
Faculty Publications

2024

Patient Autonomy, Public Safety, and Drivers with Cognitive Decline

Sharona Hoffman

Case Western Reserve University School of Law, sharona.hoffman@case.edu

Cassandra Burke Robertson

Case Western Reserve University School of Law, cassandra.robertson@case.edu

Follow this and additional works at: https://scholarlycommons.law.case.edu/faculty_publications

 Part of the [Health Law and Policy Commons](#)

Repository Citation

Hoffman, Sharona and Robertson, Cassandra Burke, "Patient Autonomy, Public Safety, and Drivers with Cognitive Decline" (2024). *Faculty Publications*. 2245.

https://scholarlycommons.law.case.edu/faculty_publications/2245

This Article is brought to you for free and open access by Case Western Reserve University School of Law Scholarly Commons. It has been accepted for inclusion in Faculty Publications by an authorized administrator of Case Western Reserve University School of Law Scholarly Commons.

Patient Autonomy, Public Safety, and Drivers with Cognitive Decline

Sharona Hoffman[†]

Cassandra Burke Robertson[‡]

Abstract:

With a growing elderly population, cognitive decline in drivers has become a significant public safety concern. Currently, over thirty-two million individuals who are seventy or older have driver's licenses, and that number is growing quickly. In addition, almost ten percent of U.S. seniors (those sixty-five and older) have dementia, and an additional twenty-two percent have mild cognitive impairment. Between a quarter and a half of individuals with mild to moderate dementia still drive. As cognitive abilities such as memory, attention, and decision-making skills deteriorate, a driver's ability to operate a vehicle safely can be compromised. This not only puts the driver at risk but also endangers passengers, other motorists, and pedestrians. As the population ages, the number of drivers experiencing cognitive decline is increasing, escalating the risk of accidents.

For many older adults, however, driving is a key aspect of independence and mobility. Losing the ability to drive can lead to social isolation, dependence on others, and a decline in overall well-being. Understanding and addressing the challenges of cognitive decline in relation to driving is crucial for maintaining elderly individuals' quality of life. Nonetheless, determining when someone should stop driving due to cognitive decline is especially difficult because cognitive decline often progresses gradually and is challenging to assess.

[†] Edgar A. Hahn Professor of Law, Professor of Bioethics, and Co-Director of Law-Medicine Center, Case Western Reserve University School of Law. B.A., Wellesley College; J.D., Harvard Law School; LL.M. in Health Law, University of Houston; S.J.D. in Health Law, Case Western Reserve University. Author of *AGING WITH A PLAN: HOW A LITTLE THOUGHT TODAY CAN VASTLY IMPROVE YOUR TOMORROW*, Second Edition (First Hill Books 2022). This paper was presented at the 2024 Northeast Ohio Faculty Colloquium, and we are grateful to all attendees who provided us with insightful comments. We also thank Michael Mahoney and Shelby Conklin for their dedicated research assistance.

[‡] John Deaver Drinko-BakerHostetler Professor of Law and Director of the Center for Professional Ethics, Case Western Reserve University School of Law.

Current legal mechanisms fail to resolve the tension between promoting personal autonomy and protecting public safety, and existing approaches to the problem are unsatisfactory. Requiring road tests of every older adult is both overly intrusive and economically inefficient. At the same time, however, revoking driving privileges only after an accident has occurred creates a public safety hazard. Without an effective system of regulation, informal practices emerge. Medical professionals who recognize that a patient's driving is likely to create a safety risk may either ignore the matter entirely or pressure family members to take the keys away from their loved one. And when accidents do happen, family members are sometimes sued for failing to prevent their loved one from taking the wheel.

This Article recommends a framework for enhanced medical and regulatory protocols to navigate the intricacies of driving with cognitive decline. It recognizes that earlier efforts to solve the problem have often failed because they relied too heavily on a single point of responsibility. Our proposed framework, by contrast, creates a connection between the medical provider and the motor vehicle regulator and sets out clear lines of responsibility. The Article develops recommendations for effective interventions, analyzing the role that physicians should play and proposing legislative changes. Driving with cognitive decline is a multifaceted challenge that impacts public safety, personal independence, family relationships, legal rights, and healthcare practices. Addressing it effectively requires a balanced and thoughtful approach that considers the needs and rights of all stakeholders.

TABLE OF CONTENTS

INTRODUCTION.....	4
I. COGNITIVE DECLINE.....	10
A. <i>Understanding Cognitive Decline</i>	10
B. <i>Cognitive Testing</i>	14
C. <i>Testing Driving Ability</i>	15
II. COMPLEXITIES OF THE LEGAL LANDSCAPE	18
A. <i>How the Legal System Incentivizes Risky Driving</i>	18
1. Law and Policy Shape the Risk Environment	18
2. Individual Choices are Constrained by the Broader Environment.....	21
B. <i>The Current Regulatory Environment</i>	22
1. Driver's License Laws	22
2. Federal and State Medical Confidentiality Laws	23
C. <i>Regulatory Gaps</i>	27
III. REGULATORY GAP FILLERS	27
A. <i>Private Ordering through Insurance Policies</i>	28
B. <i>Civil Justice Remedies</i>	33
C. <i>Investment in Technology and Infrastructure</i>	36
1. Assistive technology in individually owned vehicles.....	37
2. Transportation as a Service	40
IV. PRESERVING PATIENT AUTONOMY WHILE PROTECTING PUBLIC SAFETY	42
A. <i>Existing Regulatory Efforts</i>	42
1. Mandatory Reporting of Cognitive Decline Diagnoses	42
2. Cognitive Testing by DMV	44
3. Self-Reporting and Physician Certification.....	45
B. <i>The Proposed Solution for a More Comprehensive Legal Intervention</i>	46
1. Complementing Existing Legal Frameworks	48
2. Improving Policy Outcomes while Balancing Autonomy and Safety ..	49
V. CONCLUSION.....	54

INTRODUCTION

In 2012, Dr. Arthur Daigneault was sued by the family of William Powers, who was killed after his 85-year-old girlfriend, a dementia patient, steered her car into oncoming traffic while he was in the front passenger seat.¹ Daigneault had treated the driver, Lorraine Sullivan, for dementia for two years.² The wrongful death case alleged that he should have taken steps to have Sullivan's license revoked.³ The jury ultimately found that the doctor was not liable for Powers' death because he believed Sullivan's dementia was mild and thus was not required by California law to report it to the local health department.⁴

The question of what physicians should do when they know their patients suffer from cognitive decline and still drive is not unique to this case. This Article analyzes the risks that cognitive decline (also called cognitive impairment) poses for driving safety. It explores the often-feeble legal tools that are currently available to address these risks. The Article argues that when individuals are diagnosed with cognitive decline, evaluating driving ability and addressing driving risks must be essential components of the treatment plan. Because road safety is a significant public health concern,⁵ legal interventions are necessary to ensure that the driving aptitude of individuals with cognitive decline receives appropriate attention. The Article also offers recommendations for effective interventions, analyzing the role that physicians should play and proposing legislative changes.⁶

¹ Jessica Garrison & Alan Zarembo, *Doctor Sued over Fatal Crash by Patient with Dementia*, L.A. TIMES, Sept. 7, 2012, <https://www.latimes.com/local/la-xpm-2012-sep-07-la-me-elderly-drivers-20120907-story.html>.

² *Id.*

³ *Id.*

⁴ Brian Chase, *Doctor Not Liable for Dementia Patient's Collision*, ACCIDENT & INJURY NEWS, Sep. 19, 2012, <https://www.californiainjuryblog.com/doctor-not-liable-for-dementia/>; Aaron Sachs & Associates, P.C., California jury: Doctor not liable for accident caused by his dementia patient, Sep. 7, 2012, <https://www.autoinjury.com/blog/2012/september/california-jury-doctor-not-liable-for-accident-c/>. See CAL. HEALTH & SAFETY CODE §§ 103900(a) & (d) (1995).

⁵ Centers for Disease Control and Prevention, *Transportation Safety*, <https://www.cdc.gov/transportationsafety/index.html> (last reviewed Jan. 20, 2023) [hereinafter *Transportation Safety*] ("In the United States, motor vehicle crashes are a leading cause of death, and kill over 100 people every day.").

⁶ See Generally, AMERICAN GERIATRICS SOCIETY & ALICE POMIDOR, CLINICIAN'S GUIDE TO ASSESSING AND COUNSELING OLDER DRIVERS (4th ed. 2019),

The Federal Highway Administration estimates that approximately 32.5 million individuals seventy and older had licenses in 2021, including more than four million who were eighty-five and older.⁷ Over ninety-one percent of those in the seventy to eighty age range and 69.1 percent of the 85 and over population, still have licenses. Approximately 12.9 percent of all drivers are now 70 or older. According to the National Highway Traffic Safety Agency, by 2030 as many as sixty-two million drivers will be seniors.⁸

As individuals age, they are increasingly likely to experience cognitive decline. A study published in 2022 found that almost ten percent of U.S. seniors (those sixty-five and older) have dementia, and an additional twenty-two percent have mild cognitive impairment.⁹ Among people who are ninety and older, thirty-five percent have dementia.¹⁰ Experts estimate that between twenty-two and forty six percent of individuals who have mild to moderate dementia still drive.¹¹

The prevalence of dementia may also increase further because of COVID-19.¹² A growing body of evidence indicates that COVID-19 infections are associated with cognitive decline in older patients.¹³ The disease affects attention, memory, and executive

<https://www.safemobilityfl.com/pdfs/CliniciansGuide/CliniciansGuideOlderDriversComplete4thEdition.pdf>.

⁷ U.S. Department of Transportation Federal Highway Administration, *Highway Statistics 2021*, <https://www.fhwa.dot.gov/policyinformation/statistics/2021/dl20.cfm> (last modified Jan. 25, 2023).

⁸ National Highway Traffic Safety Agency, *Older Drivers*, <https://www.nhtsa.gov/book/countermeasures/countermeasures-work/older-drivers> (last visited Dec. 11, 2023).

⁹ Jennifer J. Manly et al., *Estimating the Prevalence of Dementia and Mild Cognitive Impairment in the US: The 2016 Health and Retirement Study Harmonized Cognitive Assessment Protocol Project*, 79 JAMA NEUROLOGY 1242, 1245 (2022).

¹⁰ *Id.* at 1247.

¹¹ Larisa J.N. Hill, Robert J. Pignolo & Ericka E. Tung, *Assessing and Counseling the Older Driver: A Concise Review for the Generalist Clinician*, 94 MAYO CLIN PROC. 1582, 1583 (2019) (“as of 2006, about 30% of adults with dementia were on the road”); Jung-Min Pyun, Min Ju Kang, Sohee Kim, Min Jae Baek, Min Jeong Wang & Sang Yun Kim, *Driving Cessation and Cognitive Dysfunction in Patients with Mild Cognitive Impairment*, 7 J. CLIN. MED. 545, 545 (2018).

¹² Alzheimer’s Association, *COVID-19 May Damage the Brain in Older Adults*, ALZ MAG. Winter 2021, <https://www.alz.org/news/2021/covid-19-may-damage-the-brain-in-older-adults> (last visited Dec. 11, 2023).

¹³ *Id.*; Ezekiel Gonzalez-Fernandez & Juebin Huang, *Cognitive Aspects of COVID-19*, CURRENT NEUROLOGY & NEUROSCIENCE REP. (2023),

functions.¹⁴ It also has been found to exacerbate existing cognitive impairment, thus accelerating the development of more advanced decline.¹⁵

According to some studies, older drivers with dementia are twice as likely to have a car accident as those without dementia.¹⁶ Drivers with mild dementia have been found to be ten times more likely to fail on-road driving tests than comparators without dementia.¹⁷ This is because driving requires a multitude of cognitive abilities.¹⁸ These include “working memory capacity, time-sharing ability, and spatial and perceptual skill.”¹⁹ Working memory refers to the ability to store information temporarily and manipulate it.²⁰ Time-sharing is the ability to switch one’s attention rapidly from one task to another when performing multiple tasks simultaneously.²¹ Spatial skills enable drivers

¹⁴ Gonzalez-Fernandez & Huang, *supra* note 13, at _____. Executive functions “include attentional control, working memory, inhibition, and problem-solving,” all of which help individuals “plan, monitor, and successfully execute their goals.” *Executive Function*, PSYCHOLOGY TODAY, <https://www.psychologytoday.com/us/basics/executive-function> (last visited Dec. 11, 2023).

¹⁵ Lucia Merla, Maria Cristina Montesi, Jessica Ticali, Bruno Bais, Alessandro Cavarape & GianLuca Colussi, *COVID-19 Accelerated Cognitive Decline in Elderly Patients with Pre-Existing Dementia Followed up in an Outpatient Memory Care Facility*, 12 J. CLIN. MED. 1845, at 1857-58 (2023).

¹⁶ David A. Drachman, Joan M. Swearer & Collaborative Study Group, *Driving and Alzheimer’s Disease: The Risk of Crashes*, 43 NEUROLOGY 2448, 2448 (1993) (reporting that Alzheimer’s disease “patients had a mean of 0.091 reported crashes per year compared with matched controls, who had an average of 0.040 reported crashes per year in the same period of time”); Lynn B. Meuleners, Jonathon Ng, Kyle Chow & Mark Stevenson, *Motor Vehicle Crashes and Dementia: A Population-Based Study*, 64 J. AM. GERIATR. SOC. 1039, 1043 (2016) (studying Australian drivers aged 50 and older).

¹⁷ Justin N. Chee et al., *Update on the Risk of Motor Vehicle Collision or Driving Impairment with Dementia: A Collaborative International Systematic Review and Meta-Analysis*, 25 AM. J. GERIATR. PSYCHIATRY 1376, 1385 (2017); Hill et al., *supra* note 11, at 1583. *But see* Judith H. J. Urlings, Ariane Cuenen, Tom Brijs, Mark Lutin & Ellen M. M. Jongen, *Aiding Medical Professionals in Fitness-to-Drive Screenings for Elderly Drivers: Development of an Office-Based Screening Tool*, 30 INTERNATIONAL PSYCHOGERIATRICS 1211, 1212 (2018) (“Studies on driver fitness among drivers with MCI or (very) mild dementia report wide ranges of fail rates during on-road tests of between 18% and 70%”).

¹⁸ David Kaber, Sangeun Jin, Maryam Zahabi & Carl Pankok Jr., *The Effect of Driver Cognitive Abilities and Distractions on Situation Awareness and Performance under Hazard Conditions*, 42 TRANSPORTATION RESEARCH PART F 177, 178 (2016); Andrew E. Budson, *What’s the Relationship between Memory Loss and Driving?*, HARVARD HEALTH PUBLISHING, Oct. 12, 2022, <https://www.health.harvard.edu/blog/whats-the-relationship-between-memory-loss-and-driving-202210122829>.

¹⁹ Kaber et al., *supra* note 18, at 178.

²⁰ *Id.*

²¹ American Psychological Association, *Time Sharing*, APA DICTIONARY OF PSYCHOLOGY, <https://dictionary.apa.org/time-sharing> (last visited Dec. 11, 2023).

to monitor other cars or obstacles to determine their locations in space by using the vehicle's windows and mirrors.²²

By contrast, some studies have found a lower risk of car crashes among older drivers with dementia than those without dementia.²³ Researchers attribute this outcome to the likelihood that many of the data subjects may have limited their driving because of their dementia diagnosis or had limitations imposed on them by loved ones or caregivers.²⁴ Such studies highlight the importance of intervention to reduce the risk of car accidents for drivers with cognitive decline. They also reveal that not everyone with cognitive decline must stop driving.²⁵ When Japan instituted a new cognitive testing program for drivers who were seventy-five and older, it found that 30,000 drivers had signs of dementia, but only 674 needed to have their licenses revoked.²⁶

One might assume that U.S. state licensing laws and departments of motor vehicles would establish adequate mechanisms to identify unsafe drivers and implement appropriate interventions. Unfortunately, that is not the case. One of us had an elderly relative who drove repeatedly into parked cars and mailboxes and yet received no more than a ticket and a gentle warning to be more careful each time this happened. Another relative successfully renewed her license in Massachusetts at age 92 after passing a vision test despite relying heavily on a walker while navigating the Registry of Motor Vehicles

²² Kaber et al., *supra* note 18, at 178.

²³ Laura A. Fraade-Blanar, Ryan N. Hansen, Kwun Chuen G. Chan, Jeanne M. Sears, Hilaire J. Thompson, Paul K. Crane & Beth E. Ebel, *Diagnosed Dementia and the Risk of Motor Vehicle Crash among Older Drivers*, 113 ACCID. ANAL. PREV. 47, 50 (2018) (noting that “a lower risk of crash [was found] among urban dwelling older adults with dementia, but not among suburban or rural residents”); Jindong Ding Petersen, Volkert Dirk Siersma, René Depont Christensen, Maria Munch Storsveen, Connie Thurøe Nielsen, Mikkel Vass & Frans Boch Waldorff, *Dementia and Road Traffic Accidents among Non-Institutionalized Older People in Denmark: A Danish Register-Based Nested Case-Control Study*, 47 SCANDINAVIAN J. PUB. HEALTH, 221, 224 (2019) (finding “a 57% lower ... [road traffic accident] risk in people with dementia compared to their matched controls”).

²⁴ Drachman et al., *supra* note 16, at 1042 (finding that after a hospitalization for dementia, individuals were far less likely to have accidents than their counterparts without dementia, most likely because the hospitalization induced them to stop driving); Fraade-Blanar et al., *supra* note 23 at 50; Peterson et al., *supra* note 23, at 224.

²⁵ Christopher C. Frank, Linda Lee & Frank Molnar, *Driving Assessment for People with Dementia*, 64 CANADIAN FAMILY PHYSICIAN 744, 744 (2018).

²⁶ Erin Blakemore, *Cognitive Test for Older Drivers Tied to More Safety for Them, Study Shows*, WASH. POST, Feb. 21, 2023, <https://www.washingtonpost.com/wellness/2023/02/17/older-drivers-dementia-test-safety/>.

office. Nobody thought to question whether her legs worked well enough to operate automobile pedals safely.

