# Payments to Ontario Physicians from Ministry of Health and Long-Term Care Sources 1992/93 to 2009/10

## ICES Investigative Report

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ICES Institute for Clinical Evaluative Sciences

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This report analyzes public sector payments to physicians in Ontario between 1992 and 2009. The original plan to conduct this work was developed within ICES and resulted from discussions between the authors regarding the necessity of creating a publicly available source of accurate information on payments to doctors in Ontario. The project was proposed to the Ministry of Health and Long-Term Care, and resources were made available through the core agreement (2010–2013) between ICES and the MOHLTC.

The work was overseen by a working group chaired by Susan Fitzpatrick, Assistant Deputy Minister, Negotiations and Accountability Management Division at the MOHLTC. We are very grateful for the support provided by Ms. Fitzpatrick. We are also indebted to many staff at the MOHLTC who assisted us in identifying data gaps, facilitated access to data and tirelessly responded to questions regarding the characteristics of the data. We are also grateful to staff at the Ontario Medical Association and the Ontario Hospital Association and to others who provided extremely useful advice and insights.

## ABOUT OUR ORGANIZATION

The Institute for Clinical Evaluative Sciences (ICES) is an independent, non-profit organization that produces knowledge to enhance the effectiveness of health care for Ontarians. Internationally recognized for its innovative use of population-based health information, ICES evidence supports health policy development and guides changes to the organization and delivery of health care services.

Key to our work is our ability to link population based health information, at the patient level, in a way that ensures the privacy and confidentiality of personal health information. Linked databases reflecting 13 million of 33 million Canadians allow us to follow patient populations through diagnosis and treatment and to evaluate outcomes.

ICES brings together the best and the brightest talent across Ontario. Many of our scientists are not only internationally recognized leaders in their fields but are also practicing clinicians who understand the grassroots of health care delivery, making the knowledge produced at ICES clinically focused and useful in changing practice. Other team members have statistical training, epidemiological backgrounds, project management or communications expertise. The variety of skill sets and educational backgrounds ensures a multi-disciplinary approach to issues and creates a real-world mosaic of perspectives that is vital to shaping Ontario's future health care system.

ICES receives core funding from the Ontario Ministry of Health and Long-Term Care. In addition, our faculty and staff compete for peer-reviewed grants from federal funding agencies, such as the Canadian Institutes of Health Research, and receive project-specific funds from provincial and national organizations. These combined sources enable ICES to have a large number of projects underway, covering a broad range of topics. The knowledge that arises from these efforts is always produced independent of our funding bodies, which is critical to our success as Ontario's objective, credible source of evidence guiding health care.

*"ICES brings together the best and the brightest talent across Ontario. Many of our scientists are not only internationally recognized leaders in their fields but are also practicing clinicians who understand the grassroots of health care delivery."*

# Executive Summary

## BACKGROUND

In Canada, payments to physicians consume approximately 20% of provincial health care budgets. In the last decade, this expenditure increased at a rate exceeding inflation. Expenditure was relatively flat during the 1990s when Canadian governments capped payments and controlled physician supply. In 1998, these policies were discontinued in favour of a more sophisticated approach that centred on negotiating alternate funding arrangements with groups of physicians.

In Ontario, these policies were designed to encourage graduates to enter and stay in under-supplied specialties (e.g., family practice and general internal medicine), and to reduce wait times for key surgical procedures, certain diagnostic tests and emergency care.

Here, we report on trends in public sector payments to Ontario physicians between 1992/93 and 2009/10, the variation between specialty groups and the resulting financial impacts on the province. We also report on the impacts of changes in the different models of payment (fee for service, capitation and alternate payment plans).

The data provide an assessment of the magnitude of, and trends in, payments during the different policy environments. However, the analyses were not designed to measure impacts beyond the financial outcomes. In other words, we did not try to determine if the increased investments led to better outcomes for patients.

The work was initiated by ICES scientists, most of whom are physicians. The motivation behind the work was a belief that the public should have access to a source of accurate information on payments to doctors in Ontario. The project was proposed to the Ministry of Health and Long-Term Care, and resources were made available through the core agreement between ICES and the MOHLTC. ICES conducted the work under its mandate, which is to carry out independent research that stimulates improvements in health system performance and promotes better health for Ontarians.

## REPORT OBJECTIVES

**1 /** To estimate public payments to individual physicians from multiple sources between 1992/93 and 2009/10 and report these by specialty, specialty group and overall, using several different measures:

- the average payment per physician,
- the median (and selected percentiles) of the distribution of payments, which illustrates the range of payment levels; and
- the total of all payments to physicians in a given group.

**2 /** To analyze and report on changes over time in overall physician supply and in the main specialty groups between 1992/93 and 2009/10 as supply is an important component of expenditure.

**3 /** To analyze how payments and supply varied between the main specialty groups, and how each contributed to the rise in overall physician payments.

**4 /** To analyze how changes in the different types of payments (fee for service and other models) contributed to the observed increases in total payments and payments to physicians.

## METHODS

Because payments to physicians in Ontario come from multiple sources, we combined data from different databases at the level of individual physicians. This was done with linked de-identified data. Analysts did not have access to the names or addresses of individual doctors at any stage.

We obtained payment data from the following sources:

- Ontario Health Insurance Plan Fee-for-Service billings (1992/03–2009/10)
- Ontario Health Insurance Plan Architected Payments (2003/04–2009/10)
- Academic Health Sciences Centre governance payment database (2003/04–2009/10)
- GAPP (Generalized Alternate Payment Plan) database (2005/06–2009/10)
- Primary Care Network capitation payments (1999/00–2003/04)
- Miscellaneous payments (2005/06–2009/10)

The payments presented here exclude direct payments from hospital budgets, payments by the Workplace Safety and Insurance Board, hospital on-call funds administered by the Ontario Medical Association (OMA) and private payments for uninsured services. We have not corrected the totals for practice overhead costs, which are commonly quoted as being around 30% of gross payments and can vary among specialties.

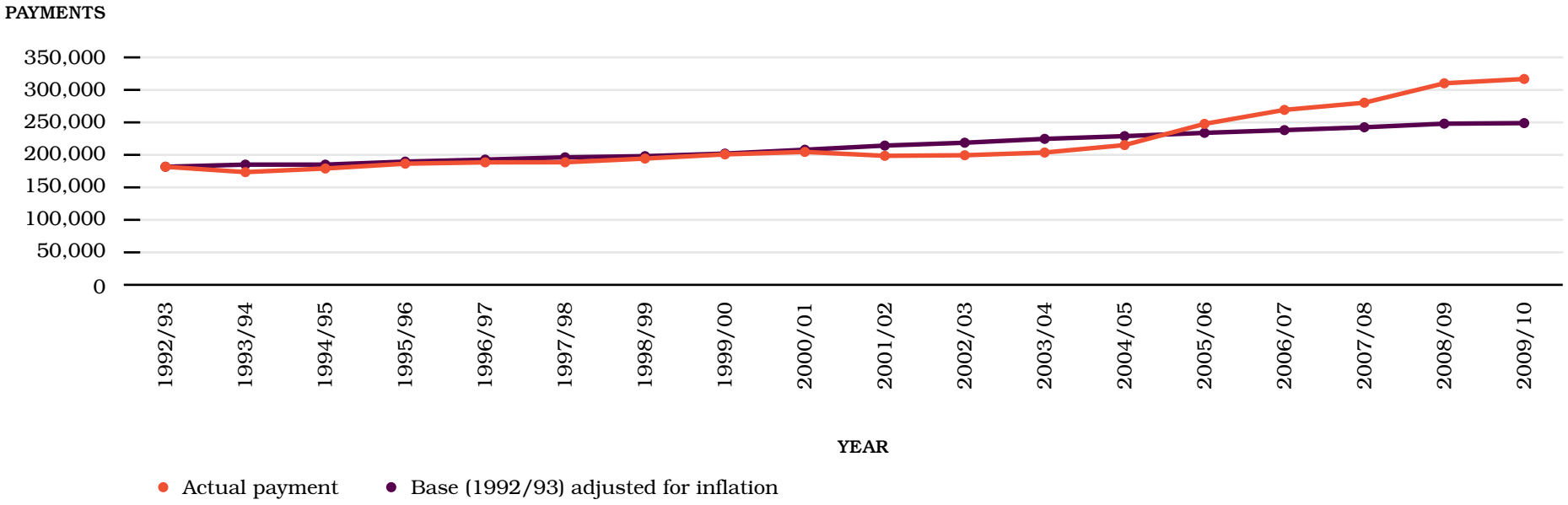
## RESULTS

### Overall Payments to Physicians

We identified payments of approximately $8 billion to doctors in Ontario in 2009/10. This is more than twice the amount, or approximately $4.3 billion more, than they were paid in 1992/93 (all in unadjusted dollars). On a per-specialty basis, by far the largest increase in total payments was to general practitioners/family physicians (GP/FPs)—an increase of more than $1.5 billion between 1992/93 and 2009/10. The next in rank order was the increase in payments to anesthesiologists ($298 million) followed by radiologists ($294 million), emergency physicians ($256 million), cardiologists ($223 million) and pediatricians ($193 million). Four of these are in the top five specialties ranked by increases in numbers of active physicians.

On a per-physician basis, the mean payments to physicians in Ontario, having remained fairly flat between 1992/93 and 2003/04, rose by around $100,000 between 2004/05 and 2009/10 (all unadjusted dollars). As figure 1 below makes clear, the average payment remained at or below the rate of inflation (using 1992/93 as the base year) until 2004/05, after which it rose at a rate well above the rate of inflation. This increase followed the implementation of the 2004/05 agreement between the OMA and the MOHLTC that included the strengthening of a number of new policies, in particular alternate payment plans for GP/FP and a number of other specialties, and additional payments to support the wait times strategy. It is important to note that these are gross payments and do not take account of practice costs, which vary among specialties and are believed to average around 30% of gross payments.

**FIGURE 1 Mean annual payments per head to all Ontario physicians and inflation-adjusted base (1992/93) payment, 1992/93 to 2009/10**



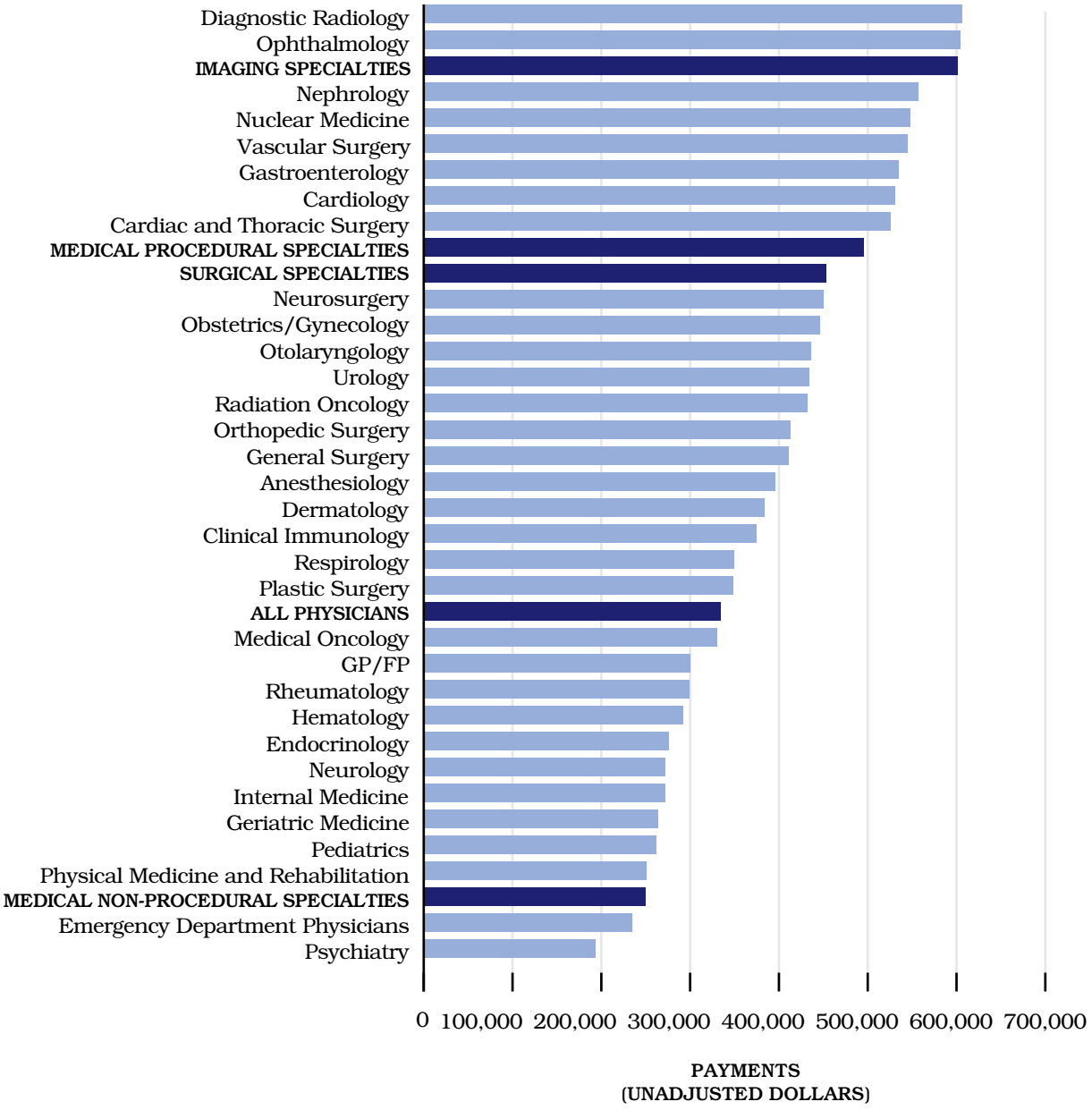
## Payments to Individual Specialties

The average payments per physician in the main specialty groups in 2009/10 are summarized in figure 2.

The highest payments to individual physicians went to those in surgical, diagnostic and medical procedural specialties and the lowest payments went to those in non-procedural medical specialties. The estimate for psychiatrists is unreliable as it does not include mental health sessional fees.

Approximately 63% of the $4.3 billion increase in total payments was related to an increase in average payments per physician. The other 37% was a result of the increase in physician supply. Additional analyses at the physician level showed that between 2004/05 and 2009/10 the substantial increases in OHIP payments to radiologists, nephrologists and ophthalmologists were due almost exclusively to an increase in the average number of services provided by each specialist.

**FIGURE 2 Average payment per physician from all sources by specialty and specialty group, in Ontario, 2009/10**



## Trends in Payments to Specific Groups of Physicians

We observed the following trends among specialty groups:

- ***General Practitioners/Family Physicians***
  The median payment per active GP/FP was relatively flat from 1992/93 to 2004/05 and rose steadily between 2005/06 and 2009/10. Fee-for-service payments remained relatively flat over the whole time period, with a slight increase from 2005/06 to 2007/08 and a small decrease thereafter. Payments specific to primary care models, the majority of which were capitation-based, rose rapidly after 2004/05 and accounted for a large proportion of the observed increase.
- ***Medical Procedural Specialists***
  Within this group, notable increases in total and individual payments were seen for cardiology, gastroenterology and nephrology, and most of the payments to these specialists continue to be in the form of fee for service.
- ***Medical Non-Procedural Specialties***
  Payments to these groups remained generally at the low end of the distribution for all physicians. Alternate payment plans appear to have been an important factor in determining retention and payments in several of these specialties.
- ***Imaging Specialists***
  Payments to diagnostic radiologists and nuclear medicine specialists have risen substantially in recent years and both remain in the upper range of payments to physicians. The great majority of payments are by fee for service.
- ***Surgical Specialties***
  Some of the traditional surgical specialties have seen only small rates of growth in supply. This may reflect the impact of non-invasive medical procedures, which in some cases are replacing open surgery. Payments to these groups have remained in the upper range for all physicians. The number of ophthalmologists increased only slightly during the observation period. However, this specialty received the largest increase in mean payments, approximately $300,000, between 1992/93 and 2009/10.

## Physician Supply

The overall number of physicians for whom we had payment information increased by 4,811 (24%) between 1992/93 and 2009/10. This is slightly higher than overall population growth (about 20%) during the same period. Growth was not constant over time, and there was a slight contraction in the number of doctors between 1993/94 and 1999/00. Growth was greatest (2.3% per year) between 2005/06 and 2009/10. Growth in physician supply was variable across specialty groups. Proportionally, the greatest increases have been seen in emergency medicine, medical procedural specialties, anesthesia and diagnostic imaging. The smallest overall proportional increase (4.5% between 1992/93 and 2009/10) was among GP/FPs. However, this overall figure disguises a decline of almost 8% between 1993/94 and 1999/00, which then reversed.

## CONCLUSIONS

Physician payments account for about 20% of total health care costs in Ontario. Although overall physician supply rose in line with population growth, this varied considerably among specialties. The rise in payments since the turn of this century has been substantially greater than the overall increase in physician numbers and has been growing significantly above the average rate of inflation since 2004/05. Directed increases in physician payments, achieved through negotiated agreements with the Ontario Medical Association in 2004 and 2008, were aimed primarily at reducing wait times and improving access to physician services, particularly primary care. This policy intervention represents the largest financial investment in physicians made by the provincial government. The most important positive outcome arising from it has been the reversal of the decline in GP/FPs seen in the 1990s. Much of the impact of this policy appears to have been related to the change in financial models, with a shift from fee-for-service to capitation-based payments. Efforts to reduce wait times in a fee-for-service environment have disproportionately benefited key surgical, medical procedural, and diagnostic specialties. These groups have also gained financially from demographic changes, technological advances and increased health system capacity (i.e., increased hospital funding) that have enabled larger numbers of services to be provided by certain specialists in recent years.

The government of Ontario spent $8 billion on physician services in 2009, $4.3 billion more than in 1992. This investment has provided a larger number of active physicians and an increase in services, particularly in areas targeted by certain policies. Alternative payment plans have supported certain government priorities and policy directions, particularly in primary care and the non-procedural medical specialties. This report cannot answer whether this increased investment has led to improved patient outcomes or to improved functioning of the health care system. To our knowledge, no such impact analysis has been undertaken. We believe this subsequent work is critical to ensuring that taxpayer dollars invested in the health care system provide maximal benefits for the patients of Ontario.

# List of Exhibits

CHAPTER 1

# Introduction

There are a number of reasons why reporting on payments to physicians is important. For one, they represent 20% of public expenditure on health care in Canada. In a recent study,[1] the Canadian Institute for Health Information (CIHI) found that spending on physicians' services has been among the fastest growing health care expenditure categories in recent years, increasing at an annual rate of 6.8% per year from 1998/99 to 2008/09. CIHI investigators found that payments to doctors grew at a faster rate than the average weekly wages of other health and social services workers, and exceeded the Industrial Composite Wage Index.

Prior to 1998/99, as noted in the CIHI report, physician compensation grew more slowly than the prices of other public goods and services. During this time, several Canadian provinces capped payments to physicians.[2] This was at a time when physicians in Canada were paid through fee for service (FFS), and the capping policy was credited with containing payments. But it may have been at a cost by precipitating a loss of doctors who could find better-paid work in the United States.[3] Since the billing caps were lifted in 1998, payments for physician services have risen, and governments have started to move away from FFS payments to alternate payment plans and, in the case of general practitioners/family physicians (GP/FPs), various models of capitation.

