

CAN LEGALIZATION IMPROVE END-OF-LIFE CARE? AN EMPIRICAL ANALYSIS OF THE RESULTS OF THE LEGALIZATION OF EUTHANASIA AND PHYSICIAN-ASSISTED SUICIDE IN THE NETHERLANDS AND OREGON

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Oregon, the only U.S. state with legalized physician-assisted suicide, and the Netherlands, the only country in Europe with legalized euthanasia and physician-assisted suicide, have kept extensive records of the use of end-of-life treatments. These records show that physicians in Oregon and the Netherlands generally follow the law, that legalization shapes physicians' behavior, and that legalization may improve end-of-life care. Dr. Jackson Pickett uses empirical data from these two jurisdictions to analyze the effects of legalization on end-of-life care and suggests some goals that any future legalization should seek to accomplish.

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I. Introduction

Imagine you are dying of cancer that has spread throughout your body.¹ After multiple medical opinions, you are convinced death is near.² You ask your physician to end your suffering.³ If your physician intends to end your life by relieving your pain with morphine, she can be charged with murder.⁴ If she intends only to end your pain with morphine, her action will be ignored by the law.⁵ As a practical matter, by using intent to separate murder from routine medical care, the law has complicated and added uncertainty to medical end-of-life decision making.⁶

This hypothetical end-of-life medical decision described is very common. About 2.4 million people die each year in the United States.⁷ Although many deaths reflect a sudden process, such as an accident,⁸ it is common for diseases to progress to a point where further medical treatment becomes futile.⁹ When this happens, death can become predictable and painful; in this situation some patients demand that physicians end their suffering.¹⁰

1. More than 550,000 people died of cancer in the United States in 2000. WORLD HEALTH ORG., TABLE 1: NUMBERS AND RATES OF REGISTERED DEATHS (2000), http://www.who.int/whosis/database/mort/table1_process.cfm (follow "select another country/year" hyperlink; then select United States, 2000).

2. In some situations, medical predictions are relatively accurate. G. Stoter et al., *Multivariate Analysis of Prognostic Factors in Patients with Disseminated Non-seminomatous Testicular Cancer: Results from a European Organization for Research on Treatment of Cancer Multiinstitutional Phase III Study*, 47 *CANCER RES.* 2714, 2716–17 (1987).

3. Multiple values conflict here: patient autonomy and the physician's duty to end suffering versus the physician's duty not to kill and the requirement that the patient be competent and make a rational decision. Margaret P. Battin & Timothy E. Quill, *False Dichotomy Versus Genuine Choice: The Argument over Physician-Assisted Dying*, in *PHYSICIAN-ASSISTED DYING: THE CASE FOR PALLIATIVE CARE AND PATIENT CHOICE* 1, 6–7 (Timothy E. Quill & Margaret P. Battin eds., 2004); Norman L. Cantor, *On Hastening Death Without Violating Legal and Moral Prohibitions*, 37 *LOY. U. CHI. L.J.* 407, 430 (2006).

4. Gina Castellano, *The Criminalization of Treating End of Life Patients with Risky Pain Medication and the Role of the Extreme Emergency Situation*, 76 *FORDHAM L. REV.* 203, 226–30 (2007).

5. See Cantor, *supra* note 3, at 422–29.

6. Castellano, *supra* note 4, at 225–30.

7. WORLD HEALTH ORG., *supra* note 1.

8. About 100,000 deaths were due to accidents in 2000 in the United States.

Id.

9. See Deborah L. Kasman, *When Is Medical Treatment Futile? A Guide for Students, Residents, and Physicians*, 19 *J. GEN. INTERNAL MED.* 1053, 1054 (2004).

10. See SUPPORT Principal Investigators, *A Controlled Trial to Improve Care for Seriously Ill Hospitalized Patients: The Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments (SUPPORT)*, 274 *JAMA* 1591, 1593–95 (1995).

There are several ways physicians end a patient's suffering.¹¹ Physicians can treat a patient's symptoms with medications that will end the patient's suffering and also her life.¹² For example, morphine can relieve a dying patient's pain but can also stop breathing; this form of killing is acceptable in many countries¹³ and will be called "treatment of symptoms" in this Article.¹⁴ Also, it is legal for a physician to end medical treatment of a dying patient even if this kills the patient.¹⁵ In this Article, this will be called "ending of treatment." Additionally, it is legal to sedate dying patients using measures that hasten their deaths; in this Article, this will be called "terminal sedation."¹⁶ In practice, the most common ways for physicians to end their patients' lives are those accepted in their jurisdiction.¹⁷

With rare exceptions, it is illegal for a physician to intentionally give a dying patient a medication to end the patient's life.¹⁸ This ban includes euthanasia, where a physician intentionally kills a dying patient, at the patient's request, by giving a lethal medication.¹⁹ Assisted suicide occurs when the physician intentionally gives a dying patient a lethal medication, which the patient takes herself.²⁰ Both voluntary

11. Cantor, *supra* note 3, at 409–27.

12. Timothy E. Quill et al., *The Rule of Double Effect—A Critique of Its Role in End-of-Life Decision Making*, 337 NEW ENG. J. MED. 1768, 1768 (1997).

13. *Vacco v. Quill*, 521 U.S. 793, 802 (1996) (accepting in dicta that "painkilling drugs may hasten a patient's death, but the physician's purpose and intent is, or may be, only to ease his patient's pain"); MARGARET PABST BATTIN, *ENDING LIFE: ETHICS AND THE WAY WE DIE* 49–55 (2005); N. Ferreira, *Latest Legal and Social Developments in the Euthanasia Debate: Bad Moral Consciences and Political Unrest*, 26 MED. & L. 387, 390 (2007) (listing Albania, Denmark, Finland, Germany, Switzerland, and the United Kingdom as countries where it is legal to use large doses of pain killers that shorten a patient's life).

14. Peter L. Bailey et al., *Effects of Intrathecal Morphine on the Ventilatory Response to Hypoxia*, 343 NEW ENG. J. MED. 1228, 1228 (2000); Quill et al., *supra* note 12, at 1768.

15. Cantor, *supra* note 3, at 410–15.

16. *Vacco*, 521 U.S. at 802. Cantor, *supra* note 3, at 409–10; Castellano, *supra* note 4, at 211 (stating there is no legal precedent in the United States); Quill et al., *supra* note 12, at 1769–70.

17. BATTIN, *supra* note 13, at 48–55; Agnes van der Heide et al., *End-of-Life Practices in the Netherlands Under the Euthanasia Act*, 356 NEW ENG. J. MED. 1957, 1957 (2007).

18. Suzanne Rode, *End-of-Life Decisionmaking for Patients in Persistent Vegetative States: A Comparative Analysis*, 30 HASTINGS INT'L & COMP. L. REV. 477, 482 n.27 (2007). Euthanasia is legal in Belgium, Columbia, Japan, and the Netherlands. *Id.* Physician-assisted suicide is legal in Germany, Switzerland, the United Kingdom, and Oregon. *Id.*

19. PENNEY LEWIS, *ASSISTED DYING AND LEGAL CHANGE* 4–5 (2007).

20. Kathryn L. Tucker & Fred B. Steele, *Patient Choice at the End of Life: Getting the Language Right*, 28 J. LEGAL MED. 305, 311 (2007).

euthanasia and assisted suicide require that the patient be able to make a reasoned decision, or be competent, and request the lethal medication from the physician.²¹ Dividing the legal from the illegal, or the legal classification, depends on the intent of the physician and consent of the patient.

This legal classification breaks down in practice.²² Physician intent may be hard to discern as the same medication can be used in treatment of symptoms and in euthanasia; both will end in the death of the patient.²³ Discerning intent is “mission impossible.”²⁴ Consent of the patient is not required when a physician determines that medical treatment is futile and ends medical treatment without consent of the patient.²⁵ Conversely, depressed or incompetent patients may consent inappropriately to euthanasia or physician-assisted suicide.²⁶ A legal classification based on physician intent and patient consent fails to cleanly separate murder from medical care.²⁷

Although it is logical to classify euthanasia as murder, most physicians who perform euthanasia are not punished.²⁸ This logical inconsistency of the law will be tested as medical technology makes it possible to extend life beyond the desires of many dying patients.²⁹ The meaningless extension of the dying process by medical technology will be aggravated by the aging of the world population.³⁰ Millions of dying patients will push for legalization so they can control how their lives end.³¹

21. LEWIS, *supra* note 19. Euthanasia is involuntary when the patient is capable of consenting but does not do so. *Id.* at 5.

22. Cantor, *supra* note 3, at 408–10; Quill et al., *supra* note 12, at 1769.

23. Quill et al., *supra* note 12, at 1769–70.

24. Cantor, *supra* note 3, at 423.

25. Kasman, *supra* note 9, at 1054.

26. See Marijke C. Jansen-van der Weide et al., *Granted, Undecided, Withdrawn, and Refused Requests for Euthanasia and Physician-Assisted Suicide*, 165 ARCHIVES INTERNAL MED. 1698, 1703 (2005).

27. Cantor, *supra* note 3, at 427–29.

28. *Id.* at 423; Castellano, *supra* note 4, at 225–30.

29. Amy D. Sullivan et al., *Legalized Physician-Assisted Suicide in Oregon—The Second Year*, 342 NEW ENG. J. MED. 598, 603 (2000); Van der Heide et al., *supra* note 17, at 1958.

30. U.N. DEP'T OF ECON. & SOC. AFFAIRS, WORLD POPULATION AGEING: 1950–2050, at xxviii–xxix, U.N. Doc. ST/ESA/SER.A/207, U.N. Sales No. E.02.XIII.3 (2002).

31. The World Health Organization estimated that 55.7 million adults died in 2000. Emmanuela Gakidou et al., *Adult Mortality: Time for a Reappraisal*, 33 INT'L J. EPIDEMIOLOGY 710, 712 (2004). In the Netherlands, about 2% of all deaths are due to assisted suicide or euthanasia. Van der Heide et al., *supra* note 17, at 1961. Two percent of 55.7 million deaths a year is 1.1 million annual requests.

Fortunately for legalization efforts, there is an impressive series of reports from the Netherlands and Oregon summarizing the results of legalization of assisted suicide and euthanasia.³² An analysis of these reports shows that reporting and legalization shape physician behavior. In the Netherlands, physicians are nineteen times more likely to end dying patients' lives using procedures for which reporting is not required.³³ Conversely, reporting in Oregon channels patients who request assisted suicide into hospice care and promotes treatment of pain.³⁴

This Article will first review the common law and statutes of the Netherlands and Oregon. Next, it will analyze the empirical data from the Netherlands and Oregon. Third, it will make observations based on the empirical data, point out limitations of these empirical studies, and make recommendations based on these empirical studies. In the conclusion, it will argue that a valid goal of legalization is optimal end-of-life care.

II. Assisted Death Law in the Netherlands

A. Common Law

1. JUSTIFICATION OF NECESSITY

According to the Dutch Penal Code, euthanasia and assisted suicide are crimes.³⁵ But Dutch courts usually do not punish a physician who ends the suffering of a dying patient.³⁶ Punishment is avoided by finding that euthanasia or assisted suicide was justified because the physician was forced to choose between her duty to end her patient's

32. Sullivan et al., *supra* note 29, at 598; Van der Heide et al., *supra* note 17, at 1957.

33. *Infra* note 146 and associated table.

34. See Timothy E. Quill, *Legal Regulation of Physician-Assisted Death—The Latest Report Cards*, 356 NEW ENG. J. MED. 1911, 1912 (2007).