Most states either establish no special license renewal rules for older drivers or require renewal in person, more frequent renewals and/or vision tests.²⁷ Only Illinois routinely requires road tests for drivers who are seventy-five or older.²⁸ Only the District of Columbia and Nevada require a medical certification for some or all license renewals by drivers who are seventy and older.²⁹

In addition, few states have established reporting obligations related to drivers who may pose safety hazards because of cognitive deficits.³⁰ Only California, New Jersey, Oregon, and Pennsylvania require physicians to report at-risk drivers to state authorities.³¹ Moreover, states often do not train law enforcement officers on how to identify drivers who may be unsafe because of age-related conditions.³²

Those of us who have loved ones with cognitive decline are acutely aware of the challenges of convincing individuals to relinquish driving. For good reason, many older

²⁷ Steven Gursten, *Elderly Driving Laws by State*, TAOS INJURY LAWYERS, Nov. 29, 2018, <https://www.taosinjurylawyers.com/blog/elderly-driving-laws-by-state/#:~:text=Ohio%20%E2%80%93%20There%20are%20no%20special,their%20license%20every%20two%20years>; Insurance Institute for Highway Safety & Highway Loss Data Institute, *License Renewal Procedures* [hereinafter *License Renewal Procedures*], July 2023, <https://www.iihs.org/topics/older-drivers/license-renewal-laws-table>.

²⁸ 625 ILL. COMP. STAT. § 5/6-109(c) (2023); Governors Highway Safety Association, *Mature Drivers*, <https://www.ghsa.org/state-laws/issues/Mature%20Drivers?state=New%20Hampshire> (last reviewed March 2023); Highway Loss Data Institute, *Illinois Mandatory On-Road Driving Test for Older Drivers*, 33 HLDI BULLETIN 1, 1 (2016).

²⁹ DC.gov Department of Motor Vehicles, *Medical requirements*, <https://dmv.dc.gov/service/dmv-medical-requirements#:~:text=If%20you%20are%2070%20years%20old%20or%20older%2C%20when%20you,Pass%20the%20vision%20test> (last visited Dec. 11, 2023); DMV.com, *Senior Drivers in Nevada*, https://www.dmv.com/nv/nevada/senior-drivers?tg1=DVA&utm_content=dmv.com&utm_medium=dmv &utm_source=dmv.com&utm_term=organic_dmv&utm_campaign=organic_dmv (last updated Mar. 7, 2019) (establishing the requirement only for drivers who renew by mail); Governors Highway Safety Association, *supra* note 28.

³⁰ SHARONA HOFFMAN, *AGING WITH A PLAN: HOW A LITTLE THOUGHT TODAY CAN VASTLY IMPROVE YOUR TOMORROW*, Second Edition 148-49 (First Hill Books 2022).

³¹ CAL. HEALTH & SAFETY CODE §§ 103900(a) & (d) (1995); N.J. REV. STAT. §39:3-10.4 (1970); OR. REV. STAT. §807.710(2) (2018); 75 PA. STAT. AND CONS. STAT. ANN. § 1518 (2004).

³² Linda L. Hill, Jill Rybar, James Stowe & Jana Jahns, *Development of a Curriculum and Roadside Screening Tool for Law Enforcement Identification of Medical Impairment in Aging Drivers*, 3 INJURY EPIDEMIOLOGY 13, 14 (2016).

adults feel that driving is vital to their wellbeing.³³ When individuals stop driving, they may lose much of their autonomy and opportunities to remain socially active and intellectually engaged.³⁴ Social isolation, in turn can have significant physical and mental adverse effects.³⁵ It has been associated with depression, anxiety, substance abuse, high blood pressure, heart disease, and diabetes.³⁶ Over three-quarters of older Americans have inadequate public transportation options because they live in poorly served rural or suburban areas.³⁷ Consequently, many older adults are understandably very reluctant to surrender their driver's licenses.³⁸

This Article develops a proposal for state legislation that specifically addresses drivers with cognitive decline. The law should require physicians who diagnose patients with cognitive decline or an illness that is known to lead to cognitive decline to refer the individuals for driving competency tests that include road testing or validated simulations. The law should further require physicians to provide the state DMV with the following: 1) names of patients who refuse driving assessments, 2) names of patients who were assessed as being unable to continue driving, and 3) information about driving restrictions that testers recommended for patients. The law should mandate periodic

³³ HOFFMAN, *supra* note 30, at 142-43.

³⁴ R. C. Hamdy, A. Kinser, T. Kendall-Wilson, A. Depelteau, D,1 K. Whalen, & J. Culp, *Driving and Patients with Dementia*, 4 GERONTOL. GERIATR. MED. 1, 3 (2018) ("Withdrawing a patient's driving privileges ... has significant psycho-socio-economic repercussions"); Weidi Qin, Xiaoling Xiang & Harry Taylor, *Driving Cessation and Social Isolation in Older Adults*, 32 J. AGING & HEALTH 962, 962 (2019).

³⁵ *Id.*; National Aging and Disability Transportation Center, *Needs and Assessment: Survey of Older Adults, People with Disabilities, and Caregivers*, KRC RESEARCH, December 2018, at 12 http://www.krcresearch.com/wp-content/uploads/2018/12/KRC-nadtc-Survey-Report-120718-FINAL_for-web.pdf ("Close to 9 in 10 who stopped driving have been negatively impacted—from being isolated to dependent. This limits them living their lives to the fullest and makes them feel frustrated.").

³⁶ Judy Germany, *Combating the Effects of Social Isolation*, RUSH, <https://www.rush.edu/news/combating-effects-social-isolation#:~:text=And%20prolonged%20isolation%20can%20have,pressure%2C%20heart%20disease%20and%20diabetes> (last visited Dec. 11, 2023).

³⁷ National Aging and Disability Transportation Center, *Unique Issues Related to Older Adults and Transportation*, p. 5, <https://www.nadtc.org/about/transportation-aging-disability/unique-issues-related-to-older-adults-and-transportation/> (last visited Dec. 11, 2023) (noting that older adults are most likely to live in rural and suburban communities where "transit may be either nonexistent or so limited that only certain destinations are served"); TRIP, *Preserving the Mobility and Safety of Older Americans*, March 2018, p. 5, https://tripnet.org/wp-content/uploads/2018/08/Older_Americans_Mobility_TRIP_Report_2018.pdf ("The majority of older Americans – 79 percent- tend to live in car-dependent suburban and rural communities").

³⁸ Marlo Sollitto, *Taking the Keys Away: What to Do If a Senior Won't Stop Driving*, AGINGCARE, <https://www.agingcare.com/articles/taking-the-keys-if-mom-or-dad-wont-stop-driving-112307.htm> (last visited Dec. 11, 2023).

repetition of testing for individuals with cognitive decline or illnesses likely to lead to cognitive decline. Finally, it should provide immunity from liability related to patients' automobile crashes for physicians who comply with all of the above duties.

The remainder of the Article proceeds as follows. Part I provides background information regarding cognitive decline, cognitive testing, and driving assessments. Part II examines how the law shapes the problem of driving with cognitive impairments. It first examines how the legal system has developed to incentivize risk in driving and how individual choices are constrained by an environment of automobile supremacy. It then addresses relevant state and federal laws and regulations, including state driver's license statutes, the HIPAA Privacy Rule, state medical confidentiality laws, and the Equal Protection clause. It concludes that the regulatory infrastructure fails to hinder people from driving much longer than they should be. Part III analyzes the additional legal mechanisms of insurance contracts and tort liability, finding that they too contribute to uncertainty about driving with cognitive decline. Part IV formulates recommendations for legislative interventions and use of technology to enhance roadway safety. Part V concludes.

I. COGNITIVE DECLINE

Cognitive decline is often subtle and difficult to detect.³⁹ This Part provides background information about cognitive impairment. It also discusses various ways to test for this condition and for its impact on driving abilities.

A. Understanding Cognitive Decline

Human brains alter as individuals grow older.⁴⁰ Brains generally shrink in volume, lose white matter integrity and cortical density, and experience decline in neurotransmitter systems such as dopamine and serotonin.⁴¹ These changes can

³⁹ Cedars Sinai, *Mild Cognitive Impairment (MCI)*, <https://www.cedars-sinai.org/health-library/diseases-and-conditions/m/mild-cognitive-impairment-mci.html#:~:text=Symptoms%20of%20mild%20cognitive%20impairment,Forgetting%20important%20appointments%20or%20events> (last visited Aug. 1, 2023).

⁴⁰ Huan Liu et al., *Aging of Cerebral White Matter*, 34 AGEING RES. REV. 64, 64 (2017); Hannah Nichols, *What Happens to the Brain as We Age?*, MEDICALNEWSTODAY, <https://www.medicalnewstoday.com/articles/319185> (updated May 26, 2023); Ruth Peters, *Ageing and the Brain*, 82 POSTGRADUATE MED. J. 84, 84 (2006).

⁴¹ Liu et al., *supra* note 40, at 66; Nichols, *supra* note 40 (explaining that "Cortical density ... refers to the thinning of the outer-ridged surface of the brain due to declining synaptic connections" and that "the brain generates fewer chemical messengers with age, and it is this decrease in dopamine, acetylcholine,

adversely affect abilities such as memory, perception speed, learning, multitasking, planning, and decision-making.⁴²

Aging can have different impacts on brain health.⁴³ When older individuals' cognitive ability is compared to functioning at the age of thirty-five, they may demonstrate:

- *Super aging*, in which there is little to no cognitive decline, and mental faculties remain highly functioning even in later ages;
- *Normal aging*, in which there is some decline in cognitive performance, but not so much that it affects daily activity;
- *Mild cognitive impairment*, in which there is accelerated cognitive decline, but not rising to the level of significantly affecting daily life;
- and
- *Pathologic aging or dementia*, in which there is accelerated cognitive decline that does impair daily functioning.⁴⁴

Approximately twenty-two percent of seniors currently have mild cognitive impairment (MCI), and ten percent have dementia.⁴⁵ Ten to fifteen percent of individuals with MCI develop dementia each year.⁴⁶

serotonin, and norepinephrine activity that may play a role in declining cognition and memory and increasing depression"); Peters, *supra* note 40, at 84 ("the volume of the brain and/or its weight declines with age at a rate of around 5% per decade after age 40 with the actual rate of decline possibly increasing with age particularly over age 70"); Frances X. Shen, *Aging Judges*, 81 OHIO ST. L. J. 235, 253-54 (2020) (explaining that reduction in white matter integrity means "[d]isruptions in brain network connectivity").

⁴² American Psychological Association, *Understanding Aging Brains, How to Improve Memory and When to Seek Help*, <https://www.apa.org/pi/aging/memory-and-aging.pdf> (last visited Dec. 11, 2023); Liu et al., *supra* note 40, at 66; Nichols, *supra* note 40; Shen, *supra* note 41, at 253-54.

⁴³ Shen, *supra* note 41, at 251.

⁴⁴ *Id.*, at 251-52.

⁴⁵ Manly et al. *supra* note 9, at 1245.

⁴⁶ Alzheimer's Association. 2022 Alzheimer's Disease Facts and Figures, 18 ALZHEIMERS DEMENT. 81, 81 (2022), <https://www.alz.org/media/Documents/alzheimers-facts-and-figures-special-report-2022.pdf>; Mayo Clinic, *Mild Cognitive Impairment (MCI)*, Jan. 18, 2023, <https://www.mayoclinic.org/diseases-conditions/mild-cognitive-impairment/symptoms-causes/syc-20354578>.

As of 2023, 6.7 million Americans who were sixty-five or older (10.7 percent of seniors) were afflicted with Alzheimer's dementia.⁴⁷ Seventy-three percent of these individuals were seventy-five and older.⁴⁸

Moreover, Alzheimer's disease is responsible for no more than sixty to eighty percent of dementia cases.⁴⁹ Many people suffer from dementia caused by other conditions, including cerebrovascular disease, Lewy body disease, frontotemporal lobar degeneration (FTLD), and Parkinson's disease.⁵⁰

Dementia can develop before the age of sixty-five.⁵¹ For example, sixty percent of individuals with FTLD are forty-five to sixty years old.⁵² Researchers believe that among people who are thirty to sixty-four years old, 110 out of every 100,000 (about 200,000 Americans) have younger-onset Alzheimer's dementia.⁵³

The Mayo Clinic lists the following as signs and symptoms of dementia:

Cognitive changes

- Memory loss, which is usually noticed by someone else.
- Problems communicating or finding words.
- Trouble with visual and spatial abilities, such as getting lost while driving.
- Problems with reasoning or problem-solving.
- Trouble performing complex tasks.
- Trouble with planning and organizing.
- Poor coordination and control of movements.
- Confusion and disorientation.

Psychological changes

- Personality changes.
- Depression.
- Anxiety.

⁴⁷ Alzheimer's Association, *2023 Alzheimer's Disease Facts and Figures*, 19 ALZHEIMERS DEMENT. 1, 20 (2023), www.alz.org/media/Documents/alzheimers-facts-and-figures.pdf [hereinafter *2023 Alzheimer's Disease Facts*].

⁴⁸ *Id.*

⁴⁹ *Id.* at 7.

⁵⁰ *Id.* at 6.

⁵¹ *Id.* at 20.

⁵² *Id.* at 7.

⁵³ *Id.*

- Agitation.
- Inappropriate behavior.
- Being suspicious, known as paranoia.
- Seeing things that aren't there, known as hallucinations.⁵⁴

Despite all these signals, many people do not discuss cognitive symptoms with their physicians.⁵⁵ Only four out of ten surveyed adults indicated that they would consult a doctor as soon as they noticed indications of MCI.⁵⁶ Furthermore, many people who have dementia do not understand or recognize that they have the condition because of their cognitive limitations or denial.⁵⁷

Dementia evolves through a number of phases. The well-established Global Deterioration Scale identifies seven stages of primary degenerative dementia.⁵⁸ They are: 1) no cognitive decline, 2) very mild cognitive decline, 3) mild cognitive decline, 4) moderate cognitive decline, 5) moderately severe cognitive decline, 6) severe cognitive decline, and 7) very severe cognitive decline.⁵⁹ Other experts believe there are three to five stages of dementia progression.⁶⁰

⁵⁴ Mayo Clinic, *Dementia: Overview*, Aug. 30, 2023 <https://www.mayoclinic.org/diseases-conditions/dementia/symptoms-causes/syc-20352013>.

⁵⁵ 2023 *Alzheimer's Disease Facts*, *supra* note 47, at 86.

⁵⁶ *Id.* at 87; Centers for Disease Control and Prevention, *Advancing Early Detection*, <https://www.cdc.gov/aging/healthybrain/issue-maps/early-detection.html> (last reviewed Feb. 4, 2019) (“over half of the people aged 45 and older with subjective cognitive decline have not talked with a healthcare provider”).

⁵⁷ 2023 *Alzheimer's Disease Facts*, *supra* note 47, at 21; Centers for Disease Control and Prevention, *supra* note 56 (“Among older adults who have been diagnosed with dementia, only 35% are aware that they have the disease.”); Senior Helpers, *Are Dementia Patients Aware They Have Dementia?*, <https://www.seniorhelpers.com/fl/orlando/resources/blogs/are-dementia-patients-aware-they-have-it-senior-helpers/#:~:text=Many%20dementia%20patients%20are%20not,or%20to%20understand%20their%20condition> (last visited Dec. 11, 2023).

⁵⁸ Barry Reisberg et al., *The Global Deterioration Scale for Assessment of Primary Degenerative Dementia*, 139 AM. J. PSYCHOL. 1136-39 (1982).

⁵⁹ See Geriatric Resources Inc., *Global Deterioration Scale* (Sept. 14, 2005), <https://geriatrictoolkit.missouri.edu/cog/Global-Deterioration-Scale.pdf>.

⁶⁰ See Alzheimer's Association, *Stages of Alzheimer's*, <https://www.alz.org/alzheimers-dementia/stages> (last visited Dec. 11, 2023) (describing three stages of Alzheimer's disease dementia: early, middle, and late); Mayo Clinic Staff, *Alzheimer's Stages: How the Disease Progresses*, MAYO CLINIC (June 7, 2023), <https://www.mayoclinic.org/diseases-conditions/alzheimers-disease/in-depth/alzheimers-stages/art-20048448> (describing five stages: preclinical Alzheimer's disease, mild cognitive impairment, mild dementia, moderate dementia, and severe dementia).

Alzheimer's disease advances at variable rates.⁶¹ On average, people aged sixty-five and older live four to eight years after diagnosis of Alzheimer's dementia, but some survive for as long as twenty years.⁶²

In some cases, cognitive decline is caused by treatable medical conditions.⁶³ Examples are thyroid problems, drug side effects, and vitamin deficiencies.⁶⁴ In such instances, cognitive deficits may resolve or diminish significantly following medical intervention.⁶⁵ Thus, they would not affect driving ability in the long-term.

B. Cognitive Testing

Many different testing tools can assess cognitive capacities.⁶⁶ Some tests take only a few minutes and are designed to determine whether individuals should undergo further evaluations.⁶⁷ Examples are:

- The *Mini-Cog* measures short-term memory and clock drawing and takes two to four minutes.
- The *Memory Impairment Screen* (MIS) asks patients to place four words into four categories and then to recall the words two or three minutes later.
- The *General Practitioner Assessment of Cognition* (GPCOG) is a brief test involving recall and clock drawing, and a short conversation with a caregiver or family member to discuss the patient's working memory, mental flexibility, and self-control.
- The *Montreal Cognitive Assessment* (MoCA) lasts ten to fifteen minutes and evaluates a patient's ability to draw a clock, abstract thinking, mental flexibility, working memory, and self-control.

⁶¹ Mayo Clinic Staff, *supra* note 60.

⁶² 2023 Alzheimer's Disease Facts, *supra* note 47, at 38.

⁶³ Cognitive Testing, MEDLINEPLUS, <https://medlineplus.gov/lab-tests/cognitive-testing/> (last updated May 4, 2023).

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ José Wagner Leonel Tavares-Júnior et al., *Cognitive Assessment Tools for Screening Older Adults with Low Levels of Education: A Critical Review*, 10 FRONTIERS IN PSYCH. 1, 3 (2019), <https://www.frontiersin.org/articles/10.3389/fpsy.2019.00878/full> (asserting that the researchers identified 44 tools).

