UNIVERSITY OF CALIFORNIA,
IRVINE

A Demographic Portrait of Physicians Sanctioned by the Federal Government in the United States

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Criminology, Law and Society

by

Bryan Robert Burton

Dissertation Committee:
Emeritus Professor Paul Jesilow, Chair
Emeritus Professor Henry Pontell
Professor Elliott Currie

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DEDICATION

To my parents, June and Ken, and my wife, Helena, in recognition of their invaluable devotion, guidance, support and love.

TABLE OF CONTENTS

LIST OF TABLES

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I fully recognize my successes in graduate school would have been impossible without the support, guidance and love I received from others. I wish to express my heartfelt gratitude to Professors Paul Jesilow, Henry Pontell and Elliott Currie for their assistance with the dissertation. Paul Jesilow – It is impossible for me to thank you for everything you have done for me during the past eleven years. Your devotion to your job and others serves as an excellent example for me, which I hope to live up to one day. You were always there for me throughout my time at UCI. I will always appreciate you as a mentor and as a dear friend. It is my hope I can help others as you have helped me.

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CURRICULM VITAE

Bryan Robert Burton

2016 Ph.D. in Criminology, Law & Society
University of California, Irvine
Dissertation: "A Demographic Portrait of Physicians Sanctioned by the Federal Government in the United States"
Professor Paul Jesilow, Chair

2008 B.A. in Social Ecology
University of California, Irvine

FIELD OF STUDY

White-Collar Crime; Healthcare Fraud and Abuse

PUBLICATIONS

Burton, B., & Jesilow, P. (2014). Healthcare Fraud. In Oxford Bibliographies in Criminology, Ed. Richard Wright. New York: Oxford University Press. Online at: http://www.oxfordbibliographies.com/view/document/obo-9780195396607/obo-9780195396607-0157.xml

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OTHER WRITINGS

Ferver, K., Burton, B., & Jesilow, P. (2008). *The Use of Claims Data in Healthcare Research*. A report to the California Wellness Foundation on the Effects of Fraud on the Evaluation of Health Care.

FELLOWSHIPS, HONORS AND AWARDS

2015	Criminology, Law & Society Professional Development Fellowship
2014	Social Ecology Dean's Dissertation Writing Fellowship, UC Irvine
2012	Outstanding Graduate Student Mentor Award, UC Irvine
2010	Global Health Travel Fellowship, UC Irvine
2009-2014	Graduate Summer Research Fellowship, UC Irvine
2006	Interdisciplinary Summer Undergraduate Research Fellow, UC Irvine
2005	Summer Undergraduate Research Program Fellow, UC Irvine

OTHER RECOGNITIONS

2007	Outstanding Supporter of Prevention Award, City of Irvine (Received for involvement in a youth conference on HIV/AIDs)

TEACHING EXPERIENCE

2015-Present **Assistant Professor**: Department of Political Science & Criminal Justice, College of Humanities & Social Sciences, Southern Utah University (SUU)

2013-2014 **Teaching Associate**: Department of Criminology, Law and Society, School of Social Ecology, University of California, Irvine (UCI)

Criminology Theory: The instructor for an upper-division undergraduate course on theories explaining criminal behaviors. Conducted lectures and reviews, developed the curriculum and examinations.

Classics in Crime Cinema: The instructor for an upper-division course on how popular culture through films shapes and molds public thinking about crime and

criminals. Conducted lectures and reviews, developed the curriculum and examinations.

2008-2015 **Teaching Assistant**: Department of Criminology, Law and Society, UCI

Developed and evaluated examinations. Conducted lectures, discussion sections, exam reviews and weekly office hours. Courses included: Foundations in Criminology, Law & Society, Social Deviance, White-Collar Crime, Naturalistic Field Research, Police and Change, Criminological Theory, Introduction to Criminology, Law & Society, Civil Legal Systems and American Socio-Legal Theory.

OTHER TEACHING EXPERIENCES

2012 **Course Development**: Department of Criminology, Law and Society, UCI

Assisted a faculty member in revising and updating the White-Collar Crime online master's course. Removed unnecessary materials and added more up-to-date readings and materials.

2011-2014 **Graduate Teaching Assistant Trainer**: Department of Criminology Law and Society, UCI

Co-designed and co-taught a 2-hour session (once quarterly) to train and prepare teaching assistants for an online instructional environment for master's-level students.

2006- 2008 **HIV/AIDS Fundamentals Undergraduate Discussion Leader**: School of Social Ecology, UCI

Taught a one-hour discussion section (4 quarters) educating undergraduates about the struggles of living with HIV/AIDs, the social impacts of the virus and safer sex techniques.

RESEARCH EXPERIENCE

2013-2015 **Graduate Student Adviser**: European Healthcare Fraud and Corruption Network

Directed three undergraduate students working with the EHFCN on updating their Fraud, Waste and Corruption Directory, which will provide a brief overview of strategies employed by the twenty-eight European Union member states to counter fraud, waste, and corruption in healthcare.

2012 **Research Assistant**: Department of Criminology, Law and Society

Helped in developing research funding proposals to evaluate the Senior Medicare Patrol Programs.

2012 **Research Assistant**: Department of Criminology, Law and Society

Assisted with conducting interviews with Swedish healthcare officials regulating fraud in their system.

OTHER WORK EXPEREINCE

2007-2008 **Investigative Intern**: Centers for Medicare and Medicaid Services

Aided senior fraud investigators with developing cases against suspect providers by screening referrals, researching information and other field work tasks.

PRESENTATIONS

Deviant Doctors: A Demographic Portrait of Physicians Sanctioned by the Federal Government in the United States. *Presentation at the American Society of Criminology Annual Meeting, San Francisco, California, November 2014.*

Global Health Policy, Law, and Diplomacy. *Presentation at the UC Global Health Day, University of California at Riverside, February 2013.*

Potential Methods to Limit Fraud and Abuse in Universal Healthcare. *Presentation at the Global Health Travel Fellowship Symposium. University of California at Irvine, March 2011.*

Why Should the World Care About Policing Healthcare in the United States? *Presentation at the Stockholm Criminology, Symposium, Stockholm, Sweden, June 2010.*

DEPARTMENTAL SERVICE

2012-2015 Graduate Peer Mentor
2011-2014 Graduate Student Representative for the Master's Program
2011-2012 Comprehensive Exam Committee

ABSTRACT OF THE DISSERTATION

A Demographic Portrait of Physicians Sanctioned by the Federal Government in the United States

By

Bryan Robert Burton

Doctor of Philosophy in Criminology, Law and Society

University of California, Irvine, 2016

Professor Paul Jesilow, Chair

This research is based upon demographic data on physicians who appeared on the Office of Inspector General's (OIG) List of Excluded Individuals and Entities for the years 2008 to 2013. Demographic information on the 1,289 excluded physicians during this period were collected from public data sources. Males, older physicians, international medical graduates and primary care doctors were overrepresented amongst excluded physicians. Females, younger physicians, United States medical graduates, board certified physicians and secondary and Tertiary care doctors were underrepresented amongst excluded physicians. Possible reasons for why these groups were overrepresented or underrepresented are discussed in the dissertation. It is argued that this demographic portrait of excluded physicians is shaped by the interplay between the individual behaviors of doctors and the activities of regulatory personnel. Female physicians were more likely to be excluded for a financial offense (FO), while male doctors were more likely to be excluded for a quality of care matter (QOC). Board certified physicians were more likely to be excluded for a QOC matter, while non-certified doctors were more likely excluded for a FO. Explanations for these findings are discussed in the dissertation.

Preface

Establishment of Medicare and Medicaid

Medicare and Medicaid were signed into law by President Johnson as part of the Social Security Act of 1965. Medicare provides healthcare to individuals who are 65 years old and older. Medicaid provides healthcare to the indigent, pregnant women and the disabled. Medicare is a federally-funded and run healthcare program. Medicaid is a state ran healthcare program jointly funded by the federal government and the states.

The American Medical Association (AMA), which was the largest lobbying group for physicians in the country at the time, opposed most government interference into healthcare. The AMA favored private health insurance groups, such as Blue Cross/Blue Shield, which were largely controlled by doctors. The AMA viewed Medicare (and to a lesser degree Medicaid) as an "enslavement of the medical profession" and some skeptical physicians believed it would lead down the road to "socialized" medicine (Campion, 1984: p. 154). The AMA spent millions of dollars in an unsuccessful effort to defeat Medicare and Medicaid in Congress from 1964 to 1965 (Law, 1974). The AMA lobbied for no restrictions on how physicians practiced medicine and fought to maintain their dominance over healthcare. They threatened not to participate in these new federal healthcare programs in an attempt to persuade Congress to compromise (see Jesilow, Pontell and Geis, 1993 for a more detail discussion).[1]

Congress compromised with the AMA to gain their support by not placing any measures in the legislation portraying physicians as anything but honest and competent in maintaining their

[1] President Lyndon Johnson perceived this threat as real and approved the use of veterans' hospitals for the Medicare program in case doctors failed to participate in the voluntary program (Jesilow et al., 1993).

legal business affairs (Jesilow et al., 1993). Congress enacted few restrictions into the law. This left Medicare and Medicaid partially vulnerable to fraud and abuse.

Growth of Healthcare Fraud and Abuse in Federal Healthcare Programs

The federal government first addressed fraud and abuse in Medicare and Medicaid in the late 1960s due to ballooning healthcare expenditures (Iglehart, 2001; Jesilow et al., 1993). The earliest fraud and abuse investigations were directed at beneficiaries (patients), but such efforts quickly proved unfruitful. Regulators in the 1970s then turned their attention to the illegal behaviors of medical doctors. These enforcement efforts were met with hostility by the AMA, which viewed these actions as infringing upon the professional autonomy of physicians. The AMA was more supportive of the federal government's efforts at reducing fraud and abuse when investigations were concentrated on non-professionals, such as ambulance companies and durable medical equipment suppliers (Jesilow et al., 1993).

There appeared to be continued growth in healthcare fraud and abuse despite the federal government's efforts. New federal and state level agencies were developed throughout the 1970s to combat healthcare fraud and abuse in an effort to constrain growing Medicare and Medicaid expenditures (Iglehart, 2001). The Health Care Financing Administration (HCFA)[2] was created in 1977 to cut costs in Medicare. Congress in the same year allocated funding for state Medicaid Fraud Control Units. A majority of the states quickly created the fraud units, which were usually located in the State Attorney General's Office. The Office of Inspector General

[2] The predecessor to the Centers for Medicare and Medicaid Services (CMS).

(OIG) started excluding individuals and entities from federal healthcare programs in the late 1970s.

Prior Research and Demographic Portrait Studies

My dissertation research partly replicates and builds upon the work of Henry Pontell, Paul Jesilow and Gilbert Geis (1985; also see 1993). The authors created a demographic profile of physicians sanctioned by the OIG from 1977 to 1982 for practices in violation of Medicare and Medicaid rules, such as billing for services never rendered or providing unnecessary surgeries. They found three groups of physicians overrepresented amongst violators: (1) physicians who received their degrees from international medical schools, (2) family or general practitioners, and (3) psychiatrists. The authors also inferred from the data that physicians who had practices with large proportions of Medicare and/or Medicaid patients were probably also overrepresented among wrongdoers.

Henry Pontell and his colleagues (1985) reasoned that any portrait of offenders does not necessarily reflect all the possible malefactors in the universe. The demographic portrait of sanctioned medical doctors is likely a product of social construction. That is, the portrait being generated does not necessarily reflect the characteristics of all offending physicians. The portrait emerging, for the most part, is the outcome of the interplay between the deviant behaviors of individual physicians and the various regulatory agencies and courts overseeing the activities of aberrant medical doctors.

White-Collar Crime

Illegal behaviors committed by medical doctors fall specifically within the realm of white-collar crime. The concept of a “white-collar criminal” was coined and introduced by Edwin Sutherland, in his 1939 presidential address to the American Sociological Society, in part to challenge the demographic studies of the time. Offenders included in demographic studies during this time were largely based upon prison populations (see Cullen, Agnew, Wilcox, 2013). Such individuals were often poor, had little education, had low IQs, learning disorders and were often identified as being psychopathic deviants or as coming from slum neighborhoods and from broken families. This gave rise to criminological theories that held poverty, mental disease and other attributes of the prison population were the causes of criminal behavior (Sutherland, 1940).

Edwin Sutherland believed the criminological theories of his time were inaccurate, since they were based upon biased samples of arrested and incarcerated individuals (1940). The criminal justice system, Sutherland argued, mainly focused on the criminal behaviors of “street-level” offenders while it generally ignored the socially harmful actions of individuals with respectability and high social status (Sutherland, 1949). In 1949, Sutherland published *White-Collar Crime*, in which he defined his concept as "crime committed by a person of respectability and high social status in the course of his occupation." White-collar offenders, according to Sutherland, were rarely imprisoned even though their offenses were regularly more damaging to society (in terms of financial, social and physical cost) than the illegal behaviors of street-level offenders (Sutherland, 1940). The illegal acts of individuals with respectability and high social status were commonly handled through regulatory agencies and/or civil courts

(Sutherland, 1949), excluded such individuals from appearing in demographic studies of offenders.

Present Research

One goal of my dissertation was to update and build upon the research conducted by Henry Pontell and his colleagues more than three decades ago. The dissertation provides an extensive demographic portrait of 1,289 medical doctors who were excluded by the OIG from 2008 to 2013. I was particularly interested in determining which demographic characteristics of the excluded physicians (e.g., sex, age, medical training, medical specialty and board certification status) were associated with the exclusionary reason (a financial offense versus a quality of care matter).

Chapter 1 describes demographic studies. This chapter first looks at demographic studies with respect to "street-level" or traditional offenders. This chapter then discusses the difficulties of obtaining a demographic picture of white-collar offenders, particularly medical doctors.

Chapter 2 examines recent research on the demographic portrait of disciplined medical doctors. Males, older physicians, international medical graduates (IMGs), general and family practitioners and psychiatrists are overrepresented amongst disciplined physicians. Females, younger physicians, United States medical graduates (USMGs), board certified physicians and surgical specialists tend to be underrepresented among disciplined physicians (Dow and Harris, 2002; Jung, Lurie, Wolfe, 2006; Khaliq, Dimassi, Huang, Narine, and Smego, 2005; Lim, 2002; Morrison and Wickersham, 1998).

These prior demographic studies created portraits by utilizing limited or biased samples. One study, for example, only looked at medical doctors who were disciplined by the Ohio State Medical Board (Clay and Conatser, 2003). Another study examined only physicians who were excluded by the OIG for Medicare and Medicaid fraud while ignoring exclusions relating to quality of care matters. My interest was to generate a broader picture of physicians who were being excluded by the OIG and which groups (if any) were overrepresented or underrepresented amongst excluded medical doctors. I also wanted to determine which groups were more likely to be excluded for a financial offense (FO) and which groups were more likely to be excluded for a quality of care (QOC) matter. Chapter 2 presents previous studies and what is known about the demographic characteristics of disciplined doctors.

Chapter 3 details the methodology used in this research. I employed both qualitative and quantitative data in my dissertation. Qualitative data included observations and interviews with government officials and regulators. Quantitative data consisted of the demographic characteristics of physicians on the Office of Inspector General's (OIG) List of Excluded Individuals and Entities (LEIE). I also compiled aggregated data by zip code on the communities where excluded physicians practiced medicine. This was done to indirectly measure the percentage of the probable Medicare (percentage of individuals 65 years old and older in a particular zip code) and possible Medicaid (percentage of individuals living below the federal poverty level in a certain zip code) patients in an excluded physician's practice.

Chapter 4 describes the analyses and presents the results. I first compared the percentage of doctors on the LEIE who were of a certain demographic characteristic (e.g., female physicians) to that group's percentage of the total physician population in 2010. Excluded

female physicians, young doctors, USMGs, secondary and tertiary care physicians and board certified physicians were underrepresented when compared to the general physician population. Excluded male physicians, older doctors, IMGs, primary care physicians and non-board certified physicians were overrepresented when compared to the total physician population.

Bivariate analyses were then used to test the relationship between the independent variables described in Chapter 3 and the dependent variable, exclusionary reason (financial offense versus a quality of care matter). Multivariate logistic regression models were employed to evaluate which variables (if any) best predicted the exclusionary reason. Only two independent variables were found to be important determinants of the exclusionary reason. The logistic regressions overall indicated female physicians were more likely to be excluded for a financial offense (FO) than for a quality-of-care (QOC) offense. Board certified physicians were less likely to be excluded for a FO than for a QOC matter.

Chapter 5 discusses the possible reasons for the results obtained in Chapter 4. I also discuss the limitations of the dissertation and the future research strategies to correct the weaknesses of the data. Possible forthcoming research projects are also discussed.

Chapter One

Introduction

Demographic Studies

Demographic studies have their beginnings in the 19th century. There was a severe cholera outbreak in August 1854 in London, England. More than 600 individuals, by the time the outbreak ended, lost their lives due to this infection. Many public health officials at the time believed the outbreak of cholera was caused by pollution or "bad air." John Snow, who was a medical doctor, was unconvinced by this reasoning and set out to uncover the origin of the epidemic. He was able to pinpoint the source of the outbreak by talking with local residents. Snow determined the water pump on Broad Street was contaminated due to the lack of proper sanitary services. He was unsure specifically how the disease was transmitted, since he was unable to prove the hazard of the drinking water through microscopic inspection. He instead mapped the location where individuals were living when they contacted the infection. This was his key demographic variable. The map revealed that the cholera cases were centered on the Broad Street water pump (see McLeod, 2000 for a more detailed discussion). This led to the policy suggestion to close down the water pump to reduce the further spread of cholera. Snow's work serves as an example of how demographic studies can be used to address a specific public health problem.

Demographic characteristics are normally features of individuals in the general population. They include such items as gender, age, race, ethnicity, religion, education level, disabilities, illnesses, home ownership, political affiliation, employment status, and address, among others.

There have been numerous studies that have utilized demographic characteristics since Snow's initial effort. Scholars commonly employ demographic characteristics to study various issues, such as public health concerns. Demographic research, for example, has attempted to determine the types of individuals who have HIV/AIDS in order to pinpoint services to them and to prevent the spread of the disease (Takahashi and Smutny, 2007). Scholars also utilize demographic characteristics to determine individuals' attitudes towards a variety of public policies, such as whether people were in favor or not of the Vietnam War (Verba, Brody, Parker, et al., 1967), in favor or not of abortion (Combs and Welch, 1982), their attitudes toward the police (Jesilow, Meyer, and Namazzi, 1995) and their attitudes toward the Affordable Care Act (Gross, Stark, Krosnick, et al., 2012; Huntoon, McCluney, Scannell, et al., 2011). Demographic characteristics are also regularly used by researchers in marketing. They use demographic data to determine the types of individuals who buy certain products (Homburg and Giering, 2001; Slama and Tashchian, 1985). These are just a few areas in which scholars use demographic characteristics to study particular issues.

Before discussing what is known of the demographic portrait of healthcare violators, I will in the following paragraphs first discuss the current demographic picture of what researchers know with regards to street-level (or traditional) offenders. The recent demographic portrait of white-collar offenders will then be discussed.

Demographic Studies of "Street-Level" Offenders

There has been extensive criminological research done regarding the demographic characteristics of "street" offenders. Scholars regularly examine the demographic

characteristics of traditional or street-level offenders. These include those who have engaged in violent crimes, such as aggravated assault, forcible rape, murder and robbery. Researchers also look at the demographic characteristics of offenders who are involved in property crimes, such as arson, burglary, larceny-theft and motor vehicle theft.

Demographic portrait studies generally report individuals arrested and convicted of street-level offenses tend to be males between the ages of 15 to 29 years old in the United States and other advanced industrialized nations (see Farrington, 1986; Hirschi and Gottfredson, 1983; Stattin, Magnusson, and Reichel, 1989; Uniform Crime Report [UCR], 2012). The majority of arrested street offenders in the U.S. are also white and typically come from lower socioeconomic class neighborhoods (McCaghy, Giordano, and Henson, 1977). Blacks, however, are typically overrepresented in demographic studies in the U.S. examining the characteristics of offenders in official crime statistics (Fagan 2002; Fagan and Davies 2000; Fagan, Zimring, and Kim 1998; Gould and Mastrofski, 2004; Greene, 1999; Harris, 1993; Kautt and Spohn, 2006; United States Sentencing Commission, 2007). Immigrants to the United States, in general, are less likely in the U.S. to appear in demographic offender studies (Waters, 1999).[3]

The question becomes to what extent this demographic portrait is the result of the behavior of individuals or the outcome of criminal justice participants (such as the police, prosecutors, juries, judges) or some interplay between offenders and the system. Criminal justice personnel do not always equally treat everyone (Fagan, 2002). That is, some types of individuals may be labeled or perceived as more deviant and/or dangerous while others are not. For example,

[3] It is important to note that some immigrant groups are overrepresented in demographic studies looking at arrest and conviction data, such as Hispanics (Waters, 1999).

scholars have examined the demographic characteristics of individuals sentenced for possession of cocaine (Kautt and Spohn, 2006; Lowney, 1994; Schwarzer, 1992; United States Sentencing Commission, 2007; Weikel, 1995). These studies show that Blacks are disproportionately represented among federal crack cocaine offenders. This is despite the fact research has shown whites are more likely to use the drug (Knafo, 2013; National Institute on Drug Abuse, 1991). One survey found whites were nearly twice as likely as Blacks to have used crack cocaine (Substance Abuse and Mental Health Services Administration, 2011).[4] The previous demographic studies mentioned reveal the offenders sentenced by the federal government for possession of crack cocaine do not reflect the actual users in society. This suggests the enforcement of the law may be biased against African-Americans.

Sex

Females are underrepresented in the demographic portrait of individuals arrested and convicted of street-level crimes (Cauffman, 2008; Hindelang, 1979; Loy and Norland, 1981; Schwartz and Steffensmeier, 2007; Snyder and Sickmund, 2006; Steffensmeier and Allan, 1996; Women in Prison Project, 2005; UCR, 2012). Females represented slightly more than half (50.8 percent) of the general United States population in 2010 (U.S. Census, 2010), but they accounted for roughly a quarter of those arrested for all property and violent crimes (UCR, 2012). This gives rise to three important matters: (1) is the underrepresentation of females in

[4] Blacks are also disproportionately punished for other drug offenses. One study looked at the characteristics of individuals arrested from 1997 to 2006 for marijuana possession in New York City (Levine and Small, 2008). The researchers found Blacks were overrepresented. They accounted for 27 percent of the city's population, yet represented 54 percent of the arrests. Whites were underrepresented amongst the violators even though they were more likely to use marijuana.

crime statistics due to their behaviors; or (2) is their underrepresentation due to the activities of criminal justice personnel; or (3) is it due to some combination of the two?

The underrepresentation of females in arrests statistics may be due to the fact they engage in less criminal behaviors than males. Arrests statistics, in particular, indicate females are more underrepresented in violent crimes than they are in property offenses. Females are arrested for approximately 30 percent of all property crimes and 20 percent of all violent crimes (UCR, 2012). Females could simply be less violent than males. When females do kill, their behavior seems to be expressive (emotional or less rational). Females are more likely to kill family members in the home than they are to kill individuals who are unrelated (Adler, 1975; Simon, 1976).

The underrepresentation of females in official crime statistics may also be partly due to law enforcement biases. That is, the police may believe males are more likely to be the perpetrators of offenses than females (Becker, Hall and Stinson, 2001; Center for Sex Offender Management, 2007; Denov, 2004). Police officers, for example, in domestic violence cases are more likely to believe the man is the assailant than the woman (Buzawa, 1993; Hoyle and Sanders, 2000; Stith, 1990). The police in domestic violence cases are often more likely to arrest the man than the woman (Hoyle and Sanders, 2000). Males, who are victimized by their female partners, are less likely to be taken seriously by the police (Buzawa, 1993). Such biases may in part affect the arrest rates of female offenders.

Race

African-Americans are overrepresented in the demographic portrait of individuals arrested and convicted of street-level crimes (Cole, 1999; Fagan and Davies, 2000; Fagan, Zimring, and Kim, 1998; Gould and Mastrofski, 2004; Greene, 1999; Harris, 1993, 1999; Kautt and Spohn, 2006; Lowney, 1994; Schwarzer, 1992; Lundman and Kaufman, 2003; Skolnick and Caplovitz, 2001; Smith and Petrocelli, 2001; United States Sentencing Commission, 2007; Warren, Tomaskovic-Devey, Smith, Zingraff, and Mason, 2006; Weikel, 1995; Zingraff, Mason, Smith, et al., 2000). Blacks represented about 13 percent of the general United States population in 2010 (U.S. Census, 2010), yet made up nearly 30 percent of those arrested for all property and violent crimes (UCR, 2012). This again gives rise to three important matters: (1) is the overrepresentation of African-Americans in crime statistics due to their behaviors; or (2) is their overrepresentation due to the activities of criminal justice personnel; or (3) is it due to some combination of the two?

The overrepresentation of Blacks in crime statistics may be only partly due to their behaviors. Their disproportionate crimes statistics are likely a product of the social conditions associated with the lives of African-Americans, which may result in them committing more behaviors that are criminal. Blacks historically, following the end of the Civil War and during the Reconstruction Era (1865 to 1877), had fewer financial resources, job opportunities and lived in economically poorer neighborhoods compared to whites (see Foner and Mahoney, 1997; Pitz, 2013 for a more detailed discussion). This trend continues today for African-Americans (DeNavas-Walt, Proctor, and Smith, 2013). Nearly half (45 percent) of Blacks are still concentrated in neighborhoods with high poverty (as compared to 12 percent of whites) and

continue to lack access to decent schools, jobs and housing (Austin, 2013). The poverty in such neighborhoods might give rise to criminal behaviors. Poverty is highly associated with street-level criminal offenses (McLaughlin, 2011; Sampson, Raudenbush and Earls, 1997; Webster and Kingston, 2014). Social disorganization, which is believed to increase the extent of crime, is common in such communities (Shaw and McKay, 1942). These communities also may lack the social norms that might result in community action against criminal behaviors (Sampson, Raudenbush and Earls, 1997). Blacks, due to such poor social circumstances, may be more likely to engage in street-level offenses.

The overrepresentation of African-Americans in official crime statistics might be due to the racial, cultural and/or socioeconomic biases of system participants. Studies have generally found that the public tends to hold more biased and prejudice views against Blacks (and other minorities) than whites (Abreu, 1999; Dovidio, Kawakami, Gaertner, 2002; Ferguson, 2003; Sagar and Schofield, 1980; Sommers and Ellsworth, 2001). These biases are unlikely just limited to the general population. Many police officers likely hold some of these biases too, because they often perceive Blacks as more dangerous and having a greater likelihood of engaging in criminal behaviors than whites (Correll, Park, Judd, Wittenbrink et al., 2007; Dale and Schutt, 1982; Brunson, 2007; Pope and Snyder, 2002). Blacks may also have a greater chance of being arrested due to their interactions with the police. The police may perceive the demeanor of African-Americans more often as disrespectful or hostile or as challenging the authority of the police (Cox, McCamey, Scaramella, 2014). The demeanor of Blacks could be associated with socioeconomic status rather than with race or ethnicity. That is, African-Americans on average are lower on the socioeconomic ladder compared with whites (DeNavas-Walt, Proctor, and

Smith, 2013; Institute for Research on Poverty [IRP], 2015). Whites may act in ways in which the police officers understand more readily, such differences could lead to blacks being arrested more often than whites (Worden and Shepard, 1996).

The biases of system participants beyond just the police may also be creating the disproportionate crime statistics regarding race. That is, the police are more likely to stop African-Americans (Cole, 1999; Fagan and Davies, 2000; Fagan, Zimring, and Kim, 1998; Gould and Mastrofski, 2004; Greene, 1999; Harris, 1993, 1999; Kautt and Spohn, 2006; Lowney, 1994; Schwarzer, 1992). This increases the probability the police will find something wrong, which might lead to more Blacks being arrested. Defendants with more prior arrests often face negative consequences when reaching the courts. Prosecutors are more likely to charge defendants with prior records (Cole, 1970; Gibson, 1978). Juries (when controlling for prior records) are more likely to convict Black defendants compared to whites for similar criminal offenses (Anwar, Bayer and Hjalmarsson, 2012; Dieter, 1998; Palazzolo, 2013; Wordes, Bynum and Corley, 1994).[5] Judges often give harsher sentences to defendants with prior criminal records (Meyer and Jesilow, 1996). Blacks again are more likely to have prior records, since they have a greater probability of being stopped and arrested by the police. These disparities by juries and judges could be due to the same types of racial, cultural and/or socioeconomic biases held by the police (Barkow, 2013; Nugent, 1984).

Juries with all white members may simply not understand the culture of African-Americans and this may give rise to biases. Studies have found juries with all white members were more

[5] Federal prosecutors also in comparable drug cases disproportionately employ mandatory minimums and other enhancements against black defendants (Lynch, 2015; United States Sentencing Commission, 2011).

likely to convict African-Americans than whites for non-capital felony criminal cases (Anwar et al., 2012). [6] Juries with at least one Black member, however, had nearly identical conviction rates for Black and white defendants (Anwar et al., 2012). The authors reasoned that Black jury members may be able to translate culture for the white jury members. Racial, cultural and socioeconomic biases could potentially be tainting the overall demographic portrait of street-level offenders by inflating the number of African-Americans being convicted and incarcerated by criminal justice personnel.