35. Article 293 provides that “[a] person who takes the life of another person at that other person’s express and earnest request is liable for a term of imprisonment of not more than twelve years or a fine of the fifth category.” JOHN GRIFFITHS ET AL., *EUTHANASIA AND LAW IN THE NETHERLANDS* 308 (1998) (*quoting a translation in THE DUTCH PENAL CODE* (L. Rayar & S. Wadsworth trans., 1997)). Article 294 provides that “[a] person who intentionally incites another to commit suicide, assists in the suicide of another, or procures for that person the means to commit suicide, is liable to a term of imprisonment of not more than three years or a fine of the fourth category, where the suicide ensues.” *Id.* A fourth category fine is f25,000 and a fifth category fine is f100,000. *Id.* at 307.

36. *Id.* at 273.

suffering and her duty to preserve life.³⁷ This justification, or defense, of necessity was accepted by the Dutch Supreme Court in the *Schoonheim* case.³⁸

The *Schoonheim* case involved a general physician whose ninety-three-year-old female patient requested that he end her life.³⁹ She made her first request in 1981 because she was bedridden from a hip fracture; this request was rejected.⁴⁰ By 1982, she was unable to eat or drink and again requested that the doctor end her life.⁴¹ Her physician found she “was in full possession of her faculties.”⁴² Both her son and the physician-assistant agreed that euthanasia was appropriate.⁴³ The physician reported her death to the police.⁴⁴

The Dutch Supreme Court held that the physician violated Article 293 of the Dutch Penal Code by taking his patient’s life, but accepted the justification of necessity provided by Article 40 of the Dutch Penal Code,⁴⁵ which encompasses the defenses of duress and necessity.⁴⁶ The court accepted the justification of necessity because the physician was forced to choose between conflicting duties: the duty to end suffering versus the duty to preserve life.⁴⁷ The *Schoonheim* case left unresolved when the justification of necessity would be successful.⁴⁸

Reported in the same year, the *Admiraal* case defined the requirements for using the defense of necessity.⁴⁹ In *Admiraal*, the court used the “requirement of careful practice” to acquit an anesthesiologist who performed euthanasia.⁵⁰ The “requirements of careful prac-

37. *Id.* at 62–65. Article 40 provides that “[a] person who commits an offense as a result of a force he could not be expected to resist is not criminally liable.” *Id.* at 307.

38. *Schoonheim*, Hoge Raad der Nederlanden [HR] [Supreme Court of the Netherlands], 27 november 1984, NJ 106 (Neth.), translated in GRIFFITHS ET AL., *supra* note 35, at 322.

39. GRIFFITHS ET AL., *supra* note 35, at 322–23.

40. *Id.* at 323.

41. *Id.*

42. *Id.* at 324.

43. *Id.*

44. *Id.* Doctors must fill out a death certificate stating whether their patient’s death was due to natural causes or not. *Id.* at 39. If a death is not due to natural causes, as in euthanasia, then the coroner reports the death to the prosecutor. *Id.* at 39–40.

45. *Id.* at 308, 324–28.

46. *Id.* at 326.

47. *Id.* at 326–28.

48. *See id.* at 61–63.

49. *Id.* at 66–67.

50. *Id.*

tice” defined by the Dutch Medical Association included: “1. [t]he request for euthanasia must be voluntary; 2. [t]he request must be well-considered; 3. [t]he patient’s desire to die must be a lasting one; 4. [t]he patient must experience his suffering as unacceptable for him . . . ; [and] 5. [t]he doctor concerned must consult a colleague.”⁵¹ After *Admiraal*, the Minister of Justice informed the Dutch Medical Association that physicians who met the “requirements of careful practice” would not be prosecuted.⁵²

2. PSYCHIATRIC PATIENTS

The next question facing the Dutch Supreme Court was whether euthanasia should be limited to patients with a somatic illness.⁵³ The *Chabot* case involved a fifty-year-old despondent woman who requested that her psychiatrist end her life after both of her sons and her father died and she divorced a violent husband.⁵⁴ She had previously attempted suicide and was concerned that a second suicide attempt would result in commitment to a mental institution.⁵⁵ Her psychiatrist consulted four other psychiatrists, a general physician, and a professor of ethics, as well as family members.⁵⁶ The medical consultants reviewed the patient’s medical records, but did not examine her.⁵⁷ All agreed that her diagnosis was an adjustment disorder; there was no evidence of a somatic disease.⁵⁸ The patient refused any medical treatment other than euthanasia.⁵⁹ The psychiatrist reported her euthanasia to the coroner.⁶⁰

The Dutch Supreme Court found that the defense of necessity did not require a somatic illness or that the patient be in the terminal phase of an illness, but did, however, require exceptional care by the

51. *Id.* at 66.

52. *Id.* at 67.

53. Chabot, Hoge Raad der Nederlanden [HR] [Supreme Court of the Netherlands], 21 juni 1994, NR 656 (Neth.), translated in GRIFFITHS ET AL., *supra* note 35, at 329–40.

54. *Id.* at 330.

55. *Id.* at 330–31.

56. *Id.* at 331.

57. *Id.* at 331–32.

58. *Id.* at 332. While two-thirds of suicides are due to depression, depression was not the diagnosis in this patient. John G. Tierney II, *Treatment-Resistant Depression: Managed Care Considerations*, 13 J. MANAGED CARE PHARMACY S2, S3 (Supp. S-a 2007).

59. GRIFFITHS ET AL., *supra* note 35, at 332.

60. *Id.* at 330.

physician when his patient was not dying of a somatic illness.⁶¹ Exceptional care usually requires the judgment of another qualified physician based on his examination of the patient.⁶² Because an independent physician did not examine the patient, the defense of necessity was rejected and the psychiatrist was found guilty.⁶³ He was not punished, but a Medical Disciplinary Tribunal later reprimanded the psychiatrist.⁶⁴ By finding that euthanasia is appropriate for suffering in the absence of a terminal somatic disease, the Dutch Supreme Court expanded the range of suffering for which patients and physicians could consider euthanasia.⁶⁵

3. INFANTS

A Dutch Court of Appeals accepted the justification of necessity and did not punish the euthanasia of an infant in the *Kadijk* case.⁶⁶ The case involved a baby girl who was born with congenital defects due to trisomy 13.⁶⁷ Trisomy 13, or Patau syndrome, is characterized by small eyes, cleft lip, and an abnormal number of fingers or toes.⁶⁸ In addition to periodically needing mechanical ventilation and having limited kidney function,⁶⁹ the infant developed a skull defect through which the brain linings protruded and became infected.⁷⁰ When moved, the infant appeared to be in pain⁷¹ and was only expected to live for, at most, a few months.⁷² As a result, further medical treatment or surgical treatment was rejected, as it would only prolong the dying process.⁷³ The parents requested that the physician end the infant's life.⁷⁴ The infant was examined by another physician, and the

61. *Id.* at 334–35.

62. *Id.* at 336.

63. *Id.* at 337–38.

64. *Id.* at 338–40.

65. *Id.* at 336.

66. *Kadijk*, *Gerechtshof [Hof] [Court of Appeals]*, Leeuwarden, 4 april 1996, *Tijdschrift voor Gezondheidsrecht* 35 (Neth.), translated in GRIFFITHS ET AL., *supra* note 35, at 341–51.

67. *Id.* at 342.

68. A.C. Duarte et al., *Patau Syndrome with a Long Survival. A Case Report*, 3 *GENETICS & MOLECULAR RES.* 288, 291 (2004), available at <http://www.funpecrp.com.br/gmr/year2004/vol2-3/pdf/gmr0072.pdf>. Over 80% of infants with Trisomy 13 die within a month. *Id.* at 289.

69. GRIFFITHS ET AL., *supra* note 35, at 342.

70. *Id.* at 342–43.

71. *Id.* at 343.

72. *Id.*

73. *Id.* at 343, 348.

74. *Id.* at 343.

attending physician consulted over the phone with a pediatrician.⁷⁵ The three physicians agreed euthanasia was appropriate and agreed on the means to use; the infant died in her mother's arms.⁷⁶ The physician reported the euthanasia of the infant.⁷⁷

The Minister of Justice required the courts to review the physician's ending of the infant's life.⁷⁸ The Court of Appeals reviewed the case and, based on expert testimony, accepted the diagnosis of trisomy 13 and the brief life that diagnosis implied.⁷⁹ Further, the court accepted the unanimous opinion of the experts that the parents' request for the infant to die at home without further medical or surgical treatment was reasonable and should have been honored.⁸⁰ Nonetheless, the court found that the physician's decision to end the infant's life was murder.⁸¹ The court held, however, that the infant's murder was justified because:

there was no doubt about the diagnosis and the prognosis based on it, and the parents as well as the defendant were familiar with these; there was no doubt at all as to the well-considered consent of the parents to the termination of life; the defendant secured the advice of an independent, experienced doctor (GP) and consulted one of the responsible pediatricians; the defendant brought about the baby's death in a conscientious and careful manner . . . ; and he had carefully given account of his conduct in the matter.⁸²

Thus, the court of appeals did not punish the euthanasia of an infant who could not consent.⁸³

4. LACK OF CONSENT

The Dutch Supreme Court decided not to punish a physician who ended the life of a dying patient without her consent in the *Van Oijen* case.⁸⁴ A dying eighty-four-year-old woman became uncon-

75. *Id.*

76. *Id.* at 343–44.

77. *Id.* at 344–45.

78. *Id.* at 346.

79. *Id.* at 348.

80. *Id.*

81. Under Article 289, “a person who intentionally and with premeditation takes the life of another person is guilty of murder and liable to life imprisonment or a term of imprisonment of not more than twelve years or a fine of the fifth category.” *Id.* at 308.

82. *Id.* at 350–51.

83. *Id.*

84. Michael Bohlander, *Murder: Euthanasia*, 69 J. CRIM. L. 401, 401–03 (2005); Tony Sheldon, *Dutch GP Found Guilty of Murder Faces No Penalty*, 322 BRIT. MED. J. 509, 509 (2001).

scious, but suffered with necrosis of her heels and hip.⁸⁵ Her physician gave her pain medication and a sedative to ease her suffering.⁸⁶ Nonetheless, her suffering persisted and the physician consulted with her daughters.⁸⁷ The daughters thought her suffering should end because “you wouldn’t do that to a dog.”⁸⁸ The physician ended the patient’s life by giving her a drug that paralyzed her muscles.⁸⁹ In this case, the court rejected the defense of necessity because the patient’s suffering was not unbearable (she was unconscious), the doctor failed to consult other physicians, and the doctor used a drug that did not treat the patient’s symptoms.⁹⁰ Although the Dutch Supreme Court found the physician guilty of murder, that court did not punish him.⁹¹ Despite the facts in this case, the Dutch Supreme Court accepted that ending a dying patient’s life without her consent could be excused by the defense of necessity.⁹²

5. NORMAL MEDICAL PRACTICE

For Dutch courts, normal medical practice includes ending a patient’s life by treatment of symptoms or ending of treatment.⁹³ Treatment of symptoms often involves the use of pain or sedative medications; both can hasten a patient’s death.⁹⁴ Physicians who end their patients’ lives by treatment of symptoms or ending of treatment may report their patients’ deaths as natural.⁹⁵ The report of a natural death will not trigger further investigation by the prosecutor.⁹⁶ Avoiding a possible investigation by the prosecutor may encourage some physicians to classify more deaths as natural, thus masking a number of assisted deaths.⁹⁷

85. Bohlander, *supra* note 84, at 401.

86. *Id.* at 401–02.

87. *Id.* at 402.

88. *Id.*

89. *Id.* Alcuronium, which the doctor used, is a neuromuscular blocking drug. M. Rose & M. Fisher, *Rocuronium: High Risk for Anaphylaxis?*, 86 BRIT. J. ANAESTHESIA 678, 680 (2001).

90. Bohlander, *supra* note 84, at 402–03.

91. Sheldon, *supra* note 84, at 509.

92. Bohlander, *supra* note 84, at 402.

93. GRIFFITHS ET AL., *supra* note 35, at 95.

94. Judith A. C. Rietjens et al., *Terminal Sedation and Euthanasia: A Comparison of Clinical Practices*, 166 ARCHIVES INTERNAL MED. 749, 752 (2006).