Payments to physicians matter for reasons other than total costs. Relative payments between the different specialty groups is important. It has long been believed that the fee-for-service model favour specialty groups that perform procedures, rather than practitioners who provide consulting services, such as GP/FPs, psychiatrists and general internal medicine specialists. Recognizing this, governments have created incentives for medical graduates to enter these and other specialty groups. In Ontario, these incentives include capitation models for GP/FPs, alternate payment plans for general internists working in hospitals, and incentives directed at emergency physicians, particularly those working in under-served areas. These programs have been most active during a period that has included a significant financial recession commencing in 2008/09. This has meant that inflation-driven increases in physician payments have coincided with a fall in government revenues, increasing the pressure on the public purse.[1]

It is appropriate and timely to review past and current trends in payments to physicians in Ontario and the distribution of these payments among the different specialty groups. However, the exercise is not entirely straightforward. It might seem a simple matter to total the payments made to each physician in the province during the relevant years. Indeed, if all payments were in the form of fees paid under the Ontario Health Insurance Plan (OHIP), it would be relatively easy. But as noted by the Auditor General of Ontario in his 2011 annual report,[4] a large number of physicians in the province participate in alternate payment plans. Participation in these plans is variable, even within defined groups; therefore, calculating total payments requires the collation of multiple streams of funding at the level of the individual practitioner. We thought it appropriate that this work should be done at ICES for although it does not involve personal health information, the data are sensitive, and ICES has a long history of protecting the privacy of personal information of all types and has rigorous data security procedures in place. No individual data are provided in this report, and all analyses were performed on de-identified data; this is consistent with all previous work done at ICES on the same and related topics.

*"It is appropriate and timely to review past and current trends in payments to physicians in Ontario and the distribution of these payments among the different specialty groups."*

## BACKGROUND

Two recent international reports that have analyzed payments to physicians help to put Canadian data in context. Laugesen and Glied compared health spending in six countries in 2008 and analyzed the impact of physician payments.[5] In Canada, total health care spending was higher than in Australia and the United Kingdom but lower than in the United States. Laugesen and Glied questioned what was driving the very high costs of health care in the United States. Their main conclusion was simple: it was due to the high prices paid for a wide range of services. To quote the authors: "We conclude that the higher fees, rather than factors such as higher practice costs, volume of services, or tuition expenses, were the main drivers of higher US spending, particularly in orthopedics." The authors underscore the importance of studying physician payments as a general driver of health system costs.

Another recent international comparison of fees paid to doctors in different countries was conducted by the International Federation of Health Plans in 2010.[6] This study summarized data collected from 100 health insurance plans in 30 countries. Across a series of procedures (routine office visits, normal deliveries of newborns, cesarean sections, appendectomies, cataract surgeries and hip replacements) that enumerated physician fees, Canada ranked in the middle or the bottom half of a group of countries that included Argentina, Australia, Chile, France, Germany, New Zealand, Spain, Switzerland, the United Kingdom and the United States.

A more detailed analysis of the situation in Canada was conducted by CIHI.[1] This investigation found that Canada has an overall physician supply of 2.2 per 1,000 population—lower than many other OECD countries—but the rate of growth in physician supply increased between 2003 and 2008 compared with previous years. Prior to 1998, rates of increase in physician compensation followed rates of increase in the Government Current Expenditure Implicit Price Index (GCEIPI). Since 1998, rates of increase in physician compensation have exceeded rates of increase in the GCEIPI. Fee increases have been the major cost driver for physician expenditure during the last 10 years. Physician compensation increases have accounted for approximately one-half of annual growth in expenditure since 1998.

The CIHI report concluded that "after years of moderation, FFS prices have risen quite sharply since a nadir in 1997 and in the last decade have exceeded the GCEIPI, and since 1998 physician compensation has exceeded the rates of increase in the industrial composite wage index. This is compounded by an increase in rates of utilization in the last decade. As a result, increases in the prices of physician services have been the major cost driver of physician expenditures over the last 10 years."[1]

Several of these themes were also picked up in the Auditor General's 2011 annual report and provide important background to this report. The Auditor General observed that more than 60% of the province's almost 12,000 GP/FPs were participating in the new primary care models, and more than nine million Ontarians had enrolled with these physicians.[4] Based on data from 2007/08 (the latest available at the time of the audit), family physicians who were paid through Family Health Group (FHG) and Family Health Organization (FHO) models earned, on average, over 25% more than those being paid through the traditional FFS model. The Auditor General also noted that there were 10 major types of alternate funding arrangements for specialists, with approximately half of the almost 13,000 specialists in Ontario being paid, at least in part, through one of them.

All of this serves to illustrate the importance of understanding not only how much physicians are being paid, but how this has changed over time and which policies and programs are driving these changes.

## POLICIES AND PROGRAMS AFFECTING PHYSICIAN PAYMENT

Between 1992/93 and 2009/10, the Ontario government initiated or participated in a number of actions that affected payments to doctors in particular groups. The following interventions should be considered when viewing the exhibits presented in subsequent chapters:

**1 / *Imposition of expenditure caps.***[2] As Archibald and Flood reported, Ontario imposed "a global ceiling on expenditures for medical services during the three fiscal years beginning with 1993/94. An overall ceiling on expenditures was set in each year payments in excess of the ceiling were 'clawed back' by reducing each physician's billings by an equal across-the-board percentage."[7] Use of payment caps ceased in 1998.

**2 / *Introduction of physician supply controls.***[2,3] In Ontario, temporary restrictions on new billing numbers for out-of-province graduates were put in place between 1993 and 1996. From 1997 to 1999, financial penalties were instituted for recent graduates who wanted to establish a practice in selected urban areas designated as 'over-serviced.'

**3 / *Funding enhancements to improve wait times.***[8] This covers a range of strategies used to reduce wait times for cancer surgery, cardiac procedures, cataract surgery, hip and knee replacement, and magnetic resonance imaging (MRI) and computed tomography (CT) scans. Hospitals were provided with funding in addition to their base funding to help clear wait lists for procedures and MRI/CT. The extra funds provided additional operating room capacity for orthopedic surgeons, cardiologists and others to do more procedures and shorten wait lists. It also gave them an opportunity to increase their incomes. This money came with conditions: Participating centres had to use the Wait Time Information System to show improvements in wait times. The same was done for MRI/CT.

**4 / *Development of alternatives to the fee-for-service model.*** Since 1996, the MOHLTC has been steadily introducing programs designed to move physicians in certain specialties away from a purely FFS payment model. This process began in 1996 with emergency departments in remote and northern communities, followed in 1999 with alternate funding arrangements (AFAs) being offered to nearly all EDs in the province. This has since expanded to other specialties, so that today nearly half of all specialists receive funding from some type of alternate funding source, either an AFA, an alternate payment plan (APP) or a mixture of both.[9]

The introduction of new alternate funding models for GP/FPs began in 1999 with the first Primary Care Networks (PCNs), which were capitation-based. By 2009/10, approximately two-thirds of GP/FPs belonged to one of the primary care patient enrolment models. It has been estimated that in 2009/10 there were 302 separate contracts between the MOHLTC and the Ontario Medical Association on behalf of various physician groups.[10] This multiplicity of payment methods has implications both for physician payment itself and for tracking such payments. This latter issue will be addressed in more detail in Chapter 2.

## REPORT OBJECTIVES

**1 /** To estimate public payments to individual physicians from multiple sources between 1992/3 and 2009/10 and report these by specialty, specialty group and overall using several different measures:

- the average payment per physician;
- the median (and selected percentiles) of the distribution of payments, which illustrates the range of payment levels; and
- the total of all payments to physicians in a given group.

**2 /** To analyze and report on changes in overall physician supply and in the main specialty groups between 1992/93 and 2009/10, as supply is an important component of expenditure.

**3 /** To analyze how payments and supply varied between the main specialty groups, and how each contributed to the rise in overall physician payments.

**4 /** To analyze how changes in the different types of payments (fee for service and other models) contributed to the observed increases in total payments and payments to physicians.

## REPORT STRUCTURE

This report examines payments to physicians from MOHLTC sources from 1992/93 to 2009/10. Payments are reported overall for Ontario and by individual specialties. Three exhibits are presented for all physicians combined and for each specialty.

- The first exhibit in each series shows the median and selected percentiles of the distribution of payments from 1992/93 to 2009/10.
- The second exhibit shows the mean (average) payment for an individual physician and for a full-time equivalent (FTE) physician.
- The third exhibit shows the total of all payments to physicians in the specialty for each year, broken down by payment source.

Chapter 1 provides an introduction and Chapter 2 explains the methods used. Chapters 3 to 10 present results for the 32 specialties, grouped as follows:

**Chapter 3/**
***All Ontario Physicians***

**Chapter 4 /**
***General Practitioners/Family Physicians***

**Chapter 5 /**
***Medical Non-Procedural Specialists***

- General internal medicine
- Clinical immunology
- Dermatology
- Endocrinology
- Geriatrics
- Hematology
- Medical oncology
- Neurology
- Pediatrics
- Physical medicine and rehabilitation
- Psychiatry
- Rheumatology

**Chapter 6 /**
***Medical Procedural Specialists***

- Cardiology
- Gastroenterology
- Nephrology
- Radiation oncology
- Respirology

**Chapter 7 /**
***Surgical Specialists***

- Cardiac and thoracic surgery
- General surgery (including pediatric general surgery)
- Neurosurgery
- Obstetrics/gynecology
- Ophthalmology
- Orthopedic surgery
- Otolaryngology
- Plastic surgery
- Urology
- Vascular surgery

**Chapter 8 /**
***Imaging Specialists***

- Diagnostic radiology
- Nuclear medicine

**Chapter 9 /**
***Anesthesiologists***

**Chapter 10 /**
***Emergency Department Physicians***

**Chapter 11 /**
***Summary***

- provides a summary of the results, including exhibits that facilitate comparisons between specialties and specialty groups.

**Chapter 12 /**
***Discussion and Conclusion***

- contains the discussion of the overall results and our conclusions.

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CHAPTER 2

# Methods

## INTRODUCTION

We believe that this is the first independent attempt to make a comprehensive estimate of how much Ontario physicians are being paid from all Ministry of Health and Long-term Care (MOHLTC) sources. The biggest challenge we faced was bringing together the data from disparate sources, a number of which were new to ICES and/or had not been used previously for research purposes. The most important of these were data sources containing information about payments from the various alternate funding programs.

In the past, studies have attempted to compensate for missing alternate payment information by using shadow billings. Shadow billings are records submitted by physicians for patient services that are funded through sources other than fee for service (FFS). These records are identical to FFS billings including having a FFS fee code, but the payment amount is zero. In the past, it was thought that 'adjusting' the shadow billings, that is, applying the current price for each shadow-billed fee code, would provide a good approximation of the physician's total remuneration, including alternate payments. In recent years, as the range of non-FFS payments, such as capitation, premiums and bonuses, grew more diverse, confidence in this methodology declined. To be confident that we were representing physician payments accurately, it was necessary to obtain and use the actual data. This chapter outlines the data sources used in this study and how they were applied to estimate payments at the individual physician level.

## DATA SOURCES

The following data sources were used in this study:

- ***Ontario Health Insurance Plan (OHIP) Fee-for-Service billings (from 1992/93 to 2009/10)***
  This is a database of all OHIP FFS and shadow billings. Physicians bill for the services they provide using fee service codes defined in the Schedule of Benefits.[1] In summing the payments from this source, duplicate records and invalid claims were removed, where possible. Then the payment field was summed for each physician for each fiscal year. Shadow billings were not removed but did not contribute to the total because their payment amount was zero dollars.

- ***OHIP Architected Payments (from 2003/04 to 2009/10)***
  This is a database of summary payments made on a monthly basis that do not pertain to an individual service provided to an individual patient. Rather, this database comprises such payments as premiums, bonuses and fees that can be summed across a physician's entire practice and paid at the end of the month. For example, physicians are eligible for age premiums for providing care to patients who are very young or very old, as these patients often require more of the physician's time during a visit or consultation. To illustrate with a hypothetical example: If the premium for seeing a patient in the 75- to 79-year age group was $30 and physician A saw 10 such patients during the month, then the database would record a $300 payment for the age premium. Since there is often a lag between when the service is rendered and when the payment is made, the database record includes both the payment month and the fiscal year when the eligible service occurred. To be consistent with the FFS payments, payments were included in the year in which the service was performed, not the year in which they were paid.

- ***Academic Health Sciences Centre (AHSC) governance payment database (from 2003/04 to 2009/10)***
  The AHSC program is a funding arrangement designed to compensate physicians in teaching hospitals for the time they spend training residents and doing research; this is non-clinical work for which they cannot bill OHIP. Although there may be as many as 500 physicians from a variety of specialties covered by an AHSC contract in a large teaching hospital, all payments flow through the AHSC governance group. This means that in the AHSC payment data, there are only a couple of large aggregated payments per month to each AHSC. The AHSC governance data were used to identify which physicians were affiliated with each AHSC in each year of observation. Payments not targeted for a specific specialty were divided up equally among all affiliated physicians. Specialty-specific payments were divided equally among all affiliated physicians in the designated specialty.

- ***Generalized Alternate Payment Plan (GAAP) database (from 2005/06 to 2009/10)***
  The GAPP is a database of all non-OHIP-related payments (including those to AHSCs). It includes information on the payment amount, the payment month, the payment type and the original payment data source. Many payments also include the model name, which identifies the type of APP or agreement (e.g., Emergency, Northern Specialists, Family Health Organization). With respect to identifiers, a payment record can have one or more of the following: physician billing number (encrypted), group billing number (encrypted) or contract number. For payments that only had contract numbers, the MOHLTC provided 'crosswalks' that identified groups and physicians and thereby facilitated the assignment of payments. A small proportion of payments were not be assigned because they could not be linked to any physicians.
- ***Primary Care Network (PCN) capitation payments (from 1999/00 to 2003/04)***
  The first capitation-based PCNs were introduced in 1999/00. We were able to obtain a database that captured payments to this early primary care model. Depending on the group, some payments listed the physician billing number (encrypted) as well as the group; others listed only the group billing number (encrypted). In the latter case, we were able to use the OHIP Corporate Provider Database (CPDB) to identify physicians affiliated with the group and divide the payment equally among them.
- ***Miscellaneous payments (from 2005/06 to 2009/10)***
  There are several databases that report manual payments (and sometimes charges) to physicians. These payments may be administrative in nature (e.g., processing charges). Often, it is difficult to determine the reason for the payment; these payments/charges are included in the physicians' totals, and their source is listed as 'Other.'

## Missing Data

Within the data sources described above, there are several gaps that need to be acknowledged. The most important of these is APP/AFA data prior to 2005/06. The initial AFAs for emergency departments, for example, began in 1999/00 or 2000/01, but we were only able to obtain payment information beginning in 2005/06. The same is true for other APPs. For this reason, results for some or all of the years between 2000/01 and 2004/05 for certain specialties have been suppressed. In the case of other specialties, the results for these years need to be treated with caution. We have identified these examples in the exhibit footnotes.

Another type of missing data concerns physicians on alternate payment plans prior to 1999. We do not have any payment information from Community Health Centres, Health Service Organizations or early academic comprehensive agreements, such as the one with the Hospital for Sick Children. If the physicians in these plans also had FFS billings, their payments will have been underestimated. If they had no FFS billings, they will have been excluded completely prior to 2005/06.

# INCLUSION/EXCLUSION CRITERIA

## Payments

The totals reported in this report exclude payments to Academic Health Sciences Centres for administrative costs, and payments to Family Health Teams (FHTs) to cover such things as computer hardware and software, legal fees and human resources. They do not include payments to FHTs for other providers, such as nurse practitioners, nurses or dieticians.

Diagnostic tests and other procedures often have two fees: a professional fee and a technical fee. Professional fees are paid to the physician who performs and interprets the test, and technical fees are paid to the facility (e.g., the hospital) to offset the costs associated with providing the services (e.g., technicians' salaries, overhead expenditures, capital outlays and amortization). It was our intention to include only professional fees paid to physicians in this analysis. However, prior to 2000/01 not all technical fees could be identified as some procedures had three fees: technical, professional and a combined fee that included both. We did not attempt to remove the technical portion from the combined fee, so payments for certain specialties, particularly diagnostic imaging, are somewhat inflated prior to 2000/01 when the combined fee was discontinued.

A cautionary note is included on the exhibits where the results may include some technical fees.

## Physician Specialties

Certain physician specialties have been excluded from this report. They include laboratory medicine specialties (anatomical pathology, general pathology, hematological pathology, neuropathology medical microbiology and medical biochemistry) because their payment data in the sources we used were unreliable. Many laboratory physicians work in hospitals and are paid out of the hospital global budget. There were also about 50 physicians who were listed in our data under other specialties, but whose billings were almost entirely for laboratory tests. These physicians were also excluded. Finally, where the number of physicians in a specialty was very small (fewer than 50 physicians in 2009/10), the specialty was either combined with a larger specialty or was excluded. The following specialties were combined: pediatric cardiology with cardiology, thoracic surgery with cardiac and thoracic surgery, pediatric general surgery with general surgery, community medicine with GP/FPs. The following specialties were excluded because they were both very small and there were questions about the completeness of their data: medical genetics, infectious diseases, occupational medicine.

## Physicians

Physicians were included in the analysis for a given year if they met one of the following criteria: they were 'active' according to information from the Ontario Physician Human Resources Data Centre (OPHRDC) and had total payments that were more than $0, or their status was 'inactive' according to OPHRDC but they had OHIP billings during the year.

## ASSIGNING PAYMENTS TO INDIVIDUAL PHYSICIANS

Payments were allocated to individual physicians in the following manner:

**1 /** If there was a physician billing number (encrypted) associated with the payment (as in OHIP FFS billings), the payment was allocated to that physician.

**2 /** For payments where only a group billing number (encrypted) was available, physicians affiliated with that group at the time of payment were identified using the OHIP Corporate Provider Database (CPDB). The payment was then divided equally among affiliated physicians.

**3 /** For payments where only a contract number was available, a lookup table was used to identify the group billing numbers associated with the contract. Then the CPDB was used to identify physicians affiliated with the groups. Each physician was included only once per contract. The contract payments were divided equally between all physicians associated with that contract.

**4 /** Payments without identifiers or with contract numbers that had no groups associated with them could not be allocated.

## DEFINING PHYSICIAN SPECIALTIES

Physicians were classified according to their derived specialty in the Ontario Physician Workforce Database (OPWD). OPWD is a collaborative database created under a data sharing agreement between the OPHRDC, ICES and the MOHLTC. The derived specialty is based on a combination of physician certification and self-report. There were two exceptions to this: physicians who provided more than 50% of their FFS-billed services in the emergency department were classified as emergency physicians; and physicians who had more than 50% of their FFS billings for lab tests (with fee service codes beginning with 'L') were classified as laboratory medicine physicians and were excluded from this analysis.

## ANALYTICAL METHODS

As a descriptive observational study, most of the analytical methods used are quite straightforward. The most complex part of the study involved ensuring that payments were correctly assigned to each physician and correctly identified as to the source of the payment. Once this was done, payments from all data sources were combined to achieve a total for each physician and year. The median and mean were calculated using PROC MEANS in SAS version 9.2 (SAS Institute, Cary, NC).

Means were calculated on both a per-head and per-full-time-equivalent (FTE) basis. FTE is a measure of workload and was calculated using the method originally developed by Health Canada to estimate FTE using FFS billings. For this report, FTE was calculated using total payments from all sources. The assumption is that physicians who work harder get paid more. In the standard formula, all physicians are ranked in order by the total sum of their payments. Those who fall between the 40th and 60th percentiles are assigned an FTE of 1.00.