⁶⁷ American Academy of Family Physicians, *Cognitive Evaluation*, <https://www.aafp.org/family-physician/patient-care/care-resources/cognitive-care/cognitive-evaluation.html> (last visited Dec. 11, 2023); Department of Health and Human Services, Centers for Medicare and Medicaid Services, *Cognitive Assessment Tools* 2 (Dec. 15, 2017), <https://www.cms.gov/Outreach-and-Education/American-Indian-Alaska-Native/AIAN/LTSS-TA-Center/pdf/Best-Practices-Dementia-Cognitive-Assessment-Tools.pdf>.

- The *Saint Louis University Mental Status* (SLUMS) consists of eleven items including clock drawing, recognition of figures, and other activities to measure orientation, attention, and short-term recall.
- The Mini-Mental State Examination (MMSE) “assesses orientation, word recall, attention, and visuospatial thinking” and takes approximately ten minutes.⁶⁸

A number of tools are also available for self-administration so that individuals can determine whether they have a cognitive deficit that requires medical attention. These include the SAGE exam,⁶⁹ an at-home version of the MMSE,⁷⁰ brief questionnaires offered by Psycom,⁷¹ and others.⁷²

Comprehensive neuropsychological testing lasts several hours and is significantly more reliable.⁷³ Testing typically entails some or all of the following: writing, drawing, answering questions, solving puzzles, and computer exercises.⁷⁴

C. Testing Driving Ability

A key question for purposes of this Article is whether cognitive testing can effectively assess individuals’ driving ability. Not all cognitive tests are equally illuminating in this regard.⁷⁵ For example, the MMSE is not illuminating with respect to

⁶⁸ Department of Health and Human Services, *supra* note 67, at 3-6. Clock drawing measures visual and spatial problems that early dementia patients commonly have, as demonstrated by spacing numbers on the clock incorrectly. Working memory is short-term recall that is used to accomplish tasks such as buying the correct items in a store. Mental flexibility enables individuals to shift from one thought to another. *Id.* at 3-4.

⁶⁹ The Ohio State University Wexner Medical Center, *SAGE: A Test to Detect Signs of Alzheimer’s and Dementia*, <https://wexnermedical.osu.edu/brain-spine-neuro/memory-disorders/sage> (last visited Dec. 11, 2023).

⁷⁰ *Online, At-Home & Clinical Tests for Alzheimer’s, Dementia & Aging-Related Mental Decline*, DEMENTIA CARE CENTRAL, [hereinafter *Online, At-Home & Clinical Tests*], <https://www.dementiacarecentral.com/alzheimers-online-test/> (last updated Dec. 24, 2022).

⁷¹ *Dementia Test (Self-Assessment)*, PSYCOM, <https://www.psycom.net/dementia-test/> (last updated Feb. 9, 2022).

⁷² *Online, At-Home & Clinical Tests*, *supra* note 70.

⁷³ Ryan W. Schroeder, Phillip K. Martin & Anne Walling, *Neuropsychological Evaluations in Adults*, 99 AM. FAM. PHYSICIAN 101, 101 (2019); Cleveland Clinic, *What is Neuropsychology?*, <https://my.clevelandclinic.org/health/diagnostics/4893-neuropsychological-testing--assessment> (last reviewed Oct. 15, 2020) (stating that two to four hours is the typical length of neuropsychological testing, though exams can take anywhere from one to eight hours).

⁷⁴ Schroeder et al., *supra* note 73, at 101-103; Cleveland Clinic, *supra* note 73.

⁷⁵ Donald R. Royall, Jeffrey A. Cordes & Marsha Polk, *CLOX: an Executive Clock Drawing Task*, 64 J. NEUROL. NEUROSURG. PSYCHIATRY 588, 588 (1998) (asserting that the MMSE is not effective as an assessment of driving ability).

driving ability.⁷⁶ The Clinical Assessment of Driver-Related Skills (CADReS) is a comprehensive tool that clinicians can use to evaluate vision, cognition, and motor/sensory functions and thus gauge car crash risk.⁷⁷ The cognitive components of CADReS⁷⁸ consist of the MoCA,⁷⁹ a clock-drawing test, a trail making test,⁸⁰ and a maze test.⁸¹ Clock drawing is informative because individuals with early dementia often cannot draw clocks correctly, thereby indicating that they may have difficulty with executive function,⁸² visual-spatial ability, motor programming, attention, and concentration.⁸³

The CADReS, however, is very time-consuming and could not routinely be used by time-pressured physicians who treat elderly patients.⁸⁴ According to one medical expert, doctors could instead use brief executive function tests such as Clox (a clock-drawing test)⁸⁵ and the Trail Making Test, as initial screening tools to evaluate driving capacity.⁸⁶

⁷⁶ *Id.*; AMERICAN GERIATRICS SOCIETY & ALICE POMIDOR, *supra* note 6, at 50 (“There is clear evidence that the Mini-Mental State Exam is not related to outcomes in crashes or driving abilities”).

⁷⁷ Sang Chul Kim, So Yeon Kong, Sang-Yong Eom, Byongho Choe & Seung Jun Hong, *Functional Assessment of Driving Capacity of Older Drivers Compared with Non-older Drivers Using Clinical Evaluations and Driving Simulations*, 25 ANN. GERIATR. MED. RES. 105, 106 (2021).

⁷⁸ AMERICAN GERIATRICS SOCIETY & ALICE POMIDOR, *supra* note 6, at 39-40.

⁷⁹ See *supra* note 68 and accompanying text.

⁸⁰ Esther Heerema, *The Trail Making Test for Dementia*, VERYWELLHEALTH, <https://www.verywellhealth.com/dementia-screening-tool-the-trail-making-test-98624> (updated May 27, 2023) (explaining that the test involves twenty-five circles with numbers or letters and patients are asked to connect them with lines in different ways).

⁸¹ AMERICAN GERIATRICS SOCIETY & ALICE POMIDOR, *supra* note 6, at 269-73 (explaining that test-takers are asked to draw a line representing the route from the maze’s entrance to its exit); Association for Psychological Science, *Simple Maze Test Could Help Identify Drivers’ Accident Risk*, Feb. 25, 2015, <https://www.psychologicalscience.org/news/motr/simple-maze-test-could-help-identify-at-risk-older-drivers.html>.

⁸² For a definition of executive functions see *supra* note 14.

⁸³ Esther Heerema, *How the Clock-Drawing Test Screens for Dementia*, VERYWELLHEALTH, Apr. 8, 2022, <https://www.verywellhealth.com/the-clock-drawing-test-98619>.

⁸⁴ Megan C. Harney & Piero G. Antuono, *Driving and Dementia: A Physician’s Perspective*, 6 MARQ. ELDER’S ADVISOR 135, 146-47 (2004).

⁸⁵ Donald R. Royall, Jeffrey A. Cordes & Marsha Polk, *CLOX: an Executive Clock Drawing Task*, 64 J. NEUROL. NEUROSURG. PSYCHIATRY 588, 588 (1998).

⁸⁶ Harney & Antuono, *supra* note 84, at 146-47. See also, Christopher C. Frank et al., *supra* note 25, at 744 (stating that the clock drawing and trail making tests can be helpful but “[c]orroborating history is critical”).

Moreover, no cognitive test, including CARDeS, is as effective as on-road driving tests, which are considered to be the gold standard for evaluating driving ability.⁸⁷ Consequently individuals who are identified as being at risk after taking cognitive tests should undergo formal driving assessments, including road testing.⁸⁸ Such driving assessments can be obtained not only through DMVs, but also through occupational therapy driver rehabilitation programs, county or city offices on aging, and Veterans Administration or other rehabilitation facilities.⁸⁹

Instead of road testing, testers may use driving simulations.⁹⁰ Simulation devices can test drivers' perception-response abilities by presenting them with scenarios that require sudden reactions involving steering and braking.⁹¹ Some researchers have noted "a lack of shared and standardized methodologies and protocols" among driving simulation procedures that make it difficult to compare this type of testing to its on-road counterpart.⁹² Nevertheless, there is some evidence that simulations can constitute an effective alternative to on-road testing so long as their validity has been verified.⁹³

⁸⁷ AMERICAN GERIATRICS SOCIETY & ALICE POMIDOR, *supra* note 6, at 30; Brian Ott et al., *Assessment of Driving-Related Skills Prediction of Unsafe Driving in Older Adults in the Office Setting*, 61 J. AM. GERIATR. SOC. 1164, 1168 (2013) ("In its present form, the ADReS has limited utility as a screening test, and batteries with greater diagnostic accuracy are still needed for general office practice.").

⁸⁸ AARP, *What Is a Formal Driving Assessment?*, Sep. 3, 2013, <https://www.aarp.org/auto/driver-safety/formal-driving-assessment/> (explaining that formal driving assessments "consist of a clinical evaluation (including a variety of cognitive, visual and physical assessments) and an on-the-road test"); AMERICAN GERIATRICS SOCIETY & ALICE POMIDOR, *supra* note 6, at 30; New York State Department of Motor Vehicles, *Assessment of Your Driving Skills*, <https://dmv.ny.gov/older-driver/assessment-your-driving-skills> (last visited Dec. 11, 2023).

⁸⁹ AARP, *supra* note 88. See e.g., Cleveland Clinic, *Driver's Evaluation Rehabilitation*, [hereinafter *Driver's Evaluation Rehabilitation*], <https://my.clevelandclinic.org/departments/rehabilitation/services/drivers-evaluation> (last visited Dec. 11, 2023).

⁹⁰ Riccardo Bartolozzi & Francesco Frendo, *Definition of Simulated Driving Tests for the Evaluation of Drivers' Reactions and Responses*, 15 TRAFFIC INJ. PREV. 302, 302 (2014) ("driving simulators represent a fundamental tool that allows researchers to carry out safe, repeatable, and completely monitored experiments involving human drivers"); David Brian Carr & Ganesh Muneshwar Babulal, *Addressing the Complex Driving Needs of an Aging Population*, 330 JAMA 1187, 1187 (2023) ("Driving in an artificial environment on a driving simulator is an alternative to conventional road examinations and tests").

⁹¹ Bartolozzi & Frendo, *supra* note 90, at 302.

⁹² Alessandro Oronzo Caffò et al., *The Drives for Driving Simulation: A Scientometric Analysis and a Selective Review of Reviews on Simulated Driving Research*, 11 FRONT. PSYCHOL. Art. 917, at 15 (2020).

⁹³ *Id.*; Ramona Kenntner-Mabiala, C. Maag, Yvonne Kaussner, S. Hoffmann & Markus Schumacher, *Are Driving Simulators Suitable to Measure the Driving Competence of Elderly Drivers?*, Proceedings of the Tenth International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design, 335 (2019) ("The findings of the study confirm the validity of driving simulation as a tool to diagnose

Simulations may be particularly useful when there is concern that the driver is not competent enough to engage in road testing safely.⁹⁴

II. COMPLEXITIES OF THE LEGAL LANDSCAPE

The prospect of driving with cognitive decline raises a variety of legal questions of surprising depth and complexity. First, legal developments in the United States “across nearly every field of law” have contributed to a structure of “automobile supremacy.”⁹⁵ Even the Supreme Court has acknowledged that driving is a “virtual necessity” for ease of movement throughout American society.⁹⁶ Second, the regulatory environment adds a layer of complexity. The states have adopted different approaches to regulating driving competency.⁹⁷ Medical privacy rules and the equal protection doctrine also play a role, stretching a web of federal and constitutional law over the state regulatory systems. Yet, this complicated legal ecosystem fails to address the needs of drivers with cognitive impairments and creates risks for others on the road.

A. How the Legal System Incentivizes Risky Driving

Why is it so difficult for individuals to contemplate giving up driving when faced with a diagnosis of progressive cognitive decline? Several factors rooted in policy, law, and psychology each play a role in keeping people on the road—often for longer than they should be.

1. Law and Policy Shape the Risk Environment

driving ability and argue for its introduction as a diagnostic tool.”); Lauren Marchman Cochran & Anne E. Dickerson, *Driving While Navigating: On-Road Driving Performance Using GPS or Printed Instructions*, 86 CANADIAN J OCC. THERAPY 61, 62 (2019). *But see*, Matthew C. Costello, Peggy P. Barco, Kevin J. Manning, and Kimberly E. O’Brien, *Older Adult Driving Performance Assessed under Simulated and On-Road Conditions*, 15 APPLIED NEUROPSYCHOLOGY: ADULT 1, 1 (2022) (testing 61 adults aged 66-92 using simulated and on-road testing and concluding that simulation “cannot serve as a clear proxy for on-road driving.”).

⁹⁴ *Driver’s Evaluation Rehabilitation*, *supra* note 89 (referring to drivers who are “safe to do an on-the-road assessment”).

⁹⁵ Gregory H. Shill, *Should Law Subsidize Driving?*, 95 N.Y.U. L. REV. 498, 502 (2020).

⁹⁶ *Wooley v. Maynard*, U.S. 705, 715 (1977) (noting that “driving an automobile” is “a virtual necessity for most Americans”); William E. Crozier & Brandon L. Garrett, *Driven to Failure: An Empirical Analysis of Driver’s License Suspension in North Carolina*, 69 DUKE L.J. 1585, 1587 (2020) (noting that driver’s license suspension “can result in negative consequences ranging from job loss, to restricted career opportunities, to limited mobility”).

⁹⁷ *See generally*, Margaret F. Brinig, *The Public Choice of Driving Competence Regulations*, 21 NOTRE DAME J. L. ETHICS & PUBLIC POL’Y 405 (2007).

Journalist Jessie Singer has examined automobile crashes within the larger context of preventable deaths, including toxic chemical spills, mining explosions, and plane crashes.⁹⁸ Singer notes that “the accidental death toll in the United States is now over 200,000 a year,” (including more than 40,000 annual traffic fatalities), meaning that more Americans die by accident than die from “stroke, Alzheimer’s disease, diabetes, pneumonia, kidney failure, suicide, septicemia, liver disease, hypertension, Parkinson’s disease, or terrorism.”⁹⁹ Her conclusion, which is also the title of her influential book, is that “there are no accidents.” Instead, it is American policy choices, baked into the law, that create the environment of risk.

These policy choices, Singer explains, are “distinctly American.”¹⁰⁰ Other rich countries, including Australia, Austria, Canada, Denmark, France, Germany, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the U.K. all have far lower rates of accidental death. In fact, the risk of accidental death was 40% higher in the United States than in Norway (“the next-most-dangerous wealthy nation”).¹⁰¹ These American injuries and deaths cost \$1.09 trillion in 2019, including lost wages, insurance payouts, medical expenses, and related costs.¹⁰² The human toll of grief and loss is even higher. Singer explains that these losses are not inevitable. Instead, injuries and deaths are a predictable consequence of how we choose to regulate—or not regulate—our workplaces, roads, and heavy equipment.

Both courts and scholars have long acknowledged the car-centric nature of American life.¹⁰³ Recently, however, scholars have begun to more deeply examine how law and policy choices have created a system of car-dependency and unnecessarily increased risk on the road. Professor Greg Shill has published an influential law-review

⁹⁸ JESSIE SINGER, *THERE ARE NO ACCIDENTS: THE DEADLY RISE OF INJURY AND DISASTER—WHO PROFITS AND WHO PAYS THE PRICE* (2022).

⁹⁹ *Id.* at 1.

¹⁰⁰ *Id.* at 6.

¹⁰¹ *Id.*

¹⁰² *Id.* at 7.

¹⁰³ Indeed, car dependency was so normalized that the Supreme Court could parenthetically note that driving is “a virtual necessity for most Americans” when analyzing whether the presence of a state motto on automobile license plates complied with First Amendment guarantees. *Wooley v. Maynard*, U.S. 705, 715 (1977).

article examining how the law subsidizes driving,¹⁰⁴ along with a companion piece in the *Atlantic*, tracing the legal developments that led to widespread car dependency.¹⁰⁵

Shill convincingly makes the case that “the entire legal system plays a role in encouraging driving,” tracing automobile supremacy through legal developments that include under-enforced speed restrictions making driving faster, density limits in zoning that discourage walking and make mass transit prohibitively expensive, parking requirements for new construction that make car-use more convenient, tax laws that directly subsidize the purchase of certain vehicles,¹⁰⁶ and contract, tort, and even criminal laws that fail to hold drivers and car companies responsible for the full measure of injury and death arising out of automobile use.¹⁰⁷ Where Singer explores how policy choices shape the risk environment in the United States, Shill details how that process works in the transportation realm, explaining how particular regulatory choices and common-law legal doctrines keep Americans dependent on automobile transportation and create traffic hazards.¹⁰⁸ Although Singer and Shill come to the problem from different angles, they both share a similar fundamental insight: the legal system isn’t merely responding to personal preference for automobile travel or allocating responsibility for traffic harms caused by individuals—instead, our law and policy create the very context in which those preferences and harms arise.¹⁰⁹ As Singer explains, “[p]eople who blame individuals for

¹⁰⁴ Shill, *supra* note 95.

¹⁰⁵ Gregory H. Shill, *Americans Shouldn’t Have to Drive, but the Law Insists on It*. THE ATLANTIC. July 9, 2019, at <https://www.theatlantic.com/ideas/archive/2019/07/car-crashes-arent-always-unavoidable/592447/>.

¹⁰⁶ Shill, *supra* note 95, at 558 (explaining that the government’s corporate average fuel economy (CAFE) standard “incentivizes car companies to manufacture large, dirty vehicles, which enjoy a special loophole carved out for ‘light trucks’ a category that today encompasses pickup trucks, sport utility vehicles, and minivans”); *id.* at 571 (explaining that the “federal government pays a credit of \$2500 to \$7500 towards the purchase of a qualified plug-in electric car, including passenger vehicles and light trucks,” while offering no such incentive to encourage the adoption of alternative transportation mode such as “e-bikes, scooters, or any mode other than cars”) (emphasis in original).

¹⁰⁷ Shill, *supra* note 95, at 541-56 (criticizing zoning restrictions that prohibit multi-family structures and observing that “[i]t is difficult to advocate effectively for frequent transit in a city that lacks density, and it is difficult to advocate for density in a city that lacks transit”).