95. GRIFFITHS ET AL., *supra* note 35, at 95–97.

96. *Id.* at 236.

97. *Id.* at 205.

B. Legalization of Euthanasia

In 2002, the Dutch parliament legalized euthanasia and physician-assisted suicide by modifying the Dutch Criminal Code.⁹⁸ The Termination of Life on Request and Assisted Suicide Act allows euthanasia if a physician follows the requirements of due care.⁹⁹ Due care requires that the physician:

- a. holds the conviction that the request by the patient is voluntary and well-considered;
- b. holds the conviction that the patient's suffering is lasting and unbearable;
- c. has informed the patient about the situation he is in and about his prospects;
- d. along with the patient, holds the conviction that there is no other reasonable solution for the situation he is in;
- e. has consulted at least one other independent physician who has seen the patient and has given his written opinion on the requirements of due care.¹⁰⁰

The Act also permits euthanasia of children as young as twelve with their parent's consent.¹⁰¹

The Act also modified the reporting requirements to include review of unnatural deaths by a regional review committee in addition to review by the public prosecutor.¹⁰² A favorable report by the regional review committee ends the review process; this reduces the power of the prosecutor.¹⁰³ Additionally, the regional review committee provides an annual report giving summary information for all deaths,¹⁰⁴ which allows for an evaluation of Dutch assisted suicide and euthanasia in practice.¹⁰⁵

98. Jonathan T. Smies, *The Legalization of Euthanasia in the Netherlands*, 7 GONZ. J. INT'L L. 4, 38 (2003).

99. *Id.*

100. *Id.* at 39.

101. *Id.* at 38–41.

102. *Id.* at 41–42.

103. *Id.* at 42–44.

104. *Id.* at 44.

105. Van der Heide et al., *supra* note 17, at 1957–58.

III. Assisted Suicide Law in Oregon

A. Genesis of the Oregon Death with Dignity Act

Unlike in the Netherlands, where euthanasia law evolved over decades,¹⁰⁶ Ballot Measure 16, or the Oregon Death with Dignity Act, was passed by 51% to 49% in a referendum vote in 1994.¹⁰⁷ Given the “storm of protest” over the close vote, supporters expected a legal challenge.¹⁰⁸ The first challenge to the Act, *Lee v. Oregon*, yielded an injunction stopping assisted suicide,¹⁰⁹ but on review, the appellate court found no “actual injury, as required for standing” and vacated the trial court decision.¹¹⁰

At about the same time, the U.S. Supreme Court encouraged challenges to the Oregon statute by holding that New York and Washington could ban assisted suicide.¹¹¹ In a direct attack on the Act, the U.S. Attorney General asserted that controlled substances must be used only for a “legitimate medical purpose”¹¹² and argued that assisted suicide was not a legitimate medical purpose.¹¹³ The Supreme Court struck down this frontal assault by holding that the Controlled Substance Act could not be used by “the Attorney General to prohibit doctors from prescribing regulated drugs for use in physician-assisted suicide under state law permitting the procedure.”¹¹⁴ Having survived several court challenges, the Act was put to a second referendum vote and passed 60% to 40% in 1997.¹¹⁵

B. Requirements of the Oregon Death with Dignity Act

The Oregon Death with Dignity Act is limited to adults over age eighteen¹¹⁶ who can make and communicate three separate requests,¹¹⁷

106. GRIFFITHS ET AL., *supra* note 35, at 89.

107. Raphael Cohen-Almagor & Monica G. Hartman, *The Oregon Death with Dignity Act: Review and Proposals for Improvement*, 27 J. LEGIS. 269, 270, 272 (2001).

108. *Id.* at 273.

109. 869 F. Supp. 1491, 1503 (D. Or. 1994).

110. *Lee v. Oregon*, 107 F.3d 1382, 1383 (9th Cir. 1997).

111. *Washington v. Glucksberg*, 521 U.S. 702, 702 (1997); *Vacco v. Quill*, 521 U.S. 793, 793 (1996).

112. 21 C.F.R. § 1306.04 (2005).

113. *Gonzales v. Oregon*, 546 U.S. 243, 243 (2006).

114. *Id.* at 244.

115. Cohen-Almagor & Hartman, *supra* note 107, at 274.

116. OR. REV. STAT. § 127.800(1) (2007) (giving definition of *adult*).

117. § 127.800(3) (defining *capable*); § 127.840 (requiring one written and two verbal requests).

survive two waiting periods,¹¹⁸ and who have an illness that will cause the patient's death in six months or less.¹¹⁹ The two waiting periods include a period of at least fifteen days that must pass between the first request and the writing of the prescription and a two-day period between the written request and writing of the prescription.¹²⁰ A consulting physician must evaluate the patient.¹²¹ Also, the patient must be evaluated to exclude disorders, such as depression, that impair judgment.¹²² Because aiding another in suicide is manslaughter in Oregon,¹²³ the Act gives complying physicians immunity from criminal and civil liability, as well as from professional disciplinary action.¹²⁴ Finally, the Act requires physicians to file copies of prescriptions with the Department of Health Services, which then publishes annual statistical reports.¹²⁵

IV. Analysis—Netherlands

A. End-of-Life Practice Is Unchanged by Legalization

Paradoxically, the annual rate of euthanasia was reduced significantly by legalization.¹²⁶ The Dutch have published surveys of physician-assisted death before and after the legalization of euthanasia in 2002.¹²⁷ The surveys included estimates of the frequency of euthanasia, physician-assisted suicide, physician-assisted death without the patient's explicit consent (the "no consent" group), treatment of symptoms, and ending of treatment.¹²⁸ The results of these surveys are shown in table 1 and figures 1 and 2.

118. § 127.850 (defining waiting periods of fifteen and two days).

119. § 127.800(12) (giving definition of *terminal disease*).

120. § 127.850.

121. § 127.820 (requiring written confirmation of terminal illness, as well as voluntary and capable consent).

122. § 127.825 (requiring consultation with psychiatric or psychological evaluation if needed).

123. § 163.125(1)(b).

124. § 127.885. Noncompliance with the Act can create criminal liability. § 127.890.

125. § 127.865.

126. Van der Heide et al., *supra* note 17, at 1962.

127. Bregje D. Onwuteaka-Philipsen et al., *Euthanasia and Other End-of-Life Decisions in the Netherlands, 1990, 1995, and 2001*, 362 LANCET 395, 395 (2003); Van der Heide et al., *supra* note 17, at 1957.

128. Van der Heide et al., *supra* note 17, at 1961.

Table 1

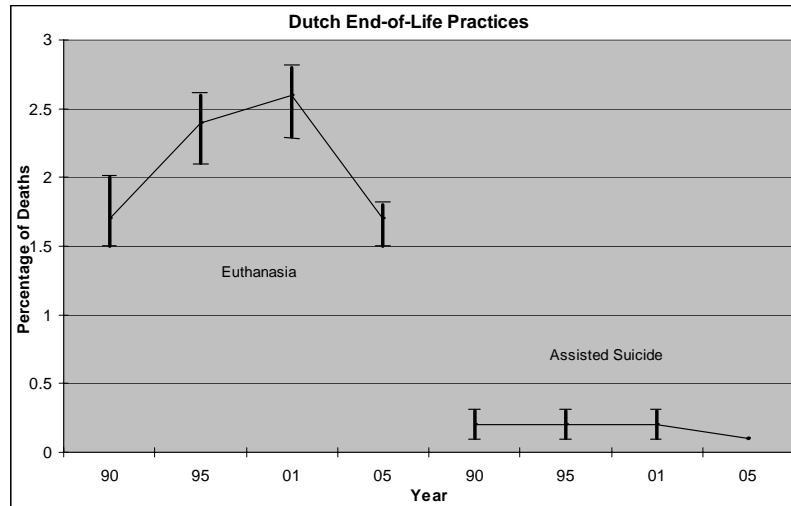
Percentage of All Dutch Deaths Due to Euthanasia, Physician-Assisted Suicide, and Physician Induced Death Without Consent (No Consent), as Well as Deaths Hastened by Treatment of Symptoms, Due to Ending of Treatment, and Terminal Sedation in 1990, 1995, 2001, and 2005, Based on Death Certificates¹²⁹

Decision	1990	1995	2001	2005
Euthanasia				
Percentage of deaths	1.7%	2.4%	2.6%	1.7%
Confidence interval	1.4–2.1	2.1–2.6	2.3–2.8	1.5–1.8
Physician-Assisted Suicide				
Percentage of deaths	0.2%	0.2%	0.2%	0.1%
Confidence interval	0.1–0.3	0.1–0.3	0.1–0.3	0.1–0.1
No Consent				
Percentage of deaths	0.8%	0.7%	0.7%	0.4%
Confidence interval	0.6–1.1	0.5–0.9	0.5–0.9	0.2–0.6
Treatment of Symptoms				
Percentage of deaths	18.8%	19.1%	20.1%	24.7%
Confidence interval	18–20	18–20	19–21	23.5–26
Ending of Treatment				
Percentage of deaths	17.9%	20.2%	20.2%	15.6%
Confidence interval	17–19	19–21	19–21	15–16
Terminal Sedation				
Percentage of deaths				8.2%
Confidence interval				7.8–8.6

129. Onwuteaka-Philipsen et al., *supra* note 127, at 395–96; Van der Heide et al., *supra* note 17, at 1961. The confidence interval was calculated to include 95% of the expected percentages. Onwuteaka-Philipsen et al., *supra* note 127, at 395–96.

Figure 1

Percentage of All Dutch Deaths Due to Euthanasia and Assisted Suicide in 1990 (90), 1995 (95), 2001 (01), and 2005 (05), Based on Death Certificates



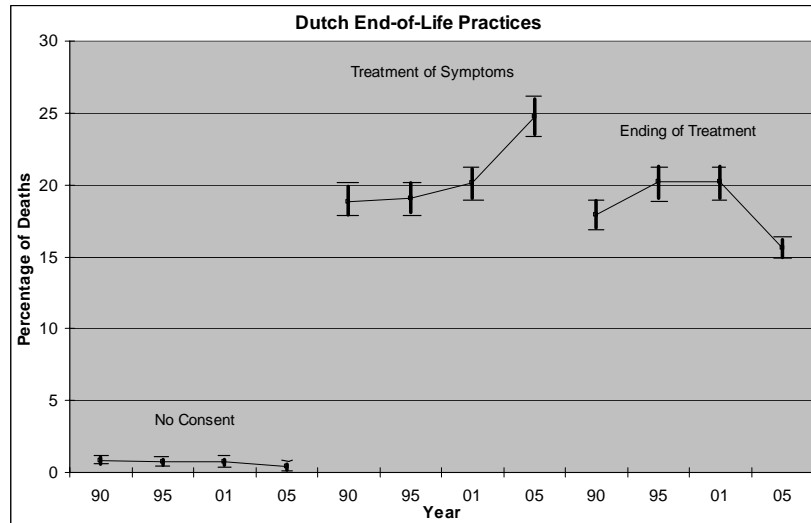
Notes: Total number of deaths in Netherlands in 1990 was 128,824, in 1995 was 135,675, in 2001 was 140,377, and in 2005 was 136,402.¹³⁰ The bars show the 95% confidence levels and lines connect the means of the groups.

The most common end-of-life practices are treatment of symptoms, ending of treatment, and terminal sedation (not shown in the figures).¹³¹ Next in frequency is euthanasia, and the least common are physician-assisted suicide and ending a patient's life without consent (the "no consent" group). Figure 2 shows that the "no consent" group declined in frequency between 1990 and 2005 from 0.8% to 0.4% but otherwise was relatively constant. The general pattern is that hastening a patient's death by treatment of symptoms or ending of treatment is much more common than euthanasia or physician-assisted suicide, as is evident in table 1.