Immigrants

The majority of Americans would probably be surprised to learn that many immigrant groups are underrepresented in crime statistics. The demographic portrait of immigrants who have committed crimes is a mixed picture (Ellis, Beaver, and Wright, 2009; Olson, Laurikkala, Huff-Corzine, Corzine, 2009). Early demographic studies, looking at immigrants in the 19th and early 20th centuries, found certain immigrant groups (such as the Irish) were overrepresented in crime statistics compared with native-born Americans (Sanderson, 1856; Schneider, 1980). More recent research studies, however, have found numerous immigrant groups are underrepresented in crime statistics, such as immigrants from South Korea and Japan (Lee, 2003; Lee, Martinez, and Rosenfeld, 2001; Martinez, 2002; Rumbaut, 2004; Waters, 1999). This gives rise to a number of matters: (1) is the current underrepresentation of immigrants in crime statistics due to their behaviors; or (2) is their underrepresentation due to the actions of criminal justice personnel; or (3) is it due to some combination of the two?

[6] The authors controlled for the age and gender of the jury and the year and county in which the trial took place.

The current underrepresentation of legal immigrants in crime statistics could be due to their behaviors. That is, some immigrant groups could simply be less prone to criminality than native-born individuals. This might be due to the fact particular immigrant groups (e.g., South Koreans), when legally arriving in the United States, are often better educated and are wealthier than the average native-born American (Alba and Nee, 1997). These immigrants, therefore, may be more qualified and likely to obtain jobs prior to their entrance into the country. This could make such individuals less likely to engage in criminal behaviors (Waters, 1999). Another explanation is immigrants are generally a "self-selected" group with relatively high levels of ambition and low criminal propensity (Butcher and Piehl, 2005; Waters, 1999). Immigrating (legally and illegally) is not an easy process requiring both time and money (some immigrants even risk their lives to come to the United States). Most immigrants probably come to America in order to create better lives for themselves and their families by pursuing economic and educational opportunities that are not available in their home countries (Tonry, 1997). They may as a result be more likely to follow and obey the laws. Immigrants might also be more likely to avoid violating laws for fear of possible deportation from the U.S. (Butcher and Piehl, 2005).

The present underrepresentation of immigrants in arrest statistics might be due to the actions of criminal justice personnel. Legal immigrants, when entering the United States, are screened by federal law enforcement agencies (such as, the U.S. Department of Homeland Security) for any past criminal involvement (Butcher and Piehl, 2005). Those who are legally allowed to enter the country will likely lack a criminal background and will unlikely engage in

criminal activities. This may be a different story for illegal immigrants, because there is no way to know their criminal backgrounds.

The underrepresentation of immigrants in incarceration statistics (Camarota and Vaughan, 2009; Butcher and Piehl, 2005) may also be due to the activities of criminal justice personnel. The police refer all undocumented immigrants who are arrested for the commission of a crime to Immigration and Customs Enforcement (ICE), under the U.S. Department of Homeland Security, for deportation hearings. ICE officials are often more inclined to deport rather than house non-citizens charged with serious criminal offenses, such as murder and rape (Camarota and Vaughan, 2009). Prosecutors will also drop pending charges against immigrants once ICE indicates the undocumented immigrants will be deported (Camarota and Vaughan, 2009). The deportation of criminal immigrants to their homelands reduces the likelihood they will return and engage in new criminal activities (Butcher and Piehl, 2005). These law enforcement activities probably reduce the overall incarceration rate of immigrants. The most deviant immigrants are being removed from the country rather than being sentenced and imprisoned.

Demographic Studies of White-Collar Criminals

Scholars who were interested in studying the demographic characteristics of white-collar offenders as defined by Edwin Sutherland had some difficulty in finding individuals to study. This was likely due to the fact few individuals who were respectable and of high social status were being arrested and convicted of crimes that they committed during the course of their occupations (Rosoff et al., 2013). Researchers found it easier to study the characteristics of

individuals who were from lower social classes than the one identified by Sutherland (e.g., see Levens, 1964; Spencer, 1965).

Researchers found those criminally convicted of white-collar offenses (when compared with the demographic characteristics of street-level offenders) tend to be older, more likely to be male and more likely to be white (Benson and Kerly, 2000; Weisburd, Wheeler, Waring and Bode, 1994). These researchers also established white-collar offenders were more likely to be married, to be secure financially and to have full-time employment at the time of their illegal behaviors.[7] Weisburd and his colleagues (1994) note that most of the convicted white-collar offenders were middle-class, not upper-class individuals. This picture of convicted white-collar offenders may be impacted by a number of factors. Upper-class individuals, for example, likely have more financial resources to hire skilled attorneys who may be better able to protect them from prosecution (Benson and Simpson, 2009). Such matters might affect the demographic portrait of white-collar criminals. That is, the portrait is going to exclude some individuals while including others.

Researchers who wanted to study the demographic characteristics of upper-class individuals found it necessary to examine regulatory and civil violations. Corporate lobbyists, throughout the decades, have been successful in influencing Congress to define the wrongdoings of the upper-class (e.g., Wall Street executives) as only worthy of civil and/or administrative actions (Rosoff et al., 2013; Schurenberg, 2011). Regulatory bodies rarely deal with individuals rather they handle businesses, which are often corporations. Sutherland in his initial study of white-collar crime, for example, looked at the regulatory and civil actions taken

[7] This is expected, since one cannot commit a white-collar crime without a job.

against corporations rather than individuals (1949).[8] These types of matters made it difficult for researchers to find samples they could study.[9] One way around this obstacle was to examine regulatory and civil violations. Richard Quinney (1963), for example, interviewed retail pharmacists with and without prescription drug violations. He found pharmacists who held more business-oriented attitudes were more likely to violate prescription rules than pharmacists with more professional oriented attitudes. Similarly, Harry Ball (1960) mailed a questionnaire to landlords with and without rent ceiling law violations. He established landlords with rent control violations were more likely than non-violators to view rent ceiling laws as unfair. Robert Lane (1953), in a similar study, investigated when businessmen were more likely to violate trade practices laws. He found through interviews that businessmen were more likely to violate trade practices laws when their companies were facing economic decline.

Scholars in about the 1960s began to re-conceptualize Sutherland's definition of white-collar crime.[10] Many scholars did not believe it was necessary for individuals to have "respectability and high social status" in order to commit white-collar offenses. Donald Newman (1958), for example, argued the main criterion for a crime to be "white-collar" is that it occurs as part of the offender's occupational role. Even farmers and repairmen, according to Newman, who engage in illegal activities during the course of their occupations (such as watering down milk for public consumption or making unnecessary repairs on televisions) could

[8] Marshall Clinard and Peter Yeager (1980), in a replication of Sutherland's study, also studied the law-breaking amongst America's leading corporations.

[9] One exception was Gilbert Geis' study of the heavy electric industry (1967). He looked specifically at the demographic portrait of seven individuals (typically the vice presidents of the corporations) who were arrested and convicted of illegalities (e.g., price fixing).

[10] Sutherland's white-collar crime definition had been a source of controversy from its conception (see Nelken, 1994; Rosoff et al., 2013).

be considered white-collar offenders (Newman, 1958). Marshall Clinard and Richard Quinney (1973) further modified the definition of white-collar crime by creating two distinct categories of illegal behaviors: (1) corporate criminal behavior, and (2) occupational criminal behavior. Corporate offenses are when employees commit crimes for the benefit of their corporations. The victims are normally consumers and other employees. Occupational offenses are when employees commit crimes for their own benefit while on the job. The victims in this case are usually going to be the consumers and the corporation. Clinard and Quinney's modified white-collar definition included individuals at various levels of social class.

The re-conceptualization of white-collar crime resulted in many researchers conducting studies on individuals from all socioeconomic levels who were engaging in crimes during the course of their occupations. Scholars, during the 1970s, began to look at white-collar offenses by workers without high incomes, such as thefts by maids at a hotel (Mars, 1973), by workers at a ship dock (Mars, 1974) and by nurses at hospitals (Hofacre, 1979). These researchers found through participant observations and interviews that pilfering is common among such low-wage employees. The researchers also found that opportunity and being in a position of trust were important factors contributing to one's ability to engage in white-collar offenses.

Some scholars in the 1980s directed their attention once again to studying the demographic characteristics of white-collar offenders as envisioned by Sutherland. Paul Jesilow, Henry Pontell and Gilbert Geis (1985) examined the demographic portrait of physicians sanctioned by the federal government for Medicare and Medicaid fraud. These researchers were in part interested in understanding why physicians, who are practicing in America's most prestigious profession, engage in white-collar offenses (such as billing for more expensive services than

were actually provided). Numerous other studies have also examined the demographic characteristics of disciplined physicians (Clay and Conatser, 2003; Dow and Harris, 2002; Jung, Lurie, Wolfe, 2006; Khaliq, Dimassi, Huang, Narine, and Smego, 2005; Lim, 2002; Morrison and Wickersham, 1998; Pande and Maas, 2013).

Chapter two will discuss what is currently known by scholars about the demographic characteristics of disciplined medical doctors in the United States. The chapter will also discuss how the demographic portrait of sanctioned physicians might be shaped by the behaviors of the individual physician, by the activities of regulatory agencies or by some combination of the two.

Chapter Two

A Portrait of Disciplined Physicians

This chapter will examine what researchers currently know about the demographic portrait of disciplined medical doctors. I will, throughout the chapter, be discussing what we would expect if it was the doctors' individual behaviors generating the portrait or if it was the activities of regulatory personnel shaping the picture of sanctioned medical doctors or some combination of the two.

What is known about the demographic characteristics of disciplined physicians?

Studies examining the demographic characteristics of disciplined physicians are relatively new. There have, however, been a few studies published since the 1980s examining the characteristics of physicians disciplined by the federal government for healthcare fraud, quality-of-care issues and other matters, such as defaulting on health education loans (Dow and Harris, 2002; Pande and Maas, 2013; Pontell, Jesilow, Geis, 1985). Studies relying on sanctioning data obtained from medical and osteopathic boards are more common (Clay and Conatser, 2003; Jung, Lurie, Wolfe, 2006; Khaliq, Dimassi, Huang, Narine, and Smego, 2005; Lim, 2002; Morrison and Wickersham, 1998). Both groups of studies have generally collected information on disciplined physician's gender, age, medical school training, medical specialty, board certification and the location of the physician's medical practice. The demographic findings of these studies are discussed in the succeeding paragraphs.

Sex

Female physicians are consistently underrepresented amongst medical doctors who have been disciplined by regulatory agencies. The California Medical Board, for example, disciplined 32 female physicians from October 1995 through April 1997 (Morrison and Wickersham, 1998).[11] The board, at the same time, disciplined more than 340 male physicians. Female physicians accounted for nearly 22 percent of all active physicians in California in 2000 (Dower, McRee, Grumbach et al., 2001), but they represented 9 percent of physicians disciplined by the California Medical Board (Morrison and Wickersham, 1998). They were similarly underrepresented amongst physicians disciplined by other state medical boards (e.g., see Clay and Conatser, 2003; Khaliq et al., 2005). Female physicians were also underrepresented amongst physicians excluded by the OIG for Medicare fraud from 2000 to 2011 (Pande and Maas, 2013). These researchers found that female physicians accounted for 13.2 percent of the disciplined physicians, but they represented 30.2 percent of the general physician population in 2010 (Smart, 2012). This gives rise to three matters: (1) is the underrepresentation of female physicians in sanctioning statistics due to their behaviors; or (2) is their underrepresentation due to the activities of regulatory agencies; or (3) some combination of the two?

The underrepresentation of female physicians in sanctioning statistics may be due to the fact they engage in less criminal behaviors than male physicians. Females' underrepresentation in sanctioning statistics is similar to official crime statistics of street-level offenders. These

[11] The individual state medical and osteopathic boards are primarily responsible for licensing physicians and protecting the public against physicians who are engaging in illegal activities and/or who are practicing below accepted medical standards. There are a total of 70 individual state medical and osteopathic boards. The composition of these boards varies from state to state. That is, in some states the medical board is an independent state agency, while in other states the board is located within the state department of licensing (Lim, 2002).

statistics established men commit much more traditional offenses than do women, particularly violent crimes (Cauffman, 2008; FBI, 2010a, b; Hindelang, 1979; Loy and Norland, 1981; Snyder and Sickmund, 2006). Female physicians, like females in general, may simply be more likely to obey the laws than males. That is, if females are less likely to be involved in street-level crimes, one might assume they are also less likely to be involved in white-collar offenses. This logic may in part explain their underrepresentation in demographic studies of disciplined medical doctors.

Female physicians remain underrepresented in offender studies despite the fact they are commonly overrepresented in medical specialties where offenses are most likely to be uncovered by regulatory personnel (Jung et al., 2006; Khaliq et al., 2005; Kohatsu, Gould, Ross, Fox, 2004; Pande and Maas, 2013). These studies generally found physicians who are disciplined by regulatory agencies are overrepresented practicing in the following medical specialties: general practice/family practice, psychiatry, and obstetrics-gynecology. Female physicians are overrepresented practicing in each of these medical specialties with high vulnerability to enforcement. Female physicians accounted for 30.2 percent of all active medical doctors in the United States in 2010 (Smart, 2012), yet represented 34 percent of all family practice/general practitioners, 34.8 percent of all psychiatrists and 47.4 percent of all gynecologists (Association of American Medical Colleges [AAMC], 2012). The underrepresentation of female physicians in offender studies given this information suggests that it is the lack of criminal behavior by female medical doctors that results in their underrepresentation.

The underrepresentation of female physicians might not be due just to their lower propensity for engaging in criminal behavior. It could also be due to the activities of regulatory

agencies and the general public shaping the demographic portrait of disciplined physicians. Private-public partnerships are vital to regulating activities of physicians. State medical and osteopathic boards, for example, are more likely to learn about the wrongdoings of physicians practicing in medical specialties with higher rates of private civil suit payments (or malpractice claim payments) than physicians in specialties with lower rates of payments (Gruner, 2008). Private civil suit payments (or medical malpractice settlements and judgements) are the primary way the boards obtain information on suspect physicians (Jesilow and Ohlander, 2010; Jesilow and Hollanders, 2010a). The boards view payments as signals of possible quality of care matters by physicians (Bovbjerg and Petronis, 1994; Fellmeth and Papageorge, 2005; Studdert, Mello, Gawande, Gandhi, and Kachalia, 2006). The boards mostly learn of civil suit payments through medical liability insurers and the National Practitioner Data Bank (NPDB) (see Jesilow and Ohlander, 2010 for a detailed discussion of the NPDB). Physicians with civil suit payments are often targeted by the medical boards for investigation. The medical boards distribute their findings to other agencies, including the OIG, regarding actions taken against the licenses of medical doctors (e.g., suspension or revocation). The OIG, based upon the actions of the medical boards, has the discretion to exclude physicians from participation in federal healthcare programs.

The underrepresentation of female physicians could be a combination of their behavior and their higher likelihood of practicing in medical specialties with a lower risk of being involved in civil suits with subsequent payments. Medical malpractice civil suits and payments vary according to a physician's medical specialty (Charles, Gibbons, Frisch, et al., 1992; Gonzales, 1993; Mullis, 1995; Schwartz and Mendelson, 1989; Lawson and Guggenheim, 1984; Sloan,

Mergenhagen, Burfield, Bovbjerg, and Hassan, 1989). Physicians practicing in surgical specialties (such as neurosurgery, plastic surgery and orthopedic surgery) have a higher risk of civil suits and successive payments than primary care physicians, such as general/family practice and internal medicine (Jena, Seabury, Lakdawalla, Chandra, 2011). Medical doctors with malpractice claim payments are more likely to be investigated and sanctioned by regulatory agencies than physicians with no payments (Baldwin et al., 1991). Female physicians are often underrepresented practicing in medical specialties (such as general surgery) with the highest rates of malpractice claim payments. Female medical doctors represented 30.2 percent of all active physicians in 2010, but only accounted for 15.4 percent of all general surgeons (AAMC, 2012; Smart, 2012). Female physicians are generally overrepresented practicing in medical specialties (such as primary care) with the lowest rates of malpractice claim payments. Such matters may in part reduce the probability of female physicians appearing in studies of offenders disciplined by regulatory agencies. This also suggests female physicians are more likely to be excluded for financial offenses (FO) than for quality of care (QOC) matters.

My dissertation research examines physicians excluded by the OIG from federal healthcare programs from 2008 to 2013. I expect physicians excluded will have similar patterns to previous studies of disciplined physicians. That is, I expect female physicians to be underrepresented amongst physicians excluded by the OIG. I also expect female physicians to be more likely excluded for a FO than for a QOC matter.[12] This is due to the fact female physicians are less likely to practice in medical specialties with the highest rates of civil suit payments.

[12] Similar to female statistics in street-level offenses. They are more likely to be involved in property offenses than violent offenses.

Age

Demographic studies report regularly that older physicians are overrepresented amongst medical doctors who have been disciplined by regulatory agencies.[13] Physicians disciplined by the federal government for Medicaid fraud and abuse from 1977 to 1982, for example, were on average nearly ten years older than members of a comparison group of non-sanctioned physicians (57.2 years old compared with 48.2 years) (Jesilow, Geis, and Pontell., 1991). The state medical boards and federal agencies from 1990 to 1999 disciplined a total of 2,247 physicians as the result of a criminal offense (Jung, Lurie, and Wolfe, 2006). The researchers found more than 70 percent of disciplined physicians were 45 years old or older, whereas 52 percent of non-disciplined physicians were 45 years old or older. Older physicians were also overrepresented amongst physicians excluded by the OIG for Medicare fraud from 2000 to 2011 (Pande and Maas, 2013). The researchers established that nearly 80 percent of the disciplined physicians were 50 years old or older. Physicians who were 50 years old or older represented 53.2 percent of all active physicians in 2012 (Young, Chaudhry, Thomas, and Dugan, 2013). These studies reveal disciplined physicians tend not to be young. This again gives rise to a few matters: (1) is the overrepresentation of older physicians in sanctioning statistics due to their behaviors; or (2) is their overrepresentation due to the activities of regulatory agencies; or (3) some combination of the two?

The overrepresentation of older physicians in sanctioning statistics might be due to their behaviors. Older physicians may be less likely than younger physicians to keep abreast of

[13] The term "elderly" is difficult to use. There is no universally agreed upon meaning (World Health Organization, 2014). That is, various societies have different meanings for the term. The term "older" will be used since it is simpler.

current medical developments and acceptable medical practices (Choudhry, Fletcher, Soumerai, 2005; Kohatsu et al., 2004). Older physicians, in some instances, might begin to develop and adopt their own techniques for providing treatments and performing medical procedures (Jesilow et al., 1991). This has the potential of leading to medical errors resulting in patient harm and subsequent civil suits and payments. State medical boards and the OIG, as mentioned earlier, are more likely to learn of the wrongdoings of medical doctors with private civil suit payments. Older physicians, because of civil suit payments, might be more likely excluded by the OIG for a QOC matter than for a FO.

The individual behaviors of older physicians may again be accounting for their overrepresentation amongst disciplined physicians. Younger physicians may have fewer opportunities to defraud federal healthcare programs than older medical doctors. Older physicians are more likely to be practicing in solo or small group practices than younger physicians (Pande and Maas, 2012). These types of medical practices require experience and a client base, which younger physicians likely lack. Physicians in solo or small group practices are more likely than individuals in large medical institutions to be excluded for Medicare fraud (Pande and Maas, 2013). Medical doctors in such practices typically bill federal healthcare programs on a fee-for-service (FFS) payment model. A FFS payment model may give physicians more incentives and opportunities to bill for services they did not provide, to bill for more expensive services than were actually supplied and to provide more unnecessary services to pad their reimbursements (Jesilow et al., 1993; Leap, 2011; Sparrow, 2000). Younger medical doctors, however, are more likely practicing in large medical institutions (e.g., UC Irvine Medical Center) and group health plans (e.g., Kaiser Permanente) where they receive a salary (Pande

and Maas, 2012). Physicians practicing at such facilities may have fewer incentives to cheat on bills (Jesilow et al., 1993). All reimbursements go to the institution, not the individual physician. Physicians may also have fewer opportunities to cheat. Medical institutions regularly have stricter rules and systems in place for monitoring bills than solo or small group practices (Sparrow, 2000). These matters may reduce the overall probability of younger physicians appearing in the demographic portrait of disciplined physicians. Older physicians, with potentially more opportunities to defraud federal healthcare programs, may be more likely excluded by the OIG for a FO than for a QOC matter.

Older physicians might also be overrepresented due to a combination of their behaviors and the activities of regulatory agencies. That is, as physicians get older they may be choosing to move from large medical institutions and group health plans to solo or small group practices (Pande and Maas, 2013). Physicians practicing in solo or small group practices, as mentioned earlier, may have more opportunities to defraud federal healthcare programs due to the FFS payment system. This could result in older physicians having larger billings for recipients of federal healthcare programs than younger physicians. Older physicians consequently might have greater exposure than younger physicians to regulatory agencies. Regulators, due to limited personnel and financial resources, often investigate physicians who bill the government for hefty dollar amounts while ignoring physicians with small billings (Jesilow et al., 1993; Sparrow, 2000).[14] Older physicians who may have more incentives and opportunities to bill for

[14] This does not mean that regulators will not investigate cases with small dollar amounts. Regulators, regardless of the dollar amount, will investigate cases involving patient harm and/or neglect (Personal Interview, 2012).

extra may more likely attract the attention of government regulators, and thus be excluded for a FO.

The individual behaviors of older physicians combined with the activities of regulatory agencies might again be generating this demographic picture of disciplined medical doctors. Older physicians might regularly find it easier to admit guilt than to fight after being questioned by regulators (Jesilow et al., 1991). This may be due to the fact these physicians are commonly close to retirement age. Researchers found physicians 75 years old or older are more likely to admit guilt than physicians less than 75 years old (Pande and Maas, 2013). Younger physicians, however, may be more willing to fight cases of wrongdoings in order to protect their careers. Such matters may increase the likelihood of older physicians being disciplined by regulatory agencies.

Older physicians again might be overrepresented in sanctioning statistics due to a combination of their own individual behaviors and the activities of regulatory agencies. Let us first begin with the individual behaviors of physicians. Male physicians make up a greater portion of medical doctors 65 years old and older compared with female physicians. Male medical doctors accounted for nearly 70 percent of the general physician population in 2010, yet represented more than 88 percent of physicians 65 years old and older (Smart, 2012). This is due to the fact females did not start entering the medical profession in significant numbers until the late 1970s and early 1980s (Wirtzfeld, 2009). Male physicians are more likely to be detected by regulatory personnel, which results in them appearing to be more likely to commit offenses than female physicians. Male physicians, as previously discussed, are more likely to select surgical specialties than female physicians, who are more likely to select primary care

specialties (AAMC, 2012; Lambert and Holmboe, 2005; McGrath and Zimet, 1977; Smart, 2012).[15] Surgical specialties require more training than primary care physicians (e.g., general practice).[16] Becoming a surgeon of any kind on average takes 11 to 15 years (4 years of undergraduate + 4 years of medical school + 3 to 7 years of residency).[17] The average age of physicians who go into surgery will be skewed upwards compared to primary care physicians. Surgeons again have a higher risk for civil suits and payments (Jena et al., 2001) and may be subsequently more likely to be excluded by the OIG for a QOC matter. Such behaviors might in part be impacting the age of disciplined physicians.

The overrepresentation of older physicians in offender studies may also be partly due to the activities of regulatory bodies. That is, it commonly takes years for regulatory personnel to detect and investigate suspect physicians and for prosecutors to punish such offenders (Friedrichs, 1996; Jesilow, Pontell, and Geis, 1993; Pande and Maas, 2013). Federal investigators often spend years building cases against physicians who have engaged in Medicare and/or Medicaid fraud (Pande and Maas, 2013). Such illegal behaviors, similar to white-collar crimes in general, are largely hidden offenses that are not easily detectible by regulatory personnel. Investigators, once the fraud is detected, then have to prove the physician had criminal intent to defraud federal healthcare programs. Proving criminal intent is a time-consuming and difficult task (see Burton and Jesilow, 2014 for a more detailed discussion on the difficulties facing regulatory agents). A physician convicted and sanctioned for healthcare fraud will not be

[15] These studies suggest women in part prefer primary care specialties (e.g., family practice), because the hours were more predictable and better allowed them to raise their children.
[16] General practice physicians only have to be in a residency program for 1 or 2 years.
[17] Some physicians may choose a sub-specialty, which may take an additional 1 to 3 years on top of their surgical residency training.

the same age as when the offense(s) was first committed (Pande and Maas, 2013). The average age of disciplined physicians is likely skewed upwards, since the offenses likely occurred years before they were detected, investigated and prosecuted. Such matters may in part increase the probability of older physicians appearing in studies of offenders disciplined by regulatory agencies.

I expect physicians excluded by the OIG from federal healthcare programs from 2008 to 2013 will have similar patterns to previous studies of disciplined physicians. That is, I expect older physicians to be overrepresented among physicians excluded by the OIG. I also believe older physicians will be more likely excluded for a QOC matter than a for a FO. This is due to the fact older physicians are more likely to be male and more likely to practice in medical specialties with the highest rates of civil suit payments (e.g., general surgery). It is also reasonable, however, to assume that older physicians might be as likely excluded for a FO. Older physicians may have more opportunities than younger physicians to defraud federal healthcare programs.

Origin of Medical School Training

Demographic studies consistently indicate international medical graduates (IMGs) are overrepresented amongst physicians who have been excluded by the OIG from federal healthcare programs. IMGs since the 1980s have generally represented about 25 percent of all active physicians in the United States (Lyons, 1983; Stimmel and Graettinger, 1984, Smart, 2012). IMGs accounted for 34 percent of physicians excluded by the OIG for fraud and abuse in Medicare and Medicaid from 1977 to 1982 (Pontell et al., 1985). Similarly, IMGs from 1989 to

1999 made up 35 percent of physicians excluded by the OIG for various matters, such as fraud, substandard care and defaulting on education loans (Dow and Harris, 2002). IMGs, in a similar study, represented 59 percent of physicians excluded by the OIG for Medicare and/or Medicaid fraud from 2000 to 2011 (Pande and Maas, 2013). This gives rise to a number of issues: (1) is the overrepresentation of IMGs in sanctioning statistics due to their behaviors; or (2) is their overrepresentation due to the activities of regulatory agencies; or (3) some combination of the two?

Scholars commonly use two terms when describing medical student graduates: United States medical graduates (USMGs) and international medical graduates (IMGs). The American Medical Association (AMA) employs the term USMGs when referring to physicians who graduated from medical schools located inside the United States, its possessions (Puerto Rico, Virgin Islands and Pacific Islands) and Canada (Smart, 2012). Canadian medical school graduates are considered to be USMGs. Medical schools in the U.S., its possessions and Canada are all accredited by the Liaison Committee on Medical Education (LCME). The LCME is sponsored by the Association of American Medical Colleges (AAMC) and the AMA. It is appropriate to use the AMA's definition on USMGs since all of these medical schools are being held to the same standards. Physicians, according to the AMA's definition, who graduated from medical schools located outside of these countries and possessions are considered to be IMGs. Not all IMGs are immigrants. Many U.S. citizens regularly obtain their medical educations abroad (see McMahon, 2004; Whelan, 2005). Likewise, not all USMGs are native-born Americans. Immigrants regularly come to the United States to earn their medical degrees (see McAvinue, Boulet, Kelly, Seeling, Opalek, 2005).

The overrepresentation of IMGs amongst disciplined physicians might be due to their individual behaviors. IMGs may have more opportunities to defraud federal healthcare programs than USMGs. IMGs, more often than USMGs, practice medicine in areas with the highest concentrations of Medicare and Medicaid eligible patients (Baer, Ricketts, Konrad, Mick, 1998; Fordyce, Doescher, Chen, Hart, 2012; Hagopian, Thompson, Kaltenbach, Hart, 2004; Mick and Lee, 1999; Polsky, Kletke, Wozniak and Escarce, 2002). There is no evidence to suggest IMGs are less honest than USMGs (Lee, Dow, Wang and VanGeest, 2004). That is, IMGs may be equally distributed amongst all physicians (including USMGs) who cheat. IMGs may simply be overrepresented amongst disciplined physicians, because they are more likely to provide services to recipients of federal healthcare programs.

Minor thefts may be common to all of society, including medical doctors. Some healthcare fraud investigators, for example, believe that all physicians (regardless if they are IMGs or USMGs) “nickel and dime” federal and private healthcare programs (Jesilow et al., 1993). Physicians, as with all of us, may justify their minor thefts and other misconducts in their own minds. It is normal for medical doctors to neutralize any feelings of wrongdoing by arguing that their behavior was in the best interest of their patients (Jesilow et al., 1993). Some medical doctors argue that they would be unable to help any patients without cheating the government. Such attitudes might result in widespread criminal activities amongst all groups.

Some IMGs may defraud federal healthcare programs, because they feel relatively deprived. Relative deprivation broadly refers to people’s perception of their economic well-being in comparison to others within their (occupational) group (Crosby, 1976, 1979; Davis, 1959). That is, IMGs may see that their USMGs colleagues are making more money by obtaining more

prestigious jobs and by treating more patients with private health insurance (Lee, Dow, Wang and VanGeest, 2004). Some IMGs, as a result, may act out through cheating. IMGs may more likely come into contact with regulatory activities, because their medical practices contain larger portions of Medicare and/or Medicaid patients.