¹⁰⁸ *Id.* at 579 (“Entire fields of law and even the American conception of freedom itself bend to the car, whose needs take precedence over society’s interests in health and welfare, housing, and economic and social vitality.”).

¹⁰⁹ Shill, *supra* note 95, at 556 (explaining that “[t]he law produces a higher level and risk of driving than would be socially optimal” and that “[a]ddressing this disequilibrium will require many reforms”); Singer, *supra* note 98 (explaining law and policy changes that could reduce accidental death).

accidents and crimes are almost always drawing attention away from the systems that allowed the death and injury, and the vast potential for prevention.”¹¹⁰

2. Individual Choices are Constrained by the Broader Environment

When American law and policy create a system of automobile supremacy, it’s not surprising that individuals are reluctant to give up driving. One study of older adults (an age group with a significantly higher risk of cognitive decline) examined the barriers to driving cessation.¹¹¹ The study found nearly 75% of older Americans “live in low-density suburban or rural areas,” and thus had few other transportation options. Older Americans were also more likely to have difficulty walking, which in turn created barriers to accessing bus stops or train stations even in cities where such options existed.¹¹² Driving was therefore necessary for integration into much of American society.

The social interactions that driving enables are vital to individuals’ quality of life. As the authors explained, their study found that driving meant “retaining functional independence and personal autonomy.”¹¹³ Driving cessation, on the other hand, was tied to negative outcomes—including “decreased out-of-home activity,” a decline in “psychosocial and physical well-being,” smaller friendship networks, increased depression, and “accelerated health decline.”¹¹⁴ In American society, giving up the car keys can mean giving up wellbeing.

Individuals facing cognitive decline face all of these barriers to driving cessation, but are also likely to experience added psychological distress.¹¹⁵ One study examined driving cessation among people diagnosed with dementia.¹¹⁶ It found that loss of driving privileges “can represent symbolic losses that extend beyond the practical aspects of everyday survival.”¹¹⁷ People who had previously defined themselves through their occupations, their activities, and their caregiving responsibilities faced an identity disruption, as the loss of driving meant the loss of their previous roles at home and work.

¹¹⁰ Singer, *supra* note 98, at 255.

¹¹¹ Andrew Schouten, Martin Wach, Evelyn A. Blumenberg, & Hannah R. King, *Cohort Analysis of Driving Cessation and Limitation Among Older Adults*, 49 TRANSP. 841 (2022).

¹¹² *Id.* at 861.

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ Sarah Sanford, Mark. J. Rapoport, Holly Tuokko, Alexander Crizzle, Stephanie Hatzfilalithis, & Sarah Laberge, *Independence, Loss, and Social Identity Perspectives on Driving Cessation and Dementia*, 18 Dementia 2906 (2018).

¹¹⁶ *Id.*

¹¹⁷ *Id.* at 2919.

The study reported that “people tended to view themselves as older following driving cessation.”¹¹⁸ Likewise, the decision to stop driving marked “a potential advancement to a more severe stage of dementia,” thus psychologically tying the loss of a driver’s license to the “perception of an impending decline.”¹¹⁹

These factors combine to keep people in the driver’s seat longer than they should be. Thus, even though one might hope that seniors will recognize their own limitations or accept others’ advice and voluntarily stop driving when appropriate, all too often this is not the case.¹²⁰

B. The Current Regulatory Environment

Because American society is largely car-dependent, state and federal regulatory structures attempt to balance the competing needs of road safety, personal autonomy, and medical privacy. In particular, driver licensing focuses on safety.¹²¹ Constitutional protections and medical privacy laws protect patient autonomy and privacy.¹²² As these regulatory structures are designed to promote different goals and objectives, they do not always blend seamlessly.

1. Driver’s License Laws

All states have driver’s license renewal laws.¹²³ The vast majority of states, however, have anemic renewal requirements.¹²⁴ Many establish no special license renewal rules for older drivers.¹²⁵ Others do no more than require that after a certain age, individuals renew licenses in person, renew more frequently, and/or undergo vision tests.¹²⁶ Only Illinois mandates road tests for all drivers who are seventy-five or older.¹²⁷ The District of Columbia requires a medical certification for renewal after age seventy,

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ Harney & Antuono, *supra* note 84, at 138–39. *See also* Vasiliki L. Tripodis, Note, *Licensing Policies For Older Drivers: Balancing Public Safety With Individual Mobility*, 38 B.C. L. Rev. 1051, 1052 (1997) (noting that a driver’s license “serves as a symbol of freedom, independence and self-sufficiency” and “also reinforces one’s identity as a functioning and socially capable adult”).

¹²¹ *See infra* Part II.B.1.

¹²² *See infra* Part II.B.2.

¹²³ Steven Gursten, *supra* note 27.

¹²⁴ *Id.*; *License Renewal Procedures*, *supra* note 27.

¹²⁵ *License Renewal Procedures*, *supra* note 27.

¹²⁶ *Id.*

¹²⁷ 625 ILL. COMP. STAT. § 5/6-109(c) (2023); N.H. REV. STAT. § 263:7(I) (2014).

and Nevada does so for drivers seventy and older who renew by mail, but no other states have followed this model.¹²⁸

Most states have no laws that specifically address driving with cognitive impairment.¹²⁹ Physicians are required to report cognitively impaired drivers only in California, Nevada, New Jersey, Oregon, and Pennsylvania,¹³⁰ though all states permit them to submit reports.¹³¹ Other states allow but do not obligate various other parties, such as relatives, friends, and law enforcement personnel to request driving assessments.¹³² For example, Massachusetts accepts reports from physicians and law enforcement.¹³³ In North Carolina anyone can request that a driver undergo medical evaluation.¹³⁴

2. Federal and State Medical Confidentiality Laws

The HIPAA Privacy Rule. The HIPAA Privacy Rule is a set of federal regulations that govern physicians' disclosure of medical information and allow patients to control their medical records to a degree.¹³⁵ The Privacy Rule establishes that, with some exceptions, covered entities must obtain patients' permission before disclosing their medical data to others.¹³⁶ These exceptions, however, are broad, and several are relevant here. First, covered entities may divulge patients' medical information without their permission for purposes of treatment.¹³⁷ Treatment includes "referral of a patient for

¹²⁸ DC.gov Department of Motor Vehicles, *supra* note 29, DMV.com, *supra* note 29; Governors Highway Safety Association, *supra* note 28.

¹²⁹ Dementia Care Central, *Driving & Dementia / Alzheimer's: State Laws, Coping & Advice for Caregivers*, <https://www.dementiacarecentral.com/caregiverinfo/driving-problems/> (last updated May 4, 2023).

¹³⁰ CAL. HEALTH & SAFETY CODE §§ 103900(a) & (d) (1995); NEV. ADMIN. CODE 483.330 (1997); N.J. REV. STAT. §39:3-10.4 (1970); OR. REV. STAT. §807.710(2) (2018); 75 PA. STAT. AND CONS. STAT. ANN. § 1518 (2004).

¹³¹ Jeffrey T Berger, Fred Rosner, Pieter Kark & Allen J Bennett, *Reporting by Physicians of Impaired Drivers and Potentially Impaired Drivers*, 15 J. GEN. INTERN. MED. 667, 669 (2000).

¹³² Dementia Care Central, *supra* note 129.

¹³³ Massachusetts Registry of Motor Vehicles, Report a Medically Impaired Driver, <https://www.mass.gov/how-to/report-a-medically-impaired-driver#:~:text=A%20law%20enforcement%20official%20or,licensing%20action%20from%20the%20RMV.> (last visited Dec. 11, 2023).

¹³⁴ North Carolina, *Requests for Medical Evaluation*, <https://www.ncdot.gov/dmv/license-id/license-suspension/medical-review-program/Pages/medical-evaluation-requests.aspx> (last updated Jul. 21, 2019).

¹³⁵ 45 C.F.R. §§ 160.101-534 (2023).

¹³⁶ 45 C.F.R. §§ 164.508 - .510 (2023).

¹³⁷ 45 C.F.R. §164.506 (2023).

health care from one health care provider to another.”¹³⁸ Ordering a driving test for purposes of assessing an individual’s ability to drive safely should be considered part of treatment for HIPAA purposes, and driving tests are often conducted at health care facilities.¹³⁹

As noted above, state legislation requires or permits physicians to report at-risk drivers to the DMV,¹⁴⁰ and such reporting does not violate HIPAA. Under HIPAA, health care providers need not obtain patient authorization for disclosures that are: (1) required by law; (2) necessary for public health activities; and (3) necessary to avert a serious threat to health or safety.¹⁴¹

In states with mandatory physician reporting, disclosures are obviously exempted from HIPAA because they are required by law.¹⁴² Even in the absence of an explicit statutory requirement, such reporting can be considered necessary for public health activities.¹⁴³ The CDC views motor vehicle safety as a public health concern.¹⁴⁴ Consequently, departments of motor vehicles are arguably agencies that are responsible for public health matters and are legally authorized to receive information in order to prevent injury.¹⁴⁵ In addition, physician disclosures to DMVs should fall under the category of necessary to prevent serious health and safety hazards.¹⁴⁶ In a 2023 letter to health care providers, the Department of Health and Human Services emphasized that clinicians may disclose medical information to third parties when they “believe the patient presents a serious danger to himself or other people.”¹⁴⁷

¹³⁸ 45 CFR § 164.501 (2023).

¹³⁹ See *supra* note 89 and accompanying text.

¹⁴⁰ See *supra* notes 130-131 and accompanying text.

¹⁴¹ 45 C.F.R. § 164.512(b), (f), and (j) (2023).

¹⁴² 45 C.F.R. § 164.512(f)(1) (2023).

¹⁴³ 45 C.F.R. § 164.512(b)(1) (2023); U.S. Department of Health and Human Services, *Disclosures for Public Health Activities*, <https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/disclosures-public-health-activities/index.html#:~:text=General%20Public%20Health%20Activities,disease%2C%20injury%2C%20or%20disability> (last revised Apr. 3, 2003).

¹⁴⁴ *Transportation Safety*, *supra* note 5.

¹⁴⁵ 45 CFR § 164.501 (2023) (defining public health authority); 45 C.F.R. § 164.512(b)(1) (2023).

¹⁴⁶ 45 C.F.R. § 164.512(j) (2023).

¹⁴⁷ Letter from Leon Rodriguez, Director of the Department of Health and Human Services Office of Civil Rights to the Nation’s Health Care Providers (Jan. 15, 2023), <https://www.hhs.gov/sites/default/files/ocr/office/lettertonationhcp.pdf>. See also Department of Health and Human Services, *What Constitutes a “Serious and Imminent” Threat That Would Permit a Health Care Provider to Disclose PHI to Prevent Harm to the Patient, Another Person, or the Public without the Patient’s Authorization*

State Medical Privacy Laws. All states and the District of Columbia have enacted their own privacy statutes that protect the confidentiality of patient information.¹⁴⁸ State laws that add medical privacy protections to those available under the HIPAA Privacy Rule are not preempted by the federal regulations.¹⁴⁹ Like HIPAA, however, state laws include significant exceptions to their nondisclosure mandates. The states have all established public health reporting requirements for conditions such as infectious diseases, HIV/AIDS, cancer, and congenital defects.¹⁵⁰ New York specifically requires physicians to report Alzheimer disease cases to its Department of Health.¹⁵¹

The states have also enacted “duty to warn” statutes that either authorize or obligate health care providers to disclose patient information in particular circumstances.¹⁵² Generally, they address disclosure to law enforcement authorities and potential victims if patients appear likely to become violent and harm themselves or others.¹⁵³ Arguably, a similar duty should extend to warning DMVs about patients who cannot drive safely.¹⁵⁴ Thus, laws that establish DMV reporting requirements do not

or Permission?, <https://www.hhs.gov/hipaa/for-professionals/faq/3002/what-constitutes-serious-imminent-threat-that-would-permit-health-care-provider-disclose-phi-to-prevent-harm-patient-public-without-patients-authorization-permission/index.html#:~:text=Health%20care%20providers%20may%20disclose,enforcement%2C%20without%20a%20patient's%20permission> (last reviewed Dec. 28, 2022) (emphasizing that HIPAA “defers to the professional judgment of health professionals in making determinations about the nature and severity of the threat to health or safety posed by a patient”).

¹⁴⁸ Jesse M. Coleman, Sheryl Tatar Dacso, Kevin Mahoney & Leon Rodriguez, *50-State Survey of Health Care Information Privacy Laws*, SEYFARTH (2021 ed.), <https://www.seyfarth.com/a/web/77459/50-State-Survey-of-Health-Care-Information-Privacy-Laws.pdf>; Sharona Hoffman & Jean Herveg, *Privacy and Integrity of Medical Records*, in OXFORD HANDBOOK ON COMPARATIVE HEALTH LAW 417, 424 (David Orentlicher & Tamara K. Hervey eds., 2020).

¹⁴⁹ 45 C.F.R. § 160.203(b) (2023).

¹⁵⁰ Joy L. Pritts, *Altered States: State Health Privacy Laws and the Impact of the Federal Health Privacy Rule*, 2 YALE J. HEALTH POL’Y, L. & ETHICS 325, 335 (2002); LawAtlas, *Public Health Departments and State Patient Confidentiality Laws Map*, <https://lawatlas.org/datasets/public-health-departments-and-state-patient-confidentiality-laws> (update through Aug. 15, 2013).

¹⁵¹ N.Y. PUB. HEALTH LAW §2001 (McKinney 2023).

¹⁵² National Conference of State Legislatures, *Mental Health Professionals’ Duty to Warn*, <https://www.ncsl.org/health/mental-health-professionals-duty-to-warn> (last visited Dec. 11, 2023).

¹⁵³ *Id.*

¹⁵⁴ Berger et al., *supra* note 131, at 670 (“In those situations where clear evidence of substantial driving impairment implies a strong threat to patient and public safety, and where physicians’ advice to discontinue driving privileges is disregarded, physicians have an ethical duty to notify the DMV of the medical conditions which would impair safe driving.”).

conflict with states' health privacy mandates, but rather, add a reasonable exemption to them.¹⁵⁵

The Equal Protection Clause. The Equal Protection Clause in the Fourteenth Amendment is the U.S. Constitution's anti-discrimination mandate, and it applies to state action.¹⁵⁶ Both disability discrimination and age discrimination are prohibited, though they are subject to the lowest level of scrutiny – rational basis.¹⁵⁷ To defend a statute under the rational basis test, a state must prove only that the “statute is rationally related to a legitimate state interest.”¹⁵⁸ Consequently, it is not difficult for states to prevail in cases challenging laws and policies on disability and age discrimination grounds. The courts have held that health and safety constitute legitimate state interests.¹⁵⁹ Indeed, many states have long-standing statutes that place extra demands on older drivers who wish to renew their driver's licenses, and these requirements are not unlawfully discriminatory.¹⁶⁰

Some state actions do not focus directly on a particular class of people, but rather, impact some groups more than others. For example, a statute requiring road testing of individuals with cognitive decline would disproportionately affect older drivers, though there would be nothing explicit in the statute that targeted them. Plaintiffs might wish to challenge such policies under a “disparate impact” theory.¹⁶¹ This theory, for example, has been used successfully under Title VII of the Civil Rights Act to challenge employment testing that was not justified by business necessity and disadvantaged African American workers.¹⁶² The Supreme Court, however, has held that there is no disparate impact cause of action under the constitutional Equal Protection Clause.¹⁶³

¹⁵⁵ See *supra* notes 130-131 and accompanying text.

¹⁵⁶ U.S. CONSTIT., amend. XIV.

¹⁵⁷ Nina Kohn, *Rethinking the Constitutionality of Age Discrimination*, 44 U.C. DAVIS L. REV. 213, 217-18 (2010); Jayne Ponder, *The Irrational Rationality of Rational Basis Review for People with Disabilities: A Call for Intermediate Scrutiny*, 53 HARV. C.R.-C.L. L. REV. 709, 709-10 (2018).

¹⁵⁸ *City of Cleburne, Tex. v. Cleburne Living Center*, 473 U.S. 432, 440 (1985).

¹⁵⁹ *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1023 (1992); *Whole Woman's Health v. Hellerstadt*, 136 S.Ct. 2292, 2311 (2016); *Harlen Associates v. Incorporated Village of Mineola*, 1273 F.3d 494, 501 (2d. Cir. 2001).

¹⁶⁰ See *supra* Part II.B.1

¹⁶¹ Sharona Hoffman & Andy Podgurski, *Artificial Intelligence and Discrimination in Health Care*, 19 YALE J. HEALTH POL'Y, L. & ETHICS 1, 24-26 (2020).

¹⁶² *Griggs v. Duke Power Co.*, 401 U.S. 424, 424 (1971).

¹⁶³ *Washington v. Davis*, 426 U.S. 229, 239 (1976); Richard A. Primus, *Equal Protection and Disparate Impact: Round Three*, 117 HARV. L. REV. 493, 494-95 (2003).

C. Regulatory Gaps

The law and policy choices leading to automobile supremacy overpower the current regulatory framework, leaving significant safety gaps. The pressure to drive is strong, and it doesn't abate with either age or cognitive decline.¹⁶⁴ The driver's licensing system generally works to ensure that new drivers are minimally competent, but it does little to ensure that drivers remain capable in the face of cognitive decline.¹⁶⁵ And although constitutional protections would allow governmental action to restrict driving, current medical privacy laws leave doctors uncertain about what information they may share about their patients.¹⁶⁶ Indeed, as one scholar has noted, when physicians have no legal obligation to report unsafe drivers, "most are unwilling to breach patient confidentiality unless the situation is truly alarming."¹⁶⁷ Even when a doctor does report the patient's diagnosis, the doctor may not explicitly express an opinion on the patient's driving ability: "A DMV spokesperson has stated that she often receives doctor's letters that avoid the issue of driving competence entirely by stating that if the patient can pass the driving test, he or she is safe to drive."¹⁶⁸

III. REGULATORY GAP FILLERS

Without a comprehensive regulatory scheme, private actors are left to negotiate both the risks and consequences of driving with cognitive decline. This section looks at how those regulatory gaps get filled and who bears the cost of regulatory failure. It focuses on two different time periods: *ex ante*, a forward-looking perspective, arising at the time that parties contract for liability shields through insurance, and *ex post*, or backward-looking, analyzing responsibility after harm has occurred, when the civil justice system must order compensation.¹⁶⁹ The *ex ante* perspective therefore focuses on private ordering (primarily through contracting for insurance), while the *ex post* perspective examines remedies in the civil justice system (through litigation).¹⁷⁰ In theory,

¹⁶⁴ See *supra* Part II.A.