130. Onwuteaka-Philipsen et al., *supra* note 127, at 396; Van der Heide et al., *supra* note 17, at 1959.

131. Terminal sedation treats the patient's symptoms using a sedative drug. Quill et al., *supra* note 12, at 1769; Rietjens et al., *supra* note 94, at 752.

Figure 2
Percentage of All Dutch Deaths that Were Physician-Induced Without Consent (No Consent), by Treatment of Symptoms, and Due Ending of Treatment in 1990 (90), 1995 (95), 2001 (01) and 2005 (05), Based on Death Certificates



Notes: The total number of deaths in Netherlands in 1990 was 128,824, in 1995 was 135,675, in 2001 was 140,377, and in 2005 was 136,402.¹³² The bars show the 95% confidence levels and lines connect the means of the groups.

Although the legalization of euthanasia in 2002 might be expected to be associated with an increase in frequency of euthanasia, figure 1 shows that the opposite occurred. Euthanasia significantly declined in frequency from 2001 to 2005; physician-assisted suicide shows a similar trend.¹³³ This decline shows that the effect of changing the Dutch Criminal Code was minor, even when measured three years after the change.¹³⁴

132. Onwuteaka-Philipsen et al., *supra* note 127, at 396; Van der Heide et al., *supra* note 17, at 1959.

133. The lack of overlap of the 95% confidence intervals between two groups shows that the chance of this difference is less than 5%, a level of difference typically labeled as statistically significant. See JERROLD H. ZAR, *BIostatistical ANALYSIS* 103–04 (2d ed. 1984).

134. Aging of the Dutch population only explained 0.1% of the decline. Van der Heide et al., *supra* note 17, at 1962. The decrease in the euthanasia rate was not associated with an increase in the proportion of terminal cancer patients or a change in the mix of physicians who practiced euthanasia. *Id.* at 1962. Terminal sedation explains some of the decline. *Id.* at 1962–63.

Likewise, between 1990 and 2005, Dutch courts failed to punish euthanasia in the *Chabot* (no somatic disease),¹³⁵ *Kadijk* (infant),¹³⁶ and *Van Oijen* (no consent)¹³⁷ cases. This failure to punish would have been expected to increase the rate of euthanasia and assisted suicide, but between 1990 and 2005 euthanasia and physician-assisted suicide were relatively constant.¹³⁸ Again, the minor change in the rates of euthanasia and physician-assisted suicide between 1990 and 2005 shows that the effect of the Dutch legal decisions during this period is slight.

The practices of euthanasia and physician-assisted suicide were determined by case law and reporting requirements that evolved before the national surveys, which started in 1990.¹³⁹ Most of the elements of the 2002 act can be found in Dutch case law going back to the *Admiraal* case in 1985.¹⁴⁰ Between 1982 and 1990, the Dutch evolved a national reporting system that required all cases of euthanasia and physician-assisted suicide to be reported to the coroner and the prosecutor.¹⁴¹ Review by the prosecutor of all cases of euthanasia and physician-assisted suicide with the possibility of criminal prosecution may have caused some physicians to favor methods of physician-assisted death that did not require reporting.¹⁴²

B. Physicians Avoid Reporting

Dutch surveys of physician-assisted death show that physicians are much more likely to end patients' lives by methods that do not require reporting, as shown in figures 1 and 2 above.¹⁴³ Physicians do

135. See *supra* Part II.A.2.

136. See *supra* Part II.A.3.

137. See *supra* Part II.A.4.

138. Van der Heide et al., *supra* note 17, at 1961.

139. GRIFFITHS ET AL., *supra* note 35, at 66–67. Similar elements can be found in the *Versluis* case in 1969 and the *Postma* case in 1973. *Id.* at 47–48, 51–54, 60, 114–18.

140. See *supra* Part II.A.1.

141. GRIFFITHS ET AL., *supra* note 35, at 114–18. A written report must be submitted to the coroner explaining the medical reasons for euthanasia or physician-assisted suicide, the patient's request, discussions with family members, explanations for why euthanasia was performed without an explicit request, the results of consultations, and the details of the life-ending treatment. *Id.* at 308–13. Between 1990 and 2005, the reporting rate for euthanasia and physician-assisted suicide rose from 18.0% to 80.2%. Van der Heide et al., *supra* note 17, at 1958; Gerrit van der Wal et al., *Evaluation of the Notification Procedure for Physician-Assisted Death in the Netherlands*, 335 NEW ENG. J. MED. 1706, 1707 (1996).

142. GRIFFITHS ET AL., *supra* note 35, at 205.

143. See *supra* Parts II.A.5, IV.A.

not have to report ending a patient's life by treatment of symptoms, which includes terminal sedation, or ending of treatment because Dutch common law accepts them as normal medical practice.¹⁴⁴ Physicians are required to report only physician-assisted suicide, euthanasia, and patients in the "no consent" group.¹⁴⁵ Table 2 shows the ratio of cases where no reporting is required to cases where reporting is required.

Table 2
Frequency of Physician-Assisted Death in Groups Where Reporting Is Required vs. Where Reporting Is Not Required¹⁴⁶

	Required (Euthanasia and Assisted Suicide)	Not Required (Treatment of Sym- ptoms, Terminal Se- dation, and Ending of Treatment)	Ratio Not Re- quired to Required
1990	1.9%	36.7%	19
1995	2.6%	39.3%	15
2001	2.8%	40.3%	14
2005	1.8%	48.5%	27
Mean	2.3%	41.2%	19

Table 2 shows that physicians are nineteen times more likely to end a dying patient's life by means that do not require reporting. At least one commentator argues that Dutch common law effectively legalized euthanasia and assisted suicide with the *Admiraal* case in 1985.¹⁴⁷ If euthanasia and assisted suicide were already de facto legal, then statutory legalization cannot explain this ratio.¹⁴⁸

144. See *supra* Part II.A.5.

145. GRIFFITHS ET AL., *supra* note 35, at 115.

146. Van der Heide et al., *supra* note 17, at 1963. The ratio is fifteen if the "no consent" group is included with euthanasia and assisted suicide and nineteen if the "no consent" group is included with treatment of symptoms, terminal sedation, and ending of treatment. Terminal sedation data is only available for 2005. *Id.* at 1961.

147. Smies, *supra* note 98, at 40, 62; *supra* text accompanying notes 49–52 (describing the *Admiraal* case).

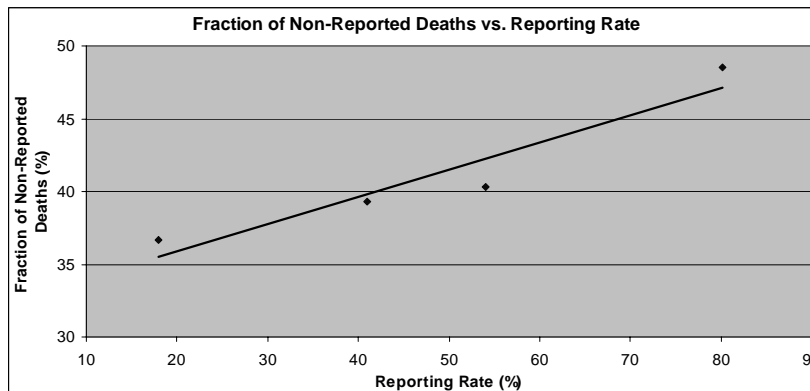
148. Both the numerator—treatment of symptoms, terminal sedation, and ending of treatment—and denominator—euthanasia and assisted suicide—would be legal. Smies, *supra* note 98, at 40, 62–63.

C. Reporting Requirements May Lead to Avoidance of Reporting

Between 1990 and 2005 the reporting of cases of euthanasia and assisted suicide increased four-fold.¹⁴⁹ At the same time, physician-assisted deaths that did not require reporting increased, as shown in figure 3.

Figure 3

Fraction of Physician-Assisted Deaths That Do Not Require Reporting Plotted as a Function of the Annual Reporting Rate for 1990, 1995, 2001, and 2005



Notes: The calculated slope is a 0.19% increase in nonreported deaths for each 1% increase in the reporting rate. The correlation coefficient is 0.95, the degrees of freedom are 2, and the p-value is 0.05.¹⁵⁰

Figure 3 shows that as the reporting rate rose from 18% in 1990 to 80% in 2005,¹⁵¹ the fraction of physician-assisted deaths that did not require reporting rose from 36.7% to 48.5%, as shown in table 2. This gives a slope of $(48.5\% - 36.7\%) / (80\% - 18\%)$, or 0.19, which is the same as the calculated slope. The correlation coefficient is 0.95, which is marginally significant with a p-value of 0.05.¹⁵² Thus, each 5% increase in the reporting rate is associated with a 1% increase in physician-assisted deaths that do not require reporting. The increase in

149. Van der Heide et al., *supra* note 17, at 1964.

150. ZAR, *supra* note 133, at 308, 570.

151. Bergje D. Onwuteaka-Philipsen et al., *Dutch Experience Monitoring Euthanasia*, 331 BRIT. MED. J. 691, 692 (2005); Van der Heide et al., *supra* note 17, at 1964.

152. ZAR, *supra* note 133, at 308, 570. The correlation drops to 0.88 if terminal sedation is excluded.

physician-assisted deaths that do not require reporting might be due to the increasing use of terminal sedation.

D. Is “No Consent” Death Murder?

1. MOST “NO CONSENT” DEATH IS NORMAL MEDICAL CARE

It is potentially troubling that Dutch physicians end the lives of many dying patients without their explicit consent at the time of the patients’ death; this is the “no consent” group.¹⁵³ As table 3 shows, most “no consent” deaths occur with treatment of symptoms or ending of treatment.

Table 3

Number of Physician-Assisted Deaths Without Explicit Consent at the Time of the Patient’s Death¹⁵⁴

	Euthanasia [†]	No Consent	Treat Symptoms	Ending of Treatment
Physician-assisted death*	2.6%	0.7%	19.1%	20.2%
No explicit request [‡]	0%	100%	66%	76%
Number of deaths	0	950	17,103	20,829

[†] Euthanasia group included physician-assisted suicide.

* Percentage of all deaths. See *supra* data for 1995 national survey shown in Table 1.

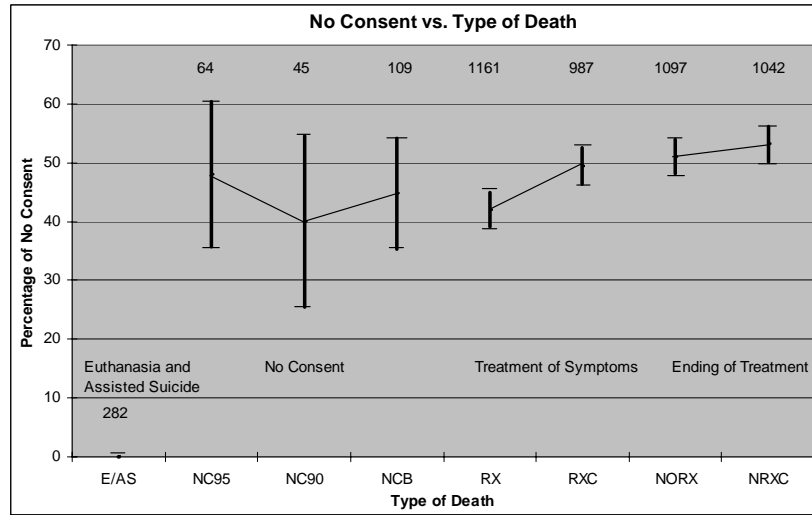
[‡] Percentage of physician-assisted deaths. No explicit request at the time life ended, but there may have been a prior discussion or stated wish. Percentage excludes unknown.

The “no consent” group makes up only about 2.4% of the total number of deaths lacking explicit consent at the time of the patient’s death. Also, as shown in figure 4, the fraction of deaths without any consent is similar in the “no consent,” treatment of symptoms, and ending of treatment groups.