The overrepresentation of IMGs in offender studies is likely also due to the activities of regulatory agencies. IMGs are more likely than USMGs to provide medical services to Medicare and Medicaid patients, because IMGs are more likely to practice medicine in the inner-cities and rural underserved areas where there are the highest concentrations of Medicare and Medicaid patients (Baer et al., 1998; Fordyce et al., 2012; Hagopian et al., 2004).[18] IMGs, as a result, might have greater exposure than USMGs to regulatory personnel. This is likely due to the fact IMGs probably on average have larger billings for beneficiaries of federal healthcare programs than USMGs (Pande and Maas, 2013; Pontell et al., 1985). Regulators often criminally investigate physicians who bill the government for hefty dollar amounts (more than $100,000) while ignoring physicians with small billings (Personal Interview, 2012).[19] Physicians who bill for the largest dollar amounts are probably practicing in areas with abundantly higher proportions of Medicare, Medicaid and other federal healthcare program recipients. USMGs, who are defrauding Medicare and Medicaid, might lack the number of patients necessary to reach the dollar threshold ($100,000) necessary for the government to open up criminal investigations.

[18] IMGs are also more likely than USMGs to accept new Medicare and Medicaid patients (Morris, Phillips, Fryer, Green, and Mullan, 2006).

[19] This does not mean that regulators will not investigate cases with small dollar amounts. Regulators, regardless of the dollar amount, will investigate cases involving patient harm and/or neglect (Personal Interview, 2012).

These matters may increase the probability of IMGs being noticed and disciplined by regulatory agencies for a FO.

The overrepresentation of IMGs in sanctioning statistics could also be due to a combination of both the individual behaviors of the IMGs and the activities of regulatory agencies. Prosecutors commonly prefer building cases against vulnerable individuals who make for easy targets (Jesilow, 2012; Payne and Gray, 2001). IMGs who are new arrivals to the United States likely make for obvious targets for prosecutors. These physicians may be unfamiliar with acceptable U.S. medical norms and practices (Jesilow et al., 1992). They might be more likely to deviate from lawful medical practices, which serves as red flags to regulators. They may also be unfamiliar with their Constitutional rights (e.g., 5th Amendment). Studies suggest immigrants may be more likely to admit guilt and are less likely to understand the consequences of a guilty plea or conviction compared with native-born citizens (Francis, 2003). Some IMGs may also have fewer financial resources than USMGs to hire skill attorneys to protect them from prosecution (Lee et al., 2004). Such matters may affect the demographic portrait of physicians excluded by the OIG.

A good example of prosecutors going after susceptible IMG targets occurred in 1984. The Attorney General of California singled out Vietnamese physicians in what was known as the Southeast Asian Project (SEAP) raids (Jesilow, Geis, Pontell, and Song, 1992; also see Tillman and Pontell, 1992). Most of the physicians targeted had recently emigrated from Vietnam to the United States due to the fall of Saigon in 1975. The Attorney General may have found it easier for a number of reasons to go after such physicians. Vietnamese immigrants, for one, were not highly regarded by the public during this time (see Palermo, 1985). Vietnamese

doctors were also largely isolated from the mainstream medical profession and were often unfamiliar with acceptable medical practices (Jesilow et al., 1992). Many of the Vietnamese physicians continued to practice medicine as they did in Vietnam when they arrived in America. Several of their behaviors, while acceptable in Vietnam, were illegal in the United States and served as clear signals to regulatory personnel.[20] Simply put, the individual behaviors of physicians (i.e., being unfamiliar with U.S. medical norms) and the activities of regulatory agencies (i.e., the SEAP) both shape the demographic portrait of physicians sanctioned.

It is anticipated IMGs will have a greater likelihood of being excluded by the OIG for a FO than for a QOC matter. IMGs are more likely than USMGs to be practicing medicine in primary care medical specialties (e.g., general and family practitioners) (AAMC, 2012; Smart, 2012). Primary care medical specialties are at lower risk for civil suits and subsequent payments than surgical specialties (where USMGs are more likely to practice medicine) (Charles et al., 1992; Gonzales, 1993; Mullis, 1995; Schwartz and Mendelson, 1989; Lawson and Guggenheim, 1984; Sloan et al., 1989). More will be covered on this topic in the medical specialty section. Therefore, it is expected IMGs will more likely be excluded by the OIG from federal healthcare programs for a FO than for a QOC matter.

It is believed physicians excluded by the OIG will have similar patterns to previous studies of disciplined physicians. That is, IMGs will probably be overrepresented amongst physicians excluded by the OIG from federal healthcare programs. It is also expected for IMGs to be more likely excluded for a FO than for a QOC matter.

[20] Vietnamese doctors, for example, used "drivers" to purchase Medicaid coupons from beneficiaries at discounted prices. This would allow the doctor to bill the government without ever having to see the patient (see Jesilow et al., 1992 for a more detailed discussion).

Historically Black Colleges

Excluded physicians in the past graduated from both prestigious and undistinguished medical schools located in the United States, its territories and Canada. Historically Black colleges (HBCs) have always topped the list of U.S. medical schools with the most excluded graduates (see Pande and Maas, 2013; Pontell et al., 1985). The number of excluded medical graduates from any particular school was small. No U.S. medical school, for example, had more than eight medical graduates excluded by the OIG for Medicare and Medicaid fraud from 2000 to 2011 (see Pande and Maas, 2013). The question is why do HBCs have the greatest number of USMGs excluded by the OIG. Is it due to the behaviors of USMGs coming from Black colleges, the activities of regulatory agencies or some combination of the two?

The greater number of USMGs from HBCs may be due to both the behaviors of the individual graduate and the activities of regulatory agencies. Researchers have reasoned Black doctors, who often come from low socioeconomic backgrounds, are probably more likely practicing in the inner-cities where there are often greater portions of recipients of federal healthcare programs (Pande and Maas, 2013; Pontell et al., 1985). Some HBCs (e.g., Meharry Medical School and Howard University) are often located near low-income neighborhoods. Graduates from HBCs, upon receiving their medical licenses, might decide to practice medicine in impoverished neighborhoods to give back to their community. Physicians, as mentioned earlier, practicing in such areas will likely have larger billings for recipients of federal healthcare programs. Medical doctors with larger billings are more likely to catch the attention of regulators than physicians with smaller billings (Pontell et al., 1985). Regulators often investigate cases where they can get the most “bang” for their buck (Jesilow et al., 1993;

Sparrow, 2000). Prosecutors also regularly pursue cases where proving fraud "beyond a reasonable doubt" is easy (Sparrow, 2000). These matters most likely affect the demographic portrait of physicians excluded by the OIG.[21]

Medical Specialties

Psychiatrists are commonly overrepresented in offender studies looking at medical doctors disciplined by the state medical boards and excluded by the OIG for various offenses, particularly for fraud (Dehlendorf and Wolfe, 1998; Jung et al., 2006; Khaliq et al., 2005; Kohatsu et al., 2004; Morrison and Morrison, 2001; Pande and Maas, 2013). Psychiatrists are medical doctors who are able to prescribe medications, assess and treat individuals with medical disorders.[22] Psychiatrists represented 4 percent of the general physician population in 2010 (Smart, 2012), but they accounted for slightly more than 13 percent of the medical doctors excluded by the OIG from 2000 to 2011 for Medicare fraud (Pande and Maas, 2013). This gives rise to three issues: (1) is the overrepresentation of psychiatrists in sanctioning statistics due to their behaviors; or (2) is their overrepresentation due to the activities of regulatory agencies; or (3) some combination of the two?

The overrepresentation of psychiatrists in sanctioning statistics may partly be the result of their individual behaviors. It takes individuals anywhere between 11 to 16 years to become a

[21] I did not collect race data on physicians excluded by the OIG. It is probable that some physicians from historically Black medical schools could be white or from other racial/ethnic backgrounds.

[22] Psychiatrists are medical doctors. They are required to graduate from medical school and to complete a three-year residency program. This is opposed to psychologists who are not medical doctors. Psychologists, who typically have a Ph.D. in the field of psychology or a PsyD in clinical psychology, are not permitted to prescribe medications. Psychologists, however, are trained to help individuals manage their mental illnesses.

psychiatrist (AAMC, 2012).[23] Neutralization techniques might be commonly utilized by psychiatrists, because it took them a long time to complete their education. Psychiatrists may feel entitled that their many years of education should be rewarded, which may result in some of these physicians defrauding Medicare and Medicaid to be compensated. Psychiatrists might also be more likely to engage in behaviors that result in disciplinary actions. Medicine is not an exact science and the correct medical procedures and treatments are not always "black and white." Psychiatrists are more likely practicing in the "grey" areas of medicine where physicians do not always agree with one another on the correct procedures and treatments. Psychiatrists are more likely to be treating patients with alcoholism and depression where the "grey" areas are most likely to exist (Ferver, Burton and Jesilow, 2009). These matters might increase the likelihood that psychiatrists will be excluded by the OIG.

The overrepresentation of psychiatrists is likely the result of the activities of enforcement agencies. Regulatory personnel (and patients) may have an easier time detecting the misdeeds of psychiatrists than other specialized medical doctors (Jesilow et al., 1993). Psychiatrists typically defraud federal healthcare programs by overstating the amounts of time they claimed to have been with patients (Pontell et al., 1985). Investigators may have an easier time detecting the illegal behaviors of physicians who bill for time than for medical services (Jesilow et al., 1993). Computer systems are designed to flag psychiatrists who bill for more hours than are in a day for patient care. Psychiatrists, as a result, might appear more on fraud detection

[23] That is, psychiatrists must complete four years of undergraduate education and four years of medical school to earn their medical degrees. They must then complete a multiple year (commonly 3 to 8 years) residency program in order to become a psychiatrist (American Board of Medical Specialties [ABMS], 2014). Psychiatrists, after completing all of these educational requirements, are permitted to obtain their medical license to practice medicine in a particular state by applying to that state's medical board.

systems than other medical specialties. It is assumed psychiatrists are more likely to be excluded by the OIG for a FO than for a QOC matter. This is in part due to the fact that psychiatrists have a low risk of civil suits and successive payments (Jena et al., 2011).

General practice (GP)[24] and family practice (FP) [25] physicians have been repeatedly overrepresented amongst medical doctors punished by the state medical boards and excluded by the OIG for numerous offenses, specifically for fraud (Dehlendorf and Wolfe, 1998; Jung et al., 2006; Khaliq et al., 2005; Kohatsu et al., 2004; Morrison and Morrison, 2001; Pande and Maas, 2013). GP and FP practitioners combined represented 9.8 percent of the general physician population in 2010 (Smart, 2012), but they accounted for nearly 25 percent of the medical doctors excluded by the OIG from 2000 to 2011 for Medicare fraud (Pande and Mass, 2013). This again gives rise to three issues: (1) is the overrepresentation of GP and FP practitioners in sanctioning statistics due to their behaviors; or (2) is their overrepresentation due to the activities of regulatory agencies; or (3) some combination of the two?

The overrepresentation of GP and FP practitioners is most likely due to the activities of regulatory agencies. These physicians may have greater exposure to regulatory personnel than physicians practicing medicine in other medical specialties, such as surgery.[26] Regulators are more likely to investigate physicians with larger billings than those with smaller billings (Pande and Maas, 2013; Pontell et al., 1985). GP and FP practitioners probably have larger patient

[24] General practitioners (GPs) are physicians who treat patients with both chronic (long-term) and acute (short-term) medical conditions and provide preventive care and education to patients. GPs are responsible for early detection of illnesses and referral of patients to more specialized physicians (e.g., Psychiatrists).

[25] Family practice (FP), or family medicine, practitioners are specialized medical doctors who provide inclusive healthcare to individuals of all ages. FP physicians are required to graduate from medical school and to complete a three-year (or more) residency program.

[26] Surgical specialties commonly include the following specialties: general surgery, orthopedic surgery, urological surgery, otolaryngology, plastic surgery, rectal surgery, among others.

pools of Medicare and Medicaid patients compared to other types of specialists, such as neurosurgeons (Perloff, Kletke, Fossett, and Banks, 1997). GP and FP physicians regularly serve as the principal point of service for beneficiaries of federal healthcare programs (Cunningham and May, 2006). That is, Medicare and Medicaid recipients in most instances are unable to see other medical specialists (such as a surgeon) without first obtaining a referral from a GP or FP physician. GP and FP physicians, as a result, are more likely to have larger billings than other types of physicians for Medicare and Medicaid patients. This will likely increase their exposure to official oversight. FP and GP practitioners will perhaps be more likely excluded by the OIG for a FO than for a QOC matter.

GP and FP practitioners might also be overrepresented due to the activities of prosecutors. That is, prosecutors may find it less difficult to pursue cases against physicians with fewer financial resources to hire skilled attorneys (Jesilow et al., 1991). GP and FP physicians likely have fewer financial resources to counter legal actions by prosecutors than surgical specialties. Numerous studies support this point (AAMC, 2011; Bodenheimer, Berenson, Rudolf, 2007; Lasser, Woolhandler, Himmelstein, 2008). One study, for example, divided medical specialties into four groups: primary care (e.g. general and family practice), surgery (e.g., plastic, neurologic and orthopedic), internal medicine (e.g., allergy and immunology, hematology and oncology) and other medical (e.g., radiation oncology, physical medicine and rehabilitation) (Leigh, Tancredi, Jerant, Kravitz, 2010). The average salaries for surgery, internal medicine and other medical are respectively 48 percent, 36 percent and 45 percent higher than the salaries of the primary care specialties. The annual salary for general practitioners, for example, ranges

from $175,000-$220,196, while the yearly income for neurosurgeons[27] ranges from $287,000-$637,000 (AAMC, 2011). Physicians with fewer financial resources may be more susceptible to prosecution and exclusion by the OIG than physicians with greater financial resources.

Surgical specialties are more likely to be excluded by the OIG for a QOC matter than for a FO. Physicians in surgical specialties are more likely to be civilly sued by patients for malpractice and to make subsequent payments than GP and FP practitioners (Charles et al., 1992; Gonzales, 1993; Mullis, 1995; Schwartz and Mendelson, 1989; Lawson and Guggenheim, 1984; Sloan et al., 1989). Malpractice insurers are required by law to report physician malpractice payments to the National Practitioner Data Bank (NPDB) (see Jesilow & Ohlander, 2010; Jesilow & Ohlander, 2010a for a more detailed discussion). The physician's state medical board may or may not take action (e.g., revoke and suspend) against the medical doctor's license. Actions taken by the medical board against a physician's license will become known to the OIG, which may then exclude the physician for a QOC matter.

GP and FP practitioners and psychiatrists will be overrepresented amongst physicians excluded by the OIG from federal healthcare programs. They will be more likely excluded for a FO than for a QOC matter. Surgical specialties will be underrepresented among medical doctors excluded by the OIG. These type of physicians will be more likely excluded for a QOC matter than for a FO.

[27] Neurosurgeons prevent, diagnose and treat disorders that may impact any part of the nervous system, such as the brain. They have to complete medical school and a seven-year residency program.

Board Certification

Demographic studies have generally found board certified physicians to be underrepresented amongst medical doctors who have been disciplined by the state medical boards (Clay and Conatser, 2003; Morrison and Wickersham, 1998; Jung et al., 2006). Board certified physicians since the 1970s have usually represented about 75 percent of all active physicians in the United States (Moore and Priebe, 1991; Smart, 2012; Young et al., 2013).[28] Board certified physicians made up 53 percent of physicians disciplined by the Medical Board of California from October 1995 through April 1997 (Morrison and Wickersham, 1998). Similarly, board certified physicians accounted for 51 percent of the physicians disciplined by the State Medical Board of Ohio from January 1997 to June 1999 (Clay and Conatser, 2003). Board certified physicians, in a more comprehensive study, represented 41.5 percent of the physicians disciplined by the state medical boards and by federal agencies from January 1990 to December 1999 (Jung et al., 2006). This gives rise to three issues: (1) is the underrepresentation of board certified physicians in sanctioning statistics due to their behaviors; or (2) is their underrepresentation due to the activities of regulatory agencies; or (3) some combination of the two?

The underrepresentation of board certified physicians in sanctioning statistics might be a result of their individual behaviors. Board certified physicians likely have the most current skills and knowledge to practice medicine in a specific medical specialty (American Board of Medical

[28] Physicians who completed their residency and obtained their medical license are not automatically board certified in their medical specialty. Most physicians have the opportunity to become board certified, except for general practice physicians The American Board of Medical Specialties does not have a board for general practitioners.

Specialties [ABMS], 2014]. Certified physicians voluntarily meet additional standards beyond basic medical licensing (ABMS, 2014). Physicians are able to become board certified after showing exceptional expertise in a certain specialty and/or subspecialty of medical practice. Certification by an ABMS Member Board involves a rigorous process of testing (via written, practical or simulator-based testing) and peer-evaluation (ABMS, 2014). A physician's board certification status is not permanent. Medical doctors must actively keep up-to-date with the latest advances in their specialties in order to maintain their board certification. Physicians, depending on the medical specialty, must renew their board certifications after six to ten years. In short, board certification tells patients that their physicians are up-to-date experts with the most current knowledge and skills available and can provide better care in their particular medical specialty compared to physicians who are not board certified.

There is no evidence to date, but one might assume board certified medical doctors might be less likely to be disciplined for QOC matters (such as patient harm and neglect) than non-board certified physicians. Board certified physicians likely have the most current skills and knowledge to provide quality healthcare within a given medical specialty compared to non-certified physicians (AMBS, 2014). Certified medical doctors, as a result, may less likely become involved in civil suits and subsequent malpractice claim payments. The medical boards again view civil suit payments as signals of possible wrongdoings by physicians (Bovbjerg and Petronis, 1994; Fellmeth and Papageorge, 2005; Studdert, Mello, Gawande, Gandhi, and Kachalia, 2006). Physicians, who are less likely to become involved in civil suits and successive payments, are less likely to be investigated and sanctioned by the medical boards. Subsequently, such physicians are less likely to be excluded by the OIG. Such matters could in

part decrease the probability of board certified physicians being disciplined by the OIG for a QOC matter.

Medical doctors who are board certified in their medical specialty should be underrepresented amongst physicians excluded by the OIG from federal healthcare programs. Board certified physicians should be less likely excluded for a QOC matter. There is no evidence to suggest board certification will make a doctor more honest. That is, having better skills does not likely make a doctor more truthful and subsequently less likely to be excluded by the OIG for a FO.

One might reversely argue that board certified physicians may be more likely to be excluded by the OIG for a QOC matter than for a FO. General practice (GP) physicians, for example, cannot be board certified. GP physicians engage in minor medical procedures (e.g., physical check-ups) that are less likely to result in patient harm. They are less likely to face civil suits and malpractice payments (Jena et al., 2011). Medical doctors who are board certified are regularly surgeons, who are involved in complex medical procedures that are more likely to result in patient harm. They are more likely to face civil suits and have malpractice payments (Jena et al., 2011). Specialized physicians, who are board certified in their medical specialty, may be more likely excluded by the OIG for a QOC matter than for a FO.

Summary

This chapter discusses what is currently known by researchers about the demographic portrait of physicians disciplined by regulatory agencies. Males, older physicians, IMGs, graduates of Black medical schools, general and family practitioners and psychiatrists are

overrepresented amongst disciplined physicians. Females, younger physicians, USMGs, board certified physicians and surgical specialists tend to be underrepresented among disciplined physicians. Henry Pontell, Paul Jesilow and Gilbert Geis more than three decades ago were interested in understanding how the demographic portrait of disciplined medical doctors was influenced (1985). The researchers reasoned it could be due to the behaviors of physicians and/or the activities of regulatory agencies. They concluded both factors played a role in forming the portrait, but that the activities of regulatory agencies were most influential.

The next chapter will discuss the methods employed in my dissertation. I will explain the dependent and independent variables and how the demographic characteristics were collected and coded.

Chapter Three

Methodology

Introduction

I collected both qualitative and quantitative data for my dissertation. Qualitative data included observations and some interviews with government officials and regulators. Quantitative data consisted of collecting demographic characteristics of physicians on the Office of Inspector General's (OIG) List of Excluded Individuals and Entities (LEIE). I also compiled aggregated data by zip code on the communities where excluded physicians practiced medicine. This was one technique to indirectly measure the percentage of the probable Medicare (percentage of individuals 65 years old and older in a particular zip code) and Medicaid (percent of individuals living below the federal poverty level in a certain zip code) patients in a physician's practice. The following paragraphs will discuss each of these matters in more detail.

Research Questions

The purpose for conducting my dissertation research was to shed light on two research questions. First, what is the general demographic portrait of physicians excluded by the OIG? Second, is the demographic portrait an accurate account of the universe of doctors who might appear on the LEIE for various behaviors (e.g., fraud, neglect, defaulting on health education loans) or is the picture more reflective of the activities of regulatory agencies? The following paragraphs describe the methods of my dissertation in detail, including the participant

observations, the dependent and independent variables as well as the collection of the demographic characteristics.

Scope of the Dissertation

The goal of my dissertation was to create a demographic portrait of physicians[29] who have been excluded from 2008 to 2013 by the OIG, under the U.S. Department of Health and Human Services (HHS) from participating in federal healthcare programs. My dissertation replicates and builds upon the work of Henry Pontell, Paul Jesilow and Gilbert Geis (1985). I was in part interested in establishing whether the demographic portrait of excluded physicians has changed or has remained approximately the same for the past three decades. A similar portrait might suggest the government has remained stagnant in its enforcement activities and strategies.

I narrowed the scope of the dissertation to make the research more discrete and bounded. I examined six recent years of excluded physicians. Collecting demographic information on all excluded medical doctors from the 1980s on would have proved too time-consuming. It was not possible for me to conduct such a comprehensive project with the time and finances available.

I was not exclusively interested in learning about the demographic characteristics of excluded medical doctors. I also wanted to understand how the activities of regulatory agencies might affect which physicians are selected for further investigations. The interplay between the medical doctors' own behaviors and the activities of regulatory agencies likely influence the

[29] Both doctors of medicine and osteopathy

physicians appearing on the OIG's LEIE. I focused on a single regulatory agency (the OIG) to better understand the process by which physicians are excluded from federal healthcare programs.

Participant Observations

The first section of the methods addresses the participant observations and why I employed them in my research. I first needed to fully understand the strengths and weaknesses of the data contained within the OIG's LEIE. First, it was necessary to learn how the OIG office operated and how its agents go about detecting wrongdoings and selecting cases to pursue. I largely learned this information through participant observations. The main purpose of the participant observations was to learn which factors (both external and internal) influence the enforcement actions of the OIG and its agents. Not all doctors who violate the laws and rules are detected, investigated and punished. Government agencies in general attempting to control illegal activities in healthcare cannot investigate every suspect. They are often restricted by limited budgets, powerful defendants and other matters. How these factors affect which physicians are targeted by the OIG for investigations were explored through the participant observations. The participant observations enabled me to understand how the activities of the office personnel might generate the demographic portrait of physicians excluded by the OIG.

Setting of the Participant Observations

The participant observations were personally conducted by the investigator and took place at one office of the Centers for Medicare and Medicaid Services (CMS), located within

the HHS. The location of the CMS office studied is situated on the West Coast. CMS is primarily responsible for administering Medicare, Medicaid and other federally-funded healthcare programs (e.g., the State Children's Health Insurance Program). The agency is also in charge of implementing hundreds of provisions and major laws, such as the Health Insurance Portability and Accountability Act (see Iglehart, 2001 for a more detailed description of CMS). My participant observations occurred specifically at a CMS office responsible for the implementation of the Medicare Integrity Program (MIP). The main goal of the MIP is to safeguard Medicare from improper billings from fraudulent providers (e.g., physicians, dentists and chiropractors) and entities (e.g., medical equipment companies). My participant observations were conducted at this site from September 2007 to June 2008.

Conducting my participant observations at CMS was advantageous. It allowed me to learn how the OIG and its agents operated. CMS serves as a middle point between the private Medicare Recovery Audit Contractors (RACs) and the OIG. The RACs, which are hired by CMS, conduct most of the investigations involving alleged healthcare fraud, waste and abuse (see Iglehart, 2001). The RACs protect Medicare by identifying improper payments and by referring suspect fraud cases to CMS. CMS may then open its own investigations on suspect providers, who CMS might take administrative actions against. CMS then refers civil and criminal cases to the OIG. The OIG will then select which cases to further investigate and prosecute. This is a generalization of how these government entities operate.

There would have been numerous limitations to performing my participant observations either at a RAC office or at an OIG office. I would have some difficulty understanding the factors influencing the enforcement actions of the OIG by conducting observations at a RAC.

This is because the OIG and the RACs rarely communicate with each other.[30] It would be challenging to understand how the RACs investigate and refer cases to CMS by conducting observations at the OIG. Conducting participant observations at CMS provided the most complete picture of how fraud, abuse and other types of cases are developed and selected for further investigations. This is due to the fact CMS is the intermediary between the RACs and the OIG.

Study Participants

My observed participants included all ten employees from the CMS study site. These participants came from diverse demographic backgrounds. There were seven male employees and three female employees. Their ages ranged from 26 to 65 years old. There were three general types of jobs at this CMS office (excluding the director), including Medicare fraud investigator, healthcare insurance specialist and administrative assistant. The participants also had diverse former occupational backgrounds. A few of the office personnel were retired police officers with more than 30 years of experience. Others were highly-experienced accountants who came from private investment companies. Some came from other government agencies.

[30] The OIG does provide oversight of the RACs. The OIG, for example, will review the administrative costs claimed by the RACs (see OIG, 2015). The OIG will then determine if the costs claimed are reasonable and allowable.

Obtaining Access

The CMS study site is secure and not open to the general public without authorization. I was able to gain access to the CMS office through the assistance of a public research university located on the West Coast. I initially contacted the CMS office director via email and arranged for a personal interview. The director offered me an internship position a few weeks later. This office deals with sensitive information, such as social security numbers, criminal records and other private information. I was required to go through a detailed background check before being allowed to work and conduct participant observations at the office. I made a yearlong commitment (June 2007 to June 2008) to assist members in the office with their work. I was in the office two days a week for a total of ten hours.

I was not allowed immediately to conduct participant observations at the start of my internship. It was initially necessary to first earn the trust of the director before beginning my research project. The director required me to do administrative work, such as shredding confidential documents and organizing case files. I performed these tasks well. This allowed me to establish a working rapport with the director and a senior Medicare fraud investigator. Once I gain their trust, I assisted the fraud investigator with developing cases against suspect providers by screening tip-offs by private citizens. Few of these cases were every investigated due to limited evidence and/or financial resources. The senior investigator, who was my key informant, invited me to weekly staff and interagency meetings and on field site visits of suspicious providers. This allowed me to commence collecting data for my participant observations.

Data Collection

I assumed the "participant-as-observer" role at the CMS study site. That is, I informed the director and other office personnel in writing and orally of my identity and research agenda. This method allows for a good combination of involvement and the necessary detachment to remain objective (Frankfort-Nachmias and Nachmias, 2008). Participant observations occurred during regular business hours (8:00am-5:00pm), usually five hours per day two days each week. A variety of daily office activities were observed, such as weekly staff meetings, the development of case files and field site visits of suspect physicians. I also observed two interagency meetings with CMS, the OIG and other federal and state agencies.

There were a number of ways I recorded my participant observations. It was my goal to be as non-disruptive as possible to office personnel when recording my observations. I would, for example, regularly wait until after office meetings or field visits to write down my observations. It was my preference to record my observations in my notebook once I was alone at my desk or in my car. I tried my best to record all observations within 1-2 hours to reduce recall bias. My cellphone was used to audio record notes to myself if I was unable to write anything in my notebook within two hours. I created memos in my cellphone with key terms to remind me of observed events.

My notebook of observations was divided into three sections: office meetings, case development and field site visits. I first began by recording nearly everything I thought was relevant to the factors influencing the enforcement actions of the OIG and its agents. I then started creating categories of factors that could be impacting how the OIG goes about regulating physicians (e.g., limited budgets, hidden offenses). These categories were

discussed with my academic adviser who gave suggestions on refining my categories. One early challenge when recording my participant observations was understanding the jargon used by the office personnel. My key informant would regularly translate and teach me the jargon most commonly employed in the office. It took me several months to learn and fully understand most of the terminology.

Human Subjects

There were virtually no risks of harm to the individuals working at the observed site, because no controversial information was collected. The identities of the subjects were also safeguarded. Data from the participant observations were recorded in a manner that the subjects could not be directly identified. Rather individuals were recognized in my field notes by their job titles, such as a fraud investigator or an administrative assistant. I shredded all my participant observation notebooks once they were scanned into my password protected computer. I also deleted all my cellphone memos once they were uploaded to my computer. The scope and depth of my dissertation project was approved by the University of California, Irvine's Institutional Review Board (See Appendix A).

Leaving the Field

My internship ended with CMS in June 2008. I, however, have remained in contact with three friends I made while interning at CMS. I regularly visit them during academic breaks. This time allows me to catch up on what is happening at the office and to gain additional insights into what is happening with the OIG's enforcement practices.

Advantages and Disadvantages of Participant Observations

There are a number of advantages to conducting participant observations. The findings from the participant observations are likely internally valid.[31] Subjects did not appear to act differently around me. They in fact seemed to be relaxed, since they often discussed confidential matters with me that might have been troublesome if discovered. Subjects might have been willing to disclose sensitive information, because I was a student intern with no power or influence over their jobs. I may have also earned the trust of the CMS office personnel. Another advantage of participant observations is they allow researchers to interact with and learn the viewpoints of the subjects (DeMunck and Sobo, 1998). I was able to record in great detail numerous factors influencing the enforcement actions of the OIG and its agents. The observations also gave me new insights into matters I had previously not considered. These matters will be explained in the discussion chapter.