¹⁶⁵ See *supra* Part II.B.1.

¹⁶⁶ See Clinician's Guide, *supra* note 6, at 101 (recommending a framework for doctors to assess their risk of liability for breaching confidentiality when taking steps to ensure that an unsafe driver stays off the roads).

¹⁶⁷ Elizabeth K. Tulloch, *What Shall We Do About Miss Daisy's Driving: Background for the Elder Law Attorney*, 27 COLO. LAW. 81, 83 (1998).

¹⁶⁸ *Id.*

¹⁶⁹ Lawrence B. Solum, *Legal Theory Lexicon 001: Ex Ante & Ex Post*, at https://lsolum.typepad.com/legal_theory_lexicon/2003/09/legal_theory_le_2.html (Dec. 17, 2022).

¹⁷⁰ *Id.*

private ordering and tort law allow the legal systems to address the risks and consequences of individual decisions.¹⁷¹ In practice, however, these structures are unable to eliminate the uncertainty facing drivers and their loved ones. As a result, they do little to prevent harm from unsafe driving. Finally, this section examines whether improvements to technology and infrastructure could fill the safety gap. It concludes that although significant progress has been made, technological solutions remain elusive.

A. Private Ordering through Insurance Policies

Nearly every state requires drivers to carry insurance with certain minimum terms.¹⁷² The price of that policy can vary greatly, however, depending on the perceived risk of the individual driver, the cost of the car, the community in which the insurance policy is sold, and the internal actuarial analysis performed by the insurance company.¹⁷³ In addition, terms beyond the minimum insurance requirements can also vary significantly—insurance companies may choose to contract for electronic monitoring of drivers, for example.¹⁷⁴

Elderly drivers generally find that their costs for automobile insurance go up significantly.¹⁷⁵ Progressive Insurance reports that rates are generally lowest for middle-

¹⁷¹ Timothy Stoltzfus Jost, *Health Law and Administrative Law: A Marriage Most Convenient*, 49 ST. LOUIS. U. L.J. 1, 23 (2004) (“As a general matter in our liberal American society, we leave most matters to private ordering, i.e. to private contracts, firms, and associations operating within the framework of social norms and markets, unless there is a good reason to do otherwise.”)

¹⁷² Rob Hillenbrand, Note, *Heller on the Threshold: Crafting a un Insurance Mandate*, 95 B.U. L. REV. 1451, 1461 (2015) (noting that “[t]oday, forty-nine states require drivers to maintain car insurance policies” and explaining that New Hampshire is the outlier).

¹⁷³ See, e.g., Allstate. *What Factors May Affect Your Car Insurance Premium?*, at <https://www.allstate.com/resources/car-insurance/what-affects-premiums-and-rates> (Dec. 2017) (“Some factors that may affect your auto insurance premiums are your car, your driving habits, demographic factors and the coverages, limits and deductibles you choose. These factors may include things such as your age, anti-theft features in your car and your driving record.”); Insurance Information Institute, *What determines the price of an auto insurance policy?* at <https://www.iii.org/article/what-determines-price-my-auto-insurance-policy> (last visited Dec. 11, 2023).

¹⁷⁴ Kristen Hall-Geisler & Jennifer Lobb, *How Do Those Car Insurance Tracking Devices Work?*, U.S. NEWS & WORLD REP., at <https://www.usnews.com/insurance/auto/how-do-those-car-insurance-tracking-devices-work> (June 30, 2023) (explaining that some insurance companies are increasingly offering technological monitoring systems that allow them “to collect specific information about your driving habits, including speeding, braking, distance driven, time of day, and other behaviors.” In return, consumers are able to obtain a discount on their insurance cost).

¹⁷⁵ Aaron Besson, *Car Insurance Discounts for Retired and Senior Drivers*, QUOTEWIZARD, June 8, 2021 at <https://quotewizard.com/auto-insurance/car-insurance-discounts-for-retired-and-senior-drivers> (“Once a driver reaches 65 years old, their auto insurance rates usually go up. While seniors pose nowhere near

aged drivers in their 50s and 60s, “possibly due to middle-aged drivers having a lot of experience behind the wheel while also being less likely to suffer from hearing or vision impairments.”¹⁷⁶ Rates go up for drivers in their 70s, and Progressive notes that by the time drivers are in their 80s and above, price increases “can become cost-prohibitive for some.” Although the car insurance companies do not explicitly state that they are pricing in the risk of cognitive impairment, it is likely that this possibility is factored into rate hikes for older individuals.

One area of confusion is what happens to the relationship between the auto insurer and driver after the driver has been diagnosed with dementia. Does the insurance company have a right to know about a diagnosis even if the individual can still drive safely? One guide for dementia patients and their loved ones suggests that drivers have an obligation to notify their carriers, even though such notification means that they are likely to lose coverage:

Contact your car insurance provider and notify them of the diagnosis. Each insurance company has different rules. It is very unlikely they will raise your premiums. The more likely scenario is they will refuse to cover the driver who has received the diagnosis. While this can sound dramatic, the insurance company can refuse to pay the claim if one does not notify their carrier and an accident occurs.¹⁷⁷

An insurance broker concurs, advising consumers that “[i]f you have been diagnosed with dementia, then you need to notify your insurer immediately” and warning that “[i]f you cause an accident and have been previously diagnosed with dementia, then an insurer may refuse to cover your claim. You did not disclose the risk to your insurer, and your insurer has the right to refuse your claim.”¹⁷⁸ Likewise, retired

the risk that teenage drivers do, auto insurance providers still consider drivers past a certain age to be a high-risk group.”).

¹⁷⁶ Progressive, *Auto Insurance for Seniors*, at <https://www.progressive.com/answers/car-insurance-for-seniors/> (last visited Dec. 11, 2023).

¹⁷⁷ *Driving & Dementia / Alzheimer's: State Laws, Coping & Advice for Caregivers*, DEMENTIA CARE CENTRAL, May 4, 2023 at <https://www.dementiacarecentral.com/caregiverinfo/driving-problems/>.

¹⁷⁸ *Can You Get Car Insurance If You Have Dementia?*, INSURANCE PANDA, Oct. 21, 2021 at <https://www.insurancepanda.com/faq/car-insurance-with-dementia/>

lawyer Charles G. Warner reports that failure to inform one's insurance company of a dementia diagnosis risks a denial of coverage.¹⁷⁹

This advice, however, may be somewhat problematic. First, not all cognitive decline is dementia. Rather, dementia is generally understood to be impairment that is "severe enough to compromise social and/or occupational functioning."¹⁸⁰ At what point in the progression of their condition would individuals be obligated to disclose it? Second, not all experts agree that there is a general duty to report cognitive decline to automobile insurers.¹⁸¹ And third, the confusion about patient reporting can affect how physicians address driving competence.

Researchers have explored what doctors believe about patients' obligation to report cognitive impairment to their insurance companies. One survey found that a majority of physicians were uncertain about whether patient reporting was required.¹⁸² If physicians assume that their patients are disclosing diagnoses either to insurance companies or to licensing authorities, they may feel less urgency to address driving safety.

Moreover, even a contractual duty to report diagnoses appears dubious at best. Our search of Westlaw reveals no reported cases in which an insurance company has attempted to deny coverage under an existing policy for failure to disclose a medical diagnosis. It is certainly possible that such denials happen in cases that are settled or otherwise resolved without publication of an appellate opinion.¹⁸³ Likewise, it is possible

¹⁷⁹ Charles G. Warner, *Driving and Dementia*, Alzheimer's Assoc., at https://www.alzheimersblog.org/wp-content/uploads/2013/05/Drive_ChuckWarner.pdf (last visited Dec. 11, 2023).

¹⁸⁰ Julie Hugo & Mary Ganguli, *Dementia and Cognitive Impairment: Epidemiology, Diagnosis, and Treatment*, 30 CLIN. GERIATR. MED. 421, 421-22 (2014)

¹⁸¹ Erika M. Gergerich, *Reporting Policy Regarding Drivers with Dementia*, 56 GERONTOLOGIST 345, 349 (2015) (noting that in the state of the survey, a person "who receives a diagnosis of dementia is not required to inform their auto insurance company").

¹⁸² *Id.* ("When asked whether people with dementia are required to report to their auto insurance company in the United States, 34% responded correctly, whereas a majority of respondents (66%) were unsure.").

¹⁸³ Most automobile litigation goes to state courts, and few state trial courts issue written opinions. See Mercer Law Library, *Federal Research: Courts & Opinions* at <https://guides.law.mercer.edu/c.php?g=1036306&p=7876564> (noting that "in most jurisdictions only the appellate courts issue written opinions") (last visited Dec. 11, 2023); Susan Randall, *Corrective Justice and the Torts Process*, 27 IND. L. REV. 1, 50 ("Empirical evidence from state courts also demonstrates that the bulk of tort litigation, excluding professional malpractice and products liability, involves automobile accidents (42%) and other types of personal injury.").

that our research simply failed to find existing cases.¹⁸⁴ It is notable, however, that the sources claiming a duty to disclose such a diagnosis to the insurance company (and suggesting that failure to do so could result in a denial of coverage) do not themselves provide citations to any case law, statute, or insurance policy as the source of such a duty.

Finally, our review of common insurance policies revealed no clear contractual duty to disclose a diagnosis. Insurance policies can be difficult to parse. However, state policies from industry leader Allstate provide a relatively clear duty to disclose other information. In a section labeled “Duty to Report Changes,” Allstate’s Florida auto insurance policy specifies that:

Your policy was issued in reliance on information you provided including, but not limited to, information regarding autos, persons in your household, and your place of residence. You must promptly notify us:

1. when you change your address;
2. when any person with a driver’s license joins your household, or when any resident of your household acquires a driver’s license; and
3. when you acquire any additional auto or replacement auto.¹⁸⁵

No mention is made of a duty to report changes in health status. Progressive Insurance appears to have a broader duty to disclose, requiring

You must promptly report to us [Progressive] all changes, including additions and deletions, in policy information. This includes, but is not limited to, changes in:

1. your mailing address or your residence address;
2. the principal garaging address of any covered auto;
3. the residents in your household;

¹⁸⁴ We did, however, find cases in which insurance companies attempted to deny coverage for matters unrelated to health—for example, for failing to update an insurance company after a change in business incorporation status. *Christy v. Travelers Indemnity Company of America*, 2014 WL 11514674 (D.N.M., 2014); *Mueller v. Generali-U.S. Branch*, 4 Fed.Appx. 187 (4th Cir. 2001).

¹⁸⁵ Allstate, Florida Auto Policy contract ACR208, available at <https://www.allstate.com/help-support/my-policy/state-policy-contracts> (last visited Dec. 11, 2023).

4. the persons of legal driving age residing in your household;
5. the persons who regularly operate a covered auto;
6. an operator's marital status; or
7. the driver's license or operator's permit status of you, a relative, or a rated resident.¹⁸⁶

It is possible that a medical diagnosis could constitute “policy information,” especially if the original policy application made any representation of health status. However, that interpretation is uncertain, and the policy language does not clearly put drivers on notice that they should report a medical diagnosis of cognitive decline or impairment when there has been no change in driver's license status. None of the sample “duty to report” clauses collected by Law Insider mentioned any duty to report changes in health or cognitive status.¹⁸⁷

Thus, although private ordering through insurance contracts could provide guidance for dealing with cognitive decline, they do not appear to do so in any way that could provide assurance or certainty. There is reportedly widespread confusion among doctors and nonprofit organizations about whether drivers have an obligation to report such health changes to their insurers.¹⁸⁸ The insurance policies themselves, however, contain no such explicit requirements. Thus, it is entirely possible that a person diagnosed with the early stages of cognitive decline, who is still capable of driving safely, would report that diagnosis to their car insurance company only to find their policy cancelled or its price prohibitively increased. Likewise, it is possible that drivers in the later stages of cognitive decline, who should not be driving but still do so, might be reluctant to disclose their diagnosis for fear of losing insurance. The economic incentives at play would suggest that drivers are better off not making such reports, even though their doctors and other care professionals may assume that they will do so (and may therefore assume that no other intervention is needed).

¹⁸⁶ *Progressive Select Insurance Company v. McKinley*, 2021 WL 2075686, at *2 (N.D.Cal., 2021)

¹⁸⁷ Law Insider, *Duty to Report Changes: Sample Clauses*, at <https://www.lawinsider.com/clause/duty-to-report-changes> (last visited Dec. 11, 2023).

¹⁸⁸ See *supra* notes 177-182; Gergerich, *supra* note 181 (surveying doctors in Arkansas and finding that “[w]hen asked whether people with dementia are required to report to their auto insurance company in the United States, 34% responded correctly [that they were not], whereas a majority of respondents (66%) were unsure”).

B. Civil Justice Remedies

When individuals facing cognitive decline do get into car accidents, there may be litigation over liability and damages. Although civil litigation cannot undo the physical harm arising from an automobile crash, it is intended to allocate the costs of that harm to the responsible party and thereby reduce incentives to engage in risky behavior.¹⁸⁹ There is some doubt about whether these incentives play any significant role in dangerous driver conduct generally.¹⁹⁰ When it comes to drivers with cognitive decline, the theoretical benefits of civil litigation are rarely achieved in practice; instead, litigation results often create more uncertainty than they resolve.

Because of their disabilities, cognitively impaired individuals may not understand that driving is hazardous for them and therefore may simply be unable to respond to the incentives established by the tort system.¹⁹¹ Furthermore, if they drive despite having their license revoked and their car insurance policy cancelled, there may be no source of compensation for injured parties.¹⁹²

In general, cognitive decline or diagnosis does not constitute a defense to civil liability.¹⁹³ Instead, when a person with cognitive decline is involved in a crash, there is

¹⁸⁹ See, e.g., Albert C. Lin, *The Unifying Role of Harm in Environmental Law*, 2006 WIS. L. REV. 897, 925–26 (“[T]ort law seeks to compensate for harm and to foster corrective justice as well as to deter”), Heidi Li Feldman, *Science and Uncertainty in Mass Exposure Litigation*, 74 TEX. L. REV. 1, 34 (1995) (stating that tort litigation “seeks to allocate resources to those who have been injured by unduly risky conduct or products,” “aims to deter excessively risky conduct,” and “tries to expressively yoke victims of overly risky activity with their injurers by requiring injurers to compensate those they have harmed”).

¹⁹⁰ Other scholars have noted that litigation is less likely to shape incentives when it comes to risky driving and automobile crashes. See Howard Latin, *When Drivers Sue Drivers: Exposing the Myth Underlying Automobile Litigation*, 166 N.J. LAW. 24, 30 (1995) (“[T]he prospect of automobile litigation does not significantly deter unlucky drivers nor drivers whose risky behavior results from immutable factors nor even the relatively small number of bad drivers who thoughtlessly or deliberately choose to run high personal risks that also increase the risks for others.”).

¹⁹¹ Daniel Apolinario, Regina Miksian Magaldi, Alexandre Leopold Busse, Leonardo da Costa Lopes, Juliana Yumi Tison Kasai, and Erika Satomi, *Cognitive Impairment and Driving: A Review of the Literature*, 3 DEMENT. NEUROPSYCHOL. 283, 286–87 (2009). The authors explain:

Anosognosia is generally defined as the lack of awareness of an illness. In the context of an individual with dementia, it means the loss of insight into one’s own cognitive or functional deficits. The frequency of anosognosia increases markedly with the severity of dementia, but is present in at least 10% of the patients with very mild dementia. Patients with anosognosia may engage in activities beyond their true capacity, thus being at high risk of exposure to potentially dangerous situations.

¹⁹² Kenneth S. Abraham, & G. Edward White, *Rethinking the Development of Modern Tort Liability*, 101 B.U. L. REV. 1289, 1324 (2021) (explaining that liability insurance plays a significant role in the likelihood of litigation because “most individuals could be presumed to be judgment-proof if they were not insured”).

¹⁹³ Edward P. Richards, *Public Policy Implications of Liability Regimes for Injuries Caused by Persons with Alzheimer’s Disease*, 35 GA. L. REV. 621, 639 (2001). Scholars have criticized this rule, especially when it

likely to be litigation about whether the defendant was negligent in driving as well as whether there was “specific negligence that led to the accident.”¹⁹⁴ Even if the driver’s cognitive status did not make them an unsafe driver at the time of the accident, the time scale of the litigation process means that a defendant facing cognitive decline may appear far less capable by the time of trial.¹⁹⁵ The plaintiff may seek punitive damages “based on defendant’s behavior in knowingly subjecting plaintiff and others to the risk that she would not be able to control her car.”¹⁹⁶ If the defendant cannot fully document their condition at the time of the accident, then the jury may be influenced by the defendant’s appearance at the time of trial and may be more likely to award punitive damages.¹⁹⁷

In other cases, the driver may have been much more seriously impaired even at the time of the crash. Such cases often pit two policy interests against each other: compensating blameless victims and avoiding the injustice of holding impaired defendants liable when they were unable to control their actions.¹⁹⁸

If the impaired driver cannot be held responsible, then plaintiffs are likely to try to sue the driver’s family members or caretakers. In the United States, there is a high threshold for caretaker liability—generally the individual must have voluntarily assumed a duty to care for the driver and the harm must have been foreseeable.¹⁹⁹ Although this is a high threshold, courts have allowed cases to go to trial

comes to patients in the late stages of cognitive decline, where the individual may lack the mental capacity to understand why certain actions would create risk. See Vaughn E. James, *No Help for the Helpless: How the Law Has Failed to Serve and Protect Persons Suffering from Alzheimer’s Disease*, 7 J. HEALTH & BIOMEDICAL L. 407, 445 (2012) (calling the general rule permitting liability “a very harsh rule, especially as it applies to an Alzheimer’s patient” and explaining that “[t]he patient in the latter stages of the disease has no mental capacity. He or she does not understand anything. He or she does not understand right from wrong. He or she does not understand the elements of negligence. Hence, to hold someone who is suffering from moderate or severe Alzheimer’s disease liable for a harm caused to someone else is wrong”).