When reporting total payments by specialty or overall, figures have been rounded to the nearest 100 and reported in thousands of dollars. However, means, medians, percentages and FTEs were all calculated on unrounded numbers. All payments are reported in actual dollars unadjusted for inflation. All the data reported are for gross payments to physicians and have not been adjusted for overhead costs.

## TIME FRAME

The report examines physician payments for fiscal years 1992/93 to 2009/10, the earliest and most recent years for which data are available. In chapters 3 to 10, which present results for individual specialties, the median, mean and total payments are shown for the entire study period.

The Summary chapter (Chapter 11) contains exhibits that allow the reader to easily make comparisons between specialties and groups of specialties. These summary exhibits contain data from one or all of the following years: 1993/94, 1999/00, 2005/06 and 2009/10. These years were chosen for the following reasons:

- The 1990s represent a period when physicians were paid almost exclusively on a fee-for-service basis, so a comparison of 1993/94 and 1999/00 is illustrative of what was happening in respect of FFS.
- Comparing 1999/00 and 2005/06 shows the impact of the first wave of alternate funding plans.
- Differences between 2005/06 and 2009/10 show the impact of Ontario Medical Association agreements in 2004 and 2008, which mainly affected primary care funding.

## REFERENCE

1 Ontario Ministry of Health and Long-Term Care. Ontario Health Insurance (OHIP) Schedule of Benefits and Fees. Accessed January 13, 2012 at http://www.health.gov.on.ca/english/providers/program/ohip/sob/sob_mn.html.

CHAPTER 3

# Results for All Ontario Physicians

## INTRODUCTION

In Ontario, the 1990s witnessed the capping of fee payments and the control of physician supply. These measures were implemented for one main purpose: cost containment. The Ontario government imposed a global ceiling on expenditures for medical services during the three fiscal years beginning in 1993/94. Payments in excess of the ceiling were 'clawed back' by reducing each physician's billings by an equal across-the-board percentage. Use of payment caps ceased in 1998. Temporary restrictions on new billing numbers for out-of-province graduates were put in place between 1993 and 1996. From 1997 to 1999, financial penalties were instituted for recent graduates who wanted to establish a practice in selected urban areas designated as 'over-serviced.'[1]

Since then, agreements between the Ontario Medical Association and the MOHLTC have governed the development of more sophisticated payment schemes for physicians. As a consequence, specialists in Ontario may now be compensated through a fee-for-service system or through a range of alternate funding arrangements. Alternate funding arrangements are contractual agreement between the MOHLTC and groups of physicians and may include other organizations, such as hospitals and universities. The process of deliberately moving GP/FPs away from a purely fee-for-service model began in earnest in 1999/00. A major expansion of primary care models began in 2001/02; details of the various models are given in the Introduction to this report.

As described in the exhibits accompanying this chapter, capping policies kept payments to physicians flat during the 1990s. The switch in policies and the introduction of strategies to reduce wait times for specific procedures and diagnostic tests led to increasing payments; these are reported in more detail in the chapters covering specific specialty groups.

As noted in Chapter 2, the following specialties have been excluded from this report: all laboratory medicine physicians (including anatomical pathologists, general pathologists, neuropathologists, hematological pathologists, medical microbiologists and medical biochemists); medical geneticists; occupational medicine specialists; public health physicians; and infectious disease specialists. These specialties were excluded because their numbers are very small (fewer than 50 physicians in 2009/10) and their payment information is not reliable. Many are paid out of hospital global budgets or by other agencies, such as the Workplace Safety and Insurance Board, whose information we could not access.

# FINDINGS

## Median, Mean and Total Payments (exhibits 3.1 to 3.3)

The number of active physicians in Ontario increased from 20,208 in 1992/93 to 25,019 in 2009/10 (24%). This is broadly in line with overall population growth (around 20%) during the same period. Growth was not constant, however; there was a slight contraction in the number of doctors between 1993/94 and 1999/00. Most of the expansion in physician numbers occurred in the past decade, with a 22% increase since 2000/01.

We identified payments of approximately $8 billion to Ontario's doctors in 2009/10, $4.3 billion more than they were paid in 1992/93. These estimates are in unadjusted dollars. This increase was not evenly distributed over time. Between 1992/93 and 1999/00, payments increased by 14.6%, or a yearly average of 2.4%. During this period, the average annual rate of inflation in Canada was 1.4%. Between 1999/00 and 2005/06, physician payments increased by 6.4% annually, compared with an average annual rate of inflation of 2.4%. Between 2005/06 and 2009/10, payments to physicians increased by 9.9% annually, compared with an average annual rate of inflation of less than 2% during the same period.

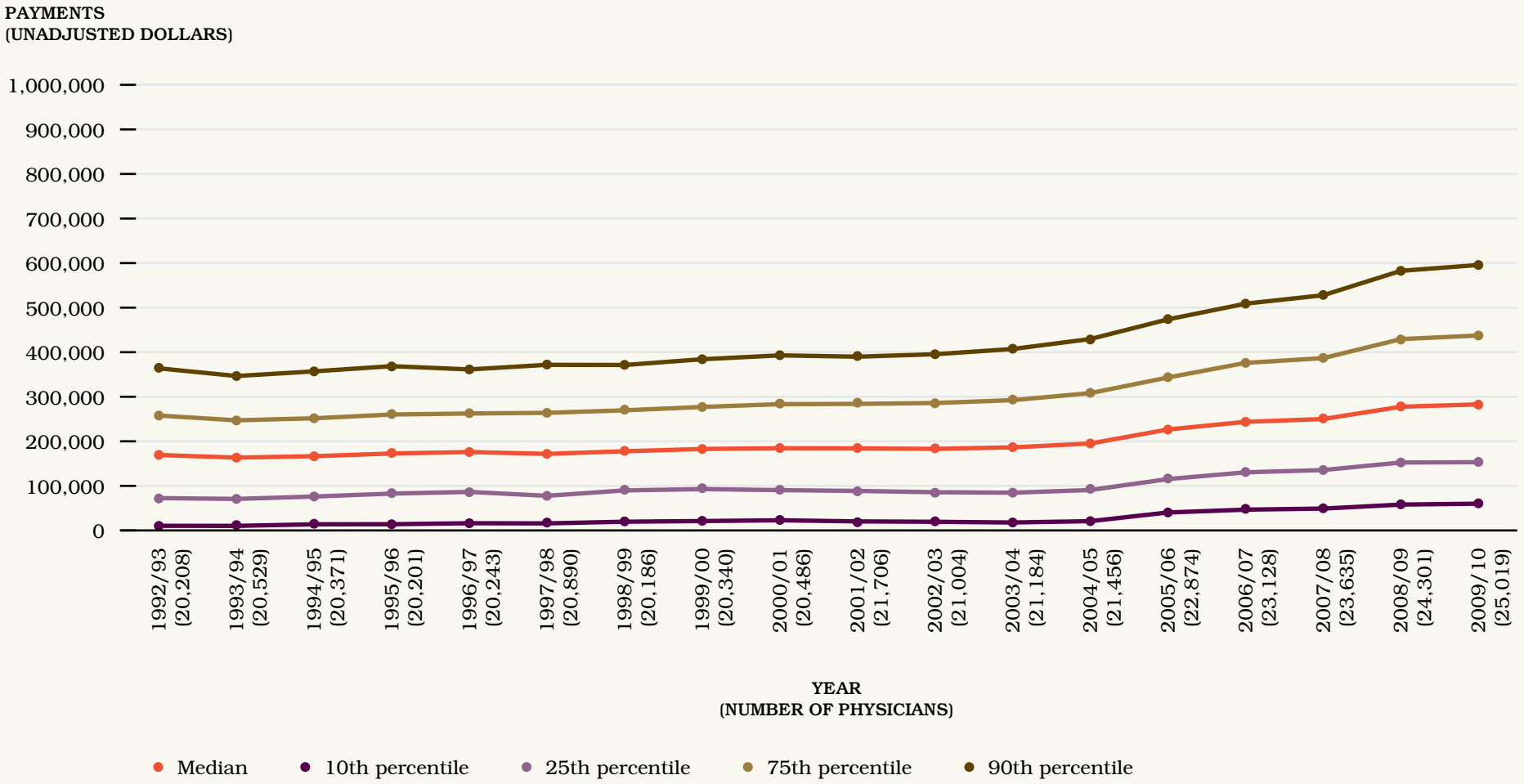
The median annual payment for all physicians combined was just under $170,000 in 1992/93 and remained flat during the 1990s (in unadjusted dollars). Between 2005/06 and 2009/10, the median payment per physician increased by 25%, from approximately $227,000 to $283,000. The mean payment per physician in 2005/06 was higher than the median at just under $250,000. This rose by 28%, to about $318,000, in 2009/10. (Note: these increases were not adjusted for inflation.) Payment by methods other than fee for service were negligible until 2004/05, but by 2009/10, they constituted 30% of total payments. From 2003/04 onward, 63% of the increase in payments to all physicians was made through some form of alternate payment plan. However, FFS payments rose during this period by 32%. Funding for the new primary care models totalled almost $1.2 billion or about 15% of the total; this was about the same as for all other payment streams combined.

## REFERENCE

1 Archibald T, Flood CM. *The Physician Services Committee: The Relationship Between the Ontario Medical Association and the Ontario Ministry of Health and Long-Term Care*. IRPP Working Paper Series No. 2004-03. Montreal: Institute for Research on Public Policy; 2004. Accessed January 13, 2012 at http://www.irpp.org/wp/archive/medicare_basket/wp2004-03.pdf.

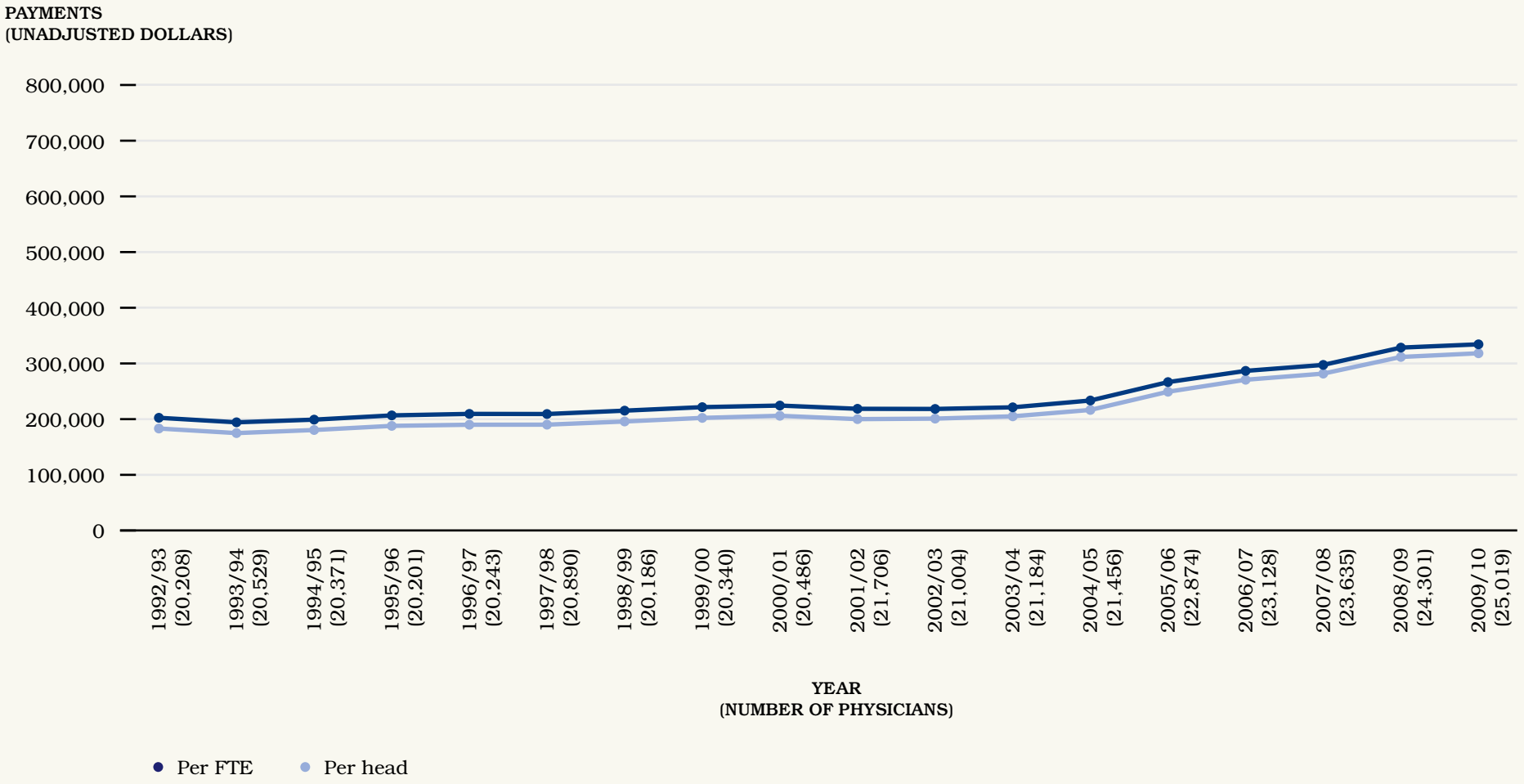
## ALL PHYSICIANS

**EXHIBIT 3.1 Median and percentiles of payments (in unadjusted dollars) to all individual physicians, in Ontario, 1992/93 to 2009/10**



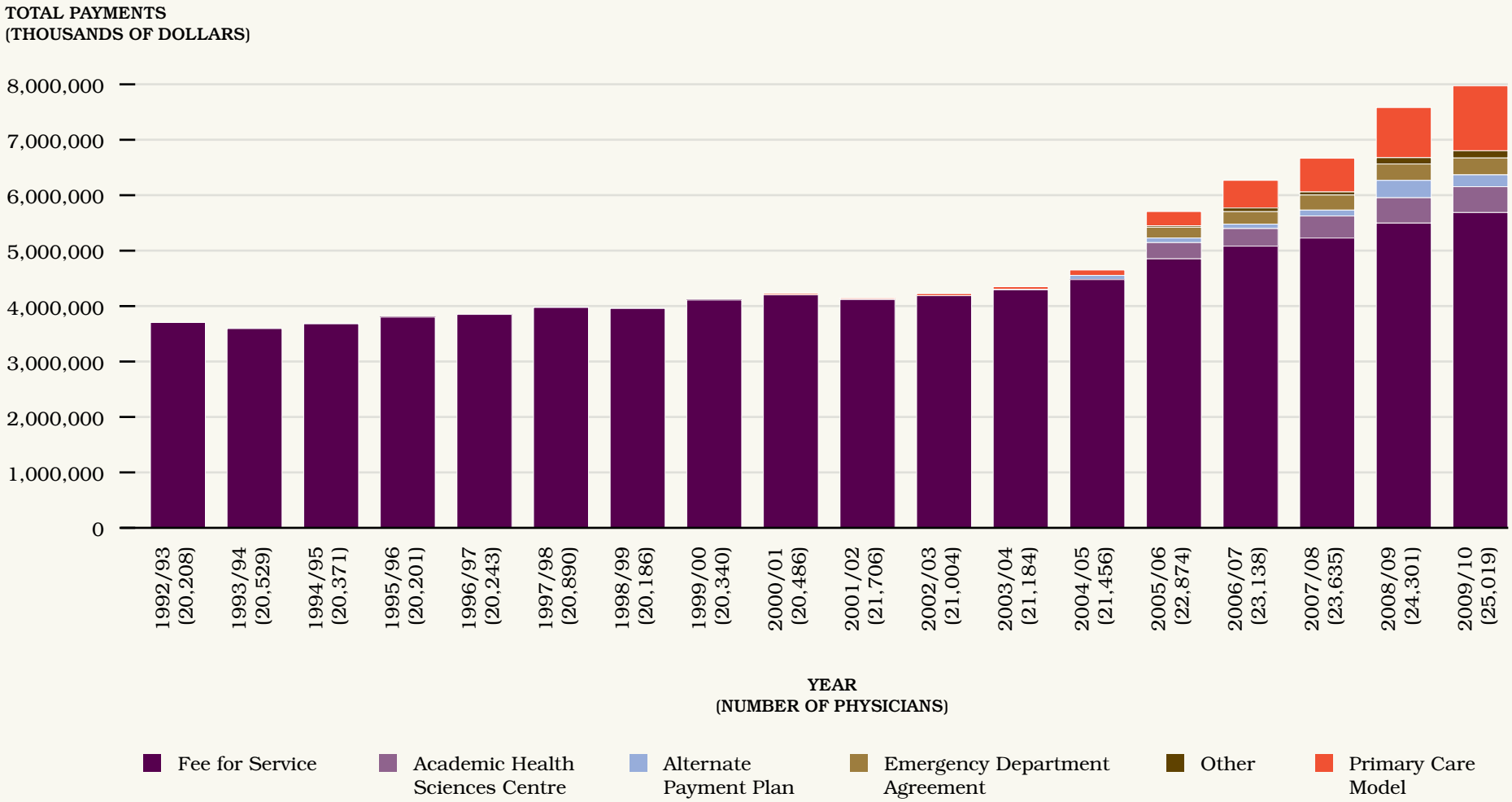
## ALL PHYSICIANS

**EXHIBIT 3.2 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to all physicians, in Ontario, 1992/93 to 2009/10**



## ALL PHYSICIANS

**EXHIBIT 3.3 Total payments to all physicians by payment source, in Ontario, 1992/93 to 2009/10**



CHAPTER 4

# Results for General Practitioners/ Family Physicians

## INTRODUCTION

This chapter presents data for the largest group of physicians—general practitioners/ family physicians (GP/FPs). GP/FPs are responsible for providing primary care to the population, and for most people, they are their main source of health care. Although GP/FPs work mainly through office-based practice, their practice venues and range of services have traditionally been very diverse. This includes, in addition to in-office visits, providing primary care to residents in nursing homes, providing supportive care to their patients who are hospitalized, working in the emergency department, providing obstetrical care in remote communities and even assisting with surgery. As well, there has always been a subgroup of physicians in this specialty who prefer to focus on a single area of practice, such as psychotherapy, allergy medicine or sports medicine. For the purposes of this report, this chapter includes all GP/ FPs except those who provided more than 50% of their services in the emergency department.

Prior to 1999/00, virtually all GP/FPs were paid on a fee-for-service (FFS) basis. The exceptions to this were two alternate payment models: Community Health Centres (CHCs) in which physicians were salaried employees, and Health Service Organizations (HSOs) in which physicians were paid a set amount for each patient on their roster (capitation). In the late 1990s, a number of capitation-based Primary Care Networks (PCNs) were formed.

The following decade saw a major expansion of primary care models, including:

- 2001/02—blended capitation Family Health Networks (FHNs);
- 2003/04—blended FFS Family Health Groups (FHGs) and Comprehensive Care Models (CCM, similar to FHG but for solo practice physicians);
- 2004/05—the group payment-based Rural-Northern Physician Group Agreement (RAN);
- 2006/07—blended capitation Family Health Organizations (FHOs), into which HSOs and PCNs were integrated.

By the end of 2009/10, more than two-thirds of Ontario's primary care physicians belonged to one of these models, with FHOs being the most popular.

The first three exhibits in this chapter show the median, mean and total payments for all GP/FPs combined from 1992/93 to 2005/06. The final two exhibits focus on the most recent years, showing the differences in payments between the various patient enrolment models (PEMs) for the years 2005/06 to 2009/10 only. Physicians often move from one type of PEM to another during the year. For the purposes of this analysis, physicians were assigned to the PEM with which they were affiliated at the midpoint of each year.