There are, however, numerous disadvantages with conducting participant observations. Findings from participant observations commonly lack external validity or generalizability (Frankfort-Nachmias and Nachmias, 2008).[32] My participant observations only took place at one CMS office. The findings from this study cannot be generalized to all CMS offices. This is because there is different leadership and personnel at each office, which could potentially impact the results. The individuals at my CMS study site were welcoming and accommodating of my research. Other CMS offices and their personnel may have been less supportive of

[31] Internal validity in particular refers to the truthfulness of the claim that one variable causes another. It pertains to the casual linkage of variables internal to the design and the confidence we have that the effect observed in the outcome variable is due to the presumed casual variable or experimental treatment (Dooley, 2001, p. 163).

[32] External validity is the extent to which the research findings can be generalized to larger populations and to different settings (Frankfort-Nachmias and Nachmias, 2008, p. 101).

academic research. The findings from participant observation studies may also lack reliability (Frankfort-Nachmias and Nachmias, 2008). That is, different researchers with varying skills and backgrounds may come up with different findings. It is difficult to check and control for such matters. Another disadvantage is I may have "gone native" (see Fuller, 2004 for a more detailed discussion). I developed friendships with individuals at the office, and I may have begun to adopt their viewpoints. This may have biased what I recorded. I did my best, however, to remain objective by talking with my academic adviser about what I was recording. One more disadvantage with participant observations is they are time-consuming compared with other research methods (e.g., secondary data analysis and sources).

Physician Exclusion Data

The second section of the methods addresses how I generated a list of physicians who were excluded by the OIG and how I collected demographic information on these medical doctors. Physicians for this study were drawn from the OIG's List of Excluded Individuals and Entities (LEIE). The LEIE is a list of healthcare professionals (e.g., physicians, nurses, dentists and social workers) and businesses (e.g., medical equipment suppliers, medical practices and hospitals) that are currently prohibited from participation in federal healthcare programs. The sample of physicians were those who were excluded from participating in Medicare and Medicaid and other federally-funded healthcare programs (e.g., Children's Healthcare Insurance Program) from January 2008 to December 2013. There were a total of 1,194 physicians (both doctors of medicine and osteopathy) excluded during this time in the United States and its possessions (Puerto Rico, Guam, U.S. Virgin Islands and American Samoa).

Physicians can be easily identified amongst all the other types of providers and suppliers on the LEIE. This is because each medical doctor has a unique physician identification number (known as a UPIN). A "physician" for this study was defined as anyone with a MD degree or a DO (Doctor of Osteopathy) degree.[33] Individuals in the following types of occupations were not considered to be medical doctors: physician assistants, social workers, optometrists, pharmacists, nurses, audiologists, chiropractors and dentists. The demographic characteristics of these individuals were not included in the portrait of medical doctors excluded by the OIG.

The LEIE is a publically accessible, searchable and is a free online database. The OIG first began implementing exclusions in 1981, but the U.S. Department of Health and Human Services (HHS) initially started imposing exclusion authorities in 1977. The LEIE is updated by the OIG at the end of each month. The OIG distributes the LEIE to the public and to other regulatory agencies, such as the individual state medical boards. The LEIE contains the following individual-level data on each excluded physician: name, business name, medical specialty, date of birth, unique physician identification number, address of practice, state, city, zip code, exclusion type, exclusion date and reinstatement date (if applicable).

The OIG has the authority to exclude individuals and entities under section 1128 of the Social Security Act (42 USC § 1320a-7). The OIG has a total of twenty-three exclusion authorities (see Table 3.1). There are two types of exclusions: six mandatory and seventeen permissive. Mandatory exclusions are those required under law. Permissive exclusions occur when physicians may be excluded for certain types of offenses, but it is not required under law.

[33] A physician with a DO degree is held up to the same standards as an MD. Both MDs and DOs attend four years of medical school and complete their training by way of residency programs.

The way the OIG decides to exclude physicians will impact the demographic portrait. The OIG could exclude physicians under several different authorities for a single illegal behavior and its consequences (Pande and Maas, 2013; Personal Interview, 2013). A doctor, for example, could prescribe and charge Medicare for medically unnecessary prescriptions for controlled substances. This physician may subsequently have her medical license revoked by her state medical board upon detection and prosecution. This physician, therefore, could be listed on the LEIE under either subsections 1128(a)(1), 1128(a)(4) or 1128(b)(4).

The OIG is required by law to impose mandatory exclusions on physicians for certain types of felony criminal convictions (see Table 3.1).[34] Such felony convictions include Medicare and/or Medicaid fraud, patient abuse or neglect, other healthcare-related fraud and unlawful distribution of controlled substances. Physicians who are excluded are unable to participate in federal healthcare programs for a minimum period of five years if convicted of one mandatory exclusion offense. Physicians convicted of two mandatory exclusion offenses are excluded for a minimum period of 10 years. Physicians convicted on three or more occasions of mandatory exclusion offenses are permanently excluded from participating in federal healthcare programs.

The OIG has discretion, under permissive exclusion authorities, to exclude physicians for certain types of misdemeanor convictions (see Table 3.1).[35] These misdemeanor offenses, include healthcare fraud, fraud in a publically-funded program, obstruction of an investigation and unlawful distribution of controlled substances. Physicians convicted for one of these

[34] Felonies are serious offenses usually carrying a penalty of death or incarceration for more than one year in prison.

[35] Misdemeanors are offenses less serious than felonies. Misdemeanors are usually punishable by incarceration of no more than one year in jail or probation or intermediate sanctions.

permissive exclusion offenses are unable to participate for a minimum period of three years. The OIG may also use its discretion to exclude physicians for various other reasons with no minimum period, such as defaulting on health education loans or scholarship obligations.

Physicians who appear on the LEIE are unable to be paid for services they provide to Medicare and Medicaid beneficiaries and to recipients of other federally-funded healthcare programs. Employers may be subject to civil monetary penalties (CMPs) if they hire physicians on the LEIE for the purpose of billing for services provided to Medicare and Medicaid patients.[36] Hospitals and group medical practices, who treat federal healthcare program recipients, may in narrow circumstances hire physicians who appear on the LEIE. Employers may hire excluded physicians if the employer is able to pay the physicians with private funds, not federal healthcare funds. Employers may also hire excluded physicians to treat and provide services to patients covered by private healthcare insurance companies.

LEIE Limitations

The LEIE data from January 2008 to December 2013 did not include all of the physicians who had been excluded during this period. Physicians are usually not permanently excluded by the OIG from federal healthcare programs. Excluded physicians are permitted to apply for reinstatement.[37] Physicians who are reinstated by the OIG are once again allowed to be paid for services they provide to Medicare and Medicaid beneficiaries. The OIG removes these physician

[36] The Balance Budget Act of 1997 authorizes the OIG to impose CMPs against employers who employ or enter into contracts with excluded individuals to provide items or services payable by federal healthcare programs.

[37] Physicians are not automatically reinstated once their specific period of exclusion ends. They must apply for reinstatement and may do so 90 days before the end of the exclusion period.

names from the LEIE. Not including these physicians could taint the overall demographic portrait of physicians excluded by the OIG. It was necessary to locate this missing data.

Physician Reinstatement Data

I was able to locate, using a couple of sources, most of the reinstatement data from 2008 to 2013. Reinstatement data are only available for the previous year on the OIG's exclusions website. I was able to obtain all the physician reinstatement data for 2013 from this website. Physician reinstatement data were not available on the OIG's exclusions website for the previous five years, 2008 to 2012. I acquired these data through the Freedom of Information Act (FOIA) Office of the Office of Inspector General. The FOIA (5 U.S.C. § 552) is a law giving the public access to federal government information.[38] The FOIA Office was able to provide physician reinstatement data from 2008 to 2012. The 2012 reinstatement data, however, were only partial. The FOIA office could not locate reinstatement data for a seven-month period, from January to July 2012. I was unable to obtain reinstatement data for this timeframe. There were a total of 95 known physicians reinstated from 2008 to 2013. This brings the total number of physicians excluded by the OIG during the study period from 1,194 to 1,289.

[38] I was not charged for FOIA services, because the billable fees were below the Department's $25 cost effective threshold.

Table 3.1: OIG Exclusion Authorities (Mandatory and Permissive)

Mandatory Exclusions		
Social Security Act	**42 USC §**	**Amendment**
1128(a)(1)	1320a-7(a)(1)	Conviction of program-related crimes. Minimum Period: 5 years
1128(a)(2)	1320a-7(a)(2)	Conviction relating to patient abuse or neglect. Minimum Period: 5 years
1128(a)(3)	1320a-7(a)(3)	Felony conviction relating to health care fraud. Minimum Period: 5 years
1128(a)(4)	1320a-7(a)(4)	Felony conviction relating to controlled substance. Minimum Period: 5 years
1128(c)(3)(G)(i)	1320a-7(c)(3)(G)(i)	Conviction of two mandatory exclusion offenses. Minimum Period: 10 years
1128(c)(3)(G)(ii)	1320a-7(c)(3)(G)(ii)	Conviction on 3 or more occasions of mandatory exclusion offenses. Permanent Exclusion
Permissive Exclusions		
Social Security Act	**42 USC §**	**Amendment**
1128(b)(1)(A)	1320a-7(b)(1)(A)	Misdemeanor conviction relating to health care fraud. Minimum Period: 3 years
1128(b)(1)(B)	1320a-7(b)(1)(B)	Conviction relating to fraud in non-health care programs. Minimum Period: 3
1128(b)(2)	1320a-7(b)(2)	Conviction relating to obstruction of an investigation. Minimum Period: 3 years
1128(b)(3)	1320a-7(b)(3)	Misdemeanor conviction relating to controlled substance. Minimum Period: 3 years
1128(b)(4)	1320a-7(b)(4)	License revocation or suspension. Minimum Period: No less than the period imposed by the state licensing authority.
1128(b)(5)	1320a-7(b)(5)	Exclusion or suspension under federal or state health care program. Minimum Period: No less than the period imposed by federal or state health care program.

1128(b)(6)	1320a-7(b)(6)	Claims for excessive charges, unnecessary services or services which fail to meet professionally recognized standards of health care, or failure of an HMO to furnish medically necessary services. Minimum Period: 1 year
1128(b)(7)	1320a-7(b)(7)	Fraud, kickbacks, and other prohibited activities. Minimum Period: None
1128(b)(8)	1320a-7(b)(8)	Entities controlled by a sanctioned individual. Minimum Period: Same as length of individual's exclusion.
1128(b)(8)(A)	1320a-7(b)(8)(A)	Entities controlled by a family or household member of an excluded individual and where there has been a transfer of ownership/ control. Minimum Period: Same as length of individual's exclusion.
1128(b)(9), (10), (11)	1320a-7(b)(9-11)	Failure to disclose required information, supply requested information on subcontractors and suppliers; or supply payment information. Minimum Period: None
1128(b)(12)	1320a-7(b)(12)	Failure to grant immediate access. Minimum Period: None
1128(b)(13)	1320a-7(b)(13)	Failure to take corrective action. Minimum Period: None
1128(b)(14)	1320a-7(b)(14)	Default on health education loan or scholarship obligations. Minimum Period: Until default has been cured or obligations have been resolved to Public Health Service's (PHS) satisfaction.
1128(b)(15)	1320a-7(b)(15)	Individuals controlling a sanctioned entity. Minimum Period: Same period as entity.
1128(b)(16)	1320a-7(b)(16)	Making false statement or misrepresentations of material fact. Minimum period: None

1156	1320c-5	Failure to meet statutory obligations of practitioners and providers to provide' medically necessary services meeting professionally recognized standards of health care (Peer Review Organization (PRO) findings). Minimum Period: 1 year
Source: Office of Inspector General, U.S. Department of Health and Human Services		

Dependent Variable

The dependent variable is whether a physician is excluded by the OIG for a quality of care (QOC) matter or for a financial offense (FO). I was able to obtain the names of 1,289 physicians excluded from 2008 to 2013 by the OIG.

The OIG employs five exclusion authorities (see Table 3.2) to address situations that involve poor quality of care, such as the provision of medically unnecessary services or patient abuse or neglect (see Demske, 2008 for a detailed discussion of these authorities). The provision of unnecessary surgeries, for example, can negatively impact the quality of one's life (see Rosoff, Pontell, and Tillman, 2014 for various examples). That is, unnecessary surgeries may result in serious bodily harm or even death. Those who are seriously harmed may be unable to work, go to school or be able to live their lives without assistance. Such behaviors by physicians may have long-term or permanent impacts on one's quality of life.

The OIG uses sixteen exclusion authorities (see Table 3.2) to deal with a variety of financial offenses, such as billing for more expensive procedures than actually provided (known as upcoding) or billing for services never provided. These illegal behaviors often do not directly impact the patient. One could argue that such behaviors might impact the QOC for the general population. Billing for services never rendered, for example, may divert funds from individuals

who actually need medical services (Jesilow et al., 1993). It may also become a QOC matter if physicians fail to provide necessary services to patients. I, however, did not label such matters as QOC. I labeled them as a FO, because such illegal behaviors are harming the government (and taxpayers). I believe such behaviors (e.g., upcoding and billing for services never provided) are generally not directly harming patients.

There were 698 physicians (54.1 percent) excluded for a financial offense and 591 physicians (45.9 percent) were excluded for a quality of care offense. Physicians excluded for financial offenses (FO) were nominally coded as 0 and physicians excluded for quality of care (QOC) matters were coded as 1.[39]

Table 3.2: Dependent Variable

Quality of Care Exclusions	Financial Offense Exclusions
1128(a)(2)	1128(a)(1)
1128(b)(4)	1128(a)(3)
1128(b)(6)	1128(a)(4)
1128(b)(7)	1128(b)(1)(A)
1156	1128(b)(1)(B)
	1128(b)(2)
	1128(b)(3)
	1128(b)(5)
	1128(b)(8)
	1128(b)(8)(A)
	1128(b)(9), (10), (11)
	1128(b)(12)
	1128(b)(13)
	1128(b)(14)
	1128(b)(15)
	1128(b)(16)

[39] The remaining two authorities 1128(c)(3)(G)(i) and 1128(c)(3)(G)(ii) involve physicians convicted of two or more occasions of mandatory exclusion offenses. These two exclusions may deal with both quality of care matters and financial violations. There were no physicians during the study period that were excluded under these authorities.

Independent Variables

Whether a physician is excluded by the OIG for quality of care matters or financial violations will be predicted using the following independent variables: sex, age, origin of medical school training, medical specialty, board certification, Medicare patient concentrations (percentage of individuals 65 years old and older) and Medicaid patient concentrations (percentage of residents living below the poverty level) within a zip code tabulated area (ZCTA) of an excluded physician's medical practice and community score. Not all of these demographic data are readily available on the LEIE, such as the excluded physician's sex, medical training and board certification status. The LEIE along with other publically available data sources were utilized to collect demographic information on each excluded physician. Collected data were recorded in an EXCEL sheet, which was later imported into SPSS (Statistical Package for the Social Sciences) to conduct the statistical analyses. The following paragraphs will discuss each independent variable and how the data were collected and coded.

Sex

Previous research, as discussed in chapter 2, has suggested that female physicians are underrepresented amongst medical doctors disciplined by various regulatory agencies. I was interested in determining if this association still exists amongst physicians who have been excluded by the OIG from participating in federal healthcare programs. The LEIE does not provide data on the sex of excluded physicians. This information can be obtained through a number of publically accessible online resources. One way to determine the sex of medical doctors is by visiting HealthGrades.com. This website allows visitors to find basic background

information on their medical doctors, such as sex, age, medical education, medical specialty, disciplinary history, some medical malpractice history and patient satisfaction reports. Another way to find out the sex of a physician is by searching their profile on their state medical and/or osteopathic board website. There are a total of seventy state medical and osteopathic boards. A directory of all these medical and osteopathic boards can be found on the website of the Federation of State Medical Boards. It was possible to determine the sex of all 1,289 excluded physicians through these two sources. The sex data appeared to be accurate, since there were no noticeable disagreements between HealthGrades and the state medical and/or osteopathic boards. Males were nominally coded as 0 and females as 1 (see Table 3.4).

Age

Prior studies have found that older physicians are overrepresented amongst medical doctors disciplined by numerous regulatory agencies. I was interested in establishing if this relationship still exists amongst physicians who have been excluded by the OIG from billing for services provided to recipients of Medicare and Medicaid. The LEIE provides date of birth information for each excluded physician. A physician's age can also be obtained from their particular state medical and/or osteopathic board website and by searching HealthGrades. The age data appeared to be correct, because there were no discrepancies between the LEIE and the other data sources. The age frequencies also seemed reasonable (exclusion ages ranged from 31 to 86 years old). The physician's age when excluded by the OIG was determined by subtracting their date of birth year from their exclusion year. Age was recorded as a continuous variable (see Table 3.4).

Origin of Medical School Training

Previous research findings have suggested that International Medical Graduates (IMGs) are overrepresented amongst medical doctors disciplined by regulatory agencies. I was interested in determining if this association still exists amongst physicians who have been excluded by the OIG from participating in federal healthcare programs.

The LEIE does not provide data on the medical school training of excluded physicians. Medical school information was obtained from a number of different sources. These data were mostly obtained from the American Medical Association (AMA) Physician Masterfile. The Physician Masterfile contains both present and past data for more than 1.4 million physicians, residents and medical students in the United States.[40] This dataset is available to researchers at a fee. The Masterfile, however, had some missing medical school data. It was possible to locate some missing medical school data through searching the state medical and/or osteopathic board websites and HealthGrades. Some of the data were still missing after using these two sources. NewsBank.com, which provides access to millions of online newspapers, was used as a final attempt to locate missing medical school data. Medical school data, even after using NewsBank, were missing for 83 (6.4 percent) of the excluded medical doctors. There were a total of 339 medical schools for the 1,206 excluded physicians (see Appendix B). Locating the country where the excluded physicians attended medical school was determined by a simple web search of the medical school's name. The medical school data appeared to be accurate due

[40] The Masterfile collects the following information on each physician: name, birthplace and date, medical education and year of graduation, graduate medical education, state licenses(s) issued and issue date(s), American Board of Medical Specialties certification(s) and sub-certification(s), licensure, Medicare/Medicaid, and other federal sanctions, practice specialty and major professional activity.

to the fact there were no discrepancies between the AMA Physician Masterfile and the other public data sources. United States medical graduates (USMGs) were nominally coded as 0 and IMGs as 1 (see Table 3.4). When no data were available, it was reported as missing.

Medical Specialty

Earlier studies found certain medical specialties (e.g., family practice and psychiatry) were overrepresented amongst physicians excluded by the OIG (Jung et al., 2006; Pande and Maas, 2013; Pontell et al., 1985). These same studies also found that other medical specialties (e.g., general surgery and neurosurgery) were underrepresented among medical doctors excluded. I was interested in determining if such relationships still exist amongst physicians who have been removed by the OIG. The LEIE provides medical specialty information for each excluded physician. Medical specialty information for each excluded physician was available on the LEIE. A physician's medical specialty could also be obtained from their particular state medical and/or osteopathic board website or by searching HealthGrades. The medical specialty data are believed to be correct, since there were no conflicts between the data sources.

The medical specialties, for the multivariate logistic regression, were divided into two groups: (1) primary care medical specialties[41] and (2) secondary and tertiary care medical specialties. Primary care physicians (e.g., general and family practice) are generally the first doctors to interact with patients in the U.S. healthcare system. That is, primary care doctors are typically the first point of consultation for patients. Secondary care physicians (e.g.,

[41] The American Medical Association labels the following medical specialties as primary care physicians: general and family practice, internal medicine, pediatrics and obstetrics and gynecology (Smart, 2012). All other medical specialties not previously listed were considered secondary and tertiary care physicians.

cardiologists and urologists) normally do not have first contact with patients. Primary care physicians generally refer patients to secondary care physicians for more specialized medical care. Tertiary care physicians (e.g., neurosurgery and cardiac surgery) refers to doctors who usually treat hospitalized patients (see Table 3.4 for a listing of primary, secondary and tertiary care medical specialties).

Primary care physicians were reasoned to be more likely excluded for a FO than for a QOC matter. Secondary and tertiary physicians, however, were reversely expected to be more likely excluded for a QOC matter than for a FO. My categories were based upon numerous research studies that have found medical malpractice civil suits and payments vary according to a physician's medical specialty (Charles, Gibbons, Frisch, et al., 1992; Gonzales, 1993; Lawson and Guggenheim, 1984; Mullis, 1995; Schwartz and Mendelson, 1989; Sloan, Mergenhagen, Burfield, Bovbjerg, and Hassan, 1989). These studies generally found that physicians practicing in secondary and tertiary medical specialties have a higher risk of civil suits and successive payments than primary care physicians. Anupam Jena and his colleagues (2011), for example, examined claims payment data from 1991 to 2005 by medical specialty. They found during the study period that 1.6 percent of physicians on average (regardless of their medical specialty) paid a malpractice claim to a plaintiff (Jena et al., 2011). About 1.4 percent of primary care physicians on average paid a malpractice claim while approximately 1.9 percent of secondary and tertiary physicians on average made a payment (Jena et al., 2011) (see Table 3.4). This means that secondary and tertiary care physicians were about 33 percent more likely to pay a medical malpractice payment than primary care physicians.

Table 3.3: Malpractice Payment by Medical Specialty

Medical Specialty	Paid Claims
Nephrology	0.0041
Psychiatry	0.0045
Pediatrics *	0.0052
Other Specialties	0.0071
Pulmonary Medicine	0.0094
Cardiology	0.0095
Family General Practice *	0.0104
Dermatology	0.0116
Ophthalmology	0.0118
Pathology	0.0128
Internal Medicine *	0.0129
Gastroenterology	0.0134
Neurology	0.0142
Emergency Medicine	0.0144
Anesthesiology	0.0162
Diagnostic Radiology	0.0162
Oncology	0.0188
Urology	0.0249
Plastic Surgery	0.0277
Obstetrics and Gynecology *	0.0298
Neurosurgery	0.0309
Gynecology	0.0318
Thoracic-cardiovascular Surgery	0.0384
Orthopedic Surgery	0.0388
General Surgery	0.0416
All Medical Specialties	**0.0159**
Source: Jena et al., 2011	

Note: 0.4 percent of all nephrologists, for example, paid a malpractice claim during the study period (1991-2005). The rest of the table can be interpreted in this fashion. * denotes a primary care specialty.

The different rates in malpractice payments may in part be contributing to the fact secondary and tertiary physicians are more likely to engage in invasive and complex medical procedures (e.g., surgery) than primary care physicians (Album and Westin, 2008; Norredam and Album, 2007). Surgical procedures, for example, are more likely to cause permanent injuries (e.g., brain damage, quadriplegia) and death (Perrow, 1984). It is probably less common for primary care physicians to be involved in medical procedures that might cause serious harm to patients. Such physicians might be more likely excluded for a FO.

Secondary and tertiary physicians, who generally have more malpractice payments, could more likely be excluded by the OIG for a QOC matter. As previously discussed in Chapter 2, private civil suit payments (medical malpractice settlements and judgements) are the primary way the state medical boards identify physicians for further investigation (Jesilow and Ohlander, 2010; Jesilow and Ohlander, 2010a). The boards again view payments as signals of possible wrongdoings by physicians. Actions taken by the boards will become known to the OIG, which may take action to exclude physicians from federal healthcare programs for quality of care concerns.

Board Certification

Previous research findings have suggested that board certified physicians are underrepresented amongst medical doctors disciplined by state medical boards. I was interested in determining if this association still exists amongst physicians who have been excluded by the OIG from participating in federal healthcare programs. The LEIE does not collect board certification data for excluded physicians. These data were largely obtained

through the American Board of Medical Specialties (ABMS) website. This website allows patients to verify if their physicians are board certified. It is also possible to determine if a physician is board certified through HealthGrades and the AMA Physician Masterfile. Some state medical and/or osteopathic board websites provide this information. The board certification data are likely accurate since there were no discrepancies between the ABMS and the other data sources. Board certification data, even after using all these data sources, were missing for 129 (10 percent) of the excluded physicians. Non-board certified physicians were nominally coded as 0 and board certified physicians as 1 (see Table 3.4). When no data were available, it was reported as missing.

Board certification has been shown to be associated with the demographic portrait of physicians excluded by the OIG (Dow and Harris, 2002). There are some limitations with this variable. Board certification in the United States is somewhat muddy. That is, physicians may be practicing medicine in one medical specialty, yet they can be board certified in another specialty. There are 24 medical specialty member boards recognized by the American Board of Medical Specialties. There is no board for general practice physicians, so they cannot be board certified in general practice (GP). GP physicians, however, can be board certified in another medical specialty (such as family medicine). My former GP physician, for example, was board certified in surgery.

Medicare and Medicaid Patient Concentrations

Henry Pontell, Paul Jesilow and Gilbert Geis (1985) hypothesized enforcement actions were in large part generating the demographic portrait of physicians excluded by the OIG. Medical

doctors, who are practicing in areas with high portions of Medicare and/or Medicaid eligible patients, will probably have larger billings. This will more likely capture the attention of regulatory personnel.

There are no publicly available datasets that tell researchers how much physicians billed for their Medicare and/or Medicaid clientele. These items, therefore, must be indirectly measured. The concentrations of patients who are eligible for Medicare and Medicaid are the best measures for determining the relative extent of a physician's billed amounts for these federal healthcare programs.

I measured the plausible number of Medicare recipients within an excluded physician's medical practice by using the percentage of individuals ages 65 and older in a specific zip code where the excluded physicians practiced medicine. Individuals must be 65 and older to be eligible for Medicare enrollment. Most senior citizens do not turn down the benefit program, since 93.1% of all seniors are covered by Medicare (Administration on Aging, 2011). It is safe to assume Medicare recipients are represented by the percentage of persons who are 65 and older within a particular zip code (see Table 3.4). The LEIE does collect zip code information for each excluded physician. Age distribution information was located by using the 2010 U.S. Census' American FactFinder. The Census made age distribution data available by Zip Code Tabulated Areas (ZCTAs) (see Howden and Meyer, 2011).[42]

Medicaid recipients are primarily individuals who, for one reason or another, find themselves in circumstances where they cannot afford their healthcare and have no other

[42] ZCTAs, created and first used by the Census Bureau in 2000, are generalized areal representations of U.S. Postal Service (USPS) Zip Code service areas.

resources. Medicaid is a needs-based program and not everyone is eligible for enrollment.[43] Medicaid and poverty are likely associated with one another. I gathered data on the percentage of residents with incomes below the federal poverty level for each excluded physician's ZCTA in an attempt to measure the percentage of likely Medicaid beneficiaries in a physician's medical practice (see Table 3.4). This information was obtained through the U.S. Census's American FactFinder. I was unable to obtain Medicare and/or Medicaid ZCTA percentage information for 147 (11.4 percent) of the 1,289 excluded medical doctors. This information was missing on the U.S. Census website.

Community Scores

I combined the Medicare and Medicaid measures to create community scores. The first step was to match the Medicare and Medicaid measures together by ZCTA. I then added both of these percentages (percent 65 years old and older plus the percent of individuals living below the poverty level) to create a community score for each excluded physician by ZCTA. Community scores inform us of the potential exposure a physician has, based upon the geographic location of their medical practice, to Medicare and Medicaid beneficiaries. That is, a physician practicing medicine in a community with a score of 50 might have greater exposure to would-be Medicare and Medicaid patients than physicians in a community with a score of 20. Physicians with greater exposure may also have larger billings for such patients. It is argued that

[43] Medicare is a U.S. tax-supported health insurance program for the elderly and disabled. Medicaid is a state-operated health insurance program for the poor; it is jointly funded by the federal government and the states.

physicians with larger billings are more likely to capture the attention of regulators. An OIG official reported to me that $100,000 was the minimal amount required for a criminal case.

There are a number of limitations regarding the creation of these community scores. First, the community scores are likely double counting some individuals. That is, there are some individuals who live below the poverty level but who are also 65 years old and older. Double counting individuals within a particular ZCTA will artificially inflate the community score. Second, a community score does not reflect the actual demographic makeup of a physician's clientele. A community score of 25, for example, does not mean Medicare and Medicaid recipients account for 25 percent of a physician's medical practice. Physicians even within the same ZCTA likely differ from one another by either accepting more or less Medicare or Medicaid patients. A community score only provides us with a relative measure of patients eligible for Medicare and Medicaid. That is, a physician who practices in a community with a higher score is more likely to have a larger number of Medicare and Medicaid patients than a doctor practicing in an area with a much lower community score.

Table 3.4: Coding the Predictors

Variables	Coding
Sex	0 = Male 1 = Female
Age	Recorded as a continuous variable
Origin of Medical Training	0 = United States Medical Graduate (USMG) 1 = International Medical Graduate (IMG) . = Missing Data
Medical Specialty Vulnerability	0 = Primary Care Medical Specialties (General and Family Practice, Internal Medicine, Pediatrics and Obstetrics and Gynecology) 1 = Secondary and Tertiary Medical Specialties (General Surgery, Orthopedic Surgery, Thoracic-Cardiovascular, Neurosurgery, Plastic Surgery, Urology, Oncology, Diagnostic Radiology, Anesthesiology, Emergency Medicine, Ophthalmology, Psychiatry and all other medical specialties not listed in the primary care category).
Board Certification	0 = Non-Board Certified 1 = Board Certified . = Missing Data
Medicare Patient Concentrations	Percentage of patients 65 years old and older living within an excluded physician's ZCTA . = Missing Data
Medicaid Patient Concentrations	Percentage of individuals who live below the federal poverty level within an excluded physician's ZCTA . = Missing Data
Community Score	Percentage of individuals 65 years old and older + percentage of individuals who live below the federal poverty level within an excluded physician's ZCTA . = Missing Data

Note: * There were no excluded physicians practicing in this particular medical specialty. The following are sub-specialties of internal medicine: adolescent medicine, critical care medicine, diabetes, endocrinology, hematology, hepatology, hospitalist, international cardiology, cardiac electrophysiology, infectious diseases, nephrology, medical oncology, pulmonology, rheumatology, among others (see Smart, 2012 for a complete listing).

