2.2
Unsure	226	41	18.1
<i>Willingness to perform VAD role<sup>a</sup></i>			
Co-ordinating medical practitioner (self-administration)	175	148	84.6
Co-ordinating medical practitioner (practitioner administration)	175	77	44.0
Co-ordinating medical practitioner (unspecified)	175	4	2.3
Consulting practitioner (eligibility assessment only)	179	105	58.7
<i>Conscientious objection to participating in VAD</i>			
No	228	174	76.3
Yes	228	26	11.4
Unsure	228	28	12.3
<i>Conscientious objection to participating in specific VAD practices<sup>b</sup></i>			
Providing information about VAD	25	1	3.8
Participating in the request and assessment process	25	4	15.4
Applying for a VAD permit	25	7	26.9
Prescribing VAD medication	25	7	26.9
Being present at the time of self-administration	25	10	38.5
Being present at the time of practitioner administration	25	14	53.8
Administering VAD medication	25	22	84.6

Note: Except where indicated, missing data is due to nonresponse.

<sup>a</sup>Question only answered by participants who reported willingness to perform a VAD role ( $n = 180$ ).

<sup>b</sup>Question only answered by participants with a conscientious objection to participating in VAD ( $n = 26$ ).

administration) has been reported elsewhere (Karapetis et al., 2018; Yoong et al., 2018). Furthermore, while our survey question on VAD participation was worded generally, willingness to provide VAD may be situation and/or patient-specific (Rutherford et al., 2021).

These data on self-administration may not raise concerns in Victoria as self-administration is the default method (data from the first 2 years show 282 patients self-administered and only 49 received practitioner administration) (Voluntary Assisted Dying Review Board, 2021). However, having fewer doctors being prepared to administer the medication might raise issues

in other Australian States where greater patient choice means practitioner administration is more likely to be requested.

Over time, Australian doctors may become more comfortable with practitioner administration, and we note that self-administration as a default is uncommon internationally. While there are exceptions (e.g., the United States where only self-administration is available) (Downie et al., 2021), practitioner administration is the norm internationally (e.g., in the Netherlands, Belgium, and Canada) (Emanuel et al., 2016).

The characteristics of doctors undertaking the training also have implications for access. The profile of trained doctors reflects the broader maldistribution of Australia's medical workforce but appears to be further skewed toward urban general practitioners (National Rural Health Alliance, 2019; Medical Board of Australia, 2021). The high numbers of general practitioners may suggest doctors are willing to provide assistance to regular patients (Sercu et al., 2012). This may also reflect general practitioners receiving more requests than other specialists (De Boer et al., 2019).

The significant proportion of doctors from larger cities also suggests (unsurprisingly) that access may be more challenging for patients in regional or rural Victoria. This potentially highlights the importance of general practitioner engagement for individuals living in rural Victoria. Furthermore, having only a small pool of participating doctors apart from general practitioners or medical oncologists (Voluntary Assisted Dying Review Board, 2021) may impact access for patients with a nonmalignant diagnosis. Furthermore, Victorian law was interpreted to require one eligibility assessment by a doctor who was a specialist in the patient's illness (White et al., 2020). While there may be changes in the expertise and experience required for this purpose, there must be sufficient willing and qualified specialists who are geographically accessible to patients.

Patient access issues can, in turn, affect the welfare of doctors, particularly in locations or speciality fields where relatively few doctors have completed the training. The risk is that the VAD workload falls on a small cohort of doctors, placing them in danger of burnout, particularly if this new medical practice does not have the support of their colleagues or professional colleges and societies (Khoshnood et al., 2018). There is evidence, however, of growth in the numbers of Victorian doctors undertaking the training and providing VAD (Voluntary Assisted Dying Review Board, 2021) and that is anticipated to continue.

### *Is the training an effective safeguard?*

Mandatory training was recommended to ensure consistent and high-quality decision-making by doctors under the VAD Act (White et al., 2021). While it is not possible to measure in practice whether this *specific* safeguard is making the VAD system safer, some data reported here provide supporting evidence that this policy goal is likely being met.

Firstly, doctors' experience suggests deep engagement with the training, in terms of length of time to complete it and difficulty of the assessment (90% pass mark). Doctors reported finding the assessment difficult, consistent with only 65% passing on the first attempt.

Secondly, after doctors undertook the training, many were highly confident in their knowledge of the Act, and their ability to apply it in practice, suggesting that doctors possessed the required knowledge to appropriately interpret the legal framework.

It is relevant that doctors in another study about end-of-life law were found to be generally accurate in their self-assessment of legal knowledge (White *et al.*, 2014).

Finally, and while not constituting direct evidence of legal knowledge, many doctors reported positive experiences with the training, finding it helpful, high-quality, thorough and comprehensive. Positive training experiences are likely to reflect deep engagement (Kucuk and Richardson, 2019).

### Strengths and limitations

This study presents data from the world's first legislatively-mandated VAD training. It provides novel information on the role of such training in preparing doctors to provide VAD consistent with a new and complex legal framework. It also provides evidence regarding doctors' nuanced attitudes toward participating in VAD and conscientious objection to specific VAD practices.

This study also has several limitations. As an observational cross-sectional study, results are a snapshot during the study period. It is not possible to isolate the training's effect on outcomes such as participants' confidence in knowledge of the Act or their ability to apply it. Although training and assessment data were available for 92% of the doctors and the post-training survey response rate was 81%, the sample size was relatively small, and we cannot exclude some degree of nonresponse bias. This may reduce the extent to which participants' attitudes toward participating in VAD and views on their experience can be generalized to the population of all training participants.

### Suggestions for further research

Doctors' views of the training have been described in studies on the early operation of Victorian VAD laws (e.g., Rutherford *et al.*, 2021; Willmott *et al.*, 2021). Further targeted research is needed to understand the impact of mandatory training on doctors' interpretation of the legal framework and decision-making in VAD practice. In addition to information on the availability of doctors providing VAD (reported by the Voluntary Assisted Dying Review Board), further research should also determine how to best achieve the safeguarding function of training while ensuring it does not adversely affect patient access to VAD or doctor welfare.

### Conclusion

Mandatory training before doctors can be involved in providing VAD is a key safeguard in Victoria's VAD system. It aims to ensure those involved have a minimum level of legal knowledge. Although unique at the time, this legislatively-mandated training has become an established part of the Australian VAD model and is likely to be considered by other jurisdictions contemplating reform. Early Victorian data suggest a mandatory state-led training program can support doctors in undertaking their roles, with participants reporting high levels of confidence in knowing the VAD Act and being able to apply it in practice.

**Data availability statement.** To protect participants' privacy, participant data are not available. However, additional information regarding the findings presented can be requested from the corresponding author.

**Author contributions.** All principal researchers (LW, BW, PY, and MP) were involved in conceptualization of this research. LW, BW, RF, and KW were involved in analysis and interpretation. LW, BW, and RF drafted the paper with input from PY, MP, and KW. All authors contributed to critical

revision of the paper and approved the final version of the paper for submission.

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**Conflict of interest.** LW, BW, PY, and MP were engaged by the Victorian Government to design and provide the legislatively-mandated training for doctors involved in voluntary assisted dying described in this article. KW is employed on the project.

**Ethics approval.** Approval was obtained from the human research ethics committees at the Queensland University of Technology (approved 5 March 2019 – approval number: 1900000136) and The University of Queensland (approved 5 March 2019 – clearance number: 2019000467).

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