153. GRIFFITHS ET AL., *supra* note 35, at 226–28.

154. The calculation involved taking the total number of Dutch deaths in 1995, or 135,675, multiplying by the percentage of physician associated deaths, 0.7% for the “no consent” group, then multiplying by the percentage of patients not giving explicit consent, 100% for the “no consent” group, to give $135,675 * 0.007 * 1.0$, or 950. See Onwuteaka-Philipsen et al., *supra* note 127, at 396; Paul J. van der Maas et al., *Euthanasia, Physician-Assisted Suicide, and Other Medical Practices Involving the End of Life in the Netherlands, 1990–1995*, 335 NEW ENG. J. MED. 1699, 1704 (1996).

Figure 4
Percentage of Patients Not Giving Consent at the Time of Death,
Plotted as a Function of the Type of Death



Notes: E/AS is the euthanasia and assisted suicide group, NC is the “no consent” group, RX is the treatment of symptoms group and NORX is the ending of treatment group. NC90 refers to data for the “no consent” group from 1990, NC95 to data from 1995 and NCB is the combined data from 1990 and 1995. Both the RX and NORX groups were also calculated (as RXC and NRXC) after removing patients where it was unknown whether they had consented or not, or 15% for the RX group and 5% for the NORX group. Bars show the 95% confidence intervals, lines connect the means of similar groups, and the number of patients is shown above the 95% confidence intervals.¹⁵⁵

The 95% confidence intervals of the fraction of patients without consent at the time of death in the “no consent” group overlaps the

155. Van der Maas et al., *supra* note 154, at 1699, 1704. The formula for standard error of percentage (se_p) is

$$se_p = \sqrt{\frac{p(1-p)}{N-1}}$$

where p is the percentage and N is the number of patients. ZAR, *supra* note 133, at 377. The 95% confidence interval is

$$p \pm \left(Z_{\alpha(2)} * se_p + \frac{1}{2N} \right),$$

where $Z_{\alpha(2)}$ is 1.96 for $N > 30$. *Id.* at 379, 482–83. The 95% confidence intervals are larger when the number (N) in the group is smaller.

95% confidence intervals of the fractions in the treatment of symptoms and ending of treatment groups. The overlap of 95% confidence intervals shows that there is no statistically significant difference between these groups at the 0.05 level of confidence.¹⁵⁶ This suggests that the lack of consent may be a normal part of the dying process where patients become unable to consent as their disease progresses.¹⁵⁷

2. “NO CONSENT” RESEMBLES TREATMENT OF SYMPTOMS

A common reason for “no consent” deaths is that the patient stated an earlier preference for physician-assisted death, but is unable to consent at the time of death. In the 1990 and 1995 Dutch national surveys, about 50–80% of patients in the “no consent” group were not competent to consent at the time of their death.¹⁵⁸ A lack of competence was also common in the treatment-of-symptoms group (47%) and ending-of-treatment group (67%).¹⁵⁹ Also, about 50% to 60% of patients in the “no consent” group had discussed or stated a wish for physician-assisted death, compared to 24% in the treatment-of-symptoms group.¹⁶⁰ For example, in the 2005 survey, 60% of the “no consent” group had expressed a wish for or discussed physician-assisted death before the time of death, and the remaining 40% had become unable to consent by the time of death.¹⁶¹ Furthermore, discussion took place with relatives in 70% to 100% of patients in the “no consent” group.¹⁶² In this group, morphine was used to end the patient’s life in 81% of cases, compared to 84% of cases in the treatment-of-symptoms group.¹⁶³ The “no consent” group was also similar to the treatment-of-symptoms group in that the estimated shortening of life was less than a week in 91% of the “no consent” group and 80% of the treatment-of-symptoms group.¹⁶⁴ In both the “no consent” and treat-

156. *Id.* at 103–04.

157. Van der Maas et al., *supra* note 154, at 1704.

158. *Id.*

159. *Id.*

160. *Id.*

161. See Van der Heide et al., *supra* note 17, at 1960.

162. *Id.* at 1963 (citing a 2001 study in which physicians discussed the procedure with a relative in 100% of cases); Van der Maas et al., *supra* note 154, at 1704 (citing a 1995 study in which physicians discussed the procedure with a relative in 70% of cases).

163. See Van der Maas et al., *supra* note 154, at 1704 (including other drugs, but excluding neuromuscular relaxants, with morphine).

164. See *id.*

ment-of-symptoms groups, death may have been due to the patient's disease and not morphine treatment, as high doses of morphine are not always lethal.¹⁶⁵ In sum, most of the "no consent" deaths were in patients who had expressed their desire for physician-assisted death.¹⁶⁶ The remaining patients were unable to consent and, for most of them, Dutch physicians treated their symptoms with pain medications.¹⁶⁷

E. Vulnerable Groups Are Protected

The Dutch national surveys show the demographic characteristics of patients who select assisted suicide or euthanasia.¹⁶⁸ First, there is an inverse relationship with age, as the oldest patients, those aged greater than eighty, are the least likely to choose assisted suicide or euthanasia.¹⁶⁹ Generally, men are more likely than women to select euthanasia or assisted suicide.¹⁷⁰ The most common causes of death, cancer and vascular disease, are those most regularly seen in patients selecting euthanasia or assisted suicide.¹⁷¹ Additionally, euthanasia and assisted suicide were most often handled by a family physician, who probably best knew the patient, and not by a specialist or nursing home physician.¹⁷² The Dutch national studies do not include data about patients' financial status, but health insurance is nearly univer-

165. Michaela Bercovitch & Abraham Adunsky, *Patterns of High-Dose Morphine Use in a Home-Care Hospice Service: Should We Be Afraid of It?*, 101 *CANCER* 1473, 1476 (2004) (showing some patients can tolerate more than 600 milligrams of morphine a day); Michaela Bercovitch et al., *High Dose Morphine Use in the Hospice Setting: A Database Survey of Patient Characteristics and Effect on Life Expectancy*, 86 *CANCER* 871, 875-76 (1999).

166. Van der Heide et al., *supra* note 17, at 1960; Van der Maas et al., *supra* note 154, at 1704.

167. Van der Heide et al., *supra* note 17, at 1963; Van der Maas et al., *supra* note 154, at 1704.

168. Onwuteaka-Philipsen et al., *supra* note 127, at 397; Van der Heide et al., *supra* note 17, at 1962.

169. Onwuteaka-Philipsen et al., *supra* note 127, at 397; Van der Heide et al., *supra* note 17, at 1962.

170. Onwuteaka-Philipsen et al., *supra* note 127, at 397; Van der Heide et al., *supra* note 17, at 1962.

171. F. Janssen & A.E. Kunst, *Cohort Patterns in Mortality Trends Among the Elderly in Seven European Countries, 1950-99*, 34 *INT'L J. EPIDEMIOLOGY* 1149, 1151 (2005); Onwuteaka-Philipsen et al., *supra* note 127, at 397; Van der Heide et al., *supra* note 17, at 1962.

172. Onwuteaka-Philipsen et al., *supra* note 127, at 397; Van der Heide et al., *supra* note 17, at 1962.

sal in the Netherlands.¹⁷³ There is no evidence that patients without insurance or elderly patients are more likely to select euthanasia.¹⁷⁴

Many patients in the Netherlands consider euthanasia, but few choose to die that way.¹⁷⁵ Patients are about three times more likely to be interested in the possibility of euthanasia or assisted suicide at some future time, rather than at a specific time.¹⁷⁶ A little less than one-half (44%) of the requests are approved.¹⁷⁷ The most common reasons for selecting euthanasia or assisted suicide are “pointless suffering”¹⁷⁸ (75%) and “deterioration or loss of dignity” (69%); the least common are “depressed” (4%) and “not wanting to be a burden on family” (13%).¹⁷⁹ Unrelieved pain is rarely (5%) the only reason for selecting assisted suicide or euthanasia, but is a factor in the decision in about 40% of cases.¹⁸⁰ Some reasons, such as “pointless suffering,” “tiredness,” “tired of living,” and “not wanting to be a burden on family,” suggest depression, which is potentially treatable; patients with these symptoms are more likely to have their requests rejected.¹⁸¹ In addition to depression, the other main reasons to reject a patient’s request are the patient’s lack of competence, a degree of suffering insufficient to warrant physician-assisted death, and availability of alternative treatments.¹⁸² The factors that guide physicians’ rejections of patients’ requests for physician-assisted death reflect the legal requirements of the 2002 act.¹⁸³

1. MENTALLY HANDICAPPED PATIENTS

Dutch physicians typically end the lives of their mentally handicapped patients by the stopping of treatment, as shown in table 4.¹⁸⁴

173. GRIFFITHS ET AL., *supra* note 35, at 31; Alain C. Enthoven & Wynard P.M.M. van de Ven, *Going Dutch—Managed-Competition Health Insurance in the Netherlands*, 357 NEW ENG. J. MED. 2421, 2421 (2007).

174. GRIFFITHS ET AL., *supra* note 35, at 31; Onwuteaka-Philipsen et al., *supra* note 127, at 397; Van der Heide et al., *supra* note 17, at 1962.

175. GRIFFITHS ET AL., *supra* note 35, at 212.

176. Onwuteaka-Philipsen et al., *supra* note 127, at 396.

177. Jansen-van der Weide et al., *supra* note 26, at 1702.

178. “Pointless suffering” is one of the requirements of the 2002 act legalizing euthanasia. Smies, *supra* note 98, at 39.

179. Jansen-van der Weide et al., *supra* note 26, at 1700–01.

180. GRIFFITHS ET AL., *supra* note 35, at 222.

181. Jansen-van der Weide et al., *supra* note 26, at 1702–03.

182. *Id.* at 1703.

183. Smies, *supra* note 98, at 39.

184. Onwuteaka-Philipsen et al., *supra* note 127, at 396–97; G.J.M.W. van Thiel et al., *Retrospective Study of Doctors’ “End-of-Life Decisions” in Caring for Mentally Handicapped People in Institutions in the Netherlands*, 315 BRIT. MED. J. 88, 89 (1997).

Compared with the general population, mentally handicapped patients are more likely to have their lives ended by ending of treatment and less likely to have their lives ended by treatment of symptoms or by euthanasia. As shown by the lack of overlap of the 95% confidence intervals, these differences are significant at the 0.05 level of confidence.¹⁸⁵ Clearly, Dutch physicians are reluctant to take active measures to end mentally handicapped patients' lives.

Table 4
Proportion of End-of-Life Decisions Made with Mentally Handicapped Patients (MHP) Compared with the General Population (Gen. Pop.)

Decision	All MHP	MHP 1995	Gen. Pop.
Ending of Treatment			
Percentage of deaths	30%	34%	20%
Confidence interval	27–33	28–40	19–21
Treatment of Symptoms			
Percentage of deaths	11%	10%	19%
Confidence interval	9–13	6–14	18–20
Euthanasia			
Percentage of deaths	0.5%	0%	2.4%
Confidence interval	0–0.9		2.1–2.6

Notes: "All MHP" is all of the 859 mentally handicapped patients and "MHP 1995" is the 222 mentally handicapped patients evaluated in 1995. General population data are from death certificates from 1995 and based on 5146 patients.

The reason for this passive ending of life is that mentally handicapped patients are rarely competent (6%) and rarely make explicit requests to have their lives ended (3%).¹⁸⁶ About 35% to 40% of all handicapped patients appeared to communicate a desire to have their lives ended by "non-autonomous" requests, where, for example, the patient said "they wanted to go to heaven," or by nonverbal means, such as resisting all medical treatment.¹⁸⁷ Dutch physicians caring for mentally handicapped patients discuss their end-of-life decisions with relatives or representatives (75%) and other physicians (69%).¹⁸⁸ In the rare cases where physicians actively ended their patients' lives—four

Confidence intervals were calculated for MHP patients. ZAR, *supra* note 133, at 103–04.