Strengths and Weaknesses

There are a couple of strengths with the quantitative portion of my dissertation research. I was able to obtain demographic information of interest on the vast majority of physicians (n= 962 out of 1289, or nearly 75 percent) who were excluded by the OIG from 2008 to 2013. This is better than studies depending on surveys, which often have low response rates (Frankfort-Nachmias and Nachmias, 2007). Another strength of the dissertation research was the inclusion of the Medicare, Medicaid and community score measures. No previous demographic studies of excluded physicians to my knowledge have included these measures. These measures might give us additional insights into the types of physicians being excluded by the OIG.

There are some weaknesses to the data that should be noted. Undergraduate research assistants, under my supervision, were largely responsible for the collection of the data. There is the possibility that some data were miscoded or inaccurately coded. To reduce this possible weakness, I met weekly with my research assistants to review their work for errors. It is also possible that demographic information provided on the LEIE were inaccurate. The information on HealthGrades and on the individual state medical board websites could have also been erroneous in some instances. This seems unlikely, however, since demographic information were often verified through more than one online resource.

There is a significant limitation with the variables measuring the Medicare and Medicaid patient concentrations. Medicare patient concentrations were measured by using the percentage of individuals 65 years old and older living within an excluded physician's ZCTA. Medicaid patient concentrations were measured by using the percentage of individuals who live below the federal poverty level within an excluded medical doctor's ZCTA. The percentage,

looking in hindsight, is not the best way to measure Medicare and Medicaid patient concentrations. The actual numbers of individuals 65 years old and older and individuals living below the poverty level within an excluded medical doctor's ZCTA is a better way to measure a physician's exposure to such patients. There was a ZCTA in rural Nevada, for example, where 100 percent of its population was 65 years old and older. There were, however, only six people living in that ZCTA. No physicians practicing medicine in such areas will come under the scrutiny of the OIG, because the doctor's billings will likely not be large enough. Let us imagine a ZCTA where 10 percent of its population was 65 years old and older. The population of this ZCTA could be 100,000, and the actual number of individuals ≥ 65 years old would be 10,000. Physicians practicing medicine in such a ZCTA might have more exposure to Medicare patients, which may result in larger billings and more scrutiny from the OIG. I will use the actual number of such individuals in future publications. More will be discussed in Chapter 5 on the limitations of the current variables measuring the Medicare and Medicaid patient concentrations.

The next chapter will present the results and analyses of my dissertation research. I will explain the bivariate associations between the dependent variable and each of the independent variables. I will then discuss two multivariate logistic regression models.

Chapter Four

Analyses and Results

This chapter presents the results of my dissertation research in three sections. The first section summarized the behaviors that resulted in physicians being excluded from participating in Medicare, Medicaid and other federally-funded healthcare programs. The number of physicians excluded by year is reported. The second section paints the demographic portrait of physicians who were excluded by the OIG. It lists the characteristics of the physicians who appeared on the OIG's List of Excluded Individuals and Entities (LEIE) from January 2008 to December 2013. The second section will also look at the bivariate associations between the dependent variable (whether a physician was excluded for a financial offense or for a quality of care matter) and each of the independent variables (sex, age, medical training, medical specialty, board certification, percent ≥ 65, percent poverty and community score). The final section includes a table summarizing the bivariate associations among all pairs of explanatory factors. Two separate multivariate logistic regression models are also discussed.

Section One: Types of Matters that Caused Exclusion

The largest portions of exclusions were for felony criminal convictions. The OIG excluded physicians for both criminal and civil matters. Mandatory exclusions accounted for 50.8 percent (n=655) of the total 1,289 OIG exclusions from 2008 to 2013. Mandatory exclusions require the OIG by law to impose a five-year minimum exclusion period on physicians for certain types of felony criminal convictions, such as Medicare and/or Medicaid fraud, patient abuse or neglect

and other healthcare-related fraud. The most common mandatory exclusion 1128(a)(1) was applied to physicians with a felony criminal conviction involving Medicare and/or Medicaid fraud. These physicians represented 21.7 percent (n=280) of the 1,289 physicians who were excluded by the OIG. The second most common mandatory exclusion 1128(a)(4) was applied to physicians with a felony conviction relating to controlled substances. They made up 14.8 percent (n=191) of the total exclusions. The next most common mandatory exclusion 1128(a)(3) was applied to physicians with a felony health fraud conviction other than against Medicare and Medicaid. These included convictions for acts committed against private healthcare insurance companies, such as Anthem Blue Cross. These physicians accounted for 9.5 percent (n=123) of the total exclusions. The least common mandatory exclusion 1128(a)(2) was applied to physicians with a criminal conviction involving patient abuse or neglect. They represented 4.7 percent (n=61) of the total exclusions.[44] Table 4.1 specifies the law that resulted in the physician's placement on the LEIE.

Permissive exclusions typically allow the OIG to decide how long physicians are to be excluded. The OIG uses its discretion when excluding physicians for administrative, civil and misdemeanor violations.[45] These type of exclusions represented 49.2 percent (n=634) of the total 1,289 physicians removed by the OIG from participating in federal healthcare programs. The most common permissive exclusion 1128(b)(4) was applied to physicians who had their medical license revoked or suspended by their state medical licensing agency. These physicians

[44] No physicians during the study period were mandatory excluded under the following subsections: conviction of two mandatory exclusion offenses 1128(c)(3)(G)(i) and conviction on 3 or more occasions of mandatory exclusion offenses 1128(c)(3)(G)(ii). These two subsections are the most serious exclusion authorities. They either result in a minimum exclusion period of 10 years or permanent exclusion.

[45] Misdemeanors range up to a year in jail. Felonies are the most serious types of criminal behaviors. Imprisonment for felonies range from 1 year and a day to life in prison.

accounted for 39.5 percent (n=509) of the 1,289 physicians who were excluded by the OIG. The second most common permissive exclusion 1128(b)(14) was applied to physicians who had defaulted on their health education loans. They made up 6.6 percent (n=85) of the total exclusions. The next most common permissive exclusion 1128(b)(7) was applied to physicians who engaged in a misdemeanor conviction relating to fraud, kickbacks and other prohibited activities. These physicians represented 1.6 percent (n=21) of the total exclusions. Table 4.1 provides a complete listing of all the permissive exclusions.[46]

Physicians were excluded by the OIG for a financial offense (FO) or for a quality of care (QOC) matter. Approximately 54 percent (n=698) out of the 1,289 physicians were excluded by the OIG for a FO. About 46 percent (n=591) out of the 1,289 medical doctors were excluded for a QOC matter.

[46] No physicians during the study period were permissively excluded under the following subsections: claims for excessive charges 1128(b)(6), entities controlled by sanctioned individual 1128(b)(8), failure to disclose required information, supply requested information on subcontractors and suppliers; or supply payment information 1128(b)(9) (10) and (11), 1128(b)(12), 1128(b)(13) and making false statements or misrepresentations of material fact 1128(b)(16).

Table 4.1: OIG Physician Exclusion List by Social Security Act Section Number

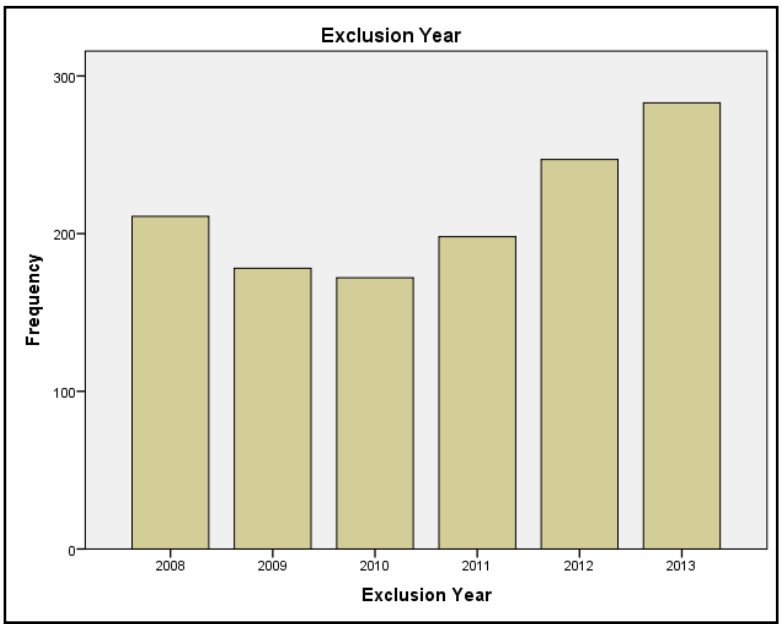
Social Security Act	Excluded Physicians (n)	Percent (%)
1128(a)(1) Medicare/Medicaid fraud conviction†	280	21.7%
1128(a)(2) Patient abuse conviction† *	61	4.7%
1128(a)(3) Felony health fraud conviction other than (a)(1) †	123	9.5%
1128(a)(4) Felony controlled substance conviction†	191	14.8%
1128(b)(1)(A) and/or (B) Fraud conviction after HIPAA other than (a)(1)	5	.4%
1128(b)(2) Obstruction of investigation/audit conviction	2	.2%
1128(b)(3) Misdemeanor controlled substance conviction	2	.2%
1128(b)(4) License revocation/suspension *	509	39.5%
1128(b)(5) Exclusion under other Federal program	7	.5%
1128(b)(7) Fraud, kickbacks etc. *	21	1.6%
1128(b)(14) Default on health educational loans	85	6.6%
1128(b)(15) Individuals controlling sanctioned entity	3	.2%
Total	1289	100.0%

Note: † following a Social Security Act indicates a mandatory exclusion. The remaining authorities without a † are permissive. * identifies a QOC exclusion; all other exclusions are a FO exclusion.

Exclusion Years

The number of physicians excluded each year has generally grown. Physicians excluded in 2008 accounted for 211 of the total 1,289 exclusions, 178 in 2009, 172 in 2010, 198 in 2011, 247 in 2012 and 283 in 2013 (See Table 4.2). The number of physicians excluded by year increased in each subsequent year after 2010.

Table 4.2: Physician Exclusions by Year



Section Two: Demographic Portrait of Offenders

Males, older doctors and international medical graduates (IMGs) were overrepresented in my sample of excluded physicians. Female, younger doctors, United States medical graduates (USMGs) and board certified physicians where underrepresented amongst physicians excluded. Physicians in primary care (family medicine, general practice, internal medicine, obstetrics/gynecology and pediatrics) were overrepresented amongst excluded medical doctors. Secondary and tertiary care physicians (general surgery, plastic surgery and other

physicians not involved in primary care) were underrepresented amongst excluded medical doctors. Excluded physicians did not appear to be practicing medicine in areas with high or moderate concentrations of Medicare and/or Medicaid patients. The following paragraphs will discuss each of these demographic characteristics in more detail.

Sex

Female physicians were underrepresented amongst physicians excluded by the OIG from 2008 to 2013 from participating in Medicare, Medicaid and other federal healthcare programs. Female physicians accounted for slightly more than 15 percent (n=194) of the 1,289 excluded physicians (see Table 4.3), but they represented slightly more than 30 percent of the medical doctors in the United States. Male physicians were overrepresented amongst physicians excluded by the OIG. They represented almost 85 percent (n=1,095) of the total excluded physicians during the study period, but accounted for nearly 70 percent of the general physician population in 2010. Whether these findings are due to the behaviors of female physicians and/or the activities of regulatory agencies will be discussed in chapter 5.

Table 4.3: Physicians Excluded by Sex

Sex	Excluded Physicians (*n*)	Percent (%)	All Physicians (2010) (*N*)	Percent (%)
Males	1095	84.9%	688,468	69.9%
Females	194	15.1%	296,907	30.1%
Total	1,289	100.0%	985,375	100.0%

Note: The book, *Physician Characteristics and Distribution in the United States* (American Medical Association [AMA], 2012), was used to obtain demographic statistics for the

general physician population. Data from 2010 was used to calculate the percentages for each category.

Female physicians were more likely than male physicians to be excluded for a financial offense (FO). Female physicians were excluded about 65 percent (n=126) of the time for a FO and approximately 35 percent (n=68) of the time for a quality-of-care (QOC) matter (see Table 4.4). Male physicians were excluded approximately 52 percent (n=572) of the time for a FO and about 48 percent (n=523) of the time for a QOC offense (Kendall's Tau-b: 0.03, 95% Confidence Interval: 0.01, 0.05, Significance 0.001).[47] There is a weak but statistically significant (P<0.05) association between sex and the reasons for exclusion.

All bivariate associations were measured by the odds ratio (OR) for a FO exclusion versus a QOC exclusion. The odds of a FO exclusion were reported for each category of the explanatory (or independent) variable versus the reference category (QOC). Male physicians, for example, were the reference category for the variable sex. That is, the odds of a FO exclusion for female physicians was compared to the odds for male physicians. Female physicians were about 69 percent more likely than male physicians to have a FO as opposed to a QOC exclusion. To obtain this number, you take the odds ratio for female physicians 1.69 and minus it by 1. This gives you .69 or 69 percent more likely than male physicians to be excluded for a FO as opposed to a QOC exclusion. This was repeated for all odds ratios.

[47] The bivariate associations were measured for each explanatory variable and exclusionary reason using Kendall's tau-b. Kendall's tau-b is a measure of the strength of association between dichotomous variables, designed to measure the degree of concordance or agreement between the paired outcomes of the associated variables (Agresti, 2002). The value ± 1 would indicate perfect positive or negative concordance, and the value 0 indicates no concordance. Kendall's tau-b in this instance measure the degree to which female physicians tend to be associated with FO exclusions. This was repeated for all bivariate associations.

Table 4.4: Sex by Exclusionary Reason

	Reasons for Exclusion		Odds Ratio
Sex	Financial Offense (n=698)	Quality of Care (n=591)	Estimate (95% Confidence Interval)
Males (n=1095)	572 (52.2%)	523 (47.8%)	Reference
Females (n=194)	126 (64.9%)	68 (35.1%)	1.69 (1.23, 2.34)
Bivariate Association for FO Exclusion versus QOC Exclusion for Sex: Kendall's Tau-b: 0.03, 95% Confidence Interval: (0.01, 0.05), Significance: 0.001			

Age

Older physicians were overrepresented amongst the 1,289 physicians excluded by the OIG from 2008 to 2013. The average age of all medical doctors in the general physician population is 49 years old (Sermo Survey, 2009). More than 75 percent of the OIG-excluded physicians were 50 years of age or older. Excluded physicians were on average about 57 years old, which is slightly more than 8 years older than the average age of the general physician population.

Younger physicians were less likely than older physicians to be excluded for a FO offense. I placed physicians into the following three mutually exclusive age categories for the bivariate data analyses: ≤44, 45-65 and ≥66. Physicians who are ≤44 years old are relatively young and likely have less years of experience in the occupation. Active physicians who are ≥66 years old are near retirement. Physicians ≤44 years old were excluded 51 percent (n=78) of the time for a FO and 49 percent (n=75) of the time for a QOC matter (see Table 4.5). Physicians between the ages of 45-65 were excluded about 54 percent (n=478) of the time for a FO and approximately 46 percent (n=400) of the time for a QOC offense. Physicians ≥66 years old were excluded 55

percent (n=142) of the time for a FO and 45 percent (n=116) of the time for a QOC offense (Kendall's Tau-b: 0.01, 95% Confidence Interval: -0.02, 0.04, Significance: 0.487).[48] There is a weak and statistically insignificant (P>0.05) association between age and the reasons for exclusion.

Physicians ≤ 44 years old were the reference category for the variable age. Physicians between the ages of 45-65 were about 15 percent more likely than physicians ≤ 44 years old to have a FO as opposed to a QOC exclusion. Physicians ≥66 years old were about 18 percent more likely than physicians ≤ 44 years old to have a FO as opposed to a QOC exclusion.

Table 4.5: Age by Exclusionary Reason

	Reasons for Exclusion		**Odds Ratio**
Age	Financial Offense (n=698)	Quality of Care (n=591)	Estimate (95% CI)
≤44 (n=153)	78 (51%)	75 (49%)	Reference
45-65 (n=878)	478 (54.4%)	400 (45.6%)	1.15 (0.814, 1.62)
≥66 (n=258)	142 (55%)	116 (45 percent)	1.18 (0.787, 1.76)
Bivariate Association for FO Exclusion versus QOC Exclusion for Age: Kendall's Tau-b: 0.01, 95% Confidence Interval: (-0.02, 0.04), Significance: 0.487			

Medical Schools

Medical school information was determined for 1,206 excluded physicians out of 1,289. Excluded physicians, with their medical school information known, attended 339 different

[48] Age was scored 1, 2 and 3 based on the increasing age categories as shown in table 4.5. Kendall's tau-b for age indicates as physicians get older they were more likely to be excluded for a FO as opposed to a QOC matter.

medical schools located both within and outside the United States (see Appendix B for a complete list of the medical schools).

Excluded United States medical graduates (USMGs) attended 150 different medical schools. The U.S. medical schools with the highest numbers of excluded graduates include, Meharry Medical College (n=19), Howard University (n=19), University of Illinois, Chicago (n=18), University of Medicine and Dentistry of New Jersey, Newark (n=16) and the University of Louisville (n=14). Meharry and Howard medical schools (both atop the list with 19 excluded graduates during the study period) have historically serviced Black students. Table 4.6 provides a list of the top ten U.S. medical schools with the most excluded graduates.

Excluded international medical graduates (IMGs) attended 189 different medical schools. International medical schools with the highest numbers of excluded graduates include, Autonomous University of Guadalajara (n=27), University of Santo Tomas (n=16), Ross University School of Medicine and Veterinary Medicine (n=13), University Central Del Este (n=9) and University of Medical Sciences of Havana (n=8). The top ten international medical schools with highest numbers of excluded graduates were predominantly located in the Western Hemisphere[49] and in developing nations.[50] Table 4.6 provides a list of the top ten international medical schools with the most excluded graduates. More will be discussed about U.S. and international medical schools in the next chapter.

[49] This term defines half of the earth that lies west of the prime meridian (Greenwich England).

[50] There is no universal agreed-upon meaning for "developing country or nation." It generally refers to nations with a low Human Development Index (HDI) in comparison to other nations. HDI is an aggregate statistic of life expectancy, education level, per capita income, among other indicators.

Table 4.6: Excluded Physicians by Medical Schools

U.S. Medical Schools Name	*n*	International Medical Schools Name	*n*
Meharry Medical College	19	Autonomous University of Guadalajara (Mexico)	27
Howard University College of Medicine	19	University of Santo Tomas, Faculty of Medicine and Surgery (Philippines)	16
University of Illinois, Chicago	18	Ross University School of Medicine & Veterinary Medicine (Federation of Saint Christopher and Nevis)	13
University of Medicine and Dentistry of New Jersey, Newark	16	University Central Del Este (Dominica Republic)	9
University of Louisville School of Medicine	14	University of Medical Sciences of Havana (Cuba)	8
Kansas City University of Medicine and Biosciences	14	American University of the Caribbean (Sint Maarten - Netherlands)	8
Rosalind Franklin University of Medicine and Science	13	St. George's University School of Medicine (Grenada)	8
Loma Linda University School of Medicine	13	Manila Central University (Philippines)	7
University of Buffalo SUNY	12	University of The East Ramon Magsaysay Memorial Medical Center (Philippines)	7
University of Tennessee College of Medicine	12	Seoul National University (South Korea)	7

Medical Training

International medical graduates (IMGs) were overrepresented amongst physicians excluded by the OIG between the years 2008 to 2013. Medical training information was determined for

approximately 94 percent (n=1,206) out of the 1,289 excluded physicians. IMGs constituted nearly 26 percent of the total physician population in the United States in 2010. They accounted for almost 34 percent (n=409) of the 1,206 excluded physicians for whom medical training was known (see Table 4.7). USMGs accounted for slightly more than 74 percent of all physicians, but made up slightly more than 66 percent (n=797) of the 1,206 excluded physicians for whom medical training was known. Whether these findings are due to the behaviors of IMGs and/or the activities of regulatory agencies will be discussed in the next chapter.

Table 4.7: Medical Training of Excluded Physicians

	Excluded Physicians (*n*)	**Percent (%)**	**All Physicians (2010) (*N*)**	**Percent (%)**
USMGs	797	66.1%	730,979	74.2%
IMGs	409	33.9%	254,396	25.8%
Total	1206	100.0%	985,375	100.0%

Note: USMGs, as defined by the AMA, refer to graduates of medical schools located within the United States, its possessions (Puerto Rico, Virgin Islands and Pacific Islands) and Canada. IMGs refer to physicians who graduated from medical schools outside these locations.

Slightly more than 57 percent (n=234) of the IMGs were excluded for a FO, whereas nearly 43 percent (n=175) of the IMGs were excluded for a QOC offense (see Table 4.8). USMGs were excluded nearly 53 percent (n=421) of the time for a FO and slightly more than 47 percent (n=376) for a QOC offense (Kendall's Tau-b: -0.02, 95% Confidence Interval: -0.05, 0.01, Significance: 0.148).[51] There is a weak and statistically insignificant (P>0.05) association

[51] Medical training was USMG or IMG, with IMG as the reference. Kendall's tau-b indicates USMGs compared to IMGs were less likely to be excluded for a FO as opposed to a QOC matter.

between medical training and the reasons for exclusion. IMGs were the reference category for the variable medical training. USMGs were about 16.2 percent less likely than IMGs to have a FO as opposed to QOC exclusion.

Table 4.8: Medical Training by Exclusionary Reason

	Reasons for Exclusion		**Odds Ratio**
Medical Training	Financial Offense (n=655)	Quality of Care (n=551)	Estimate (95% CI)
IMGs (n=409)	234 (57.2%)	175 (42.8%)	Reference
USMGs (n=797)	421 (52.8%)	376 (47.2%)	0.838 (0.658, 1.06)
Bivariate Association for FO Exclusion versus QOC Exclusion for Medical Training: Kendall's Tau-b: -0.02, 95% Confidence Interval: (-0.05, 0.01), Significance: 0.148			

Note: I was unable to obtain information about the medical school attended for 83 of the 1,289 excluded physicians (70 of these physicians were excluded for a financial offense and 13 for a quality-of-care offense).

Medical Specialty

Primary care physicians (general practice, family practice, internal medicine, obstetrics and gynecologists and pediatrics) accounted for nearly 70 percent (n=902) of the total 1,289 exclusions. General practice (GP) and family medicine (FM) practitioners alone constituted slightly more than 48 percent (n= 621) of the 1,289 physicians excluded by the OIG. Secondary and tertiary care physicians (all other medical specialties not involved in primary care) accounted for slightly more than 30 percent (n=387) of the total exclusions.

Table 4.9 provides a complete list of the number of excluded physicians by medical specialty.[52] The medical specialties in the table are arranged in descending order by the number of total exclusions. The last column on the right in the tale ranks the medical specialties by the total number of physicians practicing medicine in the United States in 2010. Family medicine physicians, for example, had the second most exclusions (n=215). Family medicine doctors were also the second most common medical specialty amongst all physicians practicing medicine in 2010 (N = 87,618).

Table 4.9: Medical Specialty of Excluded Physicians

Medical Specialty (Ranked by Total # of Exclusions)	Excluded Physicians (*n*)	Percentage of Excluded Physicians	Total # of Physicians by Specialty (2010) (*N*)	Specialty Percentage by Total # of Physicians	Specialty Rank by Total # of Physicians
1. General Practice	406	31.5%	8,591	1.1%	21
2. Family Medicine	215	16.7%	87,618	11.2%	2
3. Internal Medicine	179	13.9%	161,276	20.7%	1
4. Psychiatry	101	7.8%	39,738	5.1%	6
5. Obstetrics/ Gynecology	68	5.3%	42,797	5.5%	5
6. Anesthesiology	52	4%	43,359	5.6%	4
7. General Surgery	47	3.6%	37,100	4.8%	7
8. Pediatrics	34	2.6%	76,401	9.8%	3

[52] The following specialties had no exclusions: aerospace medicine, child psychiatry, forensic pathology, neurological surgery, nuclear medicine, occupational medicine, pediatric cardiology, physical medicine & rehabilitation and public and general preventive medicine.

9. Emergency Medicine	32	2.5%	33,278	4.3%	8
10. Neurology	25	1.9%	15,850	2.0%	14
11. Preventive Medicine	24	1.9%	2,227	0.3%	24
12. Ophthalmology	17	1.3%	18,457	2.4%	13
13. Cardiology	16	1.2%	22,888	2.9%	11
14. Radiology	14	1.1%	9,386	1.2%	20
15. Orthopedic Surgery	13	1%	25,241	3.2%	10
16. Urological Surgery	12	0.9%	10,701	1.4%	18
17. Otolaryngology	9	0.7%	10,326	1.3%	19
18. Pathology – Anatomic/ Clinical	6	0.5%	19,027	2.4%	12
18. Plastic Surgery	6	0.5%	7,418	1.0%	22
19. Dermatology	4	0.3%	11,316	1.5%	16
19. Pulmonary Diseases	4	0.3%	11,126	1.4%	17
20. Gastroenterology	3	0.2%	13,210	1.7%	15
21. Allergy/ Immunology	2	0.2%	4,312	0.6%	23
22. Colon/ Rectal Surgery	1	0.1%	1,491	0.19%	25
22. Medical Genetics	1	0.1%	597	0.08%	26
Total Known	**1,289**	**100**	**779,922**	**100.000**	

I was interested in whether there is a relationship between an individual's practice of medicine and whether they are excluded by the OIG for a FO or a QOC matter. Physicians, for the purposes of this bivariate analysis, were categorized as either primary care or as secondary/tertiary care physicians. About 54 percent (n=485) of excluded primary care physicians were barred from billing federal healthcare programs for a FO; 46 percent (n=417) were excluded for a QOC matter (see Table 4.10). Excluded secondary and tertiary care physicians were placed on the List of Excluded Individuals and Entities (LEIE) 55 percent (n=213) of the time for a FO and 45 percent (n=174) of the time for a QOC offense (Kendall's Tau-b: 0.01, 95% Confidence Interval: -0.02, 0.03, Significance: 0.675).[53] There is a weak and statistically insignificant (P>0.05) association between medical specialty and the reasons for exclusion. Primary care physicians were the reference category for the variable medical specialty. Secondary and tertiary care physicians were 5 percent more likely than primary care physicians to have a FO as opposed to a QOC exclusion.

[53] Medical specialty was primary care or secondary/tertiary care physicians, with primary care physicians as the reference. Kendall's tau-b indicates secondary/tertiary care physicians were more likely than primary care physicians to be excluded for a FO as opposed to a QOC matter.

Table 4.10: Medical Specialty by Exclusionary Reason

	Reasons for Exclusion		Odds Ratio
Medical Specialty	Financial Offense (n=698)	Quality of Care (n=591)	Estimate (95% CI)
Primary Care (n = 902)	485 (53.8%)	417 (46.2%)	Reference
Secondary and Tertiary (n = 387)	213 (55.0%)	174 (45%)	1.05 (0.829, 1.34)
Bivariate Association for FO Exclusion versus QOC Exclusion for Medical Specialty: Kendall's Tau-b: 0.01, 95% Confidence Interval: (-0.02, 0.03), Significance: 0.675			

Board Certification

Board certified physicians were underrepresented amongst medical doctors who were excluded by the OIG from billing federal healthcare programs. I was able to determine the board certification status for 90 percent (n = 1,160) of the 1,289 excluded medical doctors.[54] Board certified physicians constituted nearly 75 percent of the general U.S. population in 2010. They accounted for nearly 38 percent (n=437) of the 1,160 excluded physicians for whom certification status was known (see Table 4.11). Non-board certified physicians represented more than 25 percent of all U.S. physicians in 2010; they made up more than 62 percent (n=723) of all physicians excluded by the OIG. Whether these findings are due to the behaviors of board certified physicians and/or the activities of regulatory agencies will be discussed in the next chapter.

[54] There were 129 physicians for whom board certification data were missing; 10 of these physicians were excluded for a FO and 119 for a QOC matter. These numbers are substantially different than the distribution of violations found for those physicians for whom board certification status was known. The inclusion of these missing data, if found, might alter the results.

Table 4.11: Board Certification of Excluded Physicians

	Excluded Physicians (*n*)	Percent (%)	All Physicians (2010) (*N*)	Percent (%)
Board Certified	437	37.7%	736,142	74.7%
Non-Board Certified	723	62.3%	249,233	25.3%
Total	1160	100.0%	985,375	100%

Table 4.12 below provides the total number of board certified and non-board certified physicians by medical specialty for 1,160 excluded doctors for whom their status was known. The table states the percentage of excluded board certified physicians within each medical specialty. It also provides the number of doctors within each medical specialty with missing/unknown board certification information.