# FINDINGS

## Median, Mean and Total Payments (exhibits 4.1 to 4.3)

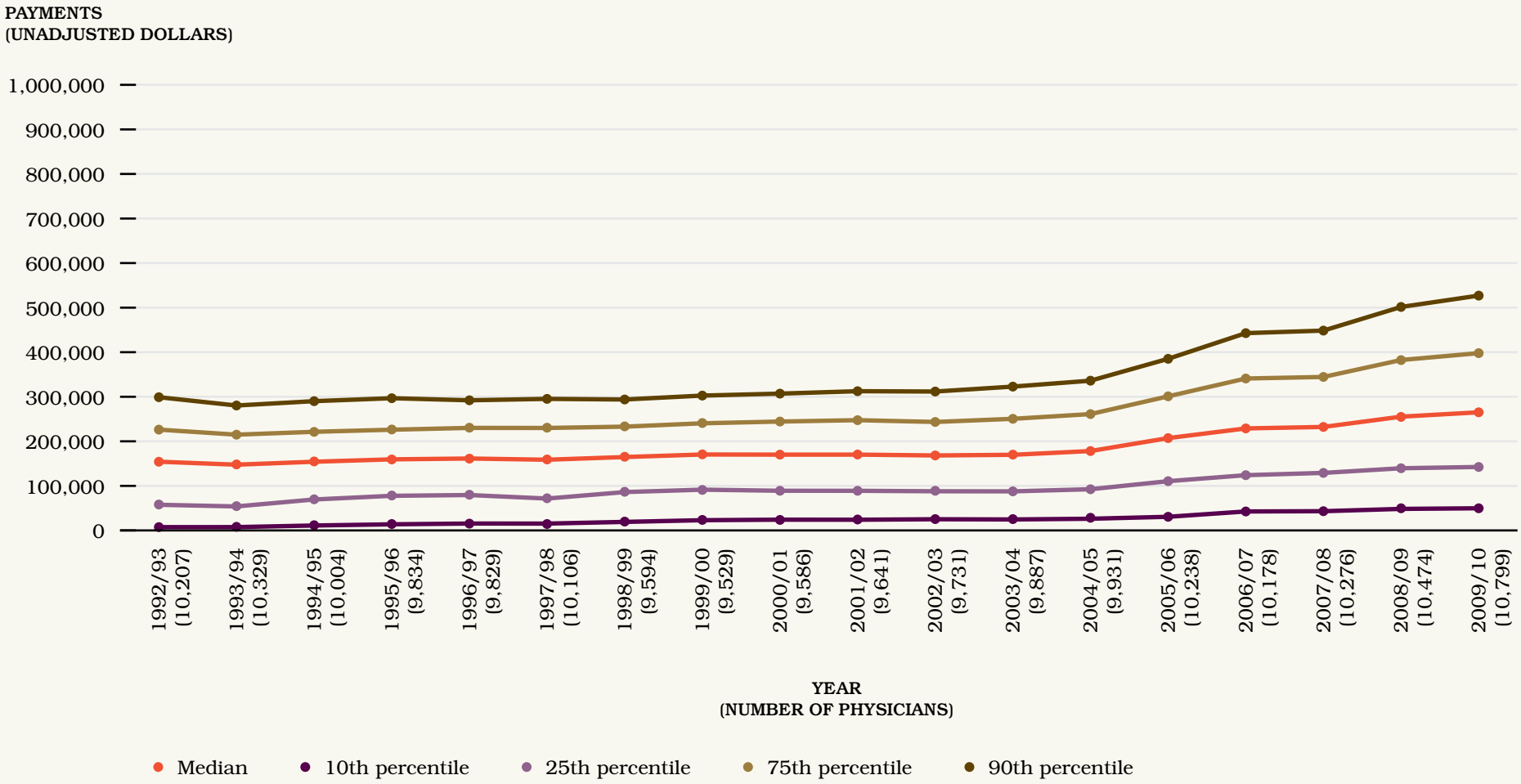
Excluding those working mainly in emergency departments, the number of GP/FPs declined approximately 7% between 1992/93 and 1999/00. Thereafter, numbers increased, and by 2009/10 there were 10,799 GP/FPs, about 6% more than in 1992/93. Between 2003/04 and 2009/10, the number of GP/FPs increased by almost 9%. Total payments to GP/FPs in 2009/10 amounted to $3.1 billion, an increase of $1.3 billion (77%) from 2003/04, or 58% after adjusting for inflation. The median payment per active GP/FP was relatively flat from 1992/93 to 2004/05, then rose steadily between 2005/06 and 2009/10. The variation in payments from the bottom 10th percentile to the top 90th percentile increased, from a gap of about $300,000 in 1992/93 to almost $500,000 in 2009/10. The mean payment per FTE for GP/FPs in 2009/10 ($300,100) was somewhat lower than that for all physicians ($334,700). Fee-for-service payments remained relatively flat over the whole time period, with a slight increase from 2005/06 to 2007/08 and a small decrease thereafter. Payments specific to primary care models, the majority of which were based on capitation, rose very rapidly after 2004/05 and accounted for a large proportion of the increase in payments.

## Payments by Patient Enrolment Model (exhibits 4.4 and 4.5)

The Family Health Group (FHG), an enhanced fee-for-service model, remained the most popular patient enrolment model until the end of 2009/10, but payments to physicians in FHGs started to decline after 2007/08. Payments to physicians in Family Health Networks (FHNs), a blended capitation model, also began to decline after 2007/08. Payments to physicians in Family Health Organizations (FHOs), a blended capitation model with a larger per capita payment and basket of services than the FHN model, rose rapidly in 2008/09 and 2009/10, with the majority of the increase being capitation payments. Payments to physicians outside of patient enrolment models decreased after 2005/06, and payments in other models remained relatively flat between 2005/06 and 2009/10. Average payments per active GP/FP were highest among those in FHOs, followed by FHNs and FHGs. Payments in all models showed a general increase between 2005/06 and 2009/10.

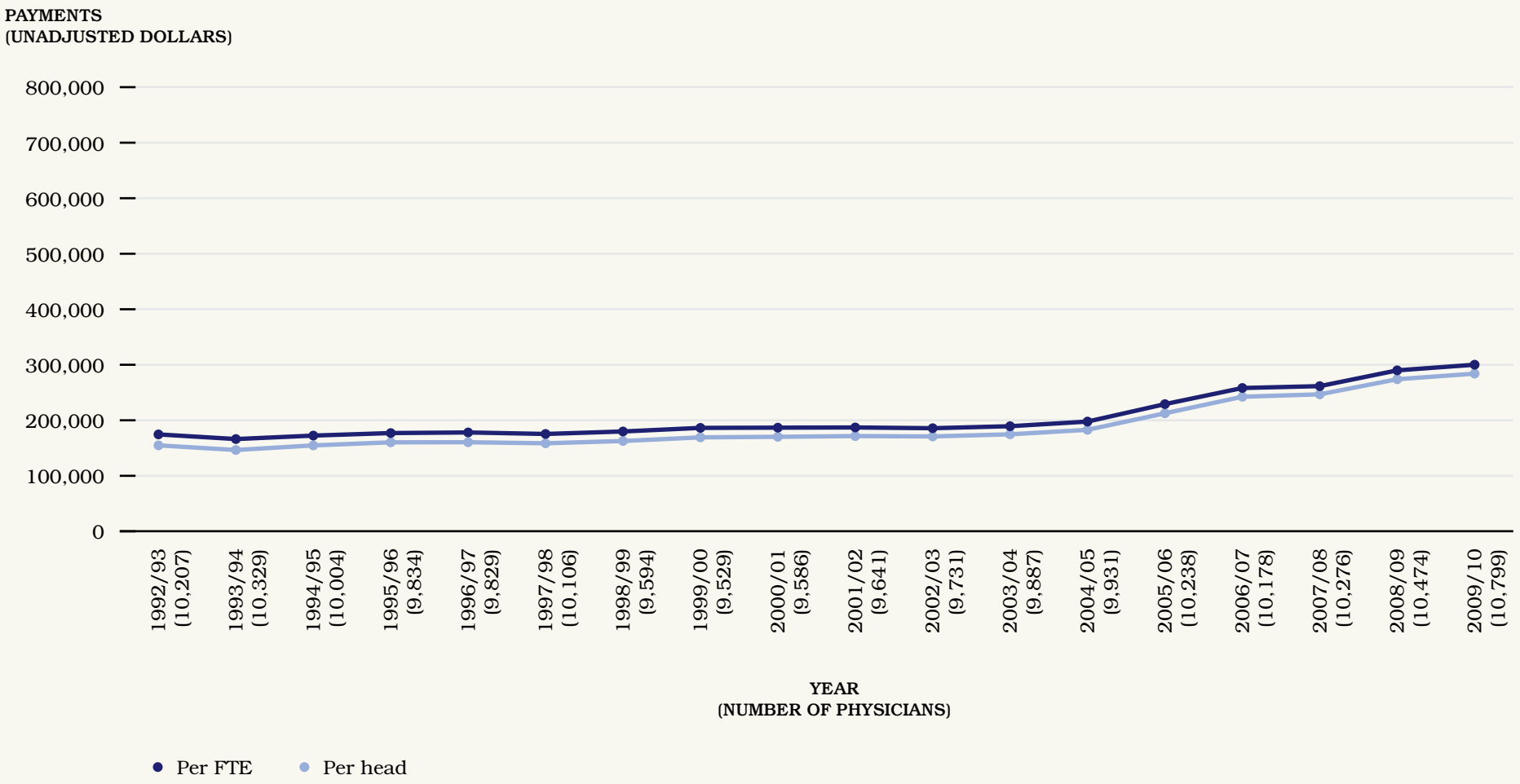
## GENERAL PRACTITIONERS/FAMILY PHYSICIANS

**EXHIBIT 4.1 Median and percentiles of payments (in unadjusted dollars) to individual GP/FPs, in Ontario, 1992/93 to 2009/10**



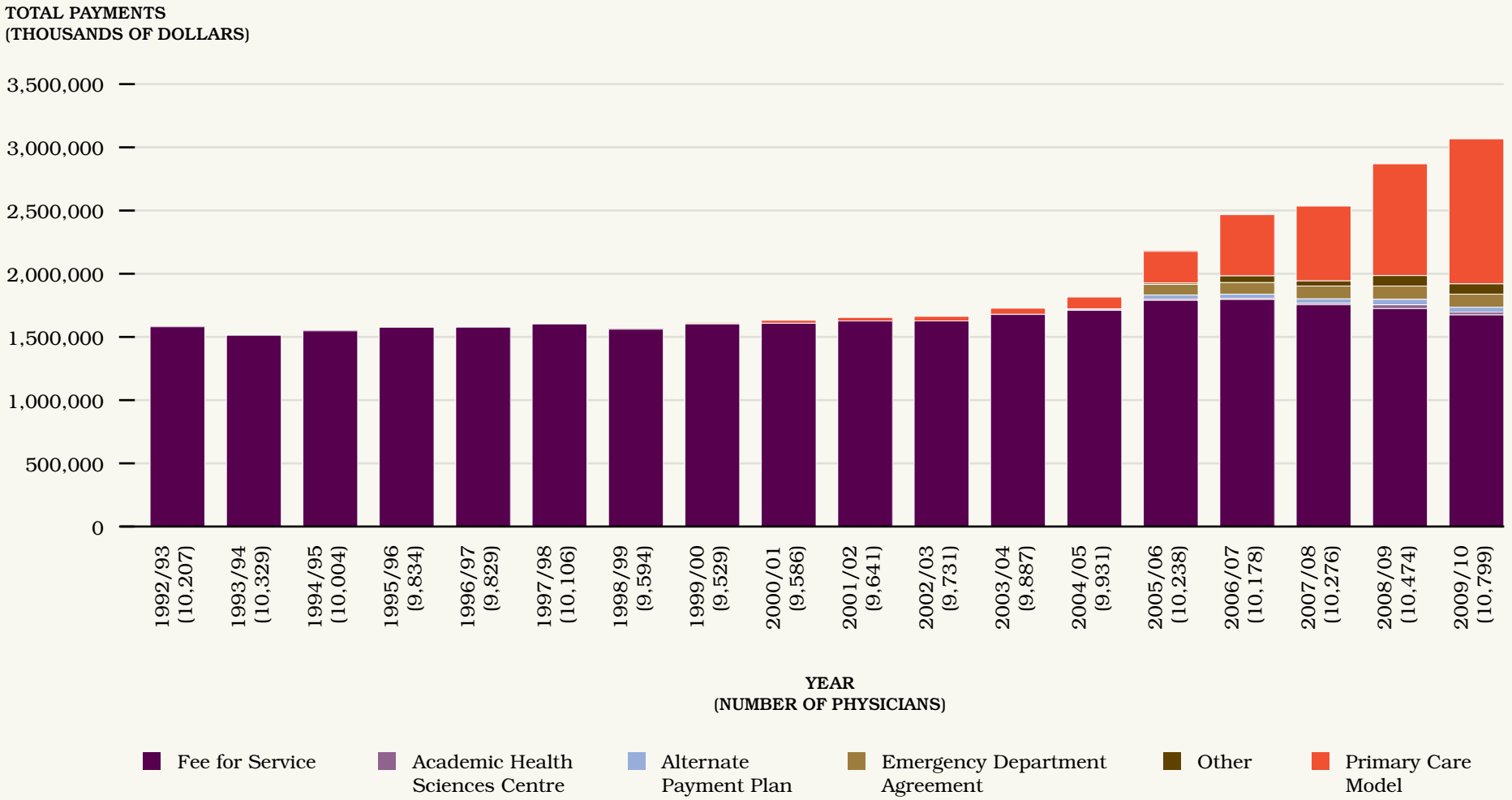
## GENERAL PRACTITIONERS/FAMILY PHYSICIANS

**EXHIBIT 4.2 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to GP/FPs, in Ontario, 1992/93 to 2009/10**



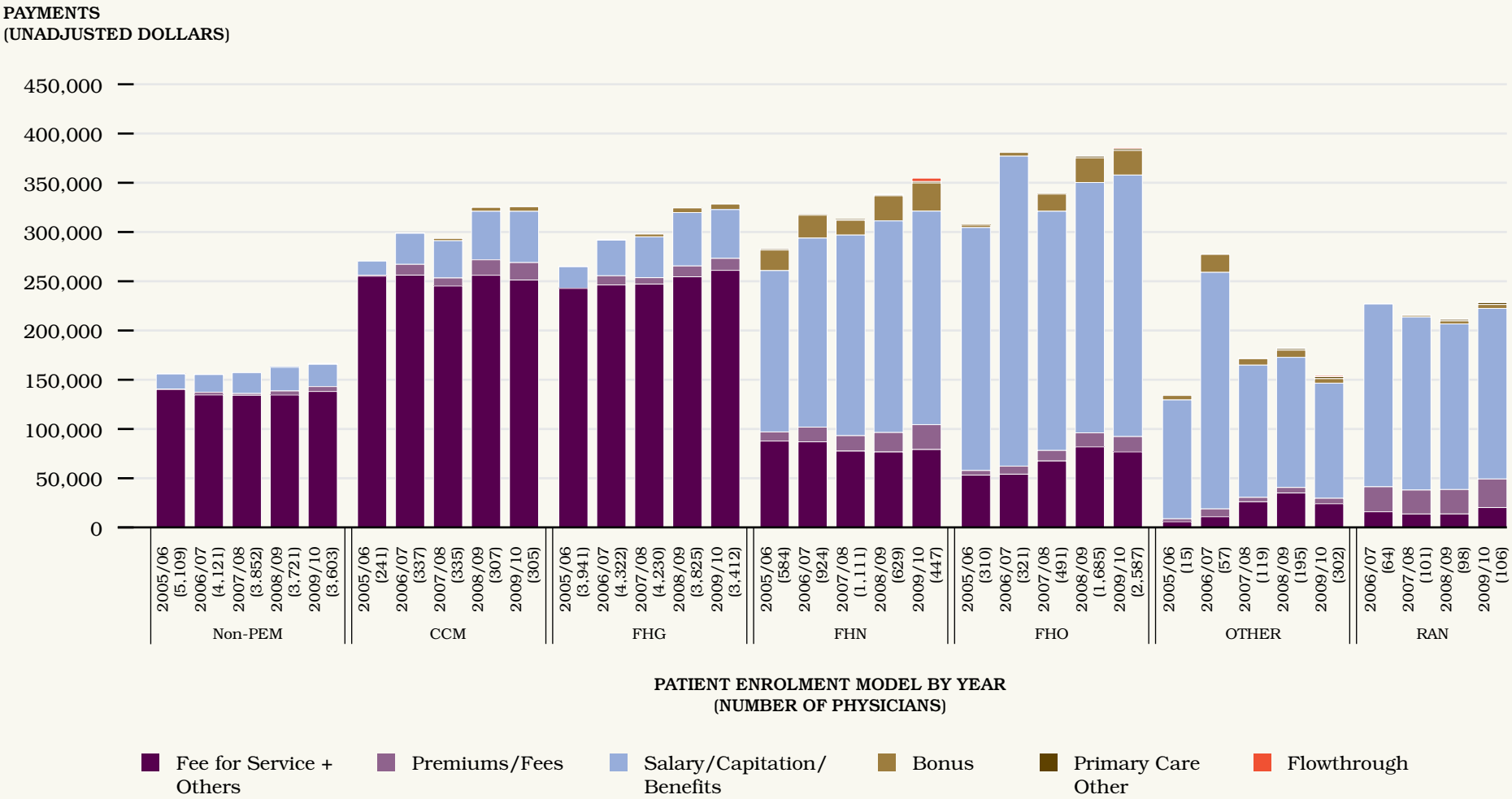
## GENERAL PRACTITIONERS/FAMILY PHYSICIANS

**EXHIBIT 4.3 Total payments to GP/FPs by payment source, in Ontario, 1992/93 to 2009/10**



## GENERAL PRACTITIONERS/FAMILY PHYSICIANS

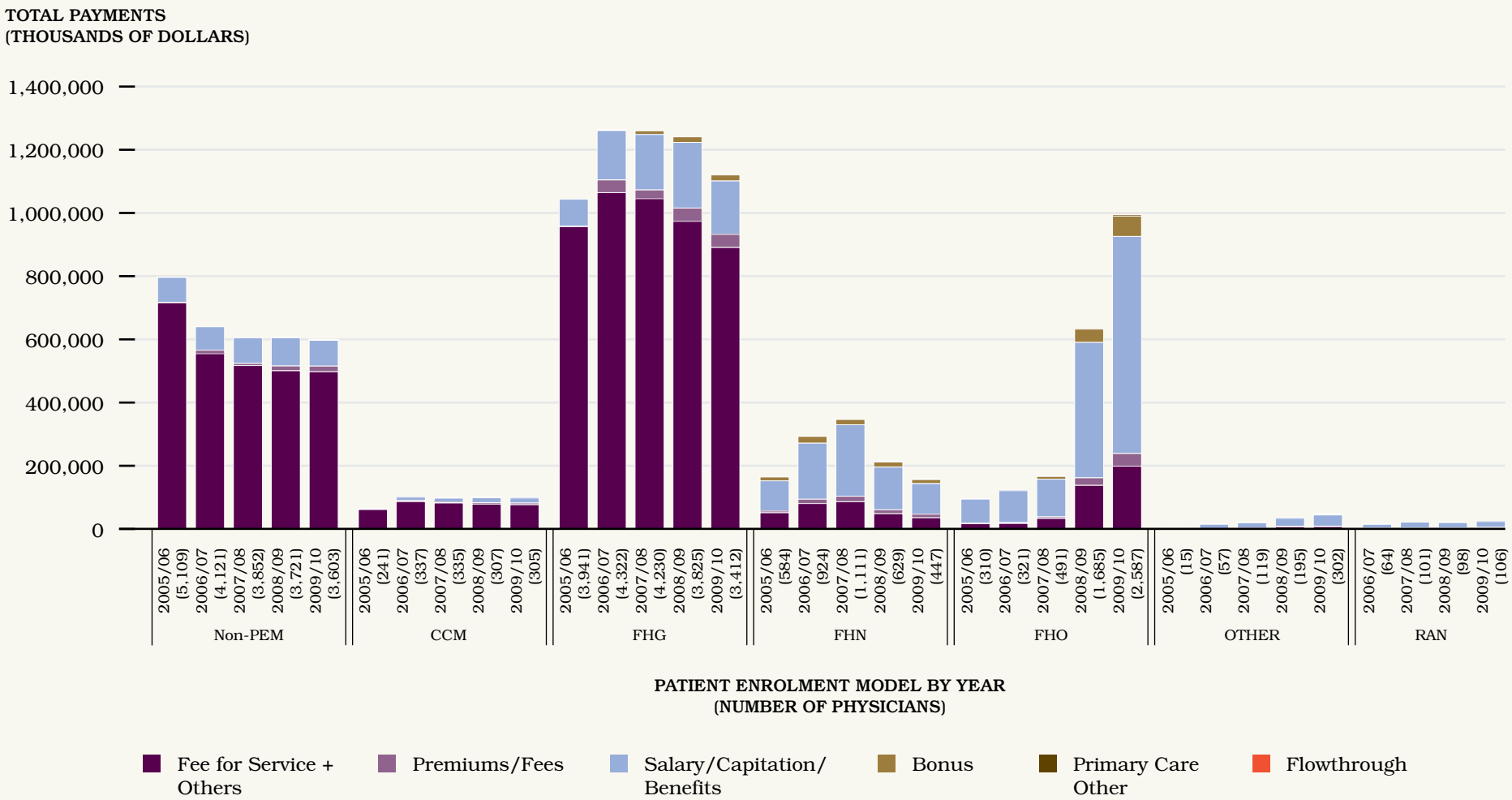
**EXHIBIT 4.4 Mean payments (in unadjusted dollars) to GP/FPs by payment type and patient enrolment model, in Ontario, 2005/06 to 2009/10**