¹⁹⁴ Richards, *supra* note 193, at 639.

¹⁹⁵ *Id.* (explaining that because of “the combination of the progression of Alzheimer’s disease and time it takes to get to trial,” it is possible that “[w]hatever the defendant’s condition at the time of the accident, the jury is likely to see a severely demented defendant on the stand”).

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ Trevor Ryan & Wendy Bonython, *Whose Fault in an Aging World?: Comparing Dementia-Related Tort Liability in Common Law and Civil Law Jurisdictions*, 27 WASH. INT’L L.J. 407, 409–10 (2018).

¹⁹⁹ *Id.* at 425–26 (explaining that “United States case law has affirmed the very high threshold . . . for liability that arises from the care and control of family members with a mental impairment,” that “a duty has been held to arise only where control over the person is assumed voluntarily,” and that the “threshold of liability is then determined largely by whether the caregiver had notice with regard to the threat, which was therefore foreseeable”).

when the plaintiff's allegations suggest that the standard could be satisfied. Thus, for example, in one case, a wife drove her husband to a store and left the car keys under a seat in the car.²⁰⁰ While the wife was in the store, the husband, who had severe Alzheimer's disease, fished the keys out from under the seat, started the car, and drove through a traffic light, crashing into another vehicle.²⁰¹ The husband was killed in the crash and the occupant of the other car suffered injury. The injured plaintiff sued the wife, alleging that she was negligent in failing to secure the car.²⁰² Although the trial court granted summary judgment in favor of the wife, finding that she had no duty to the plaintiff, the appellate court reversed that decision.²⁰³ On appeal, the court held that "before it can be determined whether there is a duty, there must be discovery on whether Elizabeth had a special ability to control Jacob's conduct and whether it was foreseeable that Jacob would drive off with the vehicle when left unattended."²⁰⁴

In another case, a lawsuit against an impaired driver's wife was allowed to go forward, but the court held that the wife's insurance policy was not obligated to either defend the case or to indemnify her if she were to be found liable.²⁰⁵ In this case, a neurologist had diagnosed the husband, Kenneth, with Alzheimer's disease. The doctor advised Kenneth's wife, Claudia, not to let him drive. Claudia, in turn, took the keys away from Kenneth and notified the insurance provider that Kenneth should be removed from the policy. Claudia's insurance policy then specifically named Kenneth as an "excluded driver."

When Kenneth later drove the car and got into a collision, the injured plaintiff sued Claudia, alleging that she "negligently allowed Kenneth to use the vehicle, failed to restrict his access to the vehicle, failed to secure the keys to the vehicle, failed to report Kenneth and the vehicle missing, and failed to employ safeguards to prevent Kenneth from accessing the vehicle."²⁰⁶ Claudia sought defense help from her insurance company. She argued that Kenneth had used the vehicle without her permission and that because her auto policy covered damages arising from "theft," it should provide coverage. However, the court concluded that the named-driver exclusion overrode the coverage for

²⁰⁰ Whitaker v. Bontekoe, 2013 WL 1442217, at *1 (Mich. App. 2013).

²⁰¹ *Id.*

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ Whitaker v. Bontekoe, 2013 WL 1442217, at *6 (Mich.App. 2013).

²⁰⁵ Illinois Farmers Insurance Company v. Walker, 2023 IL App (1st) 221115-U, ¶ 9, 2023 WL 3344323, at *2 (Ill. App. 1 Dist. 2023).

²⁰⁶ *Id.* at *5.

theft, concluding that “[t]he named driver exclusion unambiguously applies to this case to exclude Kenneth’s operation of Claudia’s vehicle on September 28, 2020, from coverage, regardless of whether he ‘stole’ the vehicle.”²⁰⁷

As a result, Claudia had no coverage for the accident and would have to pay for her own defense. The case does not detail Claudia’s financial circumstances, but most Americans cannot afford to hire an attorney.²⁰⁸ Even if Claudia could afford a defense in the case, there is no indication of whether she would be able to afford to pay the damages in the personal injury suit. Most suits settle within insurance-policy limits.²⁰⁹ However, when insurance is unavailable, defendants are unlikely to be able to pay judgments, leaving plaintiffs with no remedy.²¹⁰

These cases demonstrate the difficulty of relying on litigation to shape incentives when it comes to drivers and cognitive impairment. Even when family members attempt to do everything right—discouraging loved ones with impairments from driving, informing insurance companies of diagnoses—they may face lawsuits stemming from their loved one’s driving. In both cases discussed here, there is no record of what happened to the families after the courts’ decisions. It is clear, though, that the families of both the injured plaintiffs and the impaired drivers faced difficulties that the civil justice system could not adequately prevent or compensate.

C. Investment in Technology and Infrastructure

If neither private ordering through insurance nor civil liability can close the safety gap, is it possible that improving technology might do so even in the absence of regulatory action? It is true that vehicle safety has improved significantly over the last two decades. Observers have noted a significant decline in the number of fatal collisions

²⁰⁷ *Id.* at *4.

²⁰⁸ Ben Barton, *A Comparison Between the American Markets for Medical and Legal Services*, 67 HASTINGS L.J. 1331, 1333 (2016) (“American lawyers cost too much for the working poor or even the middle class.”).

²⁰⁹ Geoff McDonald & Associates, P.C. *Can You Sue for More Than a Defendant’s Policy Limits in Virginia?*, July 27, 2021, at <https://www.mcdonaldinjurylaw.com/blog/other/can-you-sue-for-more-than-a-defendants-policy-limits-in-virginia/> (explaining that although it is not “wholly uncommon” for a suit to seek damages beyond the insurance policy limits, “[m]ost people are effectively judgment-proof”).

²¹⁰ Tom Baker, *Liability Insurance as Tort Regulation: Six Ways that Liability Insurance Shapes Tort Law in Action*, 12 CONN. INS. L.J. 1, 3 (2005-06) (explaining that “for claims against all but the wealthiest individuals and organizations, liability insurance is a de facto element of tort liability,” and “insurance limits are a de facto cap on tort damages”).

involving older drivers.²¹¹ In 2021, 5,209 people aged seventy and older died in car accidents, a figure that is eleven percent lower than it was in 1997.²¹² This reduction is likely attributable in part to a variety of safety features.²¹³

In this section, we argue that technology can help make transportation accessible to individuals with cognitive decline, but technological improvements will not, by themselves, solve the public safety problem caused by drivers with cognitive impairments. Nonetheless, even incremental improvement can be helpful. There are two tracks to improving access: the first is improving assistive technology in individually owned vehicles, and the second is offering transportation as a service to individuals not in a position to drive themselves.

1. Assistive technology in individually owned vehicles

Assistive technologies can be particularly beneficial for individuals with deficits related to visual scanning, attention, speed of processing, and executive function.²¹⁴ According to one estimate, approximately sixty percent of the car accidents involving older drivers could be addressed by safety features.²¹⁵ As technology develops, automobiles are expected to become increasingly automated, though fully autonomous, privately owned cars may be decades away.²¹⁶ Experts warn that assistive devices for automobiles must be carefully designed with elderly and cognitively impaired drivers in mind.²¹⁷ Individuals with cognitive decline may be skeptical of technology and fail to trust it, may find it difficult to learn and use, or may become complacent and inattentive, relying too heavily on technology.²¹⁸

²¹¹ Insurance Institute for Highway Safety & Highway Loss Data Institute, *Older Drivers*, <https://www.iihs.org/topics/older-drivers> (updated June 2023).

²¹² *Id.*

²¹³ *Id.*

²¹⁴ Frank Knoefel, Bruce Wallace, Rafik Goubran, Iman Sabra & Shawn Marshall, *Semi-Autonomous Vehicles as a Cognitive Assistive Device for Older Adults*, 4 GERIATRICS (BASEL) 63, 67-8 (2019).

²¹⁵ Insurance Institute for Highway Safety & Highway Loss Data Institute, *Intersection Assistance Tech Shows Big Promise for Older Drivers*, Jun. 16, 2022, <https://www.iihs.org/news/detail/intersection-assistance-tech-shows-big-promise-for-older-drivers>.

²¹⁶ Cassandra Burke Robertson, *Litigating Partial Autonomy*, 109 IOWA L. REV. (10-11) (forthcoming 2023) (discussing categorization of vehicles from 0 to 5 by level of automation and noting that a company called Mobileye was delaying development of fully autonomous automobiles until at least 2050 in order to focus on advanced driver assistance systems).

²¹⁷ Knoefel et al., *supra* note 214, at 71-72.

²¹⁸ *Id.*; Shabnam Haghzare et al., *Automated Vehicles for People With Dementia: A “Tremendous Potential” That “Has Ways to go”—Reports of a Qualitative Study*, 63 THE GERONTOLOGIST 140, 149-52 (2023);

As technology continues to develop, it is important to distinguish between features that increase safety and those that increase only convenience—and may, in fact, actually have a detrimental impact on safety.²¹⁹ Many helpful features are widely available in today's vehicles, including adaptive cruise control that automatically adjusts car speed based on the automobile ahead, lane departure warnings, collision avoidance mechanisms such as automatic braking, parking assist systems, rear view cameras, and navigation devices.²²⁰ Collectively, these technologies are known as advanced driver assistance systems (ADAS), and much research remains to be done about how they can best serve cognitively impaired drivers.²²¹ Three of the features—blind spot warnings, lane departure warnings, and automatic emergency braking—have each been shown to reduce the risk of crashes by more than 20%.²²²

Nonetheless, early research suggests that other ADAS features (notably features that combine automatic lane-keeping with automatic steering, like Tesla's Autopilot and FSD products) may counterintuitively make driving performance worse.²²³ One study found that drivers had lower situational awareness when the car's active cruise control was engaged.²²⁴ Another study used simulated vehicles with different levels of automation and found that "driving performance degrades when the level of automation increases," as drivers of the more highly automated vehicles were less likely to stop in time to avoid a collision with a braking vehicle.²²⁵ It's not entirely clear why this is so, but researchers have suggested that the effect may arise from individuals' complacency in the face of highly automated systems—that is, the more highly automated the system, the

Russ Mitchell, 'We Are Killing People': How Technology Has Made Your Car 'A Candy Store Of Distraction', L.A. TIMES, Jul 6, 2022, <https://www.latimes.com/business/story/2022-07-06/we-are-killing-people-how-technology-has-made-your-car-a-candy-store-of-distraction>.

²¹⁹ Robertson, *supra* note 216.

²²⁰ *Id.* at 4 of 14; HOFFMAN, *supra* note 30, at 155-56.

²²¹ Haghzare et al., *supra* note 216, at 151.

²²² United States Department of Transportation | Office of the Assistant Secretary for Research and Technology, *Blind Spot Warning Technology Contributes To A 23 Percent Reduction In Lane Change Injury Crashes*, ITS DEPLOYMENT EVAL., Aug. 15, 2019, at <https://www.itskrs.its.dot.gov/its/benecost.nsf/ID/9e81c5c7193cd5d885258448005b625b>.

²²³ Robertson, *supra* note 216, at 21.

²²⁴ Neville A. Stanton & Mark S. Young, *Driver Behaviour with Adaptive Cruise Control*, 48 ERGONOMICS 1294 (2007).

²²⁵ Niklas Strand, Josef Nilsson, MariAnne Karlsson & Lena Nilsson, *Semi-Automated Versus Highly Automated Driving in Critical Situations Caused by Automation Failures*, 27 TRANSP. RES. PART F: TRAFFIC PSYCH. & BEHAVIOUR 218 (2014) at <https://www.sciencedirect.com/science/article/pii/S1369847814000436>.

less carefully individual operators monitor its functioning.²²⁶ In the words of one industry expert, “You want a driver assist system to be very good, but the better it gets, the easier it is to start forgetting that it has flaws. . . The better it is, the greater the risk of bad supervision becomes.”²²⁷

Kelly Funkhouser, the manager of vehicle technology for Consumer Reports, has studied the safety of ADAS systems.²²⁸ She has offered advice for how to ensure that ADAS features do not create safety risks. One important feature is driver monitoring—Funkhouser notes that systems capable of controlling the steering and speed “should also be designed to help the driver at moments of greatest need, such as an incapacitating health emergency or if the driver falls asleep.”²²⁹ She concludes that it is “alarming” that some ADAS systems will simply disengage—but leave the car running—if the driver fails to respond to monitoring cues (e.g. warnings or alerts), explaining “if the driver is distracted or medically impaired, the vehicle will just continue to roll forward—potentially off the road at speed—without any steering assist or speed control, until it eventually rolls to a stop or runs into something.”²³⁰ In her view, these problems could be reduced if auto manufacturers install a driver-facing monitoring camera to ensure that drivers continue to remain awake and alert.²³¹ If, on the other hand, manufacturers do not include adequate driver monitoring safeguards, then auto manufacturers should “not include both lane centering assistance and adaptive cruise control at all.”²³²

²²⁶ Lisanne Bainbridge, *Ironies of Automation*, 19 AUTOMATICA 775, 777 (1983) (“By taking away the easy parts of [the operator’s] task, automation can make the difficult parts of the human operator’s task more difficult.”).

²²⁷ Brad Templeton, *Lawsuit Over Tesla Autopilot Fatality Unlikely To Win But It Uncovers Real Issues*, FORBES, May 3, 2019, at <https://www.forbes.com/sites/bradtempleton/2019/05/03/lawsuit-over-tesla-autopilot-fatality-unlikely-to-win-but-it-uncovers-real-issues/?sh=24d9c4fb6034>

²²⁸ Mike Monticello, *Ford’s BlueCruise Ousts GM’s Super Cruise as CR’s Top-Rated Active Driving Assistance System*, CONSUMER REP., January 25, 2023 (updated May 8, 2023), at <https://www.consumerreports.org/cars/car-safety/active-driving-assistance-systems-review-a2103632203/>

²²⁹ *Id.*

²³⁰ *Id.*

²³¹ In cars with high-level ADAS features, sleeping drivers have become a recurrent problem. See Robertson, *supra* note 216, at 3 (noting at least three instances where Tesla drivers had fallen asleep at the wheel while the car continued its journey—one while a police car gave chase, sirens blaring, for over fifteen minutes). In the ADAS systems rated most highly by *Consumer Reports*, Ford’s BlueCruise and GM’s Super Cruise, “[b]oth point infrared cameras at driver faces and sound an alert if the driver stops paying attention to the road, even if just for a few seconds.” Monticello, *supra* note 228. If the alert proves insufficient and “drivers don’t turn their eyes back to the road,” then the system slows the car and eventually brings it to a halt. *Id.*

²³² Monticello, *supra* note 228.

ADAS should be a key consideration for drivers with cognitive impairments who purchase new cars. Driving rehabilitation specialists and occupational therapists can train drivers to utilize ADAS effectively. Federal agencies should continue to study the efficacy of various technologies and, especially, to investigate technologies that cause harm.²³³ Physicians who treat cognitive decline patients may also share information about ADAS with patients and their families. Ultimately, however, it is up to drivers to stay alert.²³⁴ If the driver cannot remain attentive in overseeing vehicle operation, then ADAS features will not provide any safety benefit—and might introduce their own risks.

2. Transportation as a Service

For those who must stop driving altogether, there are new options that provide transportation services.²³⁵ In many locations, Lyft and Uber rides can easily be ordered through computers or iPhone applications.²³⁶ Individuals who prefer to order rides by telephone can do so using GoGo, which schedules Uber rides and other services for a fee.²³⁷ In a growing number of U.S. cities, passengers can also order driverless “robotaxis” offered by Cruise, Waymo, and Motional.²³⁸ All of these transportation alternatives can

²³³ See, e.g., Sharon Feldman, *Fed’s Deadline Comes And Goes Without Tesla’s Reply To Autopilot Questions*, ARS TECHNICA, July 24, 2023, at <https://arstechnica.com/cars/2023/07/tesla-misses-deadline-to-inform-nhtsa-about-autopilot-problems/> (noting that “NHTSA is investigating the performance of Tesla’s Autopilot driver assistance system after identifying more than a dozen crashes in which Tesla vehicles struck stopped emergency vehicles” and “is also investigating whether Tesla vehicles adequately ensure drivers are paying attention when using the Autopilot system”).

²³⁴ Monticello, *supra* note 228.

²³⁵ Mobility Lab, *Understanding Transportation As A Service’s Potential To Reduce Car Ownership*, URBAN PLANNING, Dec. 6, 2018, at <https://mobilitylab.org/urban-planning/understanding-transportation-as-a-services-potential-to-reduce-car-ownership/> (“TaaS, sometimes called Mobility as a Service (MaaS), refers to widespread deviation away from personal vehicles and towards service-based transportation. This includes rideshare options like Uber and Lyft, e-scooters, bike sharing, and many more.”).

²³⁶ Lyft, <https://www.lyft.com/> (last visited Dec. 11, 2023); Uber, <https://www.uber.com/> (last visited Dec. 11, 2023).

²³⁷ GoGo, *Rides, Groceries, Meals & More: Built Better for Older Adults and People with Disabilities*, <https://gogograndparent.com/> (last visited Dec. 11, 2023).