Table 4.12: Medical Specialty of Excluded Physicians by Board Certification Status

Medical Specialty	Board Certified (*n*)	Non-Board Certified (*n*)	Excluded Physicians with Known Information (*n*)	Percent Board Certified within Each Specialty	No Information on Board Certification (*n*)
General Practice	106	228	334	31.7%	72
Family Medicine	89	114	203	43.8%	12
Internal Medicine	72	97	169	42.6%	10
Psychiatry	25	69	94	26.6%	7
Obstetrics/ Gynecology	28	37	65	43.1%	3
Anesthesiology	17	33	50	34%	2

General Surgery	18	22	40	45%	7
Pediatrics	18	11	29	62.1%	5
Emergency Medicine	15	14	29	51.7%	3
Neurology	7	18	25	28%	0
Preventive Medicine	5	18	23	21.7%	1
Ophthalmology	5	10	15	33.3%	2
Cardiology	9	6	15	60%	1
Radiology	3	10	13	23.1%	1
Orthopedic Surgery	7	5	12	58.3%	1
Urological Surgery	3	7	10	30%	2
Otolaryngology	1	8	9	11.1%	0
Pathology – Anatomic	1	5	6	11.1%	0
Plastic Surgery	2	4	6	33.3%	0
Dermatology	2	2	4	50.0%	0
Pulmonary Diseases	2	2	4	50.0%	0
Gastroenterology	0	2	2	0%	1
Allergy/ Immunology	1	0	1	50%	1
Colon/ Rectal Surgery	1	0	1	100%	0
Medical Genetics	0	1	1	0%	0
Total Known	**437**	**723**	**1,160**		**129**

Board certified physicians were more likely to be excluded by the OIG for a QOC matter than non-board certified medical doctors. Board certified physicians were excluded about 48 percent (n=211) of the time for a FO and nearly 52 percent (n=226) of the time for a QOC matter (see Table 12). Non-board certified physicians were more likely to be excluded for a FO than board certified medical doctors. Non-board certified physicians were excluded almost 62 percent (n=477) of the time for a FO and roughly 38 percent (n=246) of the time for a QOC matter (see Table 4.13) (Kendall's Tau-b: -0.08, 95% Confidence Interval: -0.11, -0.06, Significance: <0.0001).[55] There is a weak and statistically insignificant (P>0.05) association between board certification status and the reasons for exclusion. Non-board certified physicians were the reference category for the variable certified. Board certified physicians were 52 percent less likely than non-board certified physicians to have a FO as opposed to a QOC exclusion.

Table 4.13: Board Certification by Exclusionary Reason

	Reasons for Exclusion		**Odds Ratio**
Certified	Financial Offense (n=688)	Quality of Care (n=472)	Estimate (95% CI)
Non-Board Certified (n=723)	477 (61.8%)	246 (38.2%)	Reference
Board Certified (n=437)	211 (48.3%)	226 (51.7%)	0.48 (0.378, 0.614)
Bivariate Association for FO Exclusion versus QOC Exclusion for Medical Specialty: Kendall's Tau-b: -0.08, 95% Confidence Interval: (-0.11, -0.06), Significance: <0.0001			

[55] Certified was board certified or non-board certified, with non-board certified as the reference. Kendall's tau-b indicates board certified physicians were less likely than non-board certified physicians to excluded for a FO than for a QOC matter.

Medicare and Medicaid Patient Concentrations

I expected physicians in areas with high concentrations of Medicare and/or Medicaid recipients to be more likely excluded by the OIG. There is no dataset that provides information regarding the patient composition of a physician's medical practice. I indirectly measured the demographic makeup of a doctor's medical practice by looking at the zip code tabulated area (ZCTA) of where excluded physicians' practices were located.

The concentrations of Medicare recipients were measured by the percentage of individuals ≥ 65 years old living within a particular ZCTA. Individuals ≥ 65 years old are most likely eligible for the Medicare benefit program. The approximately 32,000 national ZCTAs were first divided into three different categories (bottom 1/3, middle 1/3 and top 1/3) in order to determine if the ZCTAs played a role in the eventual exclusion of physicians.[56] One category consisted of ZCTAs with the smallest percentage of potential Medicare recipients. The bottom one-third of the national ZCTAs had 13.1 percent or less of the individuals living in those ZCTAs were ≥ 65 years old. About 46 percent (n=524) of the excluded physicians practiced medicine in such ZCTAs. The middle one-third of national ZCTAs had 13.2 to 17 percent of the individuals living in those ZCTAs were ≥ 65 years old. Approximately 31 percent (n=357) of the excluded medical doctors practiced in these ZCTAs. The top one-third of national ZCTAs had 17.1 to 100 percent of the individuals living in those ZCTAs were ≥ 65 years old. Nearly 23 percent (n=261) of the excluded physicians practiced medicine in such ZCTAs (see Table 4.14).

[56] The percentage of individuals 65 years old and older by ZCTA where physicians were excluded ranged from 0 percent to 76.3 percent. The standard deviation was 6.23 percent.

Table 4.14: Medicare Patient Concentrations by ZCTAs

	Number and Percentage of Excluded Physicians in Each Category		
	Bottom: 0% to 13.1%	**Middle: 13.2% to 17%**	**Top: 17.1% to 100%**
Excluded Physicians (n=1,142)	524 (45.8%)	357 (31.3%)	261 (22.9%)

Note: ZCTA information was missing for 147 excluded physicians out of the 1,289.

The concentrations of Medicaid patients were measured by the percent of individuals living below the federal poverty level within a ZCTA. Individuals typically living below the federal poverty level are eligible for Medicaid and may have applied for coverage.[57] National ZCTAs were also divided into three different categories (bottom 1/3, middle 1/3 and top 1/3) in order to determine if the ZCTAs played a role in the eventual exclusion of physicians.[58] One category consisted of ZCTAs with the smallest percentage of possible Medicaid beneficiaries. The bottom one-third of the national ZCTAs had 7.6 percent or less of the individuals in those ZCTAs living below the federal poverty level. Nearly 41 percent (n=466) of the excluded medical doctors practiced medicine in such ZCTAs. The middle one-third of national ZCTAs had 7.7 to 14.5 percent of the individuals in those ZCTAs living below the federal poverty level. Approximately 28 percent (n=324) of the excluded medical doctors practiced in these ZCTAs. The top one-third of ZCTAs had 14.6 to 100 percent of the individuals in those ZCTAs living below the federal

[57] The federal government, under the Affordable Care Act of 2010, has created a minimum Medicaid income eligibility level across the country. States, however, may decide to be more generous with its eligibility requirements.

[58] The percentage of individuals living below the poverty level ranged from 0 percent to 64.6 percent where excluded physicians were practicing medicine. The standard deviation was 10.46 percent.

poverty level. Almost 31 percent (n=352) of the excluded physicians practice medicine in such ZCTAs (see Table 4.15).

Table 4.15: Medicaid Patient Concentrations by ZCTAs

	Number and Percentage of Excluded Physicians in Each Category		
	Bottom: 0% to 7.6%	**Middle: 7.7% to 14.5%**	**Top: 14.6% to 100%**
Excluded Physicians (n=1,142)	466 (40.9%)	324 (28.4%)	352 (30.7%)

I additionally assumed physicians with larger community scores (percent ≥ 65 years old + percent living below the federal poverty level in a particular ZCTA = community score) were more likely to be excluded by the OIG. National ZCTAs were also divided into three different categories (bottom 1/3, middle 1/3 and top 1/3) in order to determine if the ZCTAs played a role in the eventual exclusion of physicians.[59] The bottom one-third of the national ZCTAs had a community score of 22.9 or less. Nearly 42 percent (n=477) of the excluded physicians practice medicine in ZCTAs with such scores. The middle one-third of the national ZCTAs had a community score between 23 to 31.8. Roughly 31 percent (n=359) of the excluded medical doctors practiced medicine in such communities. The top one-third of the national ZCTAs had a community score of 31.9 to 141.7. Almost 27 percent (n=306) of excluded physicians practiced medicine in ZCTAs with such scores (see Table 4.16).

[59] The average community score for the excluded physicians was 28.6. The community scores ranged from 0 to 81.6. The standard deviation was 11.4.

Table 4.16: Community Score by ZCTAs

	Number and Percentage of Excluded Physicians in Each Category		
	Bottom: 0 to 22.9	**Middle: 23 to 31.8**	**Top: 31.9 to 141.7**
Excluded Physicians (n=1,142)	477 (41.8%)	359 (31.4%)	306 (26.8%)

Physicians practicing in ZCTAs with low and middle percentages of potential Medicare patients were more likely to be excluded by the OIG for a FO than for a QOC Matter. Physicians in the bottom one-third category were excluded almost 56 percent (n=290) of the time for a FO and slightly more than 44 percent (n=234) of the time for a QOC matter. Medical doctors in the middle one-third category were excluded almost 52 percent (n=186) of the time for a FO and slightly more than 48 percent (n=171) of the time for a QOC matter. Physicians practicing in ZCTAs with high percentages of possible Medicare patients were more likely to be excluded for a QOC matter than for a FO. Physicians in the top one-third category were excluded 52.5 percent (n=137) of the time for a QOC matter and 47.5 percent (n=124) of the time for a FO (see Table 4.17) (Kendall's Tau-b: -0.03, 95% Confidence Interval: -0.06, -0.00, Significance: 0.04).[60] There is a weak and statistically insignificant (P>0.05) association between Medicare patient concentrations and the reasons for exclusion.

As the concentrations of possible Medicare patients increase, so does the likelihood that physicians will be excluded for a QOC matter as opposed to a FO. Physicians practicing in ZCTAs

[60] Medicare patient concentrations were scored 1, 2 and 3 based on the increasing percentage of individuals ≥ 65 years old living in a particular ZCTA as shown in table 4.17. Kendall's tau-b indicates as ZCTAs had higher percentages of individuals ≥ 65 years old physicians were less likely to be excluded for a FO and more likely to be excluded for a QOC matter.

with middle concentrations of probable Medicare patients were 12.2 percent less likely than physicians practicing in ZCTAS with low concentrations to have a FO exclusion as opposed to a QOC.[61] Physicians practicing in ZCTAs with high concentrations of probable Medicare patients were 27 percent less likely than physicians practicing in ZCTAs with low concentrations to have a FO exclusion as opposed to a QOC exclusion.

Table 4.17: Medicare Patient Concentrations by Exclusionary Reason

	Reasons for Exclusion		**Odds Ratio**
Percent ≥ 65 Years Old	Financial Offense (n=600)	Quality of Care (n=542)	Estimate (95% CI)
Bottom: 0% to 13.1%	290 (55.8%)	234 (44.2%)	Reference
Middle: 13.2% to 17%	186 (51.8%)	171 (48.2%)	0.878 (0.67, 1.15)
Top: 17.1% to 100%	124 (47.5%)	137 (52.5%)	0.731 (0.542, 0.984
Bivariate Association for FO Exclusion versus QOC Exclusion for Percent ≥ 65 Years Old: Kendall's Tau-b: -0.03, 95% Confidence Interval: (-0.06, -0.00), Significance: 0.04			

Physicians practicing in ZCTAs regardless of the percentages of potential Medicaid patients were more likely to be excluded by the OIG for a FO versus a QOC matter. Physicians in the bottom one-third were excluded nearly 53 percent (n=245) of the time for a FO and more than 47 percent of the time (n=221) of the time for a QOC matter. Medical doctors in the middle one-third category were excluded almost 55 percent (n=177) of the time for a FO and 45.4

[61] Physicians practicing in ZCTAs with low percentages of possible Medicare patients were the reference category for the variable Medicare patient concentrations (percent ≥ 65 years).

percent (n=147) of the time for a QOC matter. Physicians in the top one-third were excluded nearly 51 percent (n=178) of the time for a FO and slightly more than 49 percent (n=174) of the time for a QOC matter (see Table 4.18) (Tau-b: -0.01, 95% CI: -0.04, 0.02, Significance: 0.64).[62] There is a weak and statistically insignificant (P>0.05) association between Medicaid patient concentrations and the reasons for exclusion.

As the concentrations of potential Medicaid patients increase, the likelihood that physicians will be excluded for a FO generally decreases. Physicians practicing in ZCTAs with middle concentrations of probable Medicaid patients were 9 percent more likely than physicians practicing in ZCTAs with low concentrations to have a FO exclusion as opposed to a QOC exclusion.[63] Physicians practicing in ZCTAs with high concentrations of probable Medicaid patients were 7 percent less likely than physicians practicing in ZCTAS with low concentrations to have a FO exclusion as opposed to a QOC exclusion.

[62] Medicaid patient concentrations were scored 1, 2 and 3 based on the increasing percentage of living below poverty in a particular ZCTA as shown in table 4.18. Kendall's tau-b indicates as ZCTAs had higher concentrations of individuals living below poverty physicians were less likely to be excluded for a FO and more likely to be excluded for a QOC matter.

[63] Physicians practicing in ZCTAs with low concentrations of possible Medicaid patients were the reference category for the variable Medicaid patient concentrations (percent poverty).

Table 4.18: Medicaid Patient Concentrations by Exclusionary Reason

	Reasons for Exclusion		Odds Ratio
Percent Poverty	Financial Offense (n=600)	Quality of Care (n=542)	Estimate (95% CI)
Bottom: 0% to 7.6%	245 (52.6%)	221 (47.4%)	Reference
Middle: 7.7% to 14.5%	177 (54.6%)	147 (45.4%)	1.09 (0.817, 1.44)
Top: 14.6% to 100%	178 (50.6%)	174 (49.4%)	0.923 (0.699, 1.22)
Bivariate Association for FO Exclusion versus QOC Exclusion for Percent Poverty: Kendall's Tau-b: -0.01, 95% Confidence Interval: (-0.04, 0.02), Significance: 0.64			

Physicians regardless of their community score level were more likely to be excluded by the OIG for a FO versus a QOC matter. Physicians in the bottom one-third category were excluded nearly 55 percent (n=262) of the time for a FO and slightly more than 45 percent (n=215) of the time for a QOC matter (see Table 19). Medical doctors in the middle one-third category were excluded 50.4 percent (n=181) of the time for a FO and 49.6 percent (n=178) of the time for a QOC matter. Physicians in the top one-third category were excluded 51.3 percent (n=157) of the time for a FO and 48.7 percent (n=149) of the time for a QOC (see Table 4.19) (Kendall's Tau-b: -0.02, 95% Confidence Interval: -0.05, 0.01, Significance: 0.25).[64] There is a weak and statistically insignificant (P>0.05) association between community score and the reasons for exclusion. Physicians practicing in ZCTAs with middle community scores were 16.5 percent less

[64] Community score were scored 1, 2 and 3 based on the increasing percentage of individuals ≥ 65 years old plus the percentage of individuals living below poverty in a particular ZCTA as shown in table 4.19. Kendall's tau-b indicates as the community score increases physicians were generally less likely to be excluded for a FO and more likely to be excluded for a QOC matter.

likely than physicians practicing in ZCTAs with low community scores to have a FO exclusion as opposed to a QOC exclusion.[65] Physicians practicing in ZCTAs with high community scores were 13.5 percent less likely than physicians practicing in ZCTAs with low community scores to have a FO exclusion as opposed to a QOC exclusion.

Table 4.19: Community Score by Exclusionary Reason

	Reasons for Exclusion		**Odds Ratio**
Community Score	Financial Offense (n=600)	Quality of Care (n=542)	Estimate (95% CI)
Bottom: 0% to 7.6%	262 (54.9%)	215 (45.1%)	Reference
Middle: 7.7% to 14.5%	181 (50.4%)	178 (49.6%)	0.835 (0.631, 1.1)
Top: 14.6% to 100%	157 (51.3%)	149 (48.7%)	0.865 (0.648, 1.15)
Bivariate Association for FO Exclusion versus QOC Exclusion for Community Score: Kendall's Tau-b: -0.02, 95% Confidence Interval: (-0.05, 0.01), Significance: 0.25			

Section Three: Multivariate Analyses

The bivariate analyses summarized in section two provide some sense of which predictors are important with respect to the exclusionary reason (financial offense versus quality of care matter). They fail to address, however, which of these factors, controlling for the effects of all the others, make the largest contribution to the prediction of the reason for exclusion. A multivariate analysis was employed to assess the relative importance of the endogenous

[65] Excluded physicians with low community scores were the reference category for the variable community score.

independent variables (sex, age, medical training, medical specialty and board certification) and the exogenous independent variables (percent ≥ 65 years older, percent poverty and the community score). This section discusses how the logistic multivariate regressions were conducted and the results.

A multivariate logistic regression was employed to determine the effect of various independent variables on the reason for exclusion. Logistic regressions are often utilized to predict a dichotomous dependent variable (exclusionary reason) on the basis of multiple independent variables. Researchers regularly use logistic regressions to determine the percent of variance in the dependent variable that is explained by each independent variable. Employing a logistic regression is also appropriate when the independent variables consist of categorical and continuous variables. In my analyses, all of the predictive variates are categorical.

The statistics indicating the relative significance of each independent variable in a logistic regression model can be greatly changed when two (or more) of these variables are highly associated. This is known as collinearity. I ruled out collinearity by running bivariate associations, as quantified by Kendall's Tau-B, among all pairs of the explanatory factors (Table 4.20 summarizes each bivariate association). Again, the value ± 1 would indicate perfect positive or negative concordance and the value 0 would indicate no concordance.

The strongest association was between the community score and the Medicaid variable, percent living below the federal poverty level (Tau-b = 0.45, 95% CI 0.43, 0.47, Significance is <0.0001). This is because both variables are in part measuring the same thing. The community score is the summation of the percentage of individuals 65 years old and older (Medicare

measure) and the percent of individuals living in poverty (Medicaid measure) in a particular zip code tabulated area (ZCTA). It would be inappropriate to put all three variables in the same logistic regression, since the community score includes the Medicare and Medicaid measures. I first ran a logistic regression that included all of the endogenous independent variables and two exogenous variables (percent 65 years old and older and percent living in poverty). The second logistic regression also included all of the endogenous independent variables and one exogenous variable, community score.

Table 4.20: Bivariate Associations Among All Pairs of Explanatory Factors

	Kendall's Tau-b (95% CI)	Significance	df
Sex (F vs M)			
Age	-0.00 (-0.02, 0.02)	0.7	1,289
USMG training	-0.01 (-0.03, 0.01)	0.3	1,206
Specialty	0.02 (-0.00, 0.03)	0.1	1,289
Certified	0.01 (-0.01, 0.03)	0.6	1,160
Percent ≥ 65	-0.00 (-0.03, 0.02)	0.7	1,142
Percent Poverty	0.00 (-0.02, 0.02)	0.9	1,142
Community Score	0.00 (-0.02, 0.03)	0.7	1,142
Age			
USMG training	-0.08 (-0.11, -0.06)	< 0.0001	1,206
Specialty	-0.02 (-0.04, 0.00)	0.1	1,289
Certified	-0.02 (-0.04, 0.01)	0.2	1,160
Percent ≥ 65	-0.01 (-0.03, 0.02)	0.7	1,142
Percent Poverty	-0.01 (-0.04, 0.02)	0.7	1,142
Community Score	-0.01 (-0.04, 0.02)	0.5	1,142
USMG Training			
Specialty	0.02 (0.00, 0.05)	0.05	1,206
Certified	-0.01 (-0.04, 0.01)	0.35	1,083
Percent ≥ 65	0.02 (-0.01, 0.05)	0.12	1,069
Percent Poverty	-0.03 (-0.06, 0.01)	0.11	1,069
Community Score	-0.03 (-0.06, 0.00)	0.08	1,069
Specialty			
Certified	-0.02 (-0.05, 0.01)	0.1	1,160
Percent ≥ 65	0.01 (-0.02, 0.04)	0.4	1,142
Percent Poverty	-0.05 (-0.08, -0.02)	0.0004	1,142
Community Score	-0.05 (-0.08, -0.02)	0.0004	1,142
Certified			
Percent ≥ 65	0.01 (-0.02, 0.05)	0.388	1,029
Percent Poverty	-0.06 (-0.09, -0.03)	0.0003	1,029
Community Score	-0.04 (-0.07, -0.01)	0.009	1,029
%≥65			
Poverty	-0.06 (-0.09, -0.03)	0.0006	1,142
Community Score	0.18 (0.15, 0.21)	< 0.0001	1,142
% Poverty			
Community Score	0.45 (0.43, 0.47) <	< 0.0001	1,142

Multivariate logistic regression models for the probability of FO versus QOC exclusion were based on endogenous variables (sex, age, origin of medical school training, medical specialty and board certification) and exogenous variables (percent ≥ 65 years old, percent living in poverty and the community score). Two versions of the model were developed: (1) included all of the variables except for the community score, and (2) included all of the variables except for percent ≥ 65 years old and percent living in poverty. The multivariate logistic regression models were based on all predictive factors, so each single-factor association was thus adjusted for all other factors in the model. The association of each predictor with the exclusionary outcome was quantified by the odds ratio with a 95% confidence interval for the population value. The overall goodness-of-fit of the model was quantified by the generalized R-squared statistic of Nagelkerke (Harrell, 2001).

The first logistic regression model included all of the independent variables except for the community score. Two endogenous independent variables (sex and board certified) were statistically significant at the α-level 0.05. Female physicians were 80 percent more likely than male doctors to have a FO (OR = 1.80, 95% CI 1.22, 2.64, Significance: is 0.003). Board certified physicians were 55 percent less likely than non-board certified physicians to have a FO (OR = 0.45, 95% CI 0.35, 0.59, Significance < 0.0001). Neither the Medicare nor Medicaid concentration measures were statistically significant at the α-level 0.05 (see Table 4.21).

Table 4.21: Model 1 Adjusted Odds Ratio for Each Predictive Factor - FO versus QOC

Variate	Odds Ratio (95%CI)	Significance	df
FO vs QOC: R-sqr = 6.6%			
Intercept	2.38 (1.36, 4.15)	0.002	962
Female vs Male	1.80 (1.22, 2.64)	0.003	962
Age (yrs) 45-65 vs ≤44	1.03 (0.66, 1.61)	0.891	962
Age (yrs) ≥66 vs ≤44	0.99 (0.59, 1.67)	0.973	962
USMG training	0.79 (0.59, 1.05)	0.105	962
Secondary/Tertiary Specialty	0.92 (0.69, 1.23)	0.585	962
Certified vs Non-certified	0.45 (0.35, 0.59)	< 0.0001	962
Over 65: middle 3rd vs lower 3rd	0.82 (0.60, 1.11)	0.193	962
Over 65: top 3rd vs lower 3rd	0.78 (0.55, 1.10)	0.153	962
Poverty: middle 3rd vs lower 3rd	1.05 (0.76, 1.44)	0.784	962
Poverty: top 3rd vs lower 3rd	0.91 (0.66, 1.26)	0.586	962

The second logistic regression model substituted the "community score" in place of the variables percent poverty and percent ≥ 65. The endogenous independent variables (sex and board certified) were relatively unchanged and remained statistically significant at the α-level 0.05. The exogenous variable (community score) was not statistically significant at the α-level 0.05 (see Table 4.22).

Table 4.22: Model 2 Adjusted Odds Ratio for Each Predictive Factor - FO versus QOC

Variate	Odds Ratio (95%CI)	Significance	df
FO vs QOC: R-sqr = 6.4%			
Intercept	2.28 (1.33, 3.92)	0.003	962
Female vs Male	1.81 (1.23, 2.66)	0.003	962
Age (yrs) 45-65 vs ≤44	1.04 (0.67, 1.61)	0.875	962
Age (yrs) ≥66 vs ≤44	1.00 (0.59, 1.67)	0.992	962
USMG training	0.77 (0.58, 1.03)	0.078	962
Secondary/Tertiary	0.91 (0.68, 1.22)	0.536	962
Certified vs Non-certified	0.45 (0.35, 0.59)	< 0.0001	962
Community Score: middle 3rd vs lower 3rd	0.81 (0.59, 1.10)	0.175	962
Community Score: top 3rd vs lower 3rd	0.95 (0.68, 1.32)	0.749	962

Summary of Findings

Only two independent variables were found to be important determinants of the exclusionary reason. The logistic regressions overall indicated female physicians were more likely to be excluded for a financial offense (FO) than for a quality-of-care (QOC) offense. Board certified physicians were less likely to be excluded for a FO than for a QOC matter. Whether these findings are due to the behaviors of physicians and/or the activities of regulatory agencies will be discussed in the next chapter.

Chapter Five

Conclusions and Discussion

This chapter will discuss the findings of the dissertation research. I will first restate and discuss the possible reasons for the results reported in Chapter 4. I will then discuss the limitations with the data utilized in the dissertation and explore future research strategies that might be employed to correct the weaknesses with the data collection and analyses. The chapter ends with a few proposed policy suggestions.

Findings

The number of physicians excluded by the OIG continued to rise steadily during the study period, January 2008 to December 2013. This continues a trend that has existed for more than thirty years. Growing from 3 medical doctors excluded in 1977[66] (see Pontell et al., 1985) to 283 excluded in 2013. The number of physicians excluded has usually grown since the OIG started to exclude physicians in 1977. This trend will likely continue into the future. The Affordable Care Act (ACA)[67] provides millions of Americans who are uninsured or underinsured with government subsidies to buy private healthcare insurance plans. Thus, the ACA is increasing the amount of federal money going into healthcare. If the past is any predictor of the future (which it usually is), we can expect the amount of healthcare fraud and other types of offenses to increase as more money is made available for healthcare by the federal government.

[66] This is the first year the federal government started to exclude physicians from federal healthcare programs.
[67] The ACA was enacted in March 2010.

Reason for Exclusion

Physicians excluded by the OIG from 2008 to 2013 for a financial offense (FO) constituted 54 percent (n=698) of the total 1,289 exclusions. Medical doctors excluded for a quality of care (QOC) matter made up 46 percent (n=591) of the exclusions. These findings are likely reflective of the initial investigations conducted by other federal and state agencies. Exclusion actions by the OIG fall under two general categories: (1) derivative (based on action by another government agency) and (2) affirmative (initiated independently by the OIG). A large portion of the OIG's exclusions are derivative (Demske, 2008; Personal Interview, 2012).

Financial Offense Exclusions

The demographic portrait of physicians appearing on the OIG's List of Excluded Individuals and Entities (LEIE) are not entirely due to the investigative actions of the OIG. A number of other public and private entities are also involved in generating the demographic portrait of physicians excluded by the OIG. Cases, for example, involving financial offenses (FO) regularly originated from the private Recovery Audit Contractors (RACs). It was rare, during the year I interned at the Centers for Medicare and Medicaid Services (CMS), for cases involving healthcare fraud to be solely detected and developed within the CMS office.[68] Most cases came to CMS from the Medicaid Fraud Control Units (MFCUs) and from the RACs. The same is also true for the OIG. That is, the majority of physicians appearing on the LEIE initially came to the OIG from other private and public entities. The accuracy, decision making and mission of these other agencies in part impact the total number of physicians who appear on the OIG's LEIE.

[68] Some cases were initiated from patients directly calling the CMS office.

Mandatory Exclusions

Financial offenses primarily involve mandatory exclusions, which largely originate at the RACs, state Attorney General Offices and private healthcare insurance providers. That is, mandatory exclusions are usually initiated by other agencies, not the OIG. Mandatory exclusions involve cases where the OIG is required by law to exclude physicians for a minimum of 5 years from billing for services provided to recipients of federally-funded healthcare programs. Mandatory exclusions accounted for nearly 51 percent (n=655) of the total 1,289 physicians excluded by the OIG from 2008 to 2013. Nearly 91 percent (n=594) of the 655 physicians mandatorily kicked out of federal healthcare programs by the OIG were excluded for a FO.

The most common mandatory exclusion involved physicians who were excluded for a felony conviction relating to Medicare and Medicaid fraud [1128(a)(1)]. There were 280 medical doctors excluded under this authority, which accounted for nearly 43 percent of the total 655 mandatory exclusions. This is likely due to the actions of the RACs, which are looking for abnormal and large billings from physicians. The RACs rarely concern themselves with whether or not a surgery was medically necessary. CMS hires the private Medicare RACs to largely detect fraud and improper billings, not to search for QOC matters (Iglehart, 2001).

The second most common mandatory exclusion considered to be a FO involved medical doctors who were excluded for a felony conviction relating to controlled substances [1128(a)(4)]. There were 191 medical doctors excluded under this authority, which accounted for slightly more than 29 percent of the total 655 mandatory exclusions. This outcome is largely due to the activities of law enforcement personnel at the state-level (see Garcia, 2013).

California's Office of the Attorney General (AG), for example, is charged with implementing the state's prescription drug monitoring program (PDMP). The main goal of the PDMP is to ensure physicians are prescribing medications in a legitimate manner that does not harm the well-being of patients. California's AG employs the Controlled Substance Utilization Review and Evaluation System (CURES). CURES compares the prescribing practices of physicians in similar geographical areas (such as zip codes or counties) to check for overprescribing. CURES also examines how far patients are traveling to see physicians. Patients who travel long distances from their homes may be doing so in order to find a physician who is willing to prescribe a desired drug.[69] Patients who travel short distances may be more interested in saving time. The OIG is required by law to exclude physicians who are convicted of a felony relating to controlled substances.