185. ZAR, *supra* note 133, at 103–04.

186. Van Thiel et al., *supra* note 184, at 89–90 & tbls.2 & 3.

187. *Id.* at 89–90 & tbl.3.

188. *Id.* at 90 & tbl.4.

out of 859 cases, or 0.47%—the mentally handicapped patients were suffering substantially despite all other treatment measures or were in the terminal phase of their illnesses.¹⁸⁹ This means that mentally handicapped patients are underrepresented in the euthanasia group.

2. PSYCHIATRIC PATIENTS

Each year, Dutch psychiatrists receive about 320 requests for physician-assisted suicide and assist in two to five suicides.¹⁹⁰ A typical patient requesting assistance with suicide is a forty-five-year-old woman with a mood disorder who has refused medication and psychotherapy and sees no hope of improvement of her unbearable mental suffering.¹⁹¹ Most patient requests were refused because the psychiatrist thought the patient's mental disorder could be treated (61%), their suffering was not unbearable (32%), or the psychiatrist opposed assisted suicide in principle (31%).¹⁹² About 21% of patient requests lead to further consultation by other physicians to see if the request was well considered (58%) or if there were other treatment options (58%).¹⁹³ After the consultative process, for only 2% of patients did the psychiatrist assist in the patient's suicide, although 16% of requesting patients committed suicide by themselves.¹⁹⁴ Of the patients that the psychiatrists aided in their suicide, about half had severe medical diseases.¹⁹⁵ Over time, 35% of patients no longer wanted to commit suicide, but 28% made persistent requests for the psychiatrist to aid their suicide.¹⁹⁶ Overall, Dutch psychiatrists closely follow the legal requirements created by the Dutch Supreme Court.¹⁹⁷

189. *Id.* at 89–90 & tbl.1.

190. Johanna H. Groenewoud et al., *Physician-Assisted Death in Psychiatric Practice in the Netherlands*, 336 *NEW ENG. J. MED.* 1795, 1795–96 (1997). About 400,000 Dutch patients receive mental health care, so less than 0.1% make requests for physician-assisted death. *Id.* at 1800.

191. *Id.* at 1796–97.

192. *Id.* at 1796–97 tbl.3.

193. *Id.* at 1797.

194. *Id.*

195. *Id.* at 1798, 1800.

196. *Id.* at 1797.

197. *Infra* text accompanying note 228.

3. CHILDREN

The ways Dutch physicians end dying children's lives are shown in table 5.¹⁹⁸

Table 5¹⁹⁹
End-of-Life Decisions in Children Aged 3 Months to 17 Years Compared with Adults

Decision	Children	Adults ⁺
Ending of Treatment (17)	12% 7.8–17	20.2% 19–21
Treatment of Symptoms (21)	21% 16–28	20.1% 19–21
Euthanasia (1)	0.7% 0.1–3.6	2.6% 2.3–2.8
Physician-assisted suicide	0	0.2% 0.1–0.3
No-consent (3)	2.0% 0.8–5.2	0.7% 0.5–0.9

Number in parenthesis is the number of children studied.

⁺ Adult data is from the national survey data for 2001 and based on death certificates.²⁰⁰

Euthanasia, physician-assisted suicide, and ending of treatment were less common in children than adults. Treatment of symptoms was about the same in children and adults. The rate of “no consent” physician-assisted death, often done at the explicit request of the child's parents,²⁰¹ was relatively high, but the 95% confidence intervals overlapped the adult rate. The relatively high “no consent” rate is related to the inability of most (80%) children to consent.²⁰² End-of-life decisions were always discussed with the child's parents and made at the request of parents for 50% of children.²⁰³ Like adults, the most common diagnosis was cancer, which was the diagnosis in twelve of twenty cases, or 60%, compared to about 40% in adults.²⁰⁴ Also, as in

198. Astrid M. Vrakking et al., *Medical End-of-Life Decisions for Children in the Netherlands*, 159 ARCHIVES PEDIATRICS ADOLESCENT MED. 802, 804, 808 (2005).

199. Onwuteaka-Philipsen et al., *supra* note 127, at 396; Vrakking et al., *supra* note 198, at 804.

200. Onwuteaka-Philipsen et al., *supra* note 127, at 396.

201. Vrakking et al., *supra* note 198, at 804.

202. *Id.* at 805.

203. *Id.* at 805–06.

204. Onwuteaka-Philipsen et al., *supra* note 127, at 397 tbl.3; Vrakking et al., *supra* note 198, at 805–06.

the adult treatment-of-symptoms group, the most common drug used in all child groups was morphine.²⁰⁵ The estimated shortening of life in children was less than one week in 40% of cases.²⁰⁶ Thus, Dutch end-of-life decisions are similar in children and adults, except that ending of treatment is much less common in children.

F. Complications

Prolonged death or failure to induce coma are the main complications of euthanasia (in 5.2% of cases) and assisted suicide (in 14% of cases).²⁰⁷ Assisted suicide is also limited by problems with oral administration (in 6.1% of cases) due to nausea and vomiting (in 3.5% of cases).²⁰⁸ The main additional problem with euthanasia is finding a suitable vein to inject the lethal medication (in 1.9% of cases).²⁰⁹ Time to death is about ten minutes for euthanasia and about thirty minutes for assisted suicide.²¹⁰

V. Analysis—Oregon

A. Assisted Suicide Is Rare but Increasing

Over the first ten years of the Death with Dignity Act, relatively few patients have chosen assisted suicide, but the data in table 6 and figure 5 show the rate is increasing.²¹¹

Table 6
Annual^{*} Prescriptions, Deaths, and Deaths per 10,000 Population in Oregon

Year	98	99	00	01	02	03	04	05	06	07
Prescriptions	24	33	39	44	58	68	60	65	65	85
Deaths	16	27	27	21	38	42	37	38	46	49
Deaths/10,000	5.5	9.2	9.1	7.0	12.2	13.6	12.3	12	14.7	15.6

*Only the last two digits of years are given.

205. Van der Mass et al., *supra* note 154, at 1704; Vrakking et al., *supra* note 198, at 806.

206. Vrakking et al., *supra* note 198, at 806 tbl.3.

207. Johanna H. Groenewoud et al., *Clinical Problems with the Performance of Euthanasia and Physician-Assisted Suicide in the Netherlands*, 342 *NEW ENG. J. MED.* 551, 555 (2000).

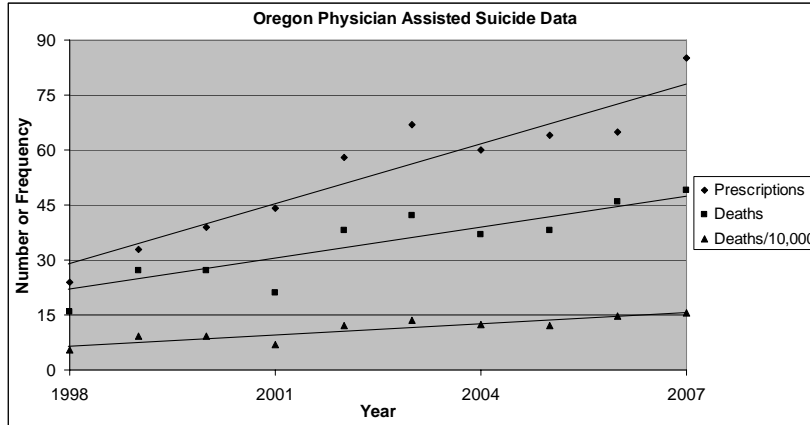
208. *Id.*

209. *Id.*

210. *Id.* at 555 tbl.5. Reported numbers are medians. *Id.*

211. See OR. DEP'T OF HUMAN SERVS., *DEATH WITH DIGNITY ANNUAL REPORTS 1-2* (2007), <http://www.oregon.gov/DHS/ph/pas/docs/year10.pdf>.

Figure 5
Oregon Physician-Assisted Suicide Data from 1998 to 2007, Including the Number of Prescriptions Written, Deaths per Year, and Deaths per 10,000 Population per Year



Note: Lines are based on linear regression.

Linear regression confirms that the number of prescriptions, deaths per year, and deaths per year per 10,000 people are increasing, as shown in table 7 and figure 5.

Table 7
Regression Analysis of Oregon Physician-Assisted Suicide Data

	Prescriptions	Deaths/Year	Deaths/10,000/Year
Slope coefficient	5.5	3.0	0.87
Slope t-test*	6.6	4.6	4.3
p-value	p < 0.0003	p < 0.002	p < 0.004

Slope t-test is the ratio of the slope coefficient to the standard of error of the slope. The p-value measures the statistical significance of the slope. The units of the slope vary, for example, for prescriptions, the unit is number of prescriptions per year. Calculations were done with Excel data analysis (regression) software.

All the slope coefficients are positive and statistically significant. If this linear relationship persists, then the deaths per 10,000 people should increase by 0.87 to about 16.5 in 2008.

B. Patients Control the Manner of Death

The most common reasons that patients chose assisted suicide were a loss of autonomy (89%), ability to do pleasurable activities (87%), and dignity (82%); the least common are financial reasons (3%) and inadequate treatment of pain (27%).²¹² The patients selecting assisted suicide are similar to other dying patients in age (median age of sixty-nine), race (97% white) and sex (54% male), but were more likely to have at least a college degree (41%).²¹³ Most patients requesting assisted suicide had cancer (82%) and were enrolled in hospice care (86%); almost all had insurance (99%).²¹⁴ Interestingly, patients requesting assisted suicide were less likely to be completely disabled than patients with similar diagnoses (21% and 84%, respectively).²¹⁵ Family members often describe patients selecting assisted suicide as desiring to control the manner of their death.²¹⁶

C. Complications

In euthanasia, a primary care doctor or oncologist who has practiced medicine for about twenty years prescribes the lethal medication, which is almost always a barbiturate.²¹⁷ Coma is induced in five to ten minutes and death in twenty-five to thirty minutes.²¹⁸ Complications include regurgitation in 5% to 9% of cases, and one (of 341) patient awoke and died two weeks later of his or her illness.²¹⁹

212. See OR. DEP'T OF HUMAN SERVS., DEATH WITH DIGNITY ANNUAL REPORTS (2007), <http://www.oregon.gov/DHS/ph/pas/docs/yr10-tbl-1.pdf> [hereinafter ANNUAL REPORT, Table 1].

213. Sullivan et al., *supra* note 29, at 600 (stating that college-educated individuals are more likely to select assisted suicide). Summary data from the 2007 annual report are shown in parenthesis. ANNUAL REPORT, Table 1, *supra* note 212.

214. ANNUAL REPORT, Table 1, *supra* note 212.

215. Arthur E. Chin et al., *Legalized Physician-Assisted Suicide in Oregon—The First Year's Experience*, 340 NEW ENG. J. MED. 577, 580 (1999).

216. Sullivan et al., *supra* note 29, at 603.

217. See, e.g., OR. DEP'T HUMAN SERVS., EIGHTH ANNUAL REPORT ON OREGON'S DEATH WITH DIGNITY ACT 12-13 (2006), available at <http://www.oregon.gov/DHS/ph/pas/docs/year8.pdf> (other reports are similar).

218. *Id.* at 24.

219. *Id.* at 13-14; ANNUAL REPORT, Table 1, *supra* note 212.