Note: Each physician was assigned to only one payment model per year. Assignment was based on the physician's affiliation at the midpoint of each year.
Non-PEM = Not in a Patient Enrolment Model CCM = Comprehensive Care Model FHG = Family Health Group FHN = Family Health Network
FHO = Family Health Organization RAN = Rural-Northern Physician Group Agreement

## GENERAL PRACTITIONERS/FAMILY PHYSICIANS

**EXHIBIT 4.5 Total payments to GP/FPs by payment type and patient enrolment model, in Ontario, 2005/06 to 2009/10**




Note: Each physician was assigned to only one payment model per year. Assignment was based on the physician's affiliation at the midpoint of each year.
Non-PEM = Not in a Patient Enrolment Model CCM = Comprehensive Care Model FHG = Family Health Group FHN = Family Health Network
FHO = Family Health Organization RAN = Rural-Northern Physician Group Agreement

CHAPTER 5

# Results for Medical Non-Procedural Specialists

GENERAL INTERNAL MEDICINE
CLINICAL IMMUNOLOGY
DERMATOLOGY
ENDOCRINOLOGY
GERIATRICS
HEMATOLOGY
MEDICAL ONCOLOGY
NEUROLOGY
PEDIATRICS
PHYSICAL MEDICINE AND REHABILITATION
PSYCHIATRY
RHEUMATOLOGY

## INTRODUCTION

Medical non-procedural specialists are specialist physicians whose clinical work does not involve procedures. Specialists such as internists, neurologists and endocrinologists may order tests, but their clinical work is primarily devoted to consultations and patient visits. By contrast, a gastroenterologist will often carry out both a consultation and a procedure (e.g., gastroscopy or colonoscopy) and may bill for both. In a fee-for-service (FFS) environment, this leads to higher payments to procedural specialists than to non-procedural specialists. This difference is exacerbated by factors such as the aging of the patient population and by technical advances that allow physicians to perform more procedures per day. Because of this, many non-procedural physicians are now part of a non-FFS payment plan, such as membership in an Alternate Payment Plan (APP) or Academic Health Sciences Centre (AHSC) group.

# FINDINGS FOR INDIVIDUAL SPECIALTIES

## General Internal Medicine (exhibits 5.1 to 5.3)

The number of general internists reached a nadir of 517 in 1999/00, then rose to 966 in 2009/10. Overall payments fell to approximately $80 million in 2003/04 and roughly trebled to over $240 million in 2009/10. In recent years, an increasing proportion of payments have been from non-FFS sources, but this remained at only 14% in 2009/10. Median payments to general internists remained flat through the 1990s and were below those to all physicians in Ontario throughout the study period. The distribution of payments was wide and included 25% that were below $100,000 annually. This suggests that either a large proportion of internists worked part-time or that some earned income from hospital salaries, which would not be captured in this report.

## Clinical Immunology (exhibits 5.4 to 5.6)

This is a small specialty, and the total number in practice remained between 60 and 70 throughout the study period. Median payment was slightly higher than that of all physicians in Ontario. Mean payment in 2009/10 was 12% higher than that of all physicians. Ten percent of clinical immunologists were paid $600,000 or more (the second highest 90th percentile value in this group of specialties). FFS dominated with 92% of payments by this route.

## Dermatology (exhibits 5.7 to 5.9)

The number of dermatologists in Ontario reached a nadir of 185 in 2006/07 and rose to 200 in 2009/10. The trend in total payments roughly paralleled supply, increasing from approximately $50 million in 2003/04 to approximately $78 million in 2009/10. The median annual payment to dermatologists remained flat at around $300,000 throughout the study period, somewhat higher than that of all physicians. However, the distribution widened substantially in recent years, with 25% of dermatologists paid more than $500,000 in 2009/10, and 10% paid more than $700,000 in that year. The mean annual payment rose to approximately $383,000 in 2009/10. These numbers do not take into account payments for cosmetic procedures or minor surgeries, which are not covered by OHIP. The great majority of public payments to dermatologists continue to be by FFS.

## Endocrinology (exhibits 5.10 to 5.12)

The number of endocrinologists increased by around 70% during the study period, peaking at 174 in 2009/10. Median annual payments to individual endocrinologists remained slightly below those to all physicians throughout the study period. The mean payment per head and per full-time equivalent were almost identical and similar to the median value. From 2004/05 onward, a proportion of total payments were APP and AHSC payments, but the proportion of FFS payments was still high, reaching 88% in 2009/10.

## Geriatrics (exhibits 5.13 to 5.15)

Geriatrics remains a small specialty in Ontario despite a doubling in the number of specialists to 102 in 2009/10, with total payments of approximately $26 million in that year. The median annual payment was flat at or below $100,000 through the 1990s, which may indicate that payment was also being received from other sources not included in our data. The data from 2005/06 onward are complete and indicate that the mean and median payments remained significantly below those of all physicians in Ontario. Although the majority of payments (65%) were still by FFS, the impact of alternate payment sources is clear for this specialty, with 28% (of the total) derived from APP and 6% from AHSC.

## Hematology (exhibits 5.16 to 5.18)

The number of hematologists increased by about 50% during the study period reaching 152 in 2009/10, at a total cost of approximately $40 million in that year. Mean and median annual payments were lower than those for all physicians during most of the study period, not including any payments received from other sources not included in our data. The data from 2002/03 to 2004/05 are incomplete and have been censored. The data from 2005/06 onward are complete and show payments to individual hematologists that are similar to those for all physicians. Notably, in recent years the proportion of total payments from non-FFS sources has increased to about 50%.

## Medical Oncology (exhibits 5.19 to 5.21)

The number of medical oncologists in Ontario more than doubled from 77 in 1992/93 to 187 in 2009/10, with total payments of just under $60 million in 2009/10. The data reveal that FFS payments were a relatively small component of payments to medical oncologists (less than 25% of the total). Payment levels were relatively low during the 1990s, because medical oncologists were at least partially paid out of hospital budgets. In the period for which we have complete data (2005/06 onward), mean and median annual payments to medical oncologists were similar to those made to all physicians. There was little variation in later years because most oncologists are now paid through a single APP, meaning the medians and 25th and 75th percentiles are very similar.

## Neurology (exhibits 5.22 to 5.24)

During the study period, the number of neurologists in Ontario increased by 47%, reaching 295 in 2009/10, at a total cost of nearly $80 million in that year. Mean and median annual payments to neurologists remained fairly flat during most of the study period. Mean payments per head and per full-time equivalent rose to a lesser degree than those for all physicians after 2004/05 and remained significantly lower in 2009/10. The majority of payments (around 84%) were in the form of FFS.

## Pediatrics (exhibits 5.25 to 5.27)

The number of active general pediatricians in Ontario increased by nearly 60% from 1992/93 reaching 1,165 in 2009/10, with total payments of over $300 million in that year. Although pediatricians comprise about 5% of all physicians, their total payments represent about 4% of total payments to physicians. Mean and median annual payments to pediatricians remained below those to all physicians, particularly in the later years. In 2009/10, general pediatricians received about 57% of payments from FFS, 37% from APPs and the remainder from other non-FFS sources. Pediatricians who worked in children's hospitals, such as the Hospital for Sick Children and the Children's Hospital of Eastern Ontario, were paid from APPs, while community-based pediatricians were paid primarily through FFS.

## Physical Medicine and Rehabilitation (exhibits 5.28 to 5.30)

The number of physical medicine and rehabilitation specialists increased by 52% to 164 over the study period. Total payments in 2009/10 were approximately $40 million. Mean and median annual payments remained below those to all physicians throughout the study period. Around 81% of payments were from FFS, 10% from AHSC and the remainder from other non-FFS sources.

## Psychiatry (exhibits 5.31 to 5.33)

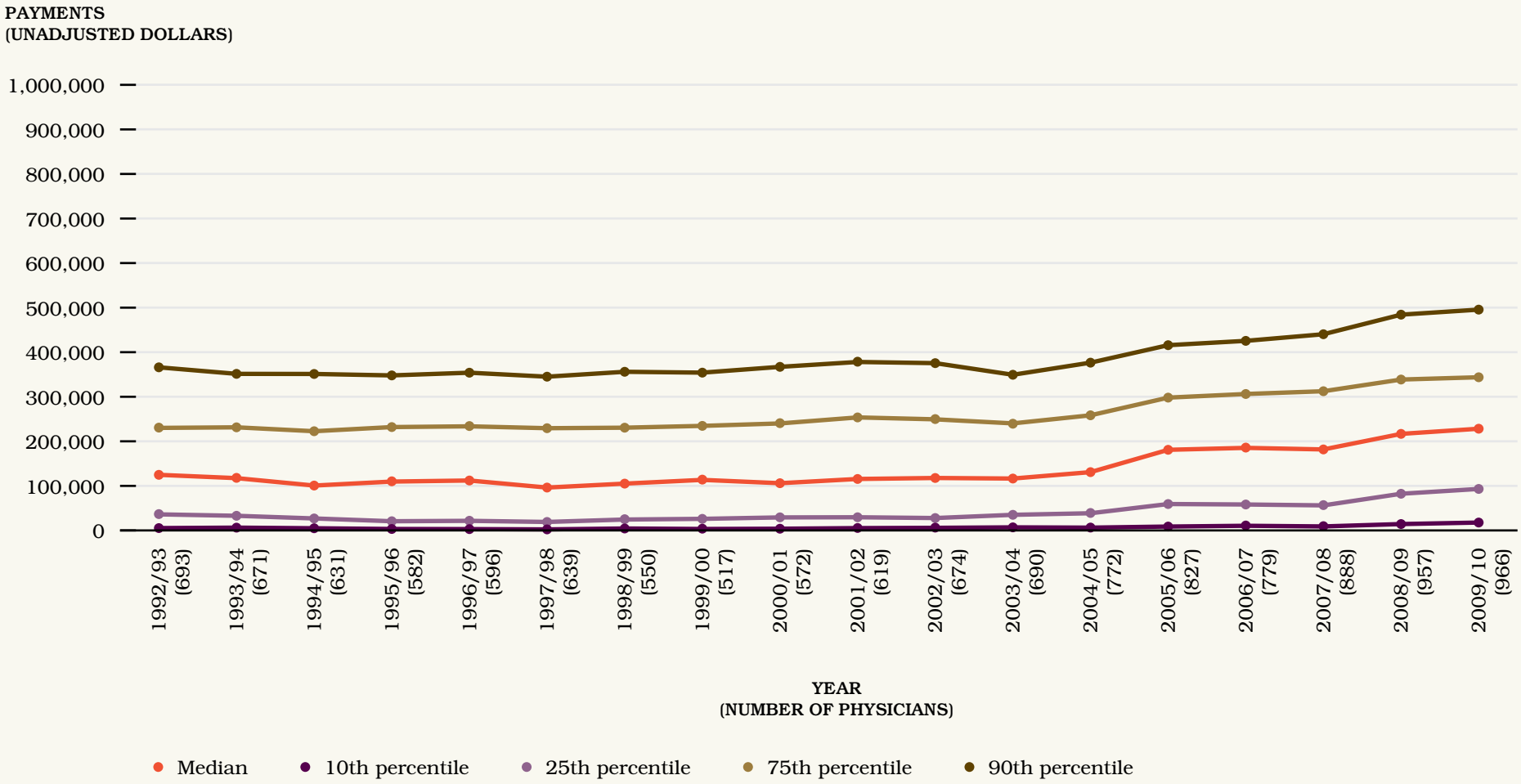
After general practice/family medicine, psychiatry is the second most populous specialty in Ontario, comprising about 8% of active physicians in 2009/10. This represents an increase of 25% since 1992/93. Total payments were over $350 million in 2009/10. It is important to realize that these numbers do not include direct payments by hospitals to psychiatrists or payments of mental health sessional fees managed directly by the Local Health Integration Networks in recent years. From the data accumulated for this study, we calculated that mean and median annual payments to psychiatrists remained fairly constant until 2004/05 and then rose modestly. These values (which we know are underestimates) are well below the average values for all physicians in Ontario. Most of these payments were from FFS with approximately 15% coming from other sources.

## Rheumatology (exhibits 5.34 to 5.36)

The number of rheumatologists increased by 38% during the study period, to a total of 160. Total payments to this specialty were nearly $50 million in 2009/10. During the 1990s, mean and median annual payments to rheumatologists were similar to those for all Ontario physicians combined, and they increased at approximately the same rate as for all physicians after 2004/05. Only a small proportion of payments was from non-FFS sources.

## GENERAL INTERNISTS

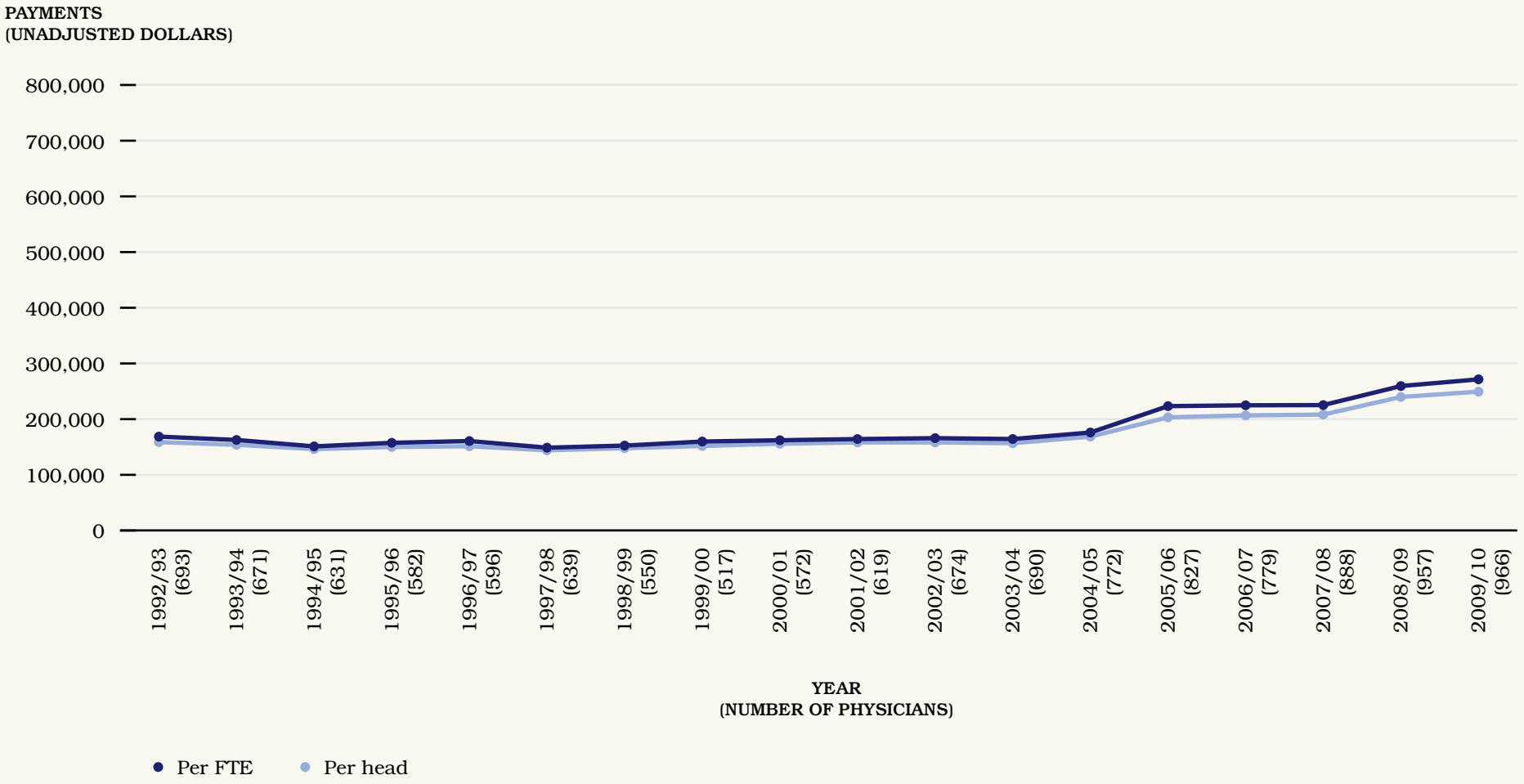
**EXHIBIT 5.1 Median and percentiles of payments (in unadjusted dollars) to individual general internists, in Ontario, 1992/93 to 2009/10**




Note: Data from 2001/02 to 2004/05 should be treated with caution due to missing APP payment information.