²³⁸ See Kirsten Korosec, *Cruise Begins Testing Self-Driving Vehicles In Atlanta*, TECHCRUNCH, August 7, 2023, at <https://techcrunch.com/2023/08/07/cruise-begins-testing-self-driving-vehicles-in-atlanta/> (noting that Cruise has recently expanded robotaxi operations “to Austin, Dallas, Houston, Phoenix, Miami, Nashville and Los Angeles”); Pete Bigelow, *Robotaxis Show Signs Of Resilience, But Now They Need A Business Plan*, AUTOMOTIVE NEWS, April 20, 2023, at <https://www.autonews.com/mobility-report/robotaxi-companies-cruise-waymo-baidu-seek-scale> (“Despite enormous technological hurdles and economic headwinds, self-driving vehicles with no humans behind the wheel are carrying paying passengers in San Francisco, Phoenix and China.”).

mitigate some of the challenges of driving cessation, at least for those who can afford them. As the “transportation as a service” model grows in popularity, infrastructure regulations and investments can encourage accessibility. For example, cities may prioritize carpool lanes, allow less space to be set aside for parking in new developments, and engage in planning for various modes of transportation.²³⁹

The government’s role is not necessarily limited to infrastructure. Currently, the private sector is leading the way in developing autonomy solutions for individuals with mobility restrictions. Government agencies also have a role to play, however, in encouraging considerations of accessibility in product design. Thus, for example, the Department of Transportation has recently sponsored an accessibility design challenge, asking competitors to propose “hardware and software solutions addressing a wide range of physical, sensory, and cognitive disabilities, all aimed at integration with Automated Driving System-Dedicated Vehicles (ADS-DVs).”²⁴⁰ A combination of ten competitors—including university groups and private companies—reached the semifinals of the competition, creating innovative methods to promote transportation accessibility. A total of \$5 million was awarded to the competitors, with \$300,000 allocated to each of the ten semifinalists and the remainder shared among the three groups who reached the finals. This type of creative challenge can help ensure that companies designing autonomous vehicles consider the accessibility needs of those with cognitive disabilities.

While these technologies are likely to improve road safety in the long run, they are not a short-term solution to the problem of drivers with cognitive decline. It is likely to be decades before full automation becomes a reality.²⁴¹ Even transportation providers like Uber and Lyft do not serve all areas of the country, leaving many small towns and rural areas without service,²⁴² and their fees may be unaffordable for many seniors. Although

²³⁹ See Mobility Lab, *supra* note 235.

²⁴⁰ U.S. Dept. of Transp., *Inclusive Design Challenge Competitors*, <https://www.transportation.gov/inclusive-design-challenge/inclusive-design-challenge-competitors> (last updated Oct. 25, 2023).

²⁴¹ Christian Wolmar, *Driverless Cars Were The Future But Now The Truth Is Out: They’re On The Road To Nowhere*, THE GUARDIAN, Dec. 6, 2023, at <https://www.theguardian.com/commentisfree/2023/dec/06/driverless-cars-future-vehicles-public-transport> (“The tech companies have constantly underestimated the sheer difficulty of matching, let alone bettering, human driving skills.”).

²⁴² See, e.g., Diana Castillo, *Family In Taos Launches Rideshare App Tailored To Rural New Mexico*, KOB4, June 20, 2023, <https://www.kob.com/new-mexico/family-in-taos-launches-rideshare-app-tailored-to-rural-new-mexico/> (“While rideshare apps work in urban areas like Santa Fe and Albuquerque, it doesn’t work as well for people in rural New Mexico areas, such as Taos.”).

technological improvements offer a promising future, they do not offer a full solution to the challenges of today.

IV. PRESERVING PATIENT AUTONOMY WHILE PROTECTING PUBLIC SAFETY

A better system is needed to protect public safety without harming patient autonomy. Both individuals with cognitive decline and the general public deserve to be protected from driving hazards. At the same time, policy makers should not ignore the reality that it is very difficult for individuals to voluntarily give up driving and doing so may adversely affect their wellbeing.²⁴³

We therefore propose that state driving laws be modified to incorporate medical evaluation of driving skills when individuals are diagnosed with cognitive decline or conditions that can lead to it. Some states (and some jurisdictions outside the U.S.) have already enacted regulatory efforts to reduce the risk of harm caused by drivers with cognitive impairment. This Part analyzes those efforts and concludes that while existing policies would offer some benefit, they also carry limitations that hamper their effectiveness. This Article builds on the lessons learned from these earlier efforts and proposes a new regulatory strategy that leverages the strength of the physician/patient relationship to create a more durable and effective approach to driving safety.

A. Existing Regulatory Efforts

Some of the steps that jurisdictions have taken to reduce the risk of harm from impaired driving include mandatory physician reporting of cognitive decline diagnoses, cognitive testing by DMVs, and self-reporting of cognitive impairment diagnoses.²⁴⁴ Each of these options can marginally improve road safety. Each option, however, also has significant limitations.

1. Mandatory Reporting of Cognitive Decline Diagnoses

²⁴³ See *supra* notes 33-38.

²⁴⁴ See Amila Kahvedzic, *International Relicensing Models of Older Drivers*, p. 3 (2013), https://rcpi-live-cdn.s3.amazonaws.com/wp-content/uploads/2016/02/4_International-Re-Licensing-Models-of-Older-Driver-1.pdf.

One alternative is to require physicians to report individuals diagnosed with cognitive decline directly to the DMV. Some jurisdictions, such as Canada and several U.S. states, have implemented this approach.²⁴⁵

Several studies have raised doubts about the efficacy of mandatory reporting laws. One found that there is inconclusive evidence as to whether such mandates actually increase the number of reports submitted to DMVs.²⁴⁶ Another found that reporting mandates did not decrease driver hospitalizations associated with crashes, though the study did not address other outcome measures such as overall crash statistics.²⁴⁷ A third study concluded that reporting requirements did not significantly affect fatal crash rates for older drivers.²⁴⁸

Physicians may hesitate to report patients despite mandates because patients may perceive automatic DMV reporting to be punitive, and this action may cause a severe deterioration in the physician-patient relationship.²⁴⁹ Physicians have indicated that patients have become angry or abusive when informed that they would be reported to licensing authorities.²⁵⁰ Doctors may also worry that patients will withhold details about their symptoms or avoid medical care altogether if they are aware that they might be reported to the DMV.²⁵¹ Admittedly, patients may behave in the same way if they resent physicians for referring them for driving assessments, as proposed later in this Article.²⁵² But patients are less likely to be enraged by testing than by being reported to the

²⁴⁵ Linda Lee & Frank Molnar, *Driving and Dementia: Efficient Approach to Driving Safety Concerns in Family Practice*, 63 CANADIAN FAM. PHYSICIAN 27, 28 (2017) (“Physicians in most Canadian jurisdictions are legally mandated to report medical findings that could affect fitness to drive.”); *supra* note 31 and accompanying text. See also, Maureen Cleary, *Driving with Dementia: The Necessity of a Comprehensive Reporting Scheme*, 24 ELDER L.J. 151, 153 (2016), at 153 (advocating for the adoption of a uniform physician reporting mandate throughout the U.S.).

²⁴⁶ Sjaan Koppel, Lyndal Bugeja, Phuong Huua, Marilyn DiStefano & Judith L. Charlton, *Issues Relating to the Efficacy of Mandatory Medical Reporting of Drivers with Medical and Other Fitness to Drive Relevant Conditions by Medical and Other Health Practitioners*, 12 J. TRANSPORT & HEALTH 237, 249 (2019).

²⁴⁷ Yil Agimi, Steven M Albert, Ada O Youk, Patricia I. Documet & Claudia A Steiner, *Mandatory Physician Reporting of At-Risk Drivers: The Older Driver Example*, 58 THE GERONTOLOGIST 578, 578 (2018).

²⁴⁸ Brian C Tefft, *Driver License Renewal Policies and Fatal Crash Involvement Rates of Older Drivers, 1986-2011*, 1 INJURY EPID., art. #25, p. 6 (2014).

²⁴⁹ Koppel et al., *supra* note 246, at 250 (2019).

²⁵⁰ *Id.*

²⁵¹ *Id.*

²⁵² See *infra* Part IV.B.

government, especially if the physician is empathetic and thoughtful in explaining the benefits of assessments and counselling about driver safety.²⁵³

Another challenge is that DMVs are often understaffed.²⁵⁴ They may not have the personnel or resources to conduct thorough testing for everyone who is reported as having a cognitive decline diagnosis. Instead, DMVs may revoke licenses without further investigation or lose track and ignore reports.²⁵⁵ The alternative approach suggested in this Article should ensure that drivers are carefully evaluated and that only those who are incapable of operating a car safely lose their licenses.²⁵⁶

2. Cognitive Testing by DMV

As part of its license renewal process, Ontario, Canada administers cognitive tests to all drivers older than eighty.²⁵⁷ Likewise, in Japan, drivers who are seventy-five or older must undergo cognitive testing for license renewal purposes.²⁵⁸ This is sensible from a public health and road safety perspective, because so many individuals with cognitive decline fail to seek medical care and obtain diagnoses.²⁵⁹ Thus, physicians have no opportunity to refer many cognitively impaired individuals for driving assessments.

²⁵³ See *infra* note 303 and accompanying text.

²⁵⁴ See e.g. OPB Staff, *Oregon DMV Faces Staffing Shortages, Causing Closures*, OREGON PUB. BROADCASTING, Jul. 11, 2023, <https://www.opb.org/article/2023/07/11/weekday-wrap-staffing-shortages-oregon-dmv-offices-seabirds-umatilla/>; Steve Sbraccia, *DMV Difficulties? Appointments Backlogged across NC Due to Staff Shortage, Commissioner Says*, CBS 17, Feb. 2, 2023, <https://www.cbs17.com/news/investigators/dmv-difficulties-appointments-backlogged-across-nc-due-to-staff-shortage-commissioner-says/>.

²⁵⁵ Agimi et al., *supra* note 247, at 584 (“In contrast to Pennsylvania, in Oregon only a small number of licensed drivers had their licenses revoked due to physician reporting”).

²⁵⁶ See *supra* Part IV.B.

²⁵⁷ Alzheimer Society, *Cognitive Testing for Drivers in Ontario*, <https://alzheimer.ca/on/en/help-support/im-person-living-dementia/living-well-dementia/getting-around/cognitive-testing> (last visited Dec. 11, 2023).

²⁵⁸ Haruhiko Inada, Jun Tomio, Shinji Nakahara & Masao Ichikawa, *Association between Mandatory Cognitive Testing for License Renewal and Motor Vehicle Collisions and Road Injuries*, 71 J. AM. GERIATR. SOC. 1145, 1146 (2023); HealthinAging.org, *In Japan, Driving Skill Training for Older Drivers Enhances Safety*, Nov. 9, 2020, <https://www.healthinaging.org/blog/in-japan-driving-skill-training-for-older-drivers-enhances-safety/>; University of Tsukuba, *Cognitive Screening for Older Drivers Improves Motor Safety—but at a Cost*, Jan. 27, 2023, <https://www.tsukuba.ac.jp/en/research-news/20230127140000.html#:~:text=In%202009%2C%20Japan%20began%20to,they%20receive%20their%20new%20license>.

²⁵⁹ See *supra* notes 55-56 and accompanying text.

Cognitive tests alone, however, are unlikely to discern which individuals are truly unsafe drivers.²⁶⁰ Initial cognitive testing would have to be supplemented by on-road testing, which DMVs may not have the resources to undertake.²⁶¹ Indeed, Japan's cognitive testing program identified 30,000 drivers with signs of dementia, but license authorities determined that only 674 should have their licenses revoked.²⁶²

Moreover, a DMV testing approach is likely untenable in the United States, where there is considerable distrust of the government.²⁶³ According to the Pew Research Center, only twenty-one percent of Americans say they trust the government to do the right thing at least most of the time.²⁶⁴ Furthermore, one may shudder to think about receiving a cognitive decline diagnosis from a DMV employee rather than a professional health care provider who is skilled at communicating distressing news to patients.

3. Self-Reporting and Physician Certification

Australia requires drivers with injuries or illnesses that could affect driving to self-identify and report themselves to driver license authorities, which will contact medical professionals about the matter.²⁶⁵ In the case of cognitive decline, however, this is not an optimal approach as many people do not accept or understand that they have the condition because of their mental limitations or denial.²⁶⁶ Moreover, a self-reporting requirement would raise compliance and enforcement problems and has not been embraced by any U.S. state.²⁶⁷

In Australia, after notification, licensing authorities consult the driver's physician for an initial opinion regarding driving ability, which may be followed by a formal

²⁶⁰ See *supra* Part I.C.

²⁶¹ *Id.*; *supra* note 254 and accompanying text.

²⁶² See *supra* note 26 and accompanying text.

²⁶³ Pew Research Center, *Public Trust in Government: 1958-2022*, Jun. 6, 2022, <https://www.pewresearch.org/politics/2022/06/06/public-trust-in-government-1958-2022/>

²⁶⁴ *Id.*

²⁶⁵ Philippa Angley, *Driving and Dementia*, Alzheimer's Association Victoria, p. 10 (2001), https://www.dementia.org.au/sites/default/files/Driving_and_Dementia_-_A_Background_Paper.pdf; Dementia Australia, *Dementia and Driving*, <https://www.dementia.org.au/resources/dementia-and-driving> (last visited Dec. 11, 2023).

²⁶⁶ See *supra* notes 55-57 and accompanying text.

²⁶⁷ Margaret F. Brinig, *The Public Choice of Driving Competence Regulations*, 21 NOTRE DAME J. L. ETHICS & PUBLIC POL'Y 405, 423 (2007).

driving assessment.²⁶⁸ Several foreign countries as well as Washington DC and Nevada have also established medical certification requirements.²⁶⁹

Medical certifications from physicians are better than no evaluation of driving capacity at all. However, as detailed above, it is not easy for physicians to evaluate driving skills, and they are not in the best position to do so.²⁷⁰ Some physicians who are asked for medical certifications may choose to order formal driving assessments,²⁷¹ but there is no guarantee that they will do so. Consequently, explicit statutory language that details how testing should be conducted is preferable to leaving the evaluation mechanism up to physicians.

B. The Proposed Solution for a More Comprehensive Legal Intervention

Although each of the existing options may offer incremental improvement, we suggest a more comprehensive regulatory approach that leverages the strengths of both medical professionals and institutions. It would incorporate action at three stages: original diagnosis, skills testing, and licensing restrictions.

At its core, the laws should mandate the following:

- Physicians who diagnose patients as having cognitive decline or having a disease likely to lead to cognitive decline must order formal driving assessments, including road testing or validated simulations for such patients.
- Physicians must provide the DMV with the names of cognitive decline patients who refuse to undergo driving assessments.
- Physicians must provide the DMV with the names of patients who were assessed as requiring driving restrictions (e.g. no driving at night or on highways) or as being unable to drive safely at all.
- Physicians must order additional driving assessments for cognitive decline patients who continue driving at intervals that are determined by state law or the DMV.
- Physicians who comply with all of the above duties will be immune from liability for damages arising out of patients' automobile crashes.

Physicians should initiate driver testing as soon as they make a diagnosis of cognitive decline, unless they are confident the impairment is temporary.²⁷² Doctors should also be obligated to ensure that patients with diseases that can lead to cognitive

²⁶⁸ Dementia Australia, *supra* note 265.

²⁶⁹ See Kahvedzic, *supra* note 244, at 3; *supra* note 29 and accompanying text.

²⁷⁰ See *supra* Part I.C; Koppel et al., *supra* note 246, at 249.

²⁷¹ See *supra* Part I.C.

²⁷² See *supra* notes 63-65 and accompanying text.

decline undergo driving assessments at an appropriate time in the course of their disease. For example, approximately seventy-five percent of people who have Parkinson's disease (PD) for more than ten years develop dementia, and on average, they develop the condition ten years after PD onset.²⁷³ It would thus be sensible to begin testing PD patients ten years after their diagnosis if testing has not previously been triggered by a cognitive impairment diagnosis.

Ordering physicians should receive reports of assessment results so they can enforce the testing requirement. This will enable them to report uncooperative patients to the DMV, as required by law.²⁷⁴ Assessment outcomes should be documented in patients' electronic health records. Thus, if patients attempt to "doctor shop" in order to circumvent testing requirements, other physicians will be able to verify whether testing took place.

Comprehensive driving assessments are often accompanied by recommendations.²⁷⁵ Physicians should report any recommended restrictions to the DMV so they can be indicated on driver licenses.²⁷⁶ For example, evaluators may determine that drivers should undergo training or limit their driving to short distances or favorable conditions (e.g. no driving at night or on highways).²⁷⁷ In the alternative, assessments might generate a recommendation that the individual stop driving altogether.²⁷⁸ Such evaluations may be made by driver rehabilitation specialists.²⁷⁹ Currently there are only three-hundred seventy certified driver specialists in the United States and Canada.²⁸⁰ The proposed driver testing requirement would likely generate significant growth in this

²⁷³ Dag Aarsland & Martin Wilhelm Kurz, *The Epidemiology of Dementia Associated with Parkinson Disease*, 289 J. NEUROL. SCI. 18, 18 (2010).

²⁷⁴ AMERICAN GERIATRICS SOCIETY & ALICE POMIDOR, *supra* note 6, at 37 ("Some older adults will absolutely refuse to consider evaluation and are intent on continuing to drive").

²⁷⁵ *Id.* at 66.

²⁷⁶ See e.g. PennDOT Driver & Vehicle Services, *License Types & Restrictions*, <https://www.dmv.pa.gov/Driver-Services/Driver-Information/License-Types/Pages/default.aspx> (last visited Dec. 11, 2023).

²⁷⁷ *Id.*

²⁷⁸ *Id.*; AAA, *Evaluate Your Driving Ability*, <https://exchange.aaa.com/safety/senior-driver-safety-mobility/evaluate-your-driving-ability/> (last visited Dec. 11, 2023).

²⁷⁹ Hill et al., *supra* note 11, at 1587; National Mobility Equipment Dealers Association, *The Importance of Certified Driver Rehabilitation Specialists* (Feb. 22, 2021), <https://nmeda.org/certified-driver-rehabilitation-specialists-2/#:~:text=Currently%2C%20there%20are%20only%20about,order%20to%20improve%20their%20work.>

²⁸⁰ National Mobility Equipment Dealers Association, *supra* note 279.

profession. In the interim, occupational therapists who are not specially certified can also test and counsel drivers.²⁸¹

When patients have progressive conditions, such as dementia or Parkinson's disease, their driving skills may deteriorate over time.²⁸² Thus, individuals whose driving is found to be competent initially may later become unsafe drivers. Consequently, state law should require repeated testing at intervals that are established either by statute or by the DMV.²⁸³

1. Complementing Existing Legal Frameworks

A law that requires physicians to refer patients for formal driving assessments and to report certain outcomes to the DMV would be consistent with other laws that govern both driving and physicians, complementing the existing legal landscape. State laws already mandate that drivers undergo various procedures in order to renew their licenses, and a few states obligate doctors to submit reports to the DMV regarding patients who may be unsafe drivers.²⁸⁴ Moreover, the proposed law is no more intrusive on physician autonomy than existing regulations in other areas—for example, many states restrict physicians' ability to prescribe opioids and require clinicians to check the Prescription Drug Monitoring Program prior to prescribing controlled substances.²⁸⁵

Moreover, the proposed statute would not be preempted by the HIPAA Privacy Rule because it would require disclosure of information without patient authorization only for purposes of treatment, law enforcement, public health, and prevention of serious

²⁸¹ See e.g. American Occupational Therapy Association, *Driving Rehabilitation Program Development*, <https://www.ota.org/practice/clinical-topics/driving-community-mobility/driving-rehabilitation-program-development> (last visited Dec. 11, 2023); University Hospitals, *Drivers Evaluations: Offering Comprehensive Clinical Driver Evaluations*, <https://www.uhhospitals.org/services/rehabilitation-services/Conditions-and-Treatments/occupational-therapy/services/drivers-evaluations> (last visited Dec. 11, 2023).