VI. Analysis—Empirical Observations, Limitations, and Recommendations

A. Empirical Observations

1. PHYSICIANS COMPLY WITH THE LAW

The empirical evidence shows that physicians comply with the law.²²⁰ In the Netherlands, all unnatural deaths are screened by the prosecutor.²²¹ Between 1991 and 1995, screening of 6324 cases of euthanasia and assisted suicide resulted in prosecution of thirteen physicians (only 0.21% of cases).²²² In the twenty published cases, three physicians were found guilty but not punished, and six were given suspended sentences.²²³ Although physician compliance is good in reported cases of assisted suicide and euthanasia, about 20% of cases are not reported.²²⁴ A comparison of a stratified random sample of sixty-eight reported and sixty-eight unreported cases revealed a failure to meet procedural requirements in the unreported cases.²²⁵ The unreported cases were more likely to lack a written request (only 44% of unreported cases had written requests, compared to 73% of reported cases), consultation with another physician (11% compared to 94%), and a written report (57% compared to 97%).²²⁶ Both the unreported and reported cases met the substantive legal requirements.²²⁷ Overall, physicians in the Netherlands comply with the law in more than 99% of cases.²²⁸ Oregon lacks a mechanism to detect underreporting or failure to comply with law.²²⁹

2. VULNERABLE GROUPS ARE UNDERREPRESENTED

In both the Netherlands and Oregon, vulnerable groups are less likely to select euthanasia or assisted suicide.²³⁰ Patients selecting euthanasia or assisted suicide are typically less than eighty years of

220. Van der Wal et al., *supra* note 141, at 1706.

221. *Id.*

222. *Id.*

223. *Id.* at 1709.

224. Van der Heide et al., *supra* note 17, at 1964 (reporting rate was 80.2% in 2005).

225. Van der Wal et al., *supra* note 141, at 1708.

226. *Id.*

227. *Id.*

228. *Id.*

229. Chin et al., *supra* note 215, at 583; Cohen-Almagor & Hartman, *supra* note 107, at 290; Sullivan et al., *supra* note 29, at 603.

230. See *supra* Part IV.E, V.B.

age,²³¹ white,²³² male,²³³ and have insurance.²³⁴ Also, they have typical, predictable causes of death, such as cancer.²³⁵ Financial reasons (3%) and inadequate pain treatment (27%) are the least common reasons for patients to select assisted suicide in Oregon.²³⁶ In Oregon, patients selecting assisted suicide are more educated²³⁷ and less disabled.²³⁸ The least common reason for selecting euthanasia or assisted suicide in the Netherlands is feeling depressed (4%).²³⁹ Thus, patients selecting euthanasia or assisted suicide are younger, more highly educated, and relatively affluent.²⁴⁰

The mentally handicapped,²⁴¹ psychiatric patients,²⁴² and children²⁴³ are underrepresented among patients selecting euthanasia or assisted suicide in the Netherlands. Physicians were more likely to stop treatment for the mentally handicapped and less likely to end their lives by treatment of symptoms or euthanasia.²⁴⁴ These differences are statistically significant at the 0.05 level of confidence.²⁴⁵ Psychiatrists only grant 2% of requests for assisted suicide,²⁴⁶ versus an approval rate for euthanasia or assisted suicide of 44% in the general population.²⁴⁷ Euthanasia and assisted suicide are both rare in children,²⁴⁸ with rates that are less than those in the adult population.²⁴⁹ The difference for assisted suicide is statistically significant at the 0.05 level of confidence.²⁵⁰ The main reason the mentally handicapped²⁵¹

231. See *supra* text accompanying note 169; ANNUAL REPORT, Table 1, *supra* note 212.

232. See *supra* text accompanying note 213.

233. See *supra* note 170 and accompanying text; ANNUAL REPORT, Table 1, *supra* note 212.

234. Enthoven & Van de Ven, *supra* note 173; ANNUAL REPORT, Table 1, *supra* note 212.

235. See ANNUAL REPORT, Table 1, *supra* note 212; *supra* text accompanying note 171.

236. ANNUAL REPORT, Table 1, *supra* note 212.

237. Sullivan et al., *supra* note 29, at 600.

238. Chin et al., *supra* note 215, at 580.

239. Jansen-van der Weide et al., *supra* note 26, at 1700 tbl.1.

240. See *supra* notes 214–16 and associated text.

241. *Supra* Part IV.E.1.

242. *Supra* Part IV.E.2.

243. *Supra* Part IV.E.3.

244. *Supra* Part IV.E.1.

245. *Supra* text accompanying note 185.

246. Groenewoud et al., *supra* note 190, at 1797.

247. *Supra* text accompanying note 177.

248. *Supra* note 200 and accompanying table.

249. *Supra* note 200 and accompanying table.

250. ZAR, *supra* note 133, at 103–04.

and children²⁵² are underrepresented is their inability to consent. For psychiatric patients the main reason they are underrepresented is because their mental disorder could be treated.²⁵³ The empirical evidence from both the Netherlands and Oregon is that vulnerable groups are less likely to select assisted suicide or euthanasia.

3. “NO CONSENT” IS MAINLY NORMAL MEDICAL TREATMENT

Most physician-aided deaths without the patient’s consent occur with treatment of symptoms or ending of treatment; both are part of normal medical treatment.²⁵⁴ Reports from the Netherlands separate a “no consent” group from euthanasia and assisted suicide.²⁵⁵ A comparison of the “no consent” group with the treatment-of-symptoms group shows the two groups are similar.²⁵⁶ The similarities include: a lack of competence at the time of death;²⁵⁷ frequent expression of wish for physician-aided death at an earlier time;²⁵⁸ the use of morphine to end the patient’s life;²⁵⁹ and estimated shortening of the patient’s life by less than a week.²⁶⁰ Furthermore, many of the “no consent” deaths may be due to the patient’s terminal illness, as high doses of morphine are not always lethal.²⁶¹ Overall, the empirical evidence favors the conclusion that most of the “no consent” group should be viewed as a part of normal medical care.

4. LEGALIZATION SHAPES PHYSICIAN BEHAVIOR

Despite formal legalization in 2002²⁶² and de facto legalization in the 1980s,²⁶³ Dutch physicians are nineteen times more likely to choose methods of physician-assisted death that do not require reporting.²⁶⁴ Also, as reporting increased fourfold, from 18% to 80%, the fraction of

251. *Supra* Part IV.E.1. The mentally handicapped also were unable to communicate their request. *Id.*

252. *Supra* text accompanying note 203.

253. *Supra* note 193 and accompanying text.

254. Data are limited to the Netherlands. *Supra* note 154 and accompanying table.

255. *Supra* notes 128–29 and accompanying text and table.

256. *Supra* Part IV.D.2.

257. *Supra* text accompanying notes 158–59.

258. *Supra* notes 160–61 and accompanying text.

259. *Supra* text accompanying note 163.

260. *Supra* text accompanying note 165.

261. *Supra* text accompanying note 165.

262. *Supra* text accompanying note 98.

263. *Supra* text accompanying note 147.

264. *Supra* note 146 and accompanying table.

physician-assisted deaths not requiring reporting increased.²⁶⁵ This shows that reporting encourages physicians to choose methods of physician-assisted death that avoid reporting.²⁶⁶ While the requirement of reporting may reduce euthanasia and assisted suicide, legalization allows Dutch patients to select either.²⁶⁷ A comparison of the Dutch results with those from other European countries could show the net effect of legalization and reporting on the rate of euthanasia and assisted suicide.

Except for euthanasia, the Dutch are similar to other European countries in their choice of methods of physician-assisted dying, as shown in table 8.²⁶⁸

Table 8
Comparison of End-of-Life Decisions in Six European Countries²⁶⁹

	Bel- gium	Den- mark	Italy	Nether- lands	Swe- den	Switzer- land
Euthanasia						
Death (%)	0.3%	0.06%	0.04%	2.6%		0.27%
CI*	.16-.58	.01-.26	0-.27	2.2-3.0		.14-.51
Assisted Suicide						
Death %	0.01%	0.06%	0	0.21%		0.36%
CI*	0-.28	.01-.26		.12-.38		.20-.63
No Consent						
Death %	1.5%	0.67%	0.06%	0.6%	0.23%	0.42%
CI*	1.1-2.0	.44-1.0	.01-.29	.43-.84	.11-.47	.25-.70
Treatment of Symptoms						
Death (%)	22%	26%	19%	20%	21%	22%
CI*	21-24	24-28	17-20	19-21	20-22	21-23
Ending Treatment						
Death (%)	15%	14%	4%	20%	14%	28%
CI*	13-16	13-15	3-5	19-21	13-16	26-29

*CI is confidence interval. The number of patients studied is 2950 in Belgium, 2939 in Denmark, 2604 in Italy, 5384 in the Netherlands, 3248 in Sweden and 3355 in Switzerland.

As shown above, euthanasia is fifteen times more common in the Netherlands than the average of the other European countries. At the time of this study, euthanasia was only legal in the Netherlands.²⁷⁰

265. *Supra* note 150 and accompanying figure.

266. *Supra* text accompanying note 142.

267. *See supra* text accompanying note 98.

268. Agnes van der Heide et al., *End-of-Life Decision-Making in Six European Countries: Descriptive Study*, 361 LANCET 345, 347 (2003).

269. *Id.*

270. *Id.* at 346. According to Smies, euthanasia was effectively legalized before this study. *Supra* text accompanying note 147.

The Dutch rate of assisted suicide overlaps the 95% confidence intervals of other European countries, except for Italy, which is significantly lower. The 95% confidence interval of the Dutch “no consent” groups overlaps those of about half of the other European countries. In the Netherlands, 40% of physician-assisted deaths are due to treatment of symptoms and ending treatment, compared to a 40% average for the other European countries, excluding Italy (and 37% including Italy). The clearest effect of legalization and reporting is to increase the rate of euthanasia.

5. REPORTING IMPROVES END-OF-LIFE CARE

In Oregon, legalization and reporting of assisted suicide stimulated the treatment of pain and also the development of hospice care and the medical system to allow more patients to die at home.²⁷¹ In both the Netherlands and Oregon, pain is not a dominant reason to choose euthanasia or assisted suicide.²⁷² This is true even though about half of deaths reported in the SUPPORT study had moderate to severe pain in the last three days before death.²⁷³ Furthermore, after legalization of assisted suicide, Oregon increased its use of morphine by 70% between 1994 and 1996 and, as a result, led the nation in the amount of morphine prescribed per person.²⁷⁴ After the referendum in Oregon, hospice care expanded to include 86% of all assisted-suicide patients.²⁷⁵ This increase in the availability of hospice care is a factor explaining why Oregon has the lowest rate of death in hospitals in the United States.²⁷⁶ When given the choice, most patients would choose to die at home.²⁷⁷ In Oregon, legalization and reporting of assisted suicide led to improved end-of-life care.

271. Quill, *supra* note 34, at 1912.

272. *Supra* text accompanying note 180 (Netherlands); *supra* text accompanying note 212 (Oregon).

273. SUPPORT Principal Investigators, *supra* note 10, at 1594.

274. Susan W. Tolle, *Care of the Dying: Clinical and Financial Lessons from the Oregon Experience*, 128 ANNALS INTERNAL MED. 567, 568 (1998). Legalization occurred in 1994. *Supra* note 107 and accompanying text.

275. ANNUAL REPORT, Table 1, *supra* note 212.

276. Tolle, *supra* note 274, at 567.

277. *Id.*

B. Limitations of Empirical Studies

1. LACK OF CONTROLS AND UNCLEAR CAUSALITY

Some obvious limitations of this Article are its reliance on data from surveys, the comparison of groups that differ in more than one way, and the inability to infer causality from correlation. The strengths of the Dutch national surveys are large numbers, survey reporting rates of about 75%, and comparisons of rates based on death certificates and interviews.²⁷⁸ The Oregon annual reports cover all cases reported.²⁷⁹ In addition, the Dutch studied the 20% of euthanasia and assisted suicides that were not reported, finding mainly procedural deficiencies; this was not done in Oregon.²⁸⁰ Reporting rates of 75% or more reduces the risk that the surveys are unrepresentative.²⁸¹ Dutch studies on mentally handicapped patients, psychiatric patients, and children are based on smaller numbers, have survey response rates of more than 80%, and, except for children, lacked a comparison of death certificates and interviews.²⁸² Interviews were confidential, while death certificates were reviewed by the prosecutor.²⁸³ A comparison of the death certificate rates with those from interviews gives an estimate of underreporting.²⁸⁴ Thus, Dutch studies on mentally handicapped and psychiatric patients might be biased by underreporting.²⁸⁵

None of the results are based on experimental studies of matched groups studied before and after legalization of euthanasia and assisted suicide.²⁸⁶ Also, in the Netherlands, de facto legalization and reporting requirements largely occurred before the large national surveys between 1990 and 2005.²⁸⁷ This makes it difficult to separate

278. Onwuteaka-Philipsen et al., *supra* note 127, at 395–96; Van der Heide et al., *supra* note 17, at 1958–59.

279. ANNUAL REPORT, Table 1, *supra* note 212.

280. *Supra* text accompanying notes 226–29.