## GENERAL INTERNISTS

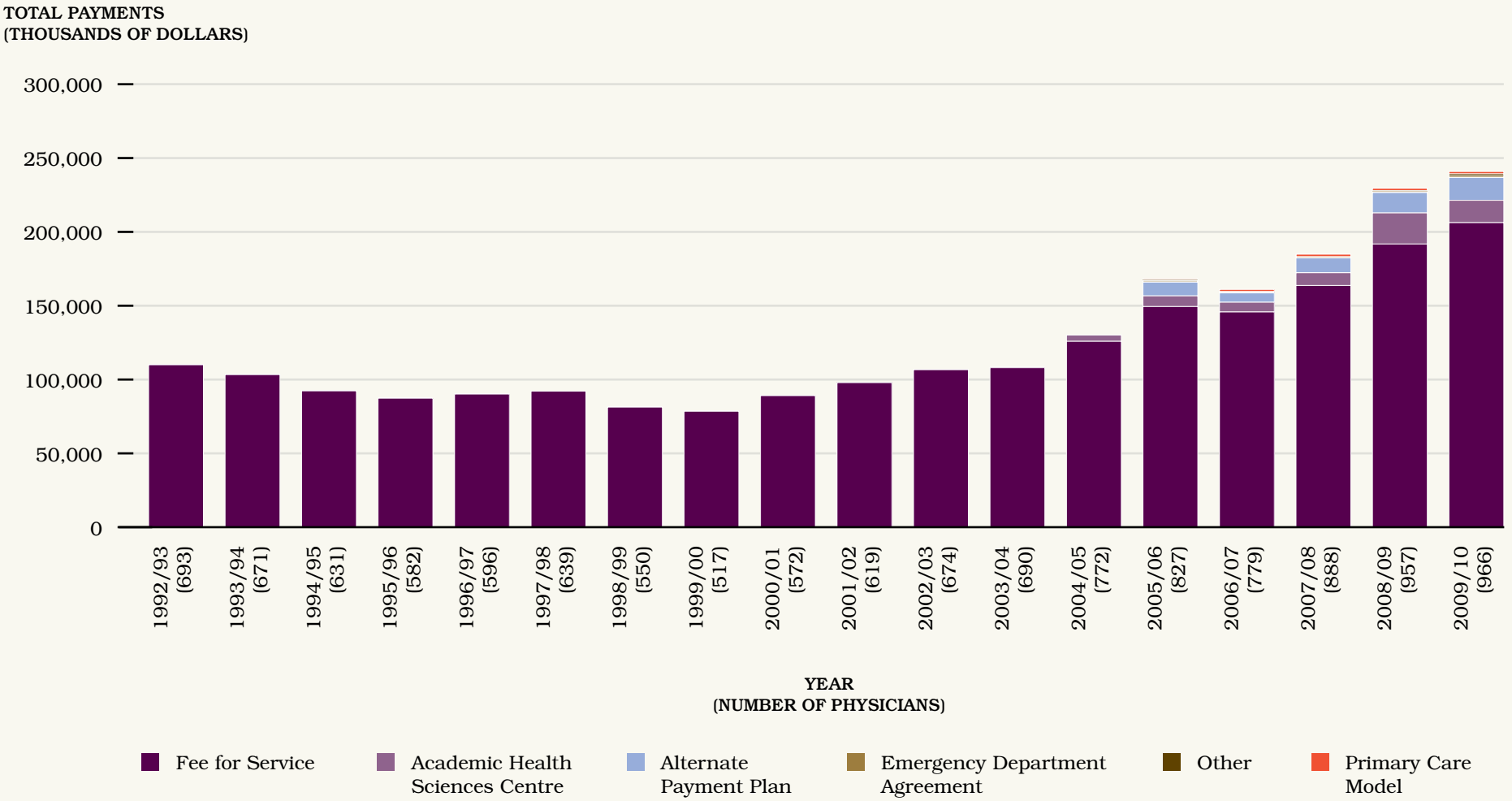
**EXHIBIT 5.2 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to general internists, in Ontario, 1992/93 to 2009/10**




Note: Data from 2001/02 to 2004/05 should be treated with caution due to missing APP payment information

## GENERAL INTERNISTS

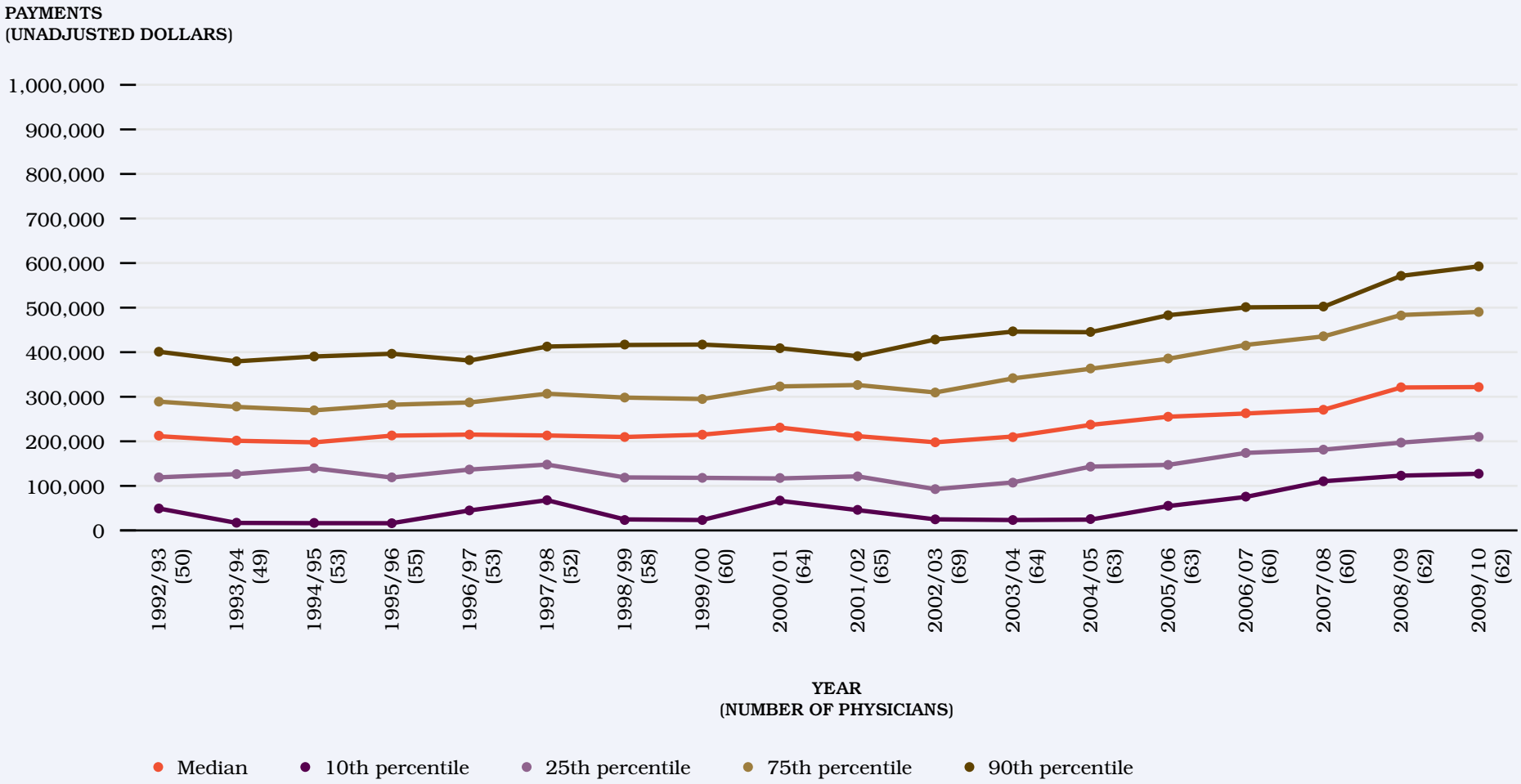
**EXHIBIT 5.3 Total payments to general internists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data from 2001/02 to 2004/05 should be treated with caution due to missing APP payment information.

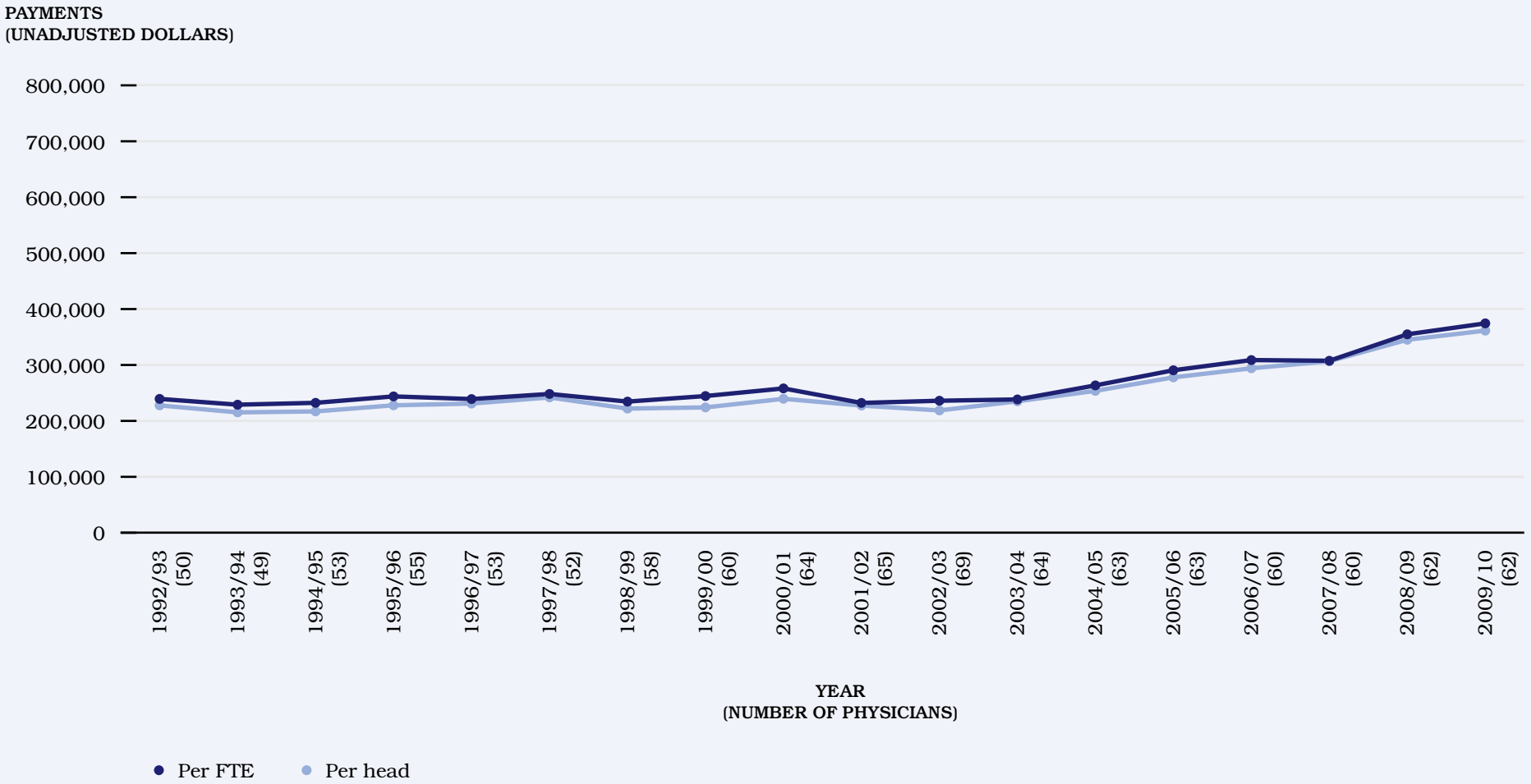
## CLINICAL IMMUNOLOGISTS

**EXHIBIT 5.4 Median and percentiles of payments (in unadjusted dollars) to individual clinical immunologists, in Ontario, 1992/93 to 2009/10**



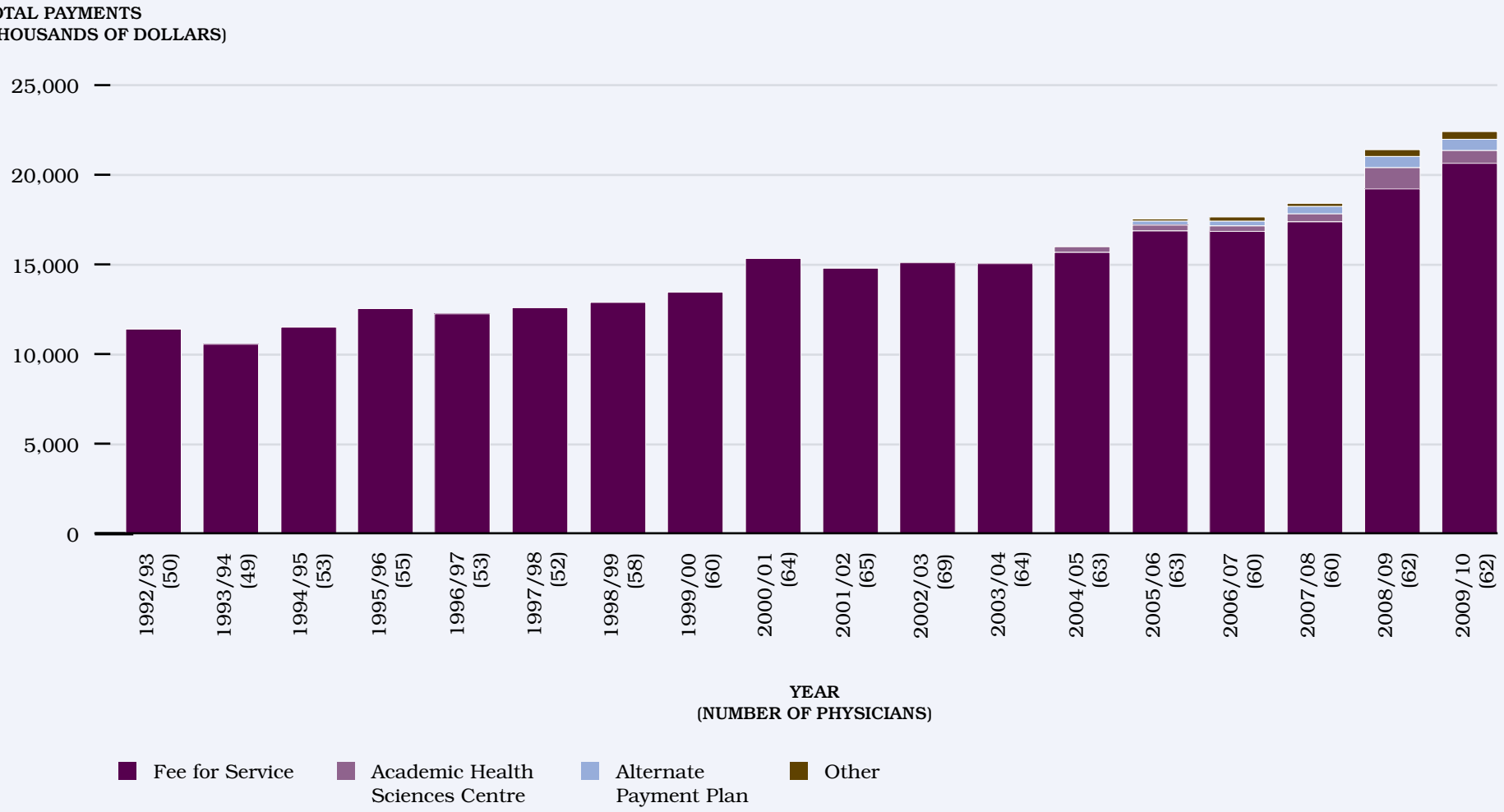
## CLINICAL IMMUNOLOGISTS

**EXHIBIT 5.5 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to clinical immunologists, in Ontario, 1992/93 to 2009/10**