The third most frequent mandatory exclusion considered to be a FO involved medical doctors who were excluded for a felony conviction relating to private insurance healthcare fraud [1128(a)(3)]. There were a total of 123 physicians excluded under this authority, which accounted for nearly 19 percent of the total 655 mandatory exclusions. Private healthcare insurance companies, such as Anthem BlueCross, have anti-fraud departments that employ similar tactics as the private Medicare RACs. That is, they seek out physicians with abnormal or large billings. Private healthcare insurers may seek a civil remedy against deviant physicians. They generally do not seek criminal cases. They report their findings and concerns to the local, county, state and federal AG offices. Physicians who are convicted of a felony relating to

[69] Patients visiting several different doctors within a short time may be "doctor shopping." That is, the patient is trying to find a doctor who will prescribe a drug.

healthcare fraud in a private healthcare insurer will become known to the OIG. The OIG first reviews all cases and then will exclude such physicians from federal healthcare programs.

No physicians during the study period were excluded for being convicted of two mandatory exclusion offenses (e.g., healthcare fraud and patient abuse) [1128(c)(3)(G)(i)] and for being convicted on 3 or more occasions of mandatory exclusion offenses [1128(c)(3)(G)(ii)]. These two exclusion authorities are the most serious; respectively resulting in a minimum exclusion period of 10 years or permanent exclusion from participating in federal healthcare programs.[70]

The age of excluded physicians might be one reason for why no physicians during the study period were excluded for 10 years or permanently excluded. Physicians excluded by the OIG from 2008 to 2013 were on average 57 years old. A 57-year-old excluded physician, under a 5-year mandatory exclusion, could at the earliest apply for reinstatement into federal healthcare programs at 62 years old. Physicians who are reinstated are once again allowed to bill for medical services provided to recipients of Medicare, Medicaid and other federally-funded healthcare programs. A 62-year old physician at the earliest (after returning to work and being caught again by regulators) could be excluded for a second mandatory offense at the age of 64. These physicians, under a 10-year mandatory exclusion, can at the soonest reapply for reinstatement at 74 years old. This is unlikely since these physicians are near retirement age. Pande and Maas (2013), for example, found that elderly doctors 75 years old and older are more often willing to plead guilty and retire than fight any prosecution.

[70] These exclusions may involve both a FO and a QOC matter. A physician, for example, could be excluded for a felony conviction relating to Medicare fraud [1128(a)(1)] and for a felony conviction relating to patient abuse and neglect [1128(a)(2)].

System capacity may be an additional reason for why no doctors were excluded for 10 years or excluded permanently. System capacity is the idea that the extent of criminal behavior impacts punishment (Pontell, 1985). Regulators have previously noted that most physicians are likely "nickel and diming" federal healthcare programs (Jesilow et al., 1993). The OIG, like other regulatory agencies, does not have unlimited financial resources and must decide how to employ them to get the most bang for their buck. That is, federal prosecutors do not have the time or money to go after every deviant physician. One tactic many federal prosecutors bring to plea-bargaining sessions is the multiple-offense indictment (known as the "shotgun approach") (Rosoff, Pontell and Tillman, 2013). They may be able to prove one of the offenses beyond a reasonable doubt. Getting any conviction will likely please the prosecutor, who will move on to the next case.

Quality of care (QOC) matters were rare amongst mandatory exclusions. The least common mandatory exclusion involved medical doctors who were excluded for a felony conviction relating to patient abuse and neglect [1128(a)(2)]. Such offenses are likely the most harmful to patients. There were a total of 61 medical doctors excluded for such offenses, which represented slightly more than 9 percent of the 655 mandatory exclusions. This result may in part be due to the fact that the private Medicare RACs, MFCUs and CMS have no easy way to detect patient abuse and neglect.

Patient abuse and neglect exclusions are likely developed through private civil law suits. A psychiatrist, for example, charged the federal government for medical services in order to hide a sexual affair (see Jesilow et al., 1993). The patient later sued and received a malpractice payment from the psychiatrist for sexual abuse. The psychiatrist's state medical board later

learned of this payment and subsequently revoked the psychiatrist's medical license. The OIG then becomes aware of this case by the medical board. Federal prosecutors could charge this psychiatrist with both fraud and/or for patient abuse. Prosecutors, however, often take the path of least resistance. They do not have the financial resources to prove every indictment against a physician (Jesilow et al., 1993; Rosoff, Pontell and Tillman, 2013).

Quality of Care Exclusions

The demographic portrait of physicians excluded by the OIG for QOC matters were largely derived from the actions of the individual state medical boards, as well as legal actions of patients. The state medical boards, as previously mentioned in the dissertation, primarily learn about wrongdoings of physicians through private civil suits initiated by patients (Gruner, 2008). Physicians with civil suit payments are regularly targeted by the medical boards for investigation. The medical boards distribute their decisions to other agencies (including the OIG) regarding actions taken against the licenses of medical doctors (e.g., suspension or revocation).

The point here is the demographic portrait of physicians excluded by the OIG does not exist in a vacuum. Physicians excluded for a QOC matter mostly appear on the LEIE due to the individual actions of patients, state medical boards and state tort laws. Some states have implemented tort laws in recent years that have made it more difficult for patients to sue physicians for medical malpractice while other states have made it easier (Jesilow and Ohlander, 2010). State tort laws often impact whether patients decide to bring civil suits or not, which likely impacts who appears on the OIG's LEIE. These matters have little to do with the

behaviors of individual physicians, but are associated with legislators and politics within a particular state.

Permissive Exclusions

QOC matters mainly involve permissive exclusions, which gives the OIG discretion on whether or not to exclude physicians. Exclusion periods vary according to the utilized authority. Permissive exclusions typically do not have a minimum time period of exclusion. Permissive exclusions accounted for nearly 49 percent (n=634) of the total 1,289 physicians excluded by the OIG from 2008 to 2013. Almost 84 percent (n=530) of the 634 physicians permissively removed from federal healthcare programs by the OIG were excluded for a QOC.

The most common permissive exclusion is a QOC matter involving physicians who had their medical license revoked or suspended by their state medical licensing agency [1128(b)(4)]. These physicians are typically excluded for matters, such as patient neglect and abuse. There were 509 physicians excluded under this authority, which accounted for slightly more than 80 percent of the total 634 physicians permissively excluded by the OIG. This exclusion is derivative. That is, the OIG is excluding physicians based upon the actions of the state licensing boards. The period of exclusion by the OIG typically runs concurrent with the time imposed by the state medical boards.

The second most common permissive exclusion is a FO (not a QOC matter) involving physicians who were excluded by the OIG for defaulting on their healthcare education loans or scholarship obligations [1128(b)(14)]. There were 85 physicians excluded under this authority, which represented more than 13 percent of the total 634 permissive exclusions. This is a

derivative exclusion, because the OIG learns of physicians who defaulted on their medical education loans through the U.S. Department of Education (ED). There is no law in the books requiring the OIG to exclude physicians who default on health education loans. OIG personnel will review these cases to determine whether or not to exclude such physicians. The exclusion period for physicians who default on their loans vary. Some physicians may be excluded for one day while others for years. Reinstatement depends on excluded physicians reaching an acceptable repayment plan with the ED.

The third most common permissive exclusion is a QOC matter involving physicians who were excluded by the OIG for submitting false or fraudulent claims to a federal health care program [1128(b)(7)]. There were 21 medical doctors excluded under this authority, which accounted for slightly more than 3 percent of the total 634 permissive exclusions. This is also likely a derivative exclusion, since the OIG is likely learning of such matters through the MFCUs and CMS. The OIG considers this exclusion authority a QOC matter under the belief the physician is billing for medical services not actually provided to the patient (Demske, 2008). Failure to provide necessary care to a patient could lead to harm.

It is unclear how the exclusion authority [1128(b)(7)] differs from [1128(b)(1)]. There were 5 physicians excluded under [1128(b)(1)] for a misdemeanor conviction relating to healthcare fraud. Additional interviews will need to be conducted with OIG personnel to differentiate between [1128(b)(7)] and [1128(b)(1)]. There were few physicians excluded under these permissive authorities due to the fact the OIG likely preferred to handle such matters in an administrative fashion.

The OIG from 2008 to 2013 excluded a total of fourteen physicians for four permissive exclusion authorities considered to be financial offenses. Two physicians were excluded for a conviction relating to obstruction of an investigation [1128(b)(2)]. Two physicians were also excluded for a misdemeanor conviction relating to controlled substances [1128(b)(3)]. Seven physicians were excluded for being suspended under a federal or state healthcare program [1128(b)(5)]. Lastly, three physicians were excluded for controlling a sanctioned business [1128(b)(15)]. These exclusions are likely based upon the initial investigative actions taken by the MFCUs, CMS and other state and federal agencies. It is hard to speculate why few medical doctors were excluded under these permissive authorities. The OIG may have preferred to deal administratively with such matters rather than exclude physicians. Interviews will need to be conducted in future research to better understand why OIG regulators rarely used these permissive exclusion authorities.

There were no physicians during the study period who were permissively excluded for excessive claim charges [1128(b)(6)]; entities controlled by a sanctioned individual [1128(b)(8)]; failure to disclose required information, supply requested information on subcontractors and suppliers or supply payment information [1128(b)(9) (10) and (11)]; failure to grant immediate access to government regulators [1128(b)(12)]; failure to take corrective action [1128(b)(13)]; and making false statement or misrepresentation of material fact [1128(b)(16)]. There is no minimum period of exclusion for these authorities. That is, a physician could be excluded on one day and be reinstated on the next day.

It is difficult to explain why no medical doctors were excluded under these permissive authorities. One possible explanation is the OIG lacked the financial resources to pursue such

cases. That is, these cases commonly might not produce enough "bang for the buck." Investigators and prosecutors, as mentioned earlier, are both generally interested in seeking out cases involving large Medicare and Medicaid billings that are easy to prove in court. Proving medical overutilization, such as excessive claim (billing) charges [1128(b)(6)], is a difficult and time-consuming task (Jesilow et al., 1993). Deviant physicians regularly hide their illegal activities within legitimate medical work, which makes it challenging for investigators to uncover fraud. The OIG might have found it best to address such cases through administrative actions rather than in civil or criminal court.

The OIG is not necessarily generating the full demographic portrait of doctors who are excluded under mandatory or permissive authorities for FO and QOC matters. This is also reflective of the demographic characteristics (sex, age, medical school training, medical specialty, board certification and Medicare and Medicaid patient concentrations) of medical doctors who have been excluded by the OIG from 2008 to 2013. That is, the demographic characteristics of excluded physicians are most likely the result of the activities of all these different private (e.g., RACs, civil suits) and public (e.g., MFCUs, medical boards, CMS) entities than due to the individual behaviors of malefactors.

Sex

Female physicians were underrepresented amongst physicians excluded from federal healthcare programs from 2008 to 2013 by the OIG. Female physicians accounted for 30 percent of the general physician population in 2010, but made up 15 percent of the total OIG exclusions. My findings were similar to results found two years ago regarding physicians

excluded by the OIG from 2000-2011 for being convicted of Medicare and Medicaid fraud (Pande and Maas, 2013). The researchers established female physicians accounted for about 13 percent of the total exclusions. My findings were also consistent with previous studies looking at physician discipline in general (Clay and Conatser, 2003; Khaliq et al., 2005; Lim, 2002, Morrison and Wickersham, 1998). These studies found women accounted for less than 10 percent of the physicians sanctioned by the California, Ohio and Oklahoma medical boards. My findings, however, were not consistent to results found more than two decades ago relating to physicians excluded by the OIG from 1977 to 1982 for Medicaid fraud (Jesilow et al., 1993). The researchers established female medical doctors represented 10 percent of all doctors, and accounted for nearly 10 percent of the physicians excluded. I was interested in whether the underrepresentation of excluded female physicians were due to their behaviors and/or the activities of regulatory agencies.

The underrepresentation of female physicians in my sample was surprising given the fact they are overrepresented amongst primary care doctors.[71] Female physicians made up almost 42 percent (N=126,912) of the 304,687 primary care physicians practicing medicine in 2010. Nearly 65 percent (n=126) of the 194 excluded female physicians practiced medicine in primary care. Primary care physicians, as discussed in Chapter 2, may be easier targets for prosecutors than secondary and tertiary doctors for two reasons. First, prosecutors may find it less difficult to pursue cases against physicians with fewer financial resources to hire skilled defense attorneys. Primary care physicians, on the average, make nearly half as much as secondary and

[71] Primary care medical specialties include: family medicine, general practice, internal medicine, obstetrics/ gynecology and pediatrics.

tertiary care physicians (Leigh et al., 2010). Second, regulators are more likely to investigate physicians with larger federal healthcare program billings than those with smaller billings. Primary care physicians are more likely to have larger patient pools of Medicare and Medicaid patients compared to other types of medical specialties, such as neurosurgeons (Perloof et al., 1997). The underrepresentation of excluded female physicians in this study is even more pronounced given this information. This finding suggests female physicians may be more law abiding than their male counterparts.

Female physicians were significantly more likely than male physicians to be excluded by the OIG for a financial offense (FO) than for a quality of care (QOC) matter.[72] Nearly 65 percent of female physicians were excluded for a FO and 35 percent excluded for a QOC matter. This is likely due to the fact female physicians are more likely to practice in primary care specialties[73] than surgical specialties, where QOC matters may be more likely to occur. Studies on medical malpractice have found that surgical specialties have higher malpractice claims rates than family medicine/general practice and psychiatry (Adamson et al., 1997; Mullis, 1995). These scholars reasoned patients are more likely to endure severe physical harm when undergoing surgery than when getting a check-up with their primary care physicians.

[72] Male physicians were also more likely to be excluded for a FO than for a QOC matter. Males had a higher percentage of exclusions for QOC matters compared to female physicians (48 percent versus 35 percent). This is probably due to the fact male physicians are more likely to practice in surgical specialties, which have higher rates of malpractice payments than physicians practicing in primary care (Adamson et al., 1997; Mullis, 1995).

[73] Primary care physicians can of course cause harm to their patients. Primary care doctors sometimes order medications that when taken together are toxic and potentially deadly. Physicians can also misdiagnose patients, which can potentially lead to severe harm or even death.

Age

Older physicians were overrepresented amongst physicians excluded by the OIG. The average age of all medical doctors in the general physician population is 49 years old (Sermo Survey, 2009). More than 75 percent of the OIG-excluded physicians were 50 years of age or older. Excluded physicians were on average about 57 years old, which is 8 years older than the average age of the general physician population. My findings are similar to results found more than two decades ago with respect to physicians excluded by the OIG from 1977-1982 for Medicaid fraud (Jesilow et al., 1991). The researchers found on average that excluded physicians were nearly ten years older than the average age of non-excluded physicians (57.2 years old compared with 48.2 years old). My findings are also parallel with results found 2 years ago regarding physicians excluded by the OIG (Pande and Maas, 2013). These researchers also found that the average age of physicians excluded for Medicare and Medicaid fraud was almost ten years older than the average age of all physicians (58 years old versus 49 years old). Lastly, my findings are similar to results found ten years ago using data from 1990-1999 with respect to physicians convicted of all crimes (Jung et al., 2006). One goal of my dissertation was to determine whether the overrepresentation of older physicians amongst excluded physicians were due to their individual behaviors and/or the actions of regulatory bodies.

There are several potential reasons for why older physicians were overrepresented amongst excluded physicians. Their overrepresentation is likely due to a combination of the activities of regulatory personnel and the individual behaviors of medical doctors. It often takes regulators years to detect and investigate suspect physicians and for prosecutors to punish deviant medical doctors (Friedrichs, 1996; Jesilow et al., 1993). Federal investigators regularly spend

years building cases against doctors involved in healthcare fraud, abuse and other illegal offenses (Sparrow, 2000). These illegal activities are largely hidden and not easily detectible by regulators. Investigators, once the fraud is detected, then have to collect evidence proving that the physician had criminal intent. Proving criminal intent beyond a reasonable doubt in court is a time-consuming and difficult task for prosecutors (see Burton and Jesilow, 2014). Physicians who are convicted and excluded for healthcare fraud and other matters will not be the same age as when the offense(s) was first committed (Pande and Maas, 2013). The average age of excluded physicians is likely skewed upwards, since the offenses probably occurred years before they were detected, investigated and then prosecuted.

The overrepresentation of older physicians amongst those excluded by the OIG might also be due to their individual behaviors. Older physicians might be less willing to fight against prosecutions than younger physicians (Jesilow et al., 1991; Pande and Maas, 2013). Older physicians, as mentioned earlier in the chapter, might find it easier to admit guilt than to fight after being questioned by regulators (Jesilow et al., 1991). This may be due to the fact many of these physicians are close to retirement age. Pande and Maas (2013) found that physicians excluded for Medicare and Medicare fraud were more likely to surrender their medical licenses and retire if they were ≥75 years old. This was not the case for medical doctors ≤74 years old. Younger physicians could be more willing to fight cases of wrongdoings in order to protect their careers. They might be more willing to apply for reinstatement. Future research will likely examine which demographic characteristics are associated with whether or not physicians are reinstated to bill for medical services provided to beneficiaries of federal healthcare programs.

Older physicians[74] were not significantly more likely than younger medical doctors to be excluded by the OIG for a FO than for a QOC matter. About 55 percent of older physicians were excluded for a FO and roughly 45 percent excluded for a QOC matter. I had originally anticipated that older medical doctors would more likely be excluded from participation in federal healthcare programs for a QOC matter. Male medical doctors are more likely than female physicians to be practicing in surgical specialties where QOC matters are more likely to occur (Adamson et al., 1997; Mullis, 1995).[75] It was also reasoned older physicians might be less likely than younger physicians to keep abreast of current medical developments and acceptable medical practices, which could possibly lead to QOC matters (Choudhry et al., 2005; Kohatsu et al., 2004). Younger medical doctors fresh out of medical school are less likely to have idiosyncratic methods for practicing medicine, while older physicians might have developed their own inappropriate ways of practicing medicine.

Older medical doctors may be more likely excluded for financial offences, because they have more opportunities to defraud federal healthcare programs. Older physicians, as discussed in Chapter 2, are more likely practicing in solo or small group practices. Physicians in such practices typically bill for medical services on a fee-for-service (FFS) payment model. That is, the more services a physician provides the more she will be paid. A FFS payment model might give physicians more incentives and opportunities to bill for services they did not provide, to bill for more expensive services than were actually supplied and to provide more

[74] Physicians who were considered to be ≥66 years old.

[75] Excluded male physicians 65 years and older were overrepresented when compared to the general physician population 65 years and older in 2010 (25 percent versus 19.8 percent). Excluded female physicians 65 years old and older are underrepresented (7.5 percent versus 19.8 percent) (Smart, 2012). This may be due to the fact females did not start entering medical schools until the late 1970s.

unnecessary services to pad their reimbursements (Jesilow et al., 1993; Leap, 2011; Sparrow, 2000). Regulators are again most likely to purse physicians with larger billings than smaller billings.

Younger medical doctors, however, are more likely practicing in large medical institutions and group health plans where they receive a salary (Pande and Maas, 2012). Physicians practicing at such facilities may have fewer incentives to cheat on bills (Jesilow et al., 1993). All reimbursements go to the institution, not the individual physician. Physicians may also have fewer opportunities to cheat. Medical institutions regularly have stricter rules and systems in place for monitoring bills than solo or small group practices (Sparrow, 2000). These matters and other may reduce the probability of younger physicians appearing on the OIG's LEIE for a FO.

Older physicians are again more likely to be excluded by the OIG for a FO than for a QOC matter. This provides further evidence the age of excluded medical doctors is probably being driven by the activities of regulatory agencies (e.g., RACs and CMS). It is reasonable to speculate FO cases take longer to conduct than QOC cases. Investigators, as previously stated, may not detect fraudulent activities for years. It takes investigators time, once the fraud is detected, to collect enough evidence for prosecutors to prove fraud beyond a reasonable doubt in court. Fraud cases often take years to finalize.

QOC cases likely have shorter lag times than FO cases. Patients who are injured (or killed) by medical procedures are more likely to take immediate actions against physicians due to statutes of limitations. The state medical boards will learn of cases when patients (or the deceased patients' families) successfully received medical malpractice payments by suing their physicians The medical boards, upon learning of the malpractice payments, decide whether to

suspend or revoke the licenses of these medical doctors. This information will then become known to the OIG, which will then take action to exclude such physicians from billing for medical services provided to recipients of federal healthcare programs. Whether QOC cases have less lag time than FO cases is merely a matter of conjecture. Future research might examine the initial start dates of cases to determine the mean length of time for QOC cases compared to FO cases.

Medical School Training

International medical graduates (IMGs) were overrepresented amongst physicians excluded from Medicare and Medicaid and other federal healthcare programs from 2008 to 2013 by the OIG. IMGs accounted for 25.8 percent of the general physician population in 2010, but made up 33.9 percent of the total OIG exclusions. Preceding studies examining physicians excluded by the OIG report similar findings. IMGs excluded for Medicare and Medicaid fraud from 1977 to 1982 accounted for 34 percent of the exclusions (Pontell et al., 1985). IMGs excluded from 1989 to 1999 represented 35 percent of the total exclusions (Dow and Harris, 2002). IMGs excluded from 2000 to 2011 for healthcare fraud made up 59 percent of the total exclusions (Pande and Maas, 2013). I was interested in determining whether the overrepresentation of excluded IMGs were due to their behaviors and/or the activities of regulatory agencies.

United States medical graduates (USMGs) excluded by the OIG from 2008 to 2013 had attended 150 different medical schools. Meharry Medical College and Howard University College of Medicine, both historically predominant Black institutions, topped the list each with 19 excluded medical graduates. My findings are similar with previous studies that found

Meharry to have the greatest number of medical graduates excluded for Medicare and Medicaid fraud (Pande and Maas, 2013; Pontell et al., 1985). Howard University was also atop the list in 2013 (Pande and Maas, 2013). Henry Pontell and his colleagues (1985) reasoned their findings might be the result of Black doctors being more likely to work in the inner-cities where there are the greatest concentrations of recipients of state and federal healthcare programs. Medical doctors practicing in such areas will likely have larger billings than physicians practicing in other types of neighborhoods. Physicians with larger billings, as discussed throughout the dissertation, are more likely to catch the attention of the regulators than doctors with smaller billings. Future research might examine where medical students from Meharry and other universities are finding work after the completion of their medical residency programs.

IMGs excluded by the OIG had attended 189 different medical schools. The top five international medical schools with the greatest numbers of excluded graduates were Autonomous University of Guadalajara (Mexico), University of Santo Tomas (Philippines), Ross University School of Medicine (Dominica), University Central Del Este (Dominican Republic) and University of Medical Sciences of Havana (Cuba). My findings were also similar with previous studies that have also found that international medical schools with the most excluded graduates were often located in developing nations (Pande and Maas, 2013; Pontell et al., 1985). One probable explanation for these findings is IMGs from developing nations (assuming they are born there) might be unfamiliar with the accepted medical norms of the United States.[76] These physicians may continue to practice medicine as they did in their home countries when they arrive in America (see Jesilow et al., 1992). Some medical norms and

[76] U.S. citizens who are IMGs or USMGs are both likely familiar with acceptable U.S. medical norms and practices.

practices in developing nations do not align with acceptable practices in the United States. This might make such IMGs susceptible to investigation and prosecution, which could increase their likelihood of being excluded. Prosecutors in the United States may actively pursue such behaviors.

There could be another probable explanation for why larger numbers of excluded IMGs are coming from developing countries. It might be simply due to immigration patterns. That is, more IMGs from developing countries are coming to the U.S. than IMGs from wealthy developed nations (e.g., Sweden). A report from the Educational Commission for Foreign Medical Graduates (ECFMG) provides some support for the previous sentence (ECFMG, 2016). The ECFMG examines the readiness of IMGs,[77] who must be certified by the ECFMG before they can begin their U.S. medical residency training. Countries with the most certified IMGs during the past 25 years, according to the ECFMG (2016), have come from India, Pakistan, Grenada, Dominica and the Philippines. IMGs from developing countries are more likely to immigrate to the United States, because they can probably earn more money in the U.S. than in their home countries. Therefore, it is not surprising that a large number of IMGs are coming from developing countries.

IMGs from developed countries were less likely than IMGs from developing nations to be excluded by the OIG. This finding is consistent with a prior study looking at the demographic characteristics of IMGs excluded by the OIG (Dow and Harris, 2002). One possible explanation is IMGs from developed countries may have less difficulty socially integrating and learning the

[77] It is important to note that IMGs could be U.S. citizens. U.S. citizens accounted for slightly more than 26 percent of the IMG population in 2015 (ECFMG, 2016).

norms of the U.S. medical profession, since they are similar to that of their home countries. Another explanation is that IMGs from developed countries are less likely to immigrate to the United States and to get certified by the ECFMG. These IMGs might be happier with their incomes and lifestyles, and they may have less desire to relocate to the United States.

IMGs might be overrepresented amongst excluded physicians, because they are more likely to provide medical services to beneficiaries of federal healthcare programs. The individual behaviors of IMGs may in part be accounting for their overrepresentation. There are numerous studies indicating that IMGs are more likely than USMGs to practice in areas with the greatest proportions of Medicare and Medicaid eligible patients (Baer et al., 1998; Fordyce et al., 2012; Hagopian et al., 2004; Mick and Lee, 1999; Polsky et al., 2002). There is no research to date supporting the idea that IMGs are less honest than USMGs (Lee et al., 2004). That is, IMGs and USMGs may be equally likely to defraud federal healthcare programs. Investigators, who were interviewed by Paul Jesilow and his colleagues (1993), perceived that nearly all medical doctors (regardless if they are IMGs or USMGs) "nickel and dime" federal and private healthcare programs. IMGs may have greater exposure than USMGs to regulatory agencies (such as the RACs and CMS).

Regulatory agencies, due to limited personnel and financial resources, often investigate physicians who bill the government for hefty dollar amounts while ignoring medical doctors with smaller billings (Jesilow et al., 1993; Sparrow, 2000). Primary care physicians, as discussed earlier, probably have larger volumes of Medicare and Medicaid patients compared to secondary and tertiary care physicians (Perloof et al., 1997). IMGs practicing in primary care medical specialties made up nearly 50 percent (N=126,912) of the total 254,396 IMGs practicing

medicine in 2010 (Smart, 2012). Nearly 74 percent (n=301) of 409 excluded IMGs physicians excluded by the OIG between 2008 and 2013 practiced medicine in primary care. Primary care physicians, as discussed earlier in this chapter and chapter 2, might make for easier targets for prosecutors than secondary and tertiary doctors. The activities of regulatory bodies could also account for the overrepresentation of excluded IMGs.

IMGs were not significantly more likely than USMGs to be excluded by the OIG for a FO than for a QOC matter. This may partly be due to the fact IMGs are less likely to practice in surgical specialties where more QOC matters tend to occur (Adamson et al., 1997; Mullis, 1995). IMGs are practicing in primary care specialties where physicians are more likely to be excluded by the OIG for a FO (e.g., billing for services never provided or billing for more expensive services than those actually provided) (see Jesilow et al., 1993).

Medical Specialty

Primary care medical specialties were overrepresented amongst physicians excluded by the OIG from 2008 to 2013 from federal healthcare programs. Primary care physicians (general and family practice, internal medicine, pediatrics, obstetrics and gynecology) represented approximately 38 percent of the general physician population in 2010 (Smart, 2012), yet primary care medical doctors accounted for 70 percent (n=902) of the total 1,289 OIG exclusions.[78] My findings were similar to previous results regarding the medical specialties of physicians excluded by the OIG for being convicted of Medicare and Medicaid fraud (Pande and

[78] Secondary and tertiary care medical specialties represented 62 percent of the general physician population in 2010 (Smart, 2012), but secondary and tertiary medical doctors accounted for 30 percent (n=387) of the total 1,289 OIG exclusions from 2008-2013.

Maas, 2013; Pontell et al., 1985). I was interested in whether the overrepresentation of excluded primary care physicians were due to their behaviors and/or the activities of regulatory agencies.

There are several possible explanations for why primary care doctors were overrepresented amongst physicians excluded by the OIG. Primary care physicians, who are typically the first point of consultation for patients, probably have larger volumes of Medicare and Medicaid patients compared to secondary and tertiary care physicians (Perloof et al., 1997). Investigators often will only spend time and financial resources pursuing cases against medical doctors with larger billings for Medicare and Medicaid beneficiaries than physicians with smaller billings (Jesilow et al., 1993). That is, the clientele of medical doctors is in part generating the demographic portrait of physicians being excluded by the OIG during the study period. Secondary and tertiary care physicians are more likely going to have smaller billings, because their practices will probably have fewer recipients of federal healthcare programs.

Primary care physicians were statistically as likely as secondary and tertiary physicians to be excluded by the OIG for a FO than for a QOC matter. Nearly 54 percent (n=485) of primary care medical doctors were excluded for a FO and slightly more than 46 percent (n=417) were excluded for a QOC matter. 55 percent (n=213) of secondary and tertiary care medical doctors were excluded for a FO and 45 percent (n=174) were excluded for a QOC matter.

There are some possible explanations for why primary care and secondary/tertiary care doctors were more likely to be excluded by the OIG for a FO than for a QOC matter. Cases involving QOC matters may be more difficult for regulators to uncover than cases involving a FO. There are a number of steps that must occur before a physician can be excluded for a QOC

matter. First, patients must realize they were victims of an unnecessary medical procedure (such as a surgery) that led to a harmful outcome. Second, attorneys must be willing to represent harmed patients. Attorneys are often unwilling to take on patient harm cases involving small dollar amounts. Lastly, malpractice payments[79] must occur in order for the state medical boards to take potential actions against the medical licenses of physicians. Disciplinary actions taken by the state medical boards later become known to the OIG. All of these moving parts likely leave many QOC cases hidden.[80] The evidence in part for this statement can be found by examining the concordance rates between medical records and billing data (known as claims data) for medical diagnoses (Ferver et al., 2009). The researchers concluded there is often little to no evidence in the medical record to support the medical diagnoses and the subsequent treatments provided. It can be argued medical doctors who deliver unnecessary treatments are providing poor quality of care to their patients.