281. SHARI SEIDMAN DIAMOND, REFERENCE GUIDE ON SURVEY RESEARCH 245–46 (2006).

282. Groenewoud et al., *supra* note 190, at 1795–96 (psychiatric physician reporting rate is 83%); Van Thiel et al., *supra* note 184, at 89–90 (handicapped physician reporting rate is 88%); Vrakking et al., *supra* note 198, at 803 (pediatric reporting rate of 91%).

283. See Van der Heide et al., *supra* note 17, at 1958–60; Van der Wal et al., *supra* note 141, at 1707.

284. See Van der Heide et al., *supra* note 17, at 1958–60.

285. *Id.*

286. Penney Lewis, *The Empirical Slippery Slope from Voluntary to Non-Voluntary Euthanasia*, 35 J.L. MED. & ETHICS 197, 199 (2007).

287. See *supra* text accompanying notes 141 & 148.

the effect of legalization and reporting.²⁸⁸ There is a positive correlation between the rate of reporting and the rate of physician-assisted deaths that do not require reporting.²⁸⁹ This suggests the reporting effect is separate from legalization.²⁹⁰ Correlation, however, does not prove causality.²⁹¹ Another weakness of the relationship is that the correlation is based only on four data points.²⁹² Although it is plausible that physicians would favor methods of physician-assisted death that avoid reporting, this ignores the patient's wishes.²⁹³ Empirical studies can describe the results of legalization, but can only suggest a causal relationship between legalization and the results.

2. CLASSIFICATION BIAS

Empirical studies are limited to data reported by physicians.²⁹⁴ Where the law has made euthanasia illegal, European physicians report low rates of euthanasia, often less than 0.3%.²⁹⁵ The rate of euthanasia in the Netherlands is fifteen times higher, about 2.6%.²⁹⁶ Yet if the euthanasia rate was 2% in all of Europe, but classified as "treatment of symptoms" where euthanasia is illegal,²⁹⁷ there would be a classification bias.²⁹⁸ If this were the case, "treatment of symptoms" would be 2% higher where euthanasia is illegal. Excluding the Netherlands, the average European treatment-of-symptoms rate is 22%, compared to 20% in the Netherlands.²⁹⁹ Empirical studies cannot exclude the possibility that the only effect of legalization was to change the way 2% of deaths are classified in reports by physicians. A similar reclassification could partially explain why Dutch national surveys revealed a decrease in euthanasia and an increase in treatment of symptoms in 2005.³⁰⁰ To detect a shift of 2% would require a

288. See *supra* text accompanying notes 141 & 148.

289. See *supra* text and figure accompanying notes 150–52.

290. See *supra* text and figure accompanying notes 150–52.

291. ZAR, *supra* note 133, at 278.

292. The 95% confidence interval is wider with small numbers. *Id.* at 311.

293. Thomas Preston et al., *The Role of Autonomy in Choosing Physician-Aid-in-Dying*, in *PHYSICIAN-ASSISTED DYING: THE CASE FOR PALLIATIVE CARE AND PATIENT CHOICE* 39, 39–54 (Timothy E. Quill & Margaret P. Battin eds., 2004).

294. *Supra* text accompanying notes 128 & 214.

295. *Supra* note 267 and accompanying table.

296. *Supra* note 267 and accompanying table.

297. See *supra* notes 11–14 and accompanying text.

298. The Dutch call this "constructability." GRIFFITHS ET AL., *supra* note 35, at 255, 278.

299. *Supra* notes 268–69 and accompanying table.

300. *Supra* table accompanying note 129.

large number of cases.³⁰¹ For example, to reduce the 95% confidence interval to between 19% and 21% requires more than 6,000 cases.³⁰² The expense of analyzing thousands of cases may explain why Dutch national surveys are only done about every five years.³⁰³ Even empirical studies based on more than a thousand cases are not likely to detect a change of 1%.

C. Recommendations Suggested by Empirical Studies

1. SCREENING FOR SUSPICIOUS DEATHS

Using the legal system to monitor physician reports is expensive, as thousands of cases are reported each year in the Netherlands.³⁰⁴ Further, investigation of reported cases by the prosecutor in the Netherlands leads to indictment in 0.21% of cases; about half are found guilty, but few are punished.³⁰⁵ Although routine screening by the prosecutor is costly, it rarely detects substantive violations.³⁰⁶ Legal resources should be focused on suspicious deaths where the probability of criminal activity is much higher than a fraction of a percent.

2. REPORTING TO IMPROVE END-OF-LIFE CARE

From an empirical point of view, a better function for legalization would be to encourage optimal end-of-life care, with euthanasia and assisted-suicide playing only a minor role.³⁰⁷ An example would be the monitoring of the adequacy of pain treatment, hospice care, and presence of insurance, as was done in Oregon.³⁰⁸ Reports from Oregon show high levels of compliance, with 73% of assisted-suicide patients having adequate pain treatment, 86% being in hospice care, and 99% having insurance.³⁰⁹ To detect 80% compliance with a 95% confidence interval of plus or minus 8% (72% to 88%) only takes about 100 cases.³¹⁰

301. See *supra* table accompanying note 155.

302. See *supra* table accompanying note 155.

303. *Supra* note 130 and accompanying figure.

304. *Supra* notes 129–32 and accompanying table and figure legends.

305. *Supra* text accompanying notes 221–23.

306. *Supra* text accompanying notes 221–23.

307. Battin & Quill, *supra* note 3, at 8.

308. *Supra* Part V.B.

309. *Supra* Part V.B.

310. *Supra* table accompanying note 155.

In addition to requiring only a small number of cases, it would be relatively easy to check the accuracy of physician reporting.³¹¹ For example, if the accuracy of physician reporting of pain control was doubted, then the degree of pain control could be rated by patients or their families.³¹² Thus, if reporting requirements focused on improving end-of-life care, there would be a legal incentive for physicians to optimize the care of their dying patients who request assisted suicide or euthanasia.³¹³ However, there would be a tendency for physicians not to report cases with less optimal care, so studies to detect nonreporting, such as those done in the Netherlands, would be needed.³¹⁴ Detecting classification bias would involve studying cases reported as treatment of symptoms or terminal sedation to see how many were actually euthanasia. By focusing on optimal end-of-life care, the law would benefit from a closer alignment of legal, physician, and patient interests.

3. AVOID WAITING PERIODS OR EXTENSIVE EVALUATIONS

Delays due to the requirements of optimal end-of-life care are reasonable. However, mandated waiting periods or evaluations unrelated to optimal care will only deny patients' control over how they die. The Dutch national surveys show that about 15% of euthanasia or assisted-suicide patients are expected to die within a day, and about 60% within a week, of the time of their request.³¹⁵ Given this high estimated death rate, there should be no required waiting period. Also, required consultations or other evaluations should be quickly attainable.

VII. Conclusion

One goal of legalizing euthanasia and assisted suicide is to protect patients from harm. Legalization permits euthanasia and assisted suicide in restricted circumstances and requires reporting. Reporting is done by a physician who has performed euthanasia or assisted suicide. This physician is also the potential offender. Given the source of the report, it is not surprising that the legal system, after reviewing

311. ANNUAL REPORT, Table 1, *supra* note 212.

312. Sullivan et al., *supra* note 29, at 603.

313. See *supra* Part V.B.

314. See *supra* text accompanying notes 226–28.

315. Van der Maas et al., *supra* note 154, at 1704.

thousands of reports, will only indict a few offenders and punish almost no one.³¹⁶ Routine screening of reports rarely detects criminal offenders.

Another goal of legalization is to gather information about the results of legalization, which are quantified in empirical studies. Unfortunately, empirical studies also depend on potentially biased physician reporting. Furthermore, large numbers are needed to generate accurate estimates. For example, over 1500 cases are needed to generate 95% confidence intervals of 18% to 22% for the treatment-of-symptoms group.³¹⁷ If a patient's symptoms were treated with morphine, the physician could classify the death as euthanasia or treatment of symptoms. In jurisdictions where euthanasia is illegal, physicians could classify all euthanasia deaths (2% of deaths) as treatment of symptoms. This classification bias would increase the treatment-of-symptoms group by 2%, from 20% to 22%. The new estimate for the treatment of symptoms group, 22%, would fall within the prior estimate's 95% confidence interval of 18% to 22%. Thus, empirical studies cannot exclude the possibility that the only effect of legalization is to change the classification of 2% of physician-aided deaths. Because of classification bias and small samples, empirical studies are unlikely to detect changes of 2% without studying more than 1500 cases.³¹⁸

The limitations due to potential classification bias and small samples qualify the interpretations made by this empirical study. The Dutch annual reports combine a large number of cases, a total of about 5000, with reporting rates of up to 80%.³¹⁹ These surveys show that physicians favor methods of ending patients' lives that do not require reporting nineteenfold over methods that do require reporting.³²⁰ A study of European countries shows that euthanasia is fifteen times more common in the Netherlands than the average of other European countries.³²¹ At the time of this Article, euthanasia was only legal in the Netherlands.³²² Furthermore, in the Netherlands, as reporting of euthanasia increases, physicians end more patients' lives by

316. *Supra* Part VI.C.1.

317. *Supra* table accompanying note 155.

318. *Supra* table accompanying note 155.

319. Van der Heide et al., *supra* note 17, at 1961, 1964.

320. *Supra* table accompanying note 146.

321. *Supra* text accompanying notes 268–70.

322. Van der Heide et al., *supra* note 268, at 346. According to Smies, euthanasia was effectively legalized before this Article. *Supra* text accompanying note 147.

methods that do not require reporting.³²³ Combining these results, it is tempting to conclude that legalization grants patients more autonomy, although physicians are reluctant to end patients' lives with euthanasia or assisted suicide. This interpretation should be accepted with caution due to the potential limitations of classification bias and small sample size.

One of the most important goals of legalization should be to require physicians to document optimal end-of-life care in their euthanasia and assisted-suicide patients. The definition of optimal end-of-life care should be left to medical experts, who might be guided by empirical studies. These requirements could be condensed into checklists with spaces to explain any deviations from optimal care. The optimal care checklist would not avoid failure to report, so studies measuring reporting rates would have to be done. However, uncertainty due to small samples would be less, because the expected compliance would be high.³²⁴ For example, to have a 95% confidence interval of 72% to 88%, or 80% plus or minus 8%, only requires about 100 cases.³²⁵ It may be possible to reduce classification bias by studying cases labeled as treatment of symptoms or terminal sedation to see if some are in fact euthanasia.³²⁶ Reducing classification bias is important, because classification of euthanasia as treatment of symptoms could be used to circumvent the requirement that patients receive optimal end-of-life care. Legalization requires protecting patients from harm by screening reports for criminal offenders and punishing criminal offenders, penalties to ensure high rates of reporting and low rates of classification bias, and documentation of optimal end-of-life care. If these requirements are met, then the minority of dying patients, those who might choose euthanasia, should have the right to control how their lives end.³²⁷

323. *Supra* figure 3 accompanying note 150.

324. *Supra* text Part VI.C.2.

325. *See supra* table accompanying note 155.

326. *See supra* Part VI.C.2.

327. *Supra* table associated with note 130.