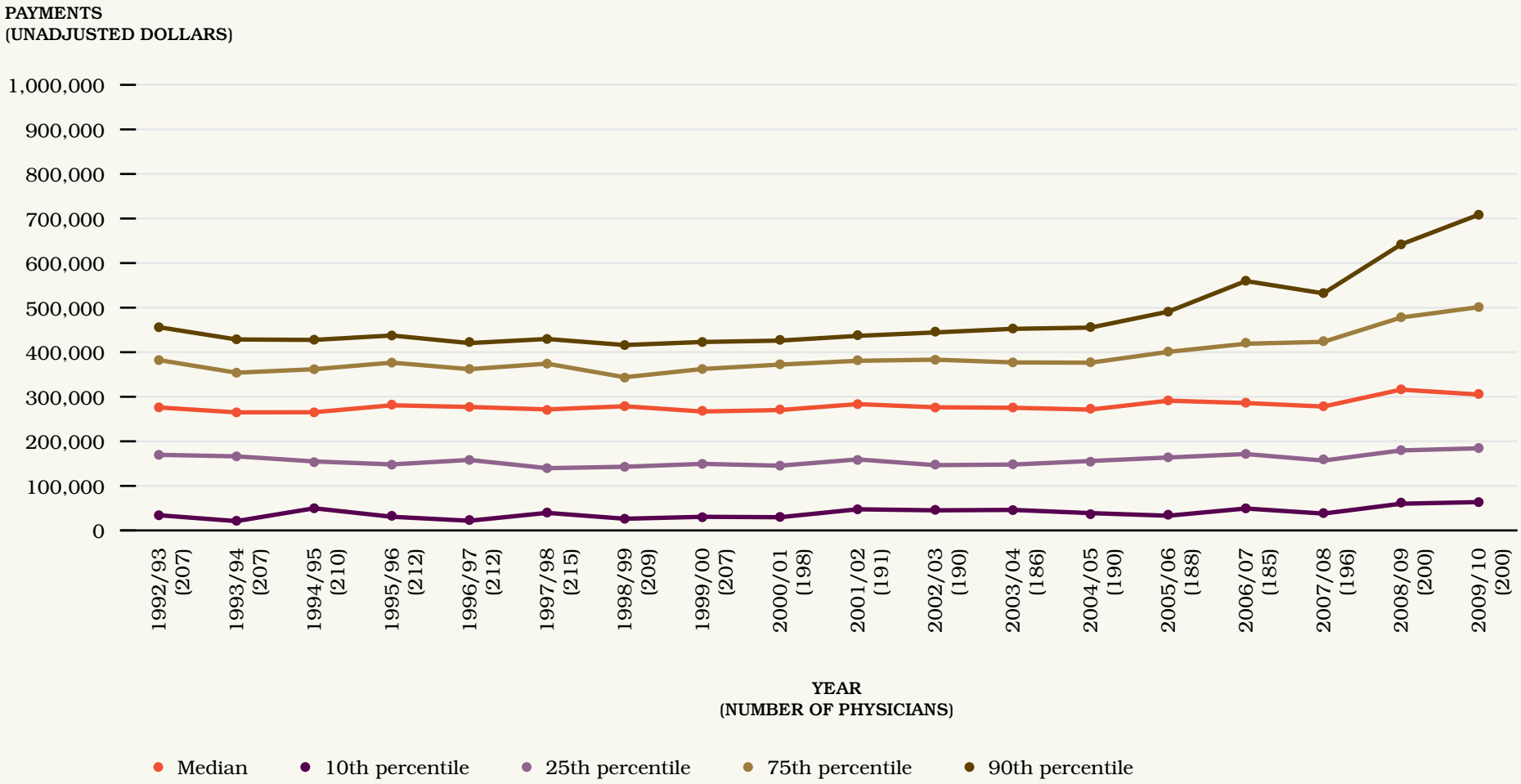
## CLINICAL IMMUNOLOGISTS

**EXHIBIT 5.6 Total payments to clinical immunologists by payment source, in Ontario, 1992/93 to 2009/10**



## DERMATOLOGISTS

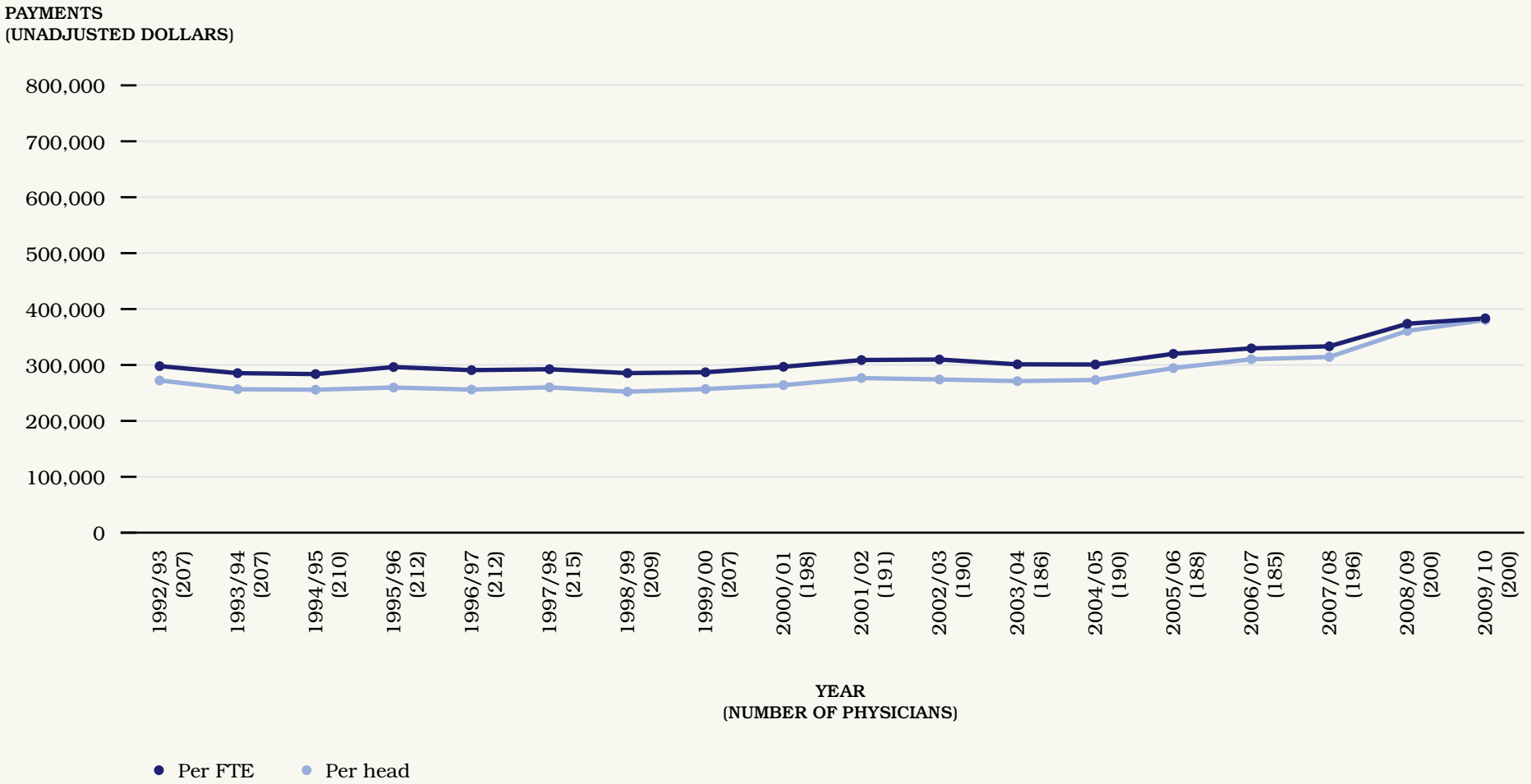
**EXHIBIT 5.7 Median and percentiles of payments (in unadjusted dollars) to individual dermatologists, in Ontario, 1992/93 to 2009/10**




Note: Data include payments for OHIP-insured services only and do not reflect payments for cosmetic procedures and other non-insured services.

## DERMATOLOGISTS

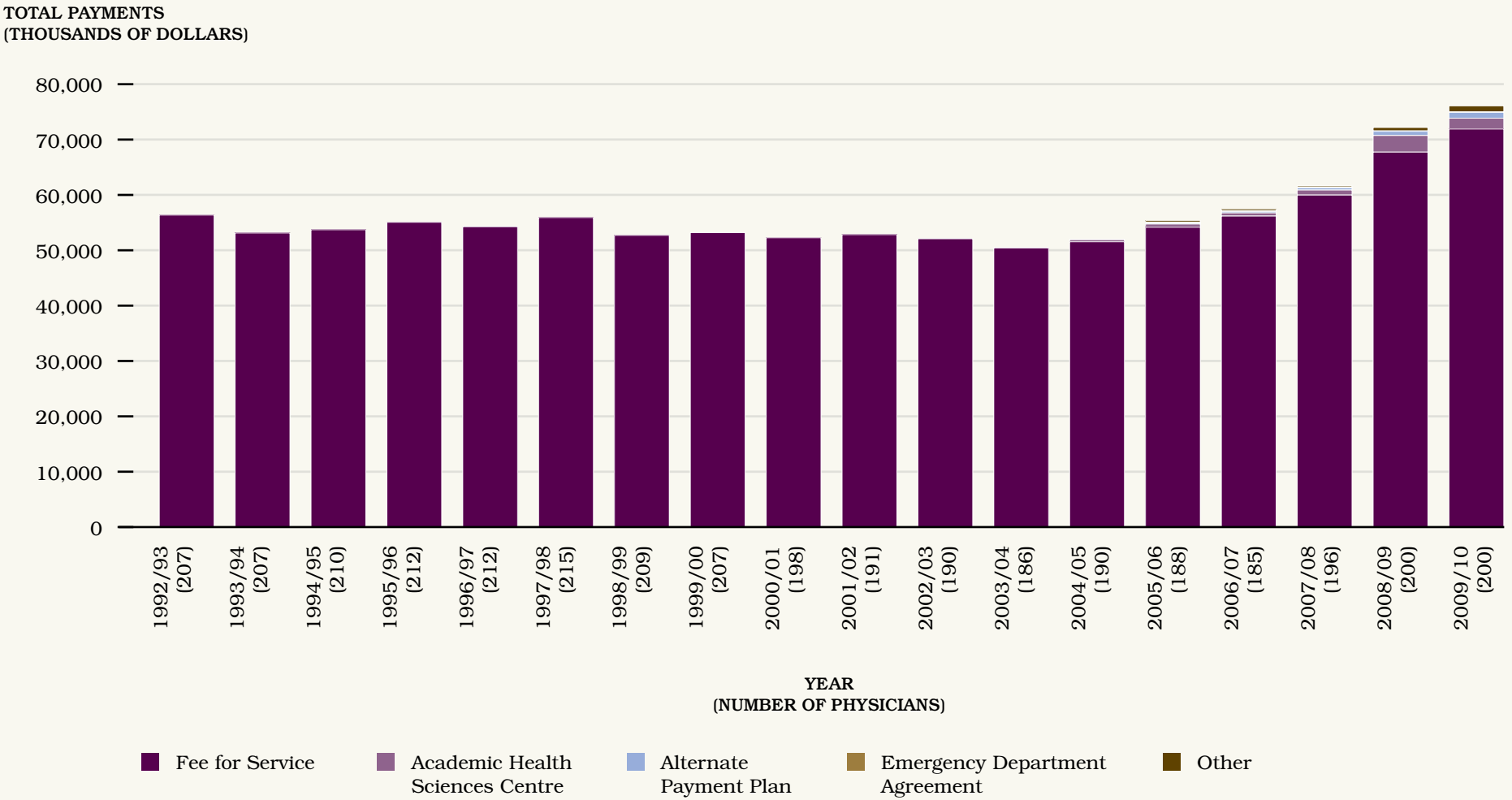
**EXHIBIT 5.8 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to dermatologists, in Ontario, 1992/93 to 2009/10**




Note: Data include payments for OHIP-insured services only and do not reflect payments for cosmetic procedures and other non-insured services.

## DERMATOLOGISTS

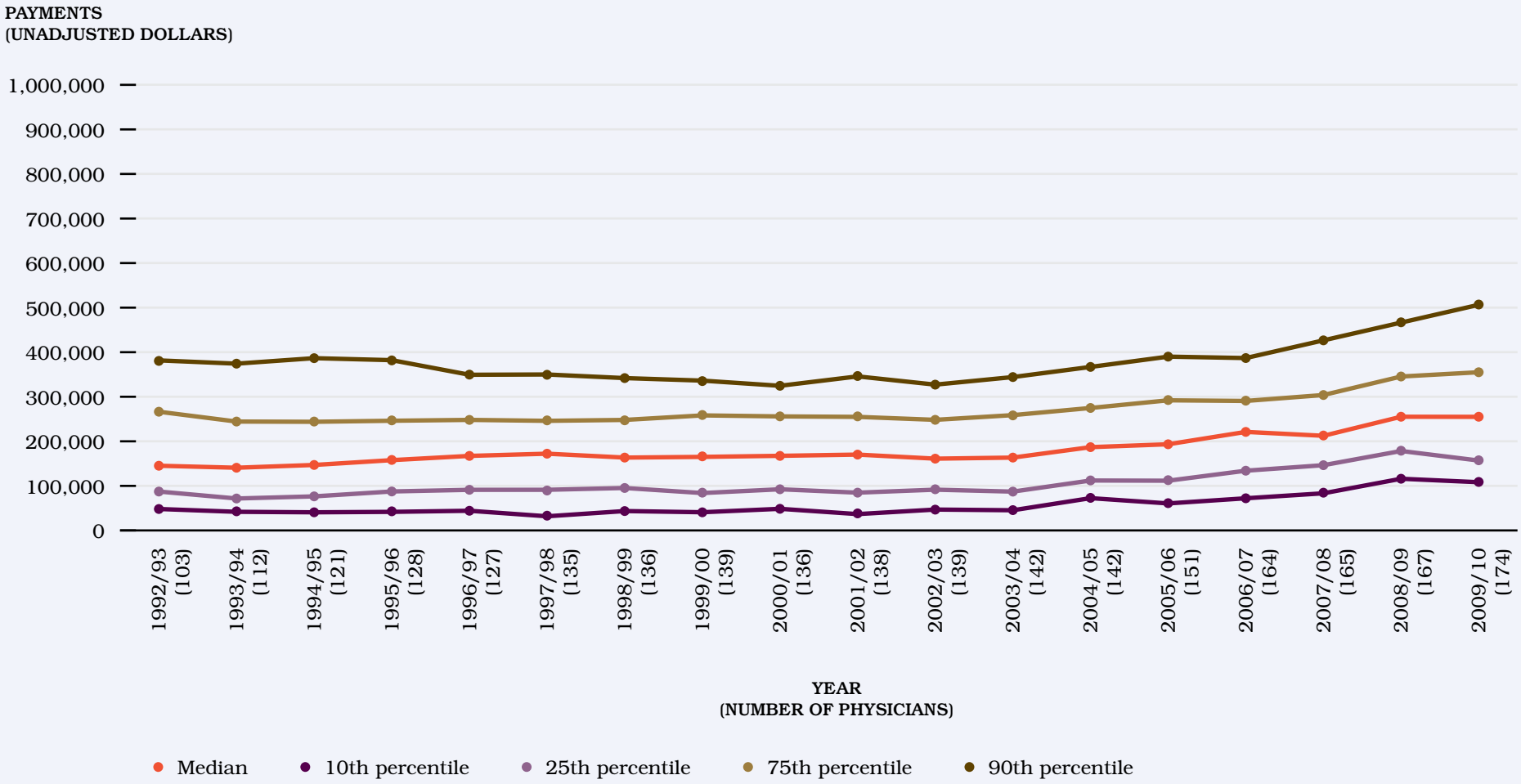
**EXHIBIT 5.9 Total payments to dermatologists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data include payments for OHIP-insured services only and do not reflect payments for cosmetic procedures and other non-insured services.

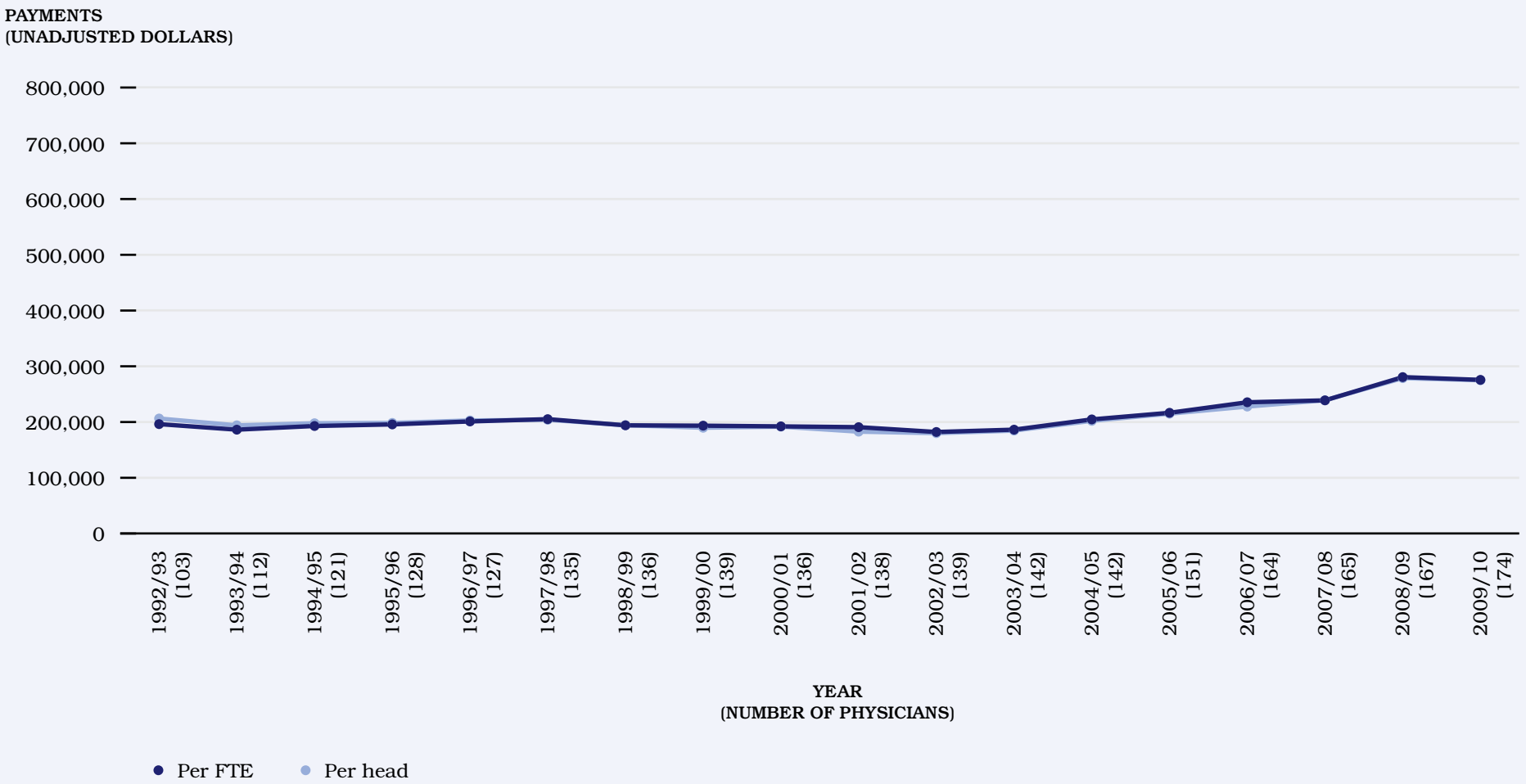
## ENDOCRINOLOGISTS

**EXHIBIT 5.10 Median and percentiles of payments (in unadjusted dollars) to individual endocrinologists, in Ontario, 1992/93 to 2009/10**



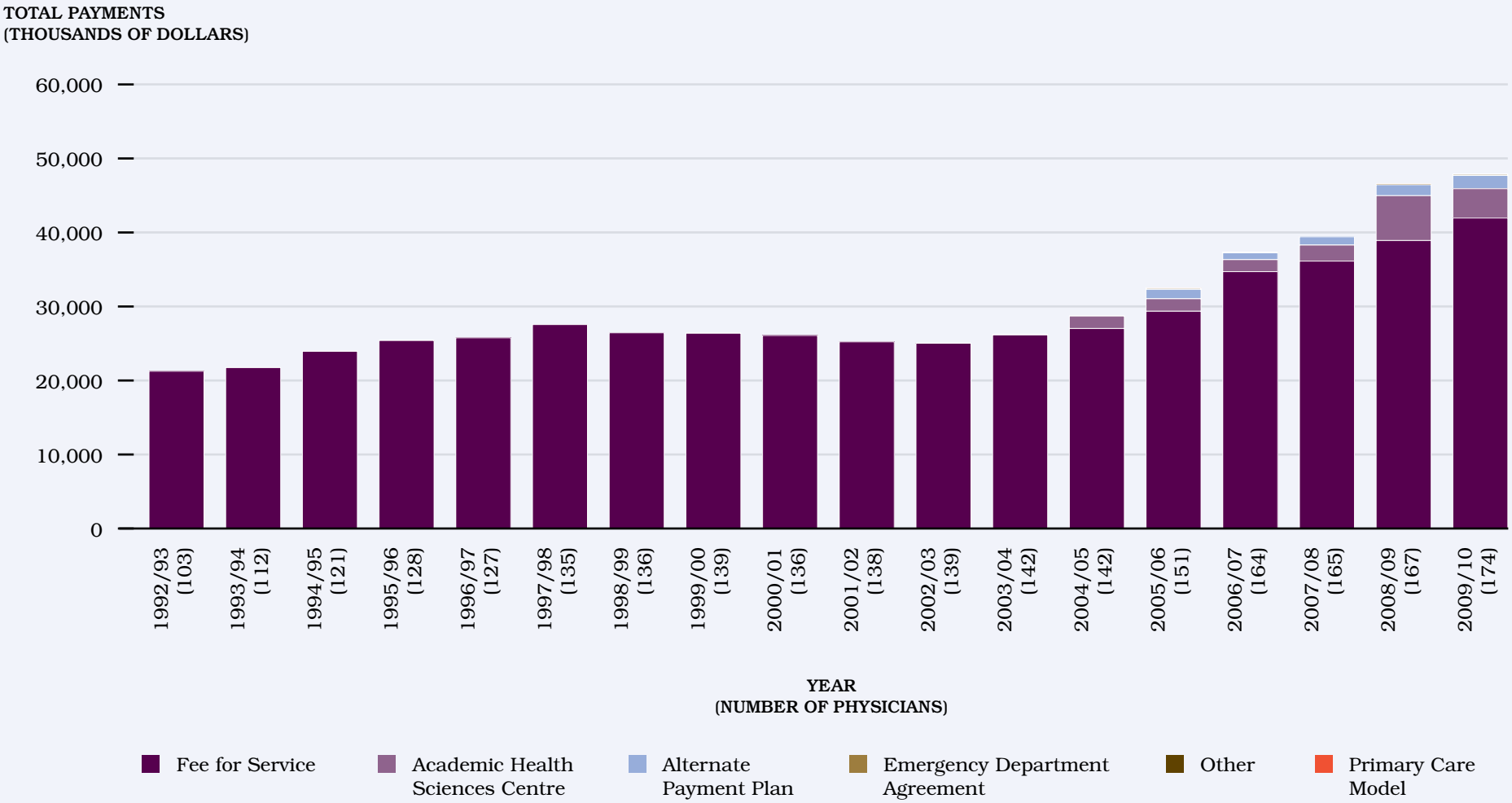
## ENDOCRINOLOGISTS

**EXHIBIT 5.11 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to endocrinologists, in Ontario, 1992/93 to 2009/10**



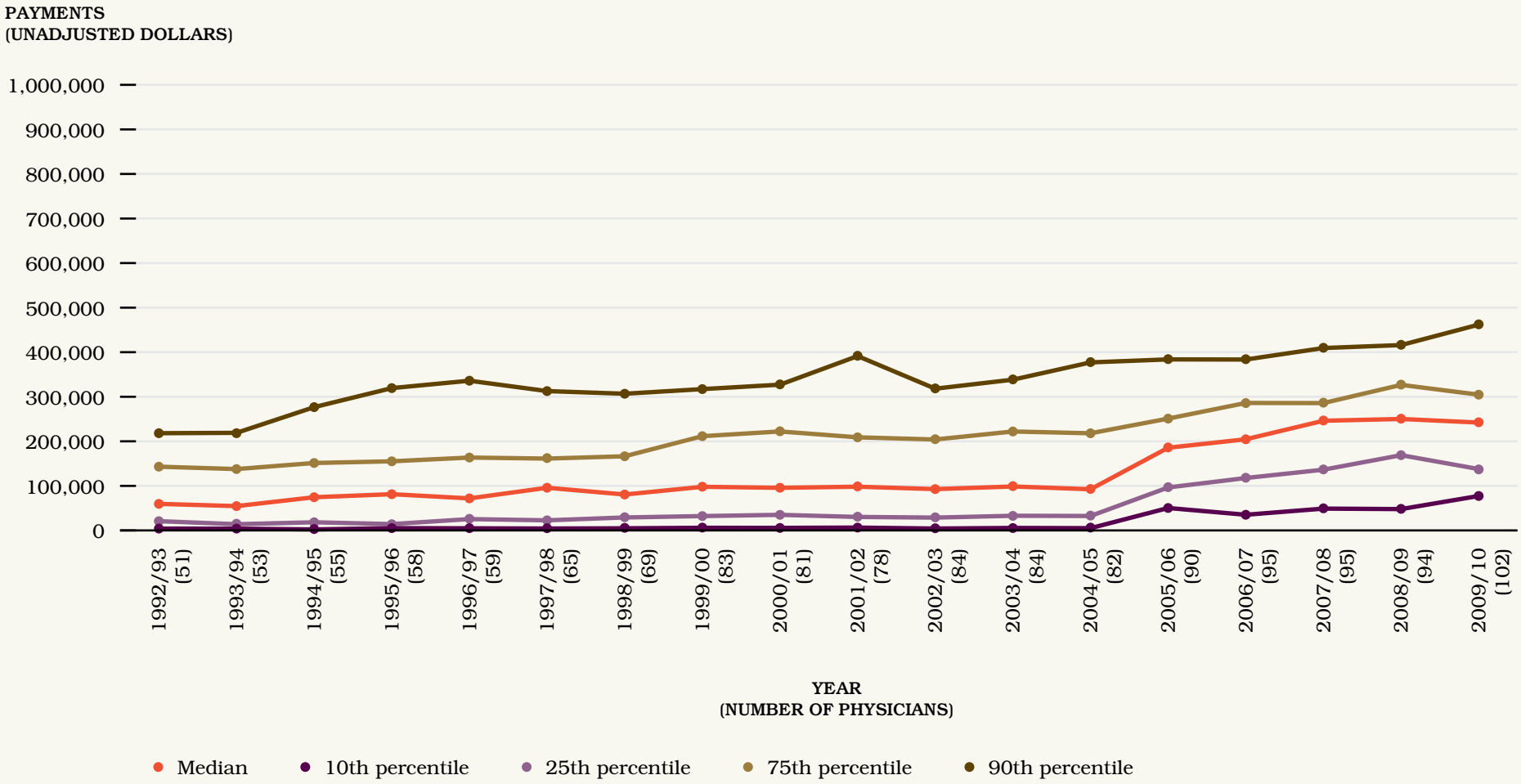
## ENDOCRINOLOGISTS

**EXHIBIT 5.12 Total payments to endocrinologists by payment source, in Ontario, 1992/93 to 2009/10**



## GERIATRICIANS

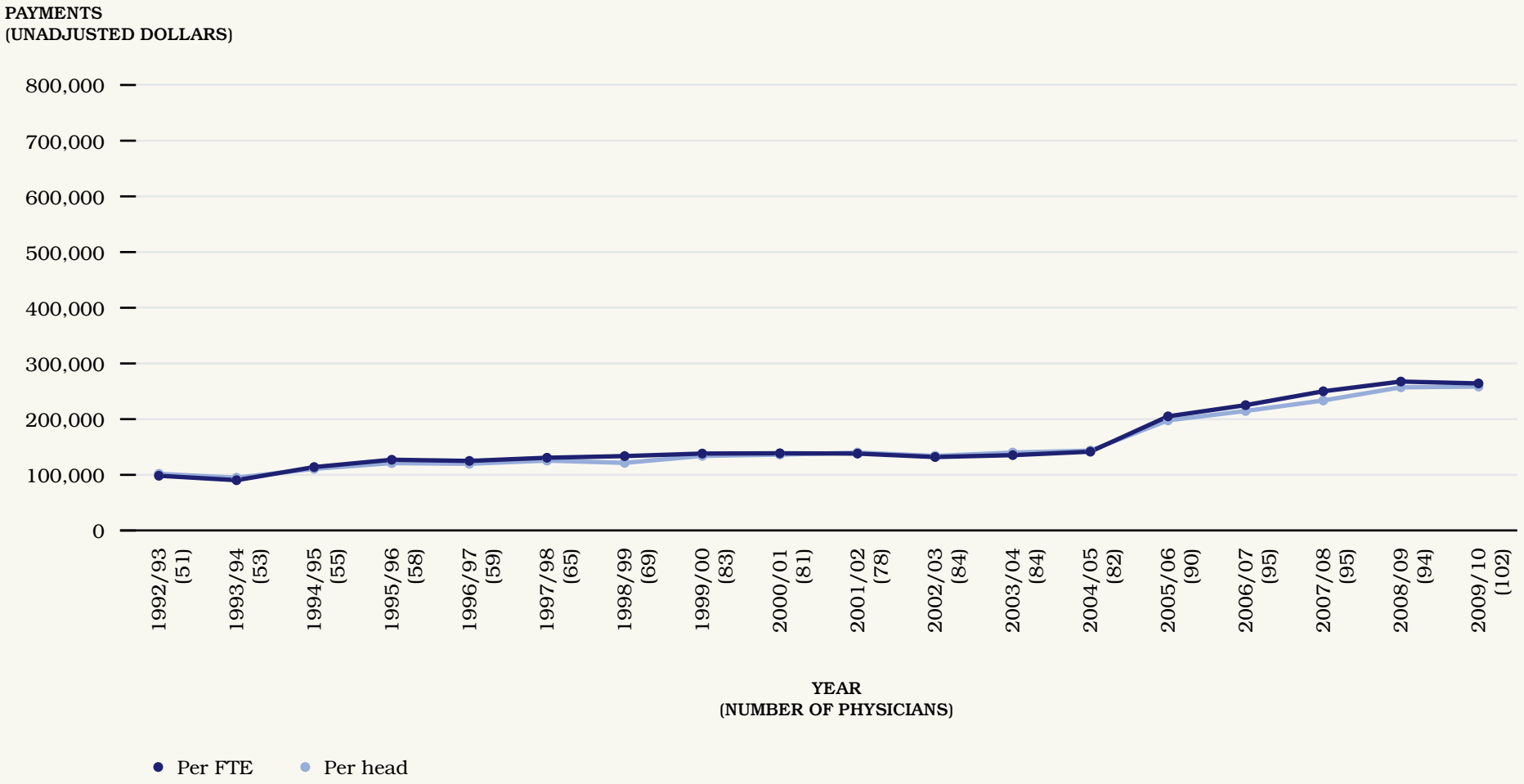
**EXHIBIT 5.13 Median and percentiles of payments (in unadjusted dollars) to individual geriatricians, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2005/06 may be incomplete and should be treated with caution.

## GERIATRICIANS

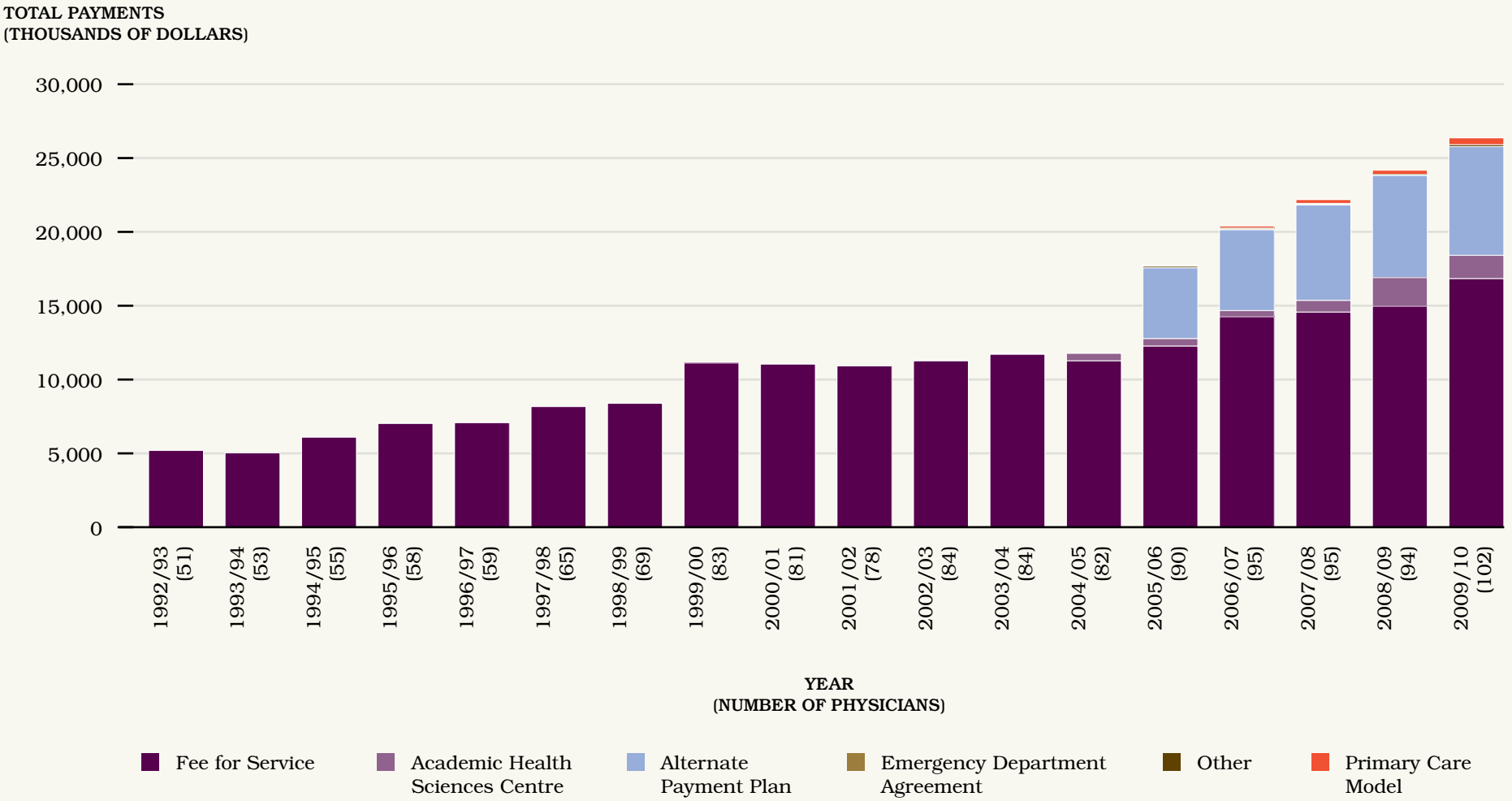
**EXHIBIT 5.14 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to geriatricians, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2005/06 may be incomplete and should be treated with caution.

## GERIATRICIANS

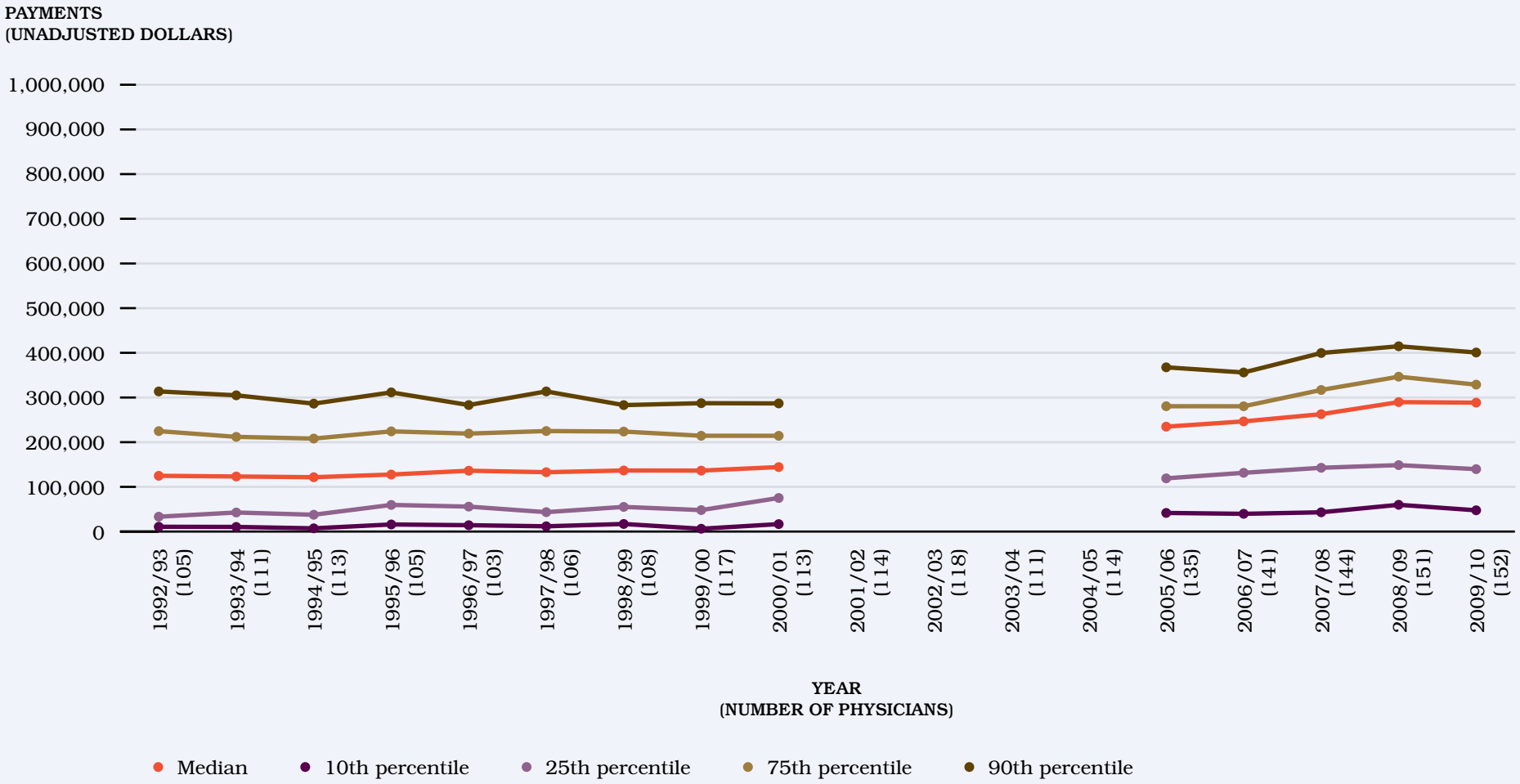
**EXHIBIT 5.15 Total payments to geriatricians by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2005/06 may be incomplete and should be treated with caution.

## HEMATOLOGISTS

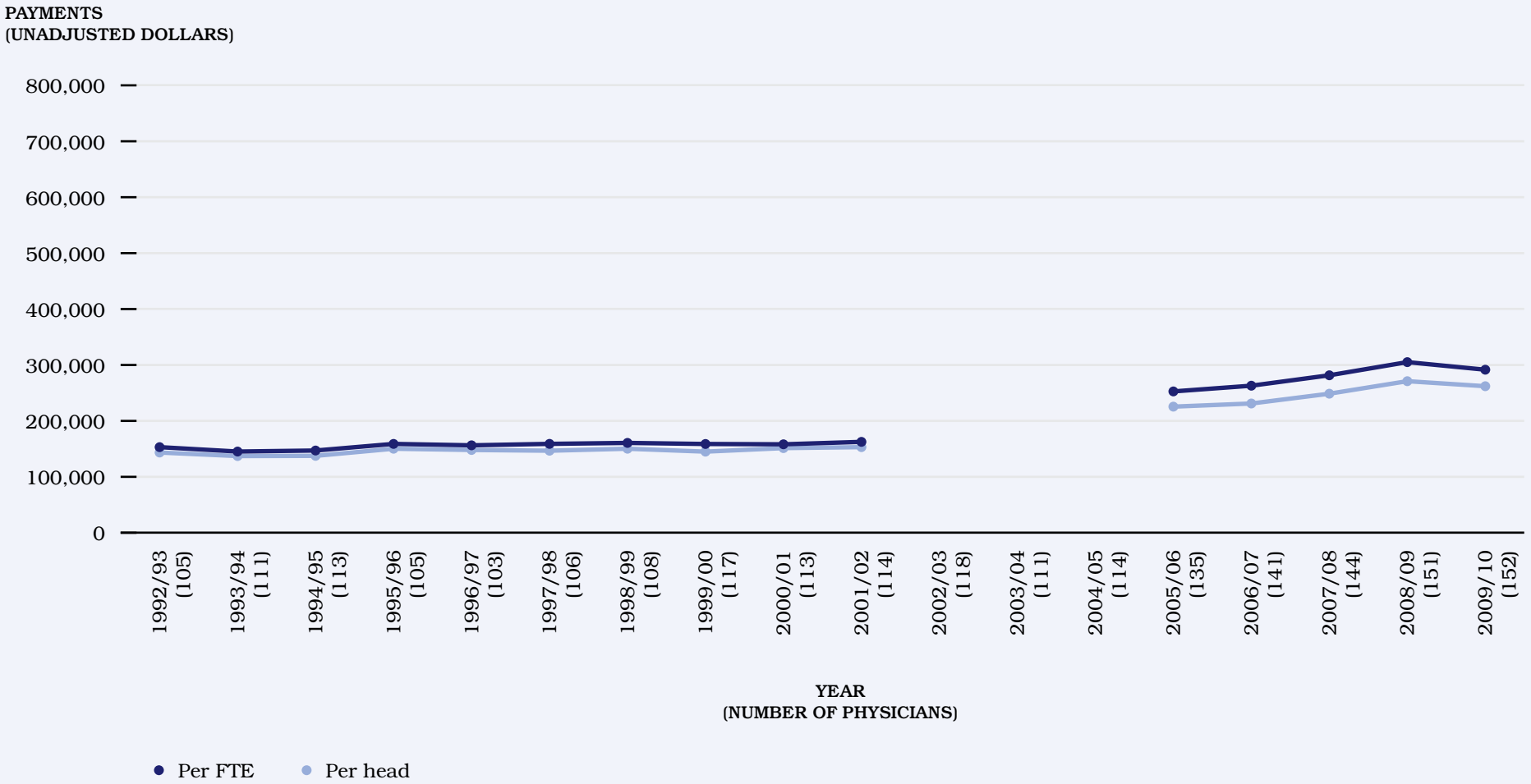
**EXHIBIT 5.16 Median and percentiles of payments (in unadjusted dollars) to individual hematologists, in Ontario, 1992/93 to 2009/10**




Note: Results for 2002/03 to 2004/05 have been suppressed due to missing data.

## HEMATOLOGISTS