Board Certification

Board certified physicians were underrepresented amongst medical doctors who were excluded by the OIG. Board certified physicians represented nearly 75 percent of the general physician population in 2010 (Smart, 2012). They accounted for almost 38 percent (n=437) of the 1,160 excluded physicians for whom board certification status was known. My findings are similar with results found fourteen years ago regarding general practitioners and family practice physicians excluded by the OIG from January 1989 to February 1999 (Dow and Harris, 2002).

[79] The actual dollar amount varies by the individual state medical boards.

[80] CMS and the OIG, in a limited manner, also deal with QOC cases not addressed by the state medical boards and other regulatory agencies (Personal Interview, 2012).

These researchers found board certified physicians were significantly less likely to be excluded than non-certified physicians. My findings are also consistent with previous studies looking at physician discipline in general. One study, for example, looked at all disciplinary actions (for criminal and non-criminal offenses) the state medical boards and federal agencies had taken against physicians from 1990 to 1999 (Jung et al., 2006). They found board certified physicians were underrepresented amongst the disciplined physicians. Board certified physicians represented 61.5 percent of the general physician population in 2000, but 41.5 percent of the disciplined physicians. Studies looking at disciplinary actions taken by various state medical boards also found disciplinary action was negatively associated with board certification (see Clay and Conatser, 2003; Khaliq et al., 2005; Morrison and Wickersham, 1998).

It is not completely clear why board certified physicians are underrepresented amongst excluded physicians. The underrepresentation of board certified physicians in part might be due to the fact they are less likely to become involved in medical malpractice civil suits and subsequent payments. The state medical boards may, therefore, be less likely to take action against board certified physicians. This in turn partly impacts the physicians who will be excluded by the OIG. Findings in earlier research relating to the relationship between a physician's board certification status and clinical outcomes were mixed (Brennan, Horwitz, Duffy, Cassel, Coode, Lipner, 2004; Kelly and Hellinger, 1986; Morrison and Wickersham, 1998; Ramsey, Carline, Inui, Larson, Logerfo, Weinrich, 1989; Sharp, Bashook, Lipsky, Horowitiz,

Miller, 2002). These studies overall suggest positive patient outcomes are modestly associated with a physician's board certification status.[81]

There is another probable explanation for why excluded board certified physicians were underrepresented. Primary care physicians, as previously mentioned this chapter, are more likely to be targeted for investigations (due to larger Medicare and Medicaid billings) compared to physicians practicing in secondary and tertiary care medical specialties. Primary care medical doctors are less likely to be board certified than physicians in secondary and tertiary care specialties (Smart, 2012, Young et al., 2013).[82] Such matters could impact the extent to which the OIG is excluding board certified physicians.

Board certified physicians were significantly more likely than non-board certified medical doctors to be excluded for a QOC matter than for a FO. Nearly 52 percent (n=226) of board certified medical doctors were excluded for a QOC matter and slightly more than 48 percent (n=211) for a FO. This is likely due to the fact that board certified physicians are more likely practicing in specialties where they are more likely to harm patients. Secondary and tertiary care medical specialties are often more involved in surgical or invasive medical procedures that regularly involve QOC matters. Studies on medical malpractice found surgical specialties have higher malpractice claims rates than primary care medical doctors (Adamson et al., 1997; Mullis, 1995). These scholars reasoned patients are more likely to endure severe physical harm when undergoing surgery than when getting a check-up with their primary care physicians.

[81] Physicians generally do not renew and maintain their board certification status as they get older (Young et al., 2013).

[82] Hospitals are increasingly requiring secondary and tertiary care physicians to be board certified before being granted hospital privileges (ABMS, 2015).

Non-Board certified physicians were significantly more likely than board certified medical doctors to be excluded for a FO than for a QOC matter. Nearly 62 percent (n=477) of non-board certified physicians were excluded for a FO and slightly more than 38 percent (n=246) were excluded for a QOC matter. Non-board certified physicians are more likely to be primary care physicians (Smart, 2012). They are less likely involved with surgical and invasive medical procedures where QOC matters are more likely to emerge.

Medicare and Medicaid Patient Concentrations

I expected the demographic composition of a physician's medical practice to impact their likelihood of appearing on the OIG's LEIE. That is, I believed doctors had an increased chance of being excluded by the OIG if they practiced medicine in areas with greater percentages of Medicare and/or Medicaid eligible patients. Physicians practicing in such neighborhoods probably have larger billings, which will more likely attract the attention of regulators. Physicians in medical practices with such demographics are more likely to be excluded for a FO than for a QOC matter.[83] The results, however, did not support these assumptions. In fact, physicians practicing medicine in ZCTAs with the smallest percentages of Medicare and Medicaid eligible patients were more often excluded by the OIG than doctors practicing in areas with the greatest portions of such patients. There were also no statistically significant

[83] QOC cases, as discussed throughout this chapter, are commonly initiated by civil suits that may result in the state medical boards taking some action against the medical licenses of physicians. The poor and elderly may be less likely to bring cases. These individuals often lack the necessary financial resources to hire legal assistance and attorneys regularly will not take on QOC cases involving small dollar amounts.

associations between Medicare and/or Medicaid patient concentrations and the exclusionary reasons (FO vs QOC).

The results presented in the dissertation are inaccurate, because I used the wrong measures for Medicare and Medicaid patient concentrations.[84] Future research should use the actual number (not the percentage) of Medicare and Medicaid eligible patients within a physician's ZCTA. The percentage of Medicare and Medicaid eligible patients within a particular ZCTA provides a distorted picture of the possible composition of a physicians medical practice. A rural ZCTA in Utah, for example, might have 70 percent of its 200 residents be 65 years old and older. Another ZCTA in California may only have 10 percent of its population be 65 years old and older. The total population of this ZCTA, however, could be 150,000 individuals. Physicians practicing in the ZCTA located in California will likely have larger billings (due to more patients) for beneficiaries of federal healthcare programs than physicians practicing in the ZCTA located in Utah. Physicians with small billings (under $100,000) will unlikely attract the attention of regulators (Personal Interview, 2012). Another method might involve determining (if possible) the total number of physicians practicing within a particular ZCTA. This data could allow me to determine on average how many Medicare and/or Medicaid patients might be present in a doctor's medical practice.

[84] The percentage of patients 65 years old and older living within an excluded physician's ZCTA was employed to measure a doctor's potential exposure to Medicare patients. The percentage of individuals living below the federal poverty level within an excluded physician's ZCTA was utilized to measure a physician's possible exposure to Medicaid eligible patients.

Possible Policy Suggestions

It might be a good idea to recruit more female physicians into the medical profession. Female physicians could be more law abiding than their male counterparts. This point is supported by evidence from this study and previous studies (Clay and Conatser, 2003; Khaliq et al., 2005; Lim, 2002, Morrison and Wickersham, 1998; Pande and Maas, 2013). Female medical doctors were underrepresented in this study amongst physicians who appeared on the OIG's LEIE. Excluded female physicians were more likely to have committed a FO than to have been removed from participation in federal healthcare programs for a QOC matter. There are numerous possible explanations for why females are underrepresented amongst physicians excluded by the OIG from 2008 to 2013. Additional research will need to be conducted before implementing a policy of recruiting more female physicians into the medical profession.

Any proposed public policy should aim to reduce the number of doctors who are defrauding federal healthcare programs and who are providing poor QOC to their patients. The goal is to diminish the number of physicians who are engaging in activities that place them on the OIG's LEIE, which would occur by reducing fraud and increasing QOC. More female medical doctors might result in less fraud and higher QOC. An increase in female doctors would lead to less male doctors in the medical profession (a zero sum game). This would lead to a greater percentage of primary care physicians being females, and a decrease in the number of male doctors who are more likely to practice in surgical specialties. This might result in a decline in the number of unnecessary surgeries and QOC matters.[85] An uptick in the number of female surgeons may

[85] Males are more likely to enter the medical profession to obtain wealth, while females are more likely driven to help people (Geis et al., 1991).

reduce the number of malpractice cases. This might partially dry up the "QOC river" that is feeding the "LEIE lake" (or the demographic portrait of excluded physicians).[86] I do not expect a large increase in the number of female physicians in primary care specialties, since they are already driven to such medical specialties. If women are indeed more honest, I would also expect there to be a slight decline in the "FO river" feeding the "LEIE lake." I would anticipate the LEIE lake to get smaller if both the FO and QOC rivers are getting drier.

Another good idea might be to offer opportunities for physicians excluded on the LEIE for FO matters (but not for QOC matters) to provide alternative services for which they could be paid. Society regularly gives first-time and low-level offenders probation instead of jail time. Probation allows offenders to remain in society with their families and permits them to keep working. Jail time often results in offenders losing their jobs and being labeled a "criminal" for life. It might be a better public policy to treat physicians like other offenders in society. Physicians who defrauded federal healthcare programs may still be able to provide quality medical care (Cherry & Aufderheide, 1999). Society spends considerable expense and time training physicians, and excluding them for long periods or permanently may be a waste of valuable resources. There may be other ways to deal with these doctors, so that they can continue to contribute to the overall health of society. These physicians might also be allowed to practice in integrated healthcare programs, such as Kaiser Permanente, where they are paid a salary and are not able to bill for individual services. They could also serve in state or federal

[86] Female physicians are less likely to be sued for medical malpractice and to have subsequent payments. This might lead to the state medical boards taking less actions, which might dry up some cases to the OIG.

prisons or in the Veteran Affairs' hospitals or in areas where there are persistent shortages of physicians.[87] The opportunities for illegalities may be minimized in these situations.

The enactment of a policy based on any demographic portrait of known violators should be cautiously approached. Such policy could be wrongheaded. It may demonize a group while doing little to improve matters. Policy decisions should be based on a strong understanding of how the system works and not just on a demographic portrait of known violators.

This dissertation has focused on understanding the factors influencing the construction of a demographic portrait of deviant doctors. It suggests that the revealed portrait is useful only if one considers how it was created. I found some of the activities of enforcement agents produce a demographic portrait of doctors that partly resembles the portrait that is created of street-level offenders; that they are male, minority members. These similarities likely reflect matters that are deeply rooted in our society and beyond the ability of government agents to easily change.

[87] There are, for example, currently 35 counties in the state of Texas with zero physicians (Commins, 2015). It might be a better policy for the federal government to require physicians, who were excluded for defrauding federal healthcare programs, to provide medical services (with close government oversight) in these counties and other similar ones throughout the country.

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Appendix A: Confirmation of Exempt Research Registration

May 21, 2015

BRYAN BURTON
DEPARTMENT OF CRIMINOLOGY, LAW AND SOCIETY

RE: HS# 2015-2019 *"Deviant Doctors: A Demographic Portrait of Physicians Sanctioned by the Federal Government in the U.S."*

The human subjects research project referenced above has been registered with the UC Irvine Institutional Review Board (UCI IRB) as Exempt from Federal regulations in accordance with 45 CFR 46.101. This exemption is limited to the described activities in the registered UCI IRB Protocol Narrative and extends to the performance of such activities at the sites identified in your UCI IRB Protocol Application. Informed consent from subjects must be obtained unless otherwise indicated below. UCI IRB conditions for the conduct of this research are included on the attached sheet.

Information provided to prospective subjects to obtain their informed consent should, at a minimum, consists of the following information: the subject is being asked to participate in research, what his/her participation will involve, all foreseeable risks and benefits, the extent to which privacy and confidentiality will be protected, that participation in research is voluntary and the subject may refuse to participate or withdraw at any time without prejudice.

Questions concerning registration of this study may be directed to the UC Irvine Office of Research, 5171 California Avenue, Suite 150, Irvine CA 92697-7600; 949-824-6068 or 949-824-2125 (biomedical committee) or 949-824-6662 (social-behavioral committee).

Level of Review:
Exempt Review, Category 4

Elizabeth Cauffman, Ph.D.
Chair, Institutional Review Board

Determinations as Conditions of Exemption:

Registration valid from 05/21/2015 to 05/20/2018 UCI (FWA) 00004071, Approved: January 31, 2003

1. STUDY STATUS: Retrospective Review of Records from January 2008 to December 2013

Informed Consent Requirements:

2. Informed Consent Not required – Records Review

UCI IRB CONDITIONS FOR ALL UCI HUMAN RESEARCH PROTOCOLS

UCI RESEARCH POLICIES:
All individuals engaged in human-subjects research are responsible for compliance with all applicable UCI Research Policies (http://www.research.uci.edu/compliance/human-research-protections/hrp-policy-library/hrppPolicies.htm). The Lead Researcher of the study is ultimately responsible for assuring all study team members adhere to applicable policies for the conduct of human-subjects research.

LEAD RESEARCHER RECORDKEEPING RESPONSIBILITIES:
Lead Researchers are responsible for the retention of protocol–related records. The following web pages should be reviewed for more information about the Lead Researcher's recordkeeping responsibilities for the preparation and maintenance of research files: http://www.research.uci.edu/compliance/human-research-protections/researchers/lead-researcher-recordkeeping- responsibilities.html
and http://www.research.uci.edu/compliance/human-research-protections/researchers/preparation-maintenance-research-audit- file.html.

PROTOCOL EXPIRATION:
The UCI IRB expiration date is provided on the exempt registration letter. **All exempt protocols are registered for a maximum period of 3 years**. If the study will continue beyond 3 years, a new Application for IRB review is required. No annual continuing renewals are required.

MODIFICATIONS & AMENDMENTS:
No changes are to be made to the registered protocol or the approved, stamped consent form without the prior review and approval of the UCI IRB. All changes (e.g., a change in procedure, number of subjects, personnel, study locations, new recruitment materials, study instruments, etc.) must be prospectively reviewed and confirmed by the IRB before they are implemented.

APPROVED VERSIONS OF CONSENT DOCUMENTS, INCLUDING STUDY INFORMATION SHEETS:
Unless a waiver of informed consent is granted by the IRB, the consent documents (consent form; study information sheet) with the UCI IRB approval stamp must be used for consenting all human subjects entered into this study. Only the current approved version of the consent documents may be used to consent subjects. **Approved consent documents are not to be**

used beyond their expiration date.

ADVERSE EVENT & UNANTICIPATED PROBLEMS REPORTING:
All unanticipated problem involving risk to subjects or others or serious adverse events must be reported to the UCI IRB in accordance with Federal regulations and UCI policy. See http://www.research.uci.edu/compliance/human-research-protections/researchers/reporting-of-adverse-events-unanticipated-problems-and-violations.html for complete details.

CHANGES IN FINANCIAL INTEREST:
Any changes in the financial relationship between the study sponsor and any of the investigators on the study and/or any new potential conflicts of interest must be reported immediately to the UCI Conflict of Interest Oversight Committee (COIOC). If these changes affect the conduct of the study or result in a change in the required wording of the approved informed consent document, then these changes must also be reported to the UCI IRB via a modification request.

CLOSING REPORT:
An electronic closing report should be filed with the UCI IRB when the research concludes. See http://www.research.uci.edu/compliance/human-research-protections/researchers/closing-a-protocol.html for complete details.

Appendix B: Medical School Names

Medical School Name (Both U.S. and International Schools)
Missing Medical School
Eugenio Maria De Hostos University (Dominican Republic)
University of Alberta Faculty of Medicine and Dentistry (Canada)
University of Arkansas College of Medicine
Tulane University School of Medicine
Oklahoma State University College of Osteopathic Medicine
University of Toledo College of Medicine
University of Utah School of Medicine
University of Nuevo León (Mexico)
University of Illinois, Chicago
Rush Medical College of Rush University
University of Santo Tomas, Faculty of Medicine and Surgery (Philippines)
Dartmouth Medical School
Manila Central University (Philippines)
Howard University College of Medicine
David Geffen School of Medicine at UCLA
Autonomous University of Guadalajara (Mexico)
University of Buenos Aires (Argentina)

Rosalind Franklin University of Medicine and Science
Western University of Health Sciences
Loma Linda University School of Medicine
Mariano Galvez University (Guatemala)
Meharry Medical College
University College London (England)
Albany Medical College
Keck School of Medicine of USC
Tehran University of Medical Sciences (Iran)
Autonomous University of Barcelona (Spain)
University of The East Ramon Magsaysay Memorial Medical Center (Philippines)
Columbia University College of Physicians and Surgeons
Government Medical College Nagpur (India)
University of Poitiers (France)
Harvard Medical School
National University of San Agustin (Peru)
National Sun Yat-sen University (Taiwan)
Suny Downstate Medical Center
University of Assiut Faculty of Medicine (Egypt)
Russian National Research Medical University (Russia)

University of Wisconsin Medical School, Madison
Seoul National University College of Medicine (South Korea)
National Autonomous University of Mexico (Mexico)
Monash University (Australia)
Saint Louis University School of Medicine
Coimbatore Medical College (India)
Tadzhik Medical Institute (Tajikistan)
Lithuanian University of Health Sciences (Lithuania)
Ross University School of Medicine & Veterinary Medicine (Federation of Saint Christopher and Nevis)
University of Buffalo SUNY
Medical University of South Carolina
University of Connecticut School of Medicine
Central University of the Caribbean (Puerto Rico)
Superior Institute of Santiago de Cuba (Cuba)
Louisiana State University School of Medicine in New Orleans
University of Santiago de Compostela (Spain)
University of Florida College of Medicine
University Central Del Este (Dominica Republic)
Yale University School of Medicine
Complutense University of Madrid (Spain)

Autonomous University of Santo Domingo (Dominican Republic)
University of Medical Sciences of Havana (Habana)
University of Louisville School of Medicine
University of Salamanca (Spain)
Ohio State University College of Medicine
Temple University
University of Virginia School of Medicine
Autonomous University of Ciudad Juarez (Mexico)
University of Tennessee College of Medicine
West Bengal University of Health Sciences (India)
Pusan National University (South Korea)
University of Texas Medical Branch at Galveston
University of the Republic (Uruguay)
Kurnool Medical College (India)
Superior Institute of Medical Sciences of Villa Clara (Cuba)
American University of the Caribbean (Sint Maarten - Netherlands)
Medical College of Georgia
Catholic University of Santiago de Guayaquil (Ecuador)
Upstate Medical University SUNY, Syracuse
Wayne State University School of Medicine

New York Medical College
University of Pune (India)
University of Chicago School of Medicine
Cetec University School of Medicine (Dominican Republic)
Dow Medical College (Pakistan)
Pandit Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences (India)
Grant Medical College, Maharashtra (India)
University of Iowa Carver College of Medicine
University of Kansas School of Medicine
University of Palermo (Italy)
Vanderbilt University School of Medicine
University of Pittsburgh School of Medicine
Baba Farid University of Health Sciences (India)
Stony Brook University School of Medicine
Far Eastern University (Philippines)
Peruvian Universidad Cayetano Heredia (Peru)
Baroda Medical College (India)
University of North Texas Health Science Center
University of Indonesia School of Medicine (Indonesia)
University of Nebraska College of Medicine

University of Belgrade (Serbia)
Boston University School of Medicine
Maharashtra University of Health Sciences (India)
Michigan State University, College of Osteopathic Medicine
Kansas City University of Medicine and Biosciences
Icahn School of Medicine at Mount Sinai
Baylor College of Medicine
University of Mississippi School of Medicine
University of Medicine and Dentistry of New Jersey, Newark
Virginia Commonwealth University School of Medicine
University of Oklahoma College of Medicine
Thomas Jefferson University
Kakatiya Medical College (India)
Hahnemann University School of Medicine, Philadelphia
Tufts University School of Medicine
University of San Paulo (Brazil)
University of Malaya, Kuala Lumpur (Malaysia)
University of Cape Town (South Africa)
B.J. Medical College (India)
Saint Petersburg State Pediatric Medical University (Russia)

University of Nigeria College of Medicine (Nigeria)
Shanghai Second Medical University (China)
Vrije Universiteit Brussels (Belgium)
Albert Einstein College of Medicine of Yeshiva University
Dnepropetrovsk State Medical Academy (Ukraine)
Northwestern University School of Medicine
University of Mansura Faculty of Medicine (Egypt)
University of Cincinnati College of Medicine
University of Mandalay (Myanmar)
University of Maryland School of Medicine, Baltimore
Ahmadu Bello University College of Medicine (Nigeria)
University of Zaragoza (Spain)
Georgetown University School of Medicine
Jawaharlal Institute of Postgraduate Medical Education & Research (India)
Philadelphia College of Osteopathic Medicine
University of the Basque Country (Spain)
University of Valencia (Spain)
University of Kentucky College of Medicine
Indiana University School of Medicine
West Virginia University School of Medicine

University of Texas Southwestern Medical Center at Dallas
Ho Chi Minh University of Medicine and Pharmacy (Vietnam)
West China University of Medical Sciences (China)
Korea University (South Korea)
Maulana Azad Medical College (India)
Jabalpur Medical College (India)
Ewha Womans University (South Korea)
University of Texas Medical School at San Antonio
University of the West Indies (Jamaica)
New York University School of Medicine
University of Lagos College of Medicine (Nigeria)
University of Miami School of Medicine
University of Michigan Medical School
University of South Alabama College of Medicine
Loyola University Chicago Stritch School of Medicine
University of Alabama School of Medicine
Oregon Health and Science University
University of Damascus Faculty of Medicine (Syria)
University of San Carlos, Guatemala (Guatemala)
University of Medicine 1, Yangon (Myanmar)

Rutgers Robert Wood Johnson Medical School
University of Toronto (Canada)
University of Minnesota Medical School
Stanford University School of Medicine
Mashhad University of Medical Sciences (Iran)
University of Arizona College of Medicine
Nova Southeastern University College of Osteopathic Medicine
Washington University School of Medicine
Mahidol University (Thailand)
University of Medicine and Pharmacy Victor Babes (Romania)
Ohio University
Wright State University School of Medicine
Des Moines University College of Osteopathic Medicine
Cairo University Faculty of Medicine (Egypt)
Perelman School of Medicine University of Pennsylvania
State University of Haiti (Haiti)
Louisiana State University in Shreveport
Drexel University College of Medicine
RG Kar Medical College (India)
All-India Institute of Medical Sciences (India)

Universite Paris-Sud (France)
Chicago College of Osteopathic Medicine of Midwestern University
University of Missouri, Kansas City
Ain Shams University Faculty of Medicine (Egypt)
Kansas City Hahnemann Medical College
Ural State Medical Academy (Russia)
Mahatma Ghandi Memorial Medical College (India)
Stavropol Medical Institute (Russia)
Tbilisi State Medical University
Chernovitsky Medical Institute (Ukraine)
St Petersburg State Medical University (Russia)
East Tennessee State University College of Medicine
The University of Texas Health Science Center at Houston
University of Nevada, Reno
George Washington University School of Medicine
University of Liège (Belgium)
University of California, Davis
University of Baghdad (Iraq)
University of California, Irvine
University of California, San Diego

Oral Roberts University
University of Colorado, Denver
University of Sindh (Pakistan)
University of South Florida College of Medicine
University of North Carolina, Chapel Hill
University of Zurich (Switzerland)
St. Matthew's University (Cayman Islands)
Eastern Virginia Medical School
National University of Colombia (Colombia)
University of Medicine and Dentistry of New Jersey, Stratford
Universite De Montpellier I (France)
Government Medical College, Surat, Gujarat (India)
McGill University Faculty of Medicine (Canada)
Creighton University School of Medicine
Gandhi Medical College (India)
University of Washington School of Medicine
University of Panama (Panama)
Marshall University
University of Massachusetts Medical School
Kirksville College of Osteopathy and Surgery

Technologic University of Santiago (Dominican Republic)
New York University Medical College
Michigan State University College of Human Medicine
Dalhousie University (Canada)
Wake Forest School of Medicine
University of New England College of Osteopathic Medicine
St. George's University School of Medicine (Grenada)
Calicut Medical College (India)
University of Delhi (India)
University of Amsterdam (Netherlands)
Catholic University of Korea (South Korea)
University of the Philippines College of Medicine (Philippines)
Northeast Ohio Medical University College of Medicine
Case Western Reserve University School of Medicine
West Virginia School of Osteopathic Medicine
University of Puerto Rico School of Medicine (Puerto Rico)
University of Ottawa Faculty of Medicine (Canada)
Northeastern University (Mexico)
Medical College of Pennsylvania
La Salle University (Mexico)

Osmania Medical College (India)
Southwestern University, Matias H. Aznar Memorial College of Medicine (Philippines)
Brown Medical School
San Juan Bautista School of Medicine (Puerto Rico)
Pedro Henriquez Urena, School of Medicine (Dominican Republic)
Dayanand Medical College & Hospital (India)
University of North Dakota School of Medicine and Health Sciences
St. Matthews University School of Medicine, San Pedro (Cayman Islands)
University of Manitoba (Canada)
Emory University School of Medicine
The Brody School of Medicine at East Carolina University
University of Bologna Faculty of Medicine and Surgery (Italy)
Texas Tech University Health Sciences Center School
University of New Mexico School of Medicine
University of California, San Francisco
Ponce Health Sciences University (Puerto Rico)
University of Saskatchewan College of Medicine (Canada)
Andhra Medical College (India)
University of Guayaquil Faculty of Medical Sciences (Ecuador)
Mayor De San Marcos National University (Peru)

First Tashkent State Medical Institute (Uzbekistan)
Christian Medical College and Hospital, Vellore (India)
University of Aleppo (Syria)
Andizan State Medical Institute (Uzbekistan)
Mysore Medical College & Research Institute (India)
Khyber Medical College (Pakistan)
University of Kinshasa (Congo)
Medical University of Vienna (Austria)
John Hopkins University School of Medicine
National University of Rosario Faculty of Medical Sciences (Argentina)
St. John's Medical College Rajiv Gandhi University of Health Sciences (India)
Autonomous University of Coahuila (Mexico)
Joan Sanford I Weill Medical College of Cornell University
Guadalajara University, University of Health Sciences Center (Mexico)
China Medical College (Taiwan)
University of Santiago, Chile (Chile)
Debreceni Orvostudomanyi Egyetem University Medical School (Hungary)
University of Cádiz (Spain)
Madras Medical College (India)
Mahatma Gandhi Memorial Medical College, Indore (India)

University of Oslo Faculty of Medicine (Norway)
University of the Philippines Institute of Health Science (Philippines)
Karolinska Institute Medical Faculty (Sweden)
Hacettepe University Faculty of Medicine (Turkey)
Southern Illinois University School of Medicine
Schulich School Of Medicine at the University of Western Ontario (Canada)
Christian Medical College, Ludhiana (India)
Sanford School of Medicine of the University of South Dakota
Carol Davila University of Medicine and Pharmacy (Romania)
Pennsylvania State University College of Medicine
Duke University School of Medicine
University of Alexandria Faculty of Medicine (Egypt)
Crimean State Medical Institute (Ukraine)
University of Hawaii School of Medicine
S.C.B. Medical College, Cuttack (India)
University of Vermont College of Medicine
Medical University of Warsaw, Warszawa (Poland)
Nishtar Medical College (Pakistan)
University of Ibadan College of Medicine (Nigeria)
Nalanda Medical College and Hospital (India)

University of Geneva School of Medicine (Switzerland)
Mayo Medical School
National University of Cordoba Faculty of Medicine (Argentina)
Saba University School of Medicine (Netherlands)
Fatima Jinnah Medical College (Pakistan)
Guntur Medical College (India)
Medical College of Wisconsin
University of Paris Faculty of Medicine (France)
Queen's School of Medicine (Canada)
The University of Missouri School of Medicine
Rangaraya Medical College (India)
Tel Aviv University Sackler Faculty of Medicine (Israel)
Perm State Medical Academy (Russia)
The University of Bonn (Germany)
University of Mosul College of Medicine (Iraq)
Yonsei University College of Medicine (South Korea)
University of Montemorelo (Mexico)
University of Leuven School of Medicine (Belgium)
Faculty of Medicine of the University of Colombo (Sri Lanka)
Sapienza University of Rome (Italy)

University of Central Venezuela Luis Razetti School of Medicine (Venezuela)
University of Peradeniya Faculty of Medicine (Sri Lanka)
Karnataka Institute of Medical Sciences (India)
National Taiwan University of Medicine (Taiwan)
Rajendra Medical College (India)
Shahid Beheshti University of Medical Sciences (Iran)
University of Lausanne Faculty of Biology and Medicine (Switzerland)
Pikeville College School of Osteopathic Medicine
University of Zagreb Medical School (Croatia)
Ankara University Medical Faculty (Turkey)
University René Descartes Faculty of Medicine (France)
University of the Witwatersrand Faculty of Health Sciences (South Africa)
Odessa Medical Institute (Ukraine)
University Federico Henriquez y Carvajal Faculty of Medicine (Dominican Republic)
Saint Joseph`s University Faculty of Medicine (Lebanon)
Dhaka Medical College (Bangladesh)
University of Bordeaux II (France)
New York College of Osteopathic Medicine
College of Osteopathic Medicine of the Pacific
Shiraz University of Medical Sciences (Iran)

Topiwala National Medical College & BYL Nair Charitable Hospital (India)
National Defense Medical Center (Taiwan)

Note: Please email me at bryanburton@suu.edu if you would the number of excluded students from each medical school.