²⁸² AMERICAN GERIATRICS SOCIETY & ALICE POMIDOR, *supra* note 6, at 66.

²⁸³ *Id.*; F. Dennis Thomas III, Richard D. Blomberg, Michael Knodler, & Matthew R.E. Romoser, *Licensing Procedures for Older Drivers*, National Highway Traffic Safety Administration (Report No. DOT HS 811 833) (2013), p. 44.

²⁸⁴ See *supra* Part II.B.I.

²⁸⁵ American College of Emergency Physicians, *PDMP Legislation*, <https://www.acep.org/state-advocacy/opioid-advocacy-resources/pdmp-legislation> (last visited Dec. 11, 2023); Amy Lieberman & Corey Davis, Jennifer Oliva, *Dosing Discrimination: Regulating PDMP Risk Scores*, 110 CAL. L. REV. 47, 77 (2022); Prescription Drug Monitoring Program Training and Technical Assistance Center, *Mandatory PDMP Use* (Apr. 19, 2023) https://www.pdmpassist.org/pdf/Mandatory_Query_Conditions.pdf.

injury.²⁸⁶ It would not conflict with any state privacy law because it would be consistent with other state reporting requirements and would add a confidentiality exception to those that already exist.²⁸⁷ Since its sole purpose would be to safeguard the welfare of drivers and passengers, the law would be rationally related to a legitimate government aim and would comply with Equal Protection requirements.²⁸⁸

Furthermore, the proposal comes with a legal incentive that can help facilitate its adoption: immunity from civil liability for doctors who comply with the reporting requirements. Civil liability is not an abstract risk. There are numerous examples of plaintiffs suing doctors and alleging that a driver's known medical condition contributed to their injuries. In some jurisdictions, the courts have ruled in favor of the doctor.²⁸⁹ In others, however, the courts have rules in favor of the plaintiffs.²⁹⁰ Oklahoma has already adopted a liability shield for physicians who voluntarily report high-risk drivers, providing that "any person or physician or any medical personnel participating in good faith and without negligence or malicious intent in making of a report pursuant to this act shall have the immunity from civil liability that might otherwise be incurred or imposed."²⁹¹ Expanding this protection to other states as part of a mandatory reporting scheme would offer greater security to medical professionals and would encourage their support for the new legal requirements.

2. Improving Policy Outcomes While Balancing Autonomy and Safety

Numerous stakeholders would benefit from the proposed law. Most obviously, it would protect individuals with cognitive decline and those who share the roads with

²⁸⁶ See *supra* notes 135-147 and accompanying text.

²⁸⁷ See *supra* Part II.B.2

²⁸⁸ See *supra* notes 156-163 and accompanying text.

²⁸⁹ See, e.g., *Medina v. Pillemer*, 2011 WL 7118864 (Mass. Super. 2011); *Hospodar v. Schick*, 885 A.2d 986, 990 (Pa. Super. 2005); *Schmidt v. Mahoney*, 659 N.W.2d 552, 554–555 (Iowa 2003); *Kolbe v. State*, 661 N.W.2d 142, 148–150 (Iowa 2003); *Estate of Witthoeft v. Kiskaddon*, 557 Pa. 340, 344 (1999); *Praesel v. Johnson*, 967 S.W.2d 391, 396–398 (Texas 1998); *Calwell v. Hassan*, 260 Kan. 769, 787 (Kansas 1996); *Young v. Wadsworth*, 916 S.W. 877, 878–879 (Missouri 1996); *Werner v. Varner, Stafford & Seaman*, 659 So.2d 1308, 1309–1311 (Florida 1995);

²⁹⁰ See, e.g., *Kochick v. Hanna*, 2010 WL 1752577, at *1–2 (W.D. Okla. 2010); *Harden v. Allstate Ins. Co.*, 883 F.Supp. 963, 971–972 (D.Del. 1995); *Duvall v. Golden*, 139 Mich.App. 342, 350–351 (1985) (finding a duty of a physician to third party based upon a "special relationship"); *Myers v. Quesenberry*, 144 Cal.App.3d 888, 892–893 (1983).

²⁹¹ OKLA. STAT. tit. 47, § 6–207 (2022).

them. Patients rarely raise the issue of driving themselves, so serious safety hazards may not be detected in states with lax driving renewal procedures.²⁹²

Researchers that have studied Illinois' on road testing requirement for drivers who are seventy-five or older have concluded that it has a positive impact.²⁹³ They found that Illinois' renewal policy significantly reduced insurance claim frequencies.²⁹⁴ Furthermore, bodily injury liability exposure for Illinois drivers who were seventy-five and older decreased relative to drivers aged fifty-five to seventy-four "by a significantly larger percentage than in the control states."²⁹⁵ It is reasonable to assume that these trends would be even more pronounced for drivers with cognitive decline.

The aim of driving assessments is to help individuals continue to drive safely, perhaps with the aid of prudent restrictions or technology, as discussed above.²⁹⁶ Studies have shown that cognitive screening requirements that lead to driving cessation can cause increased numbers of pedestrian and bicycle injuries as older individuals switch to these modes of transportation, which bear their own risks.²⁹⁷ Driving restrictions have often been found to be an effective substitute for full license suspension.²⁹⁸ Vehicle safety features may also enable drivers to remain behind the wheel for a longer period of time.²⁹⁹ But without a legal mandate, doctors may never address driving with their cognitive decline patients, thereby missing important opportunities to protect their patients and the public at large.³⁰⁰

²⁹² Carol Sinnott, Tony Foley, Linda Horgan, Kathleen McLoughlin, Cormac Sheehan, & Colin Bradley, *Shifting Gears Versus Sudden Stops: Qualitative Study of Consultations about Driving in Patients with Cognitive Impairment*, 9 BMJ OPEN e024452, p. 6 (2019).

²⁹³ Highway Loss Data Institute, *supra* note 28, at 9.

²⁹⁴ *Id.*

²⁹⁵ *Id. But see*, Tefft, *supra* note 248, at 6 ("Implementing a requirement for drivers to pass an on-road driving test at routine in-person license renewal was not associated with significant changes in fatal crash involvement rates").

²⁹⁶ AARP, *supra* note 88. *See supra* note 277 and accompanying text and *supra* Part III.C.1.

²⁹⁷ Inada et al., *supra* note 258, at 1153; Anu Sirena & Annette Meng, *Cognitive Screening of Older Drivers Does Not Produce Safety Benefits*, 45 ACCIDENT ANALYSIS & PREVENTION 634, 636-37 (2012).

²⁹⁸ National Highway Traffic Safety Administration, *Older Driver Compliance With License Restrictions* (April 2018), https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/older_driver_compliance_with_license_restrictions.pdf ("The results support the DMV panelists' position that restricting drivers in lieu of suspending their licenses does not pose an unacceptable safety risk, yet does help preserve mobility.").

²⁹⁹ *See supra* Part III.C.1.

³⁰⁰ Laura B. Brown & Brian R. Ott, *Driving and Dementia: A Review of the Literature*, 17 J. GERIATR. PSYCHIATRY NEUROL. 232, 236 (2004) (reporting that research suggests that 1 out of 4 doctors do not discuss driving with elderly patients).

The proposal will also often bring welcome relief to patients' family members. Without it, families are often left alone to navigate the minefields of determining whether their loved ones can drive safely and convincing them to stop or limit their driving when appropriate.³⁰¹ Many families have experienced explosive arguments about driving.³⁰² By contrast, trusted doctors may be better positioned to convince patients to adjust or cease driving without the emotional baggage that family discussions may carry.³⁰³

In other cases, however, families are happy to facilitate decision making about driving privileges and to serve as a source of support and comfort to the vulnerable driver. They may be effective in convincing loved ones to give up driving voluntarily. In such instances, doctors should be open to involving family members in the process. Many resources provide advice regarding discussions with loved ones about driving.³⁰⁴ They emphasize the need for empathy, objectivity, and openness to different solutions.³⁰⁵ They also counsel that family members should ride as passengers with the driver so that they can later discuss specific mistakes they observed as evidence of the need for intervention.³⁰⁶

The proposed law is sensitive to physicians' needs as well. First and foremost, it provides them with immunity if they comply with legal mandates. It may also spare physicians from confrontations with patients who resent the suggestion of testing, as

³⁰¹ See *supra* notes 33-38 and accompanying text.

³⁰² Hamdy et al., *supra* note 34, at 3; HOFFMAN, *supra* note 30, at 151-52.

³⁰³ Catherine L. Andrew, Victoria Traynor & Donald C. Iverson, *An Integrative Review: Understanding Driving Retirement Decisions for Individuals Living with a Dementia*, 71 J. ADVANCED NURSING 2728, 2736 (2015) (noting that 42% of carers reported that physicians facilitated driving cessation); Brown & Ott, *supra* note 300, at 236 (reporting that 27% of study participants who stopped driving stated that they did so upon the advice of their doctors); Harney & Antuono, *supra* note 86, at 143.

³⁰⁴ See e.g. Leandra Beabout, *Discussing Driving with Your Aging parent: How to Proceed with Care and Compassion*, CARE., Oct. 18, 2021, <https://www.care.com/c/how-to-talk-to-a-parent-about-driving/>; Medicare.org, *How to Talk With Seniors About Their Unsafe Driving*, <https://www.medicare.org/articles/how-to-talk-with-seniors-about-their-unsafe-driving/#:~:text=Be%20encouraging%20and%20supportive.&text=Avoid%20saying%20they%20are%20a,experience%20of%20their%20unsafe%20driving> (last visited Dec. 11, 2023); National Institute on Aging, *Safe Driving for Older Adults*, <https://www.nia.nih.gov/health/older-drivers#talk> (reviewed Dec. 20, 2022).

³⁰⁵ National Highway Traffic Safety Administration, *How to Understand and Influence Older Drivers*, <https://www.nhtsa.gov/older-drivers/how-understand-and-influence-older-drivers#:~:text=Empathize%20with%20and%20listen%20to,one%20person%20have%20the%20conversation> (last visited Dec. 12, 2023).

³⁰⁶ *Id.*

doctors could explain that they are obligated by law to ensure that testing occurs.³⁰⁷ Even if patients remain unhappy about testing, they will presumably have no incentive to switch doctors, because all physicians would comply with the same legal mandate.

The proposal does not require doctors to conduct any driving-related assessments themselves, but rather, leaves those determinations to driving specialists. Many physicians feel that they are stretched too thin already and suffer from burnout.³⁰⁸ Therefore, they may not be able to manage new cumbersome responsibilities such as conducting comprehensive driving evaluations. Furthermore, some are very concerned that they will destroy the physician-patient relationship by discussing driving and severely damage the quality of life of patients by making negative determinations.³⁰⁹ Many also feel that they do not have the expertise or tools necessary to determine whether individuals can drive safely.³¹⁰ They certainly cannot perform road testing in their offices.³¹¹ Physicians may also worry that if they are tasked with making driving competence determinations themselves, they could face liability for reaching the wrong conclusion if the patient is later involved in a crash.³¹²

Admittedly, the regulatory approach we recommend will not identify cognitively impaired drivers who do not receive a medical diagnosis. It is even possible that some individuals will delay seeking care for suspected cognitive decline if they learn that they would be required to undergo a driving assessment. The proposal also does not reach drivers with other medical conditions that could adversely affect driving competency, which is a notable concern that is beyond the scope of this paper.

To address some of these concerns, law enforcement authorities should train police officers regarding cognitive decline. Officers issuing tickets to older drivers should check the frequency of their traffic violations. If the older driver has received a series of

³⁰⁷ Cleary, *supra* note 245, at 169-70 (discussing mandatory reporting laws and asserting that “[t]here is less of a risk to the relationship with the patient because the doctor can put the ‘blame’ for reporting on the government and the statute”).

³⁰⁸ Sharona Hoffman, *Healing the Healers: Legal Remedies for Physician Burnout*, 18 YALE J. HEALTH POL’Y, L. & ETHICS 56, 62-7 (2019).

³⁰⁹ Carol Sinnott, Tony Foley, Justin Forsyth, Kathleen McLoughlin, Linda Horgan, Colin P. Bradley, *Consultations on Driving in People with Cognitive Impairment in Primary Care: A Scoping Review of the Evidence*, 13 PLOS ONE e0205580, p. 7 (2018).

³¹⁰ American Medical Association, Opinion 8:2, *Impaired Drivers & Their Physicians*, <https://code-medical-ethics.ama-assn.org/ethics-opinions/impaired-drivers-their-physicians> (last visited Dec. 11, 2023).

³¹¹ See *supra* notes 87-89 and accompanying text (discussing the importance of road testing).

³¹² Lee Black, *Physicians’ Legal Responsibility to Report Impaired Drivers*, 10 AM. MED. ASS’N J. ETHICS 393, 393-95 (2008) (discussing liability concerns).

tickets within a short timeframe, officers should be empowered to require a driving assessment along with a fine. Drivers could contest both the fine and the driving assessment by appearing in court for a hearing. Patients would be less inclined to avoid or delay consultation with a physician if they know they could be ordered to undergo a driving assessment when receiving traffic tickets even without a formal diagnosis. The details of the age to which this policy should apply and the number of tickets that would trigger it should be determined by law enforcement and cognitive decline experts.

It may well be optimal to require all drivers over a certain age to undergo road testing, as does Illinois.³¹³ Such a program, however, would require large expenditures by states or driver fees that could be prohibitively expensive for economically disadvantaged people. This Article, therefore, has begun with a more modest proposal that focuses on patients with cognitive decline who are among the most vulnerable drivers and the most likely to cause accidents.³¹⁴ But it is only a first step, and it will require growth in the number of certified driver rehabilitation specialists and driving assessment facilities.

Of course, passing legislation is always an uphill battle; history indicates that the likelihood of legislative change is small, as fewer than ten percent of proposed bills become enacted legislation.³¹⁵ Many of our recommendations could still be implemented voluntarily even without legislative change. For example, in the absence of statutory interventions, physicians should nevertheless follow the guidelines suggested in this Article. Referring patients for driving tests and disclosing information to DMVs when appropriate would not violate the HIPAA Privacy Rule, as all states encourage physicians to report unsafe drivers.³¹⁶ The American Medical Association (AMA) has emphasized that physician may not simply ignore the issue of driving when treating patients with impairments that could affect driving ability.³¹⁷ Indeed, the AMA, the American Academy

³¹³ 625 ILL. COMP. STAT. § 5/6-109(C) (2023).

³¹⁴ See *supra* notes 16-22 and accompanying text.

³¹⁵ Govtrack, *Statistics and Historical Comparison*, <https://www.govtrack.us/congress/bills/statistics> (last visited Dec. 11, 2023); UShistory.org, *How a Bill Becomes a Law*, <https://www.ushistory.org/gov/6e.asp> (last visited Dec. 11, 2023).

³¹⁶ See Berger et al., *supra* note 131, at 669; *supra* Part II.B.1.

³¹⁷ American Medical Association, *supra* note 310; Hillary R Bogner, Joseph B. Straton, Joseph J. Gallo, George W. Rebok & Penelope M. Keyl, *The Role of Physicians in Assessing Older Drivers: Barriers, Opportunities, and Strategies*, 17 J. AM. BOARD FAM. PRACT. 38, 38 (2004) (“Yet there are few guidelines for the evaluation of older drivers in the medical office. Standard tests of cognitive performance, such as the Mini-Mental State Examination, and aspects of the standard clinical examination, such as testing reflexes, do not capture the features of perception and attention that are critical for the safe operation of an automobile.”).

of Neurology, the Alzheimer’s Association, and other professional organizations could incorporate the Article’s recommendations into future guidance. They should also offer continuing medical education programs to help clinicians address driving concerns with patients.³¹⁸ These actions could provide a good beginning that would pave the way for more comprehensive regulatory reform. In the future, policy makers would be wise to consider a more comprehensive strategy for identifying individuals with driving-relevant physical and mental impairments and for addressing the hazards these conditions pose.

V. CONCLUSION

State legislation must balance the needs of patients with cognitive decline, their physicians, and the public at large. To that end, this Article proposes that physicians who diagnose patients with cognitive decline be legally obligated to refer them for professional driving assessments and to disclose to the DMV only the names of patients who refuse to undergo testing or are deemed to be unable to drive safely or need driving restrictions. By mandating medical evaluations and structured reporting in cases of cognitive decline, this proposal does not merely react to potential hazards but proactively seeks to prevent them. It respects the dignity and autonomy of individuals with cognitive impairments while acknowledging the paramount importance of public safety on our roads.

Our approach leverages the physician-patient relationship, a cornerstone of trust and understanding, to facilitate a more nuanced and sensitive intervention in the driving arena. Furthermore, our proposal aligns seamlessly with existing legal frameworks, complementing and enhancing them rather than contradicting or overhauling established norms. As society continues to grapple with the challenges posed by an aging population and the prevalence of cognitive impairments, it is imperative that our legal systems evolve in a manner that is both compassionate and pragmatic.

³¹⁸ See e.g. Gina C. Pervall, *Driving Cessation vs Driver Retraining Among Older Adults*, MEDSCAPE, <https://www.medscape.org/viewarticle/975649> (reviewed and renewed Jun. 29, 2023) (describing continuing medical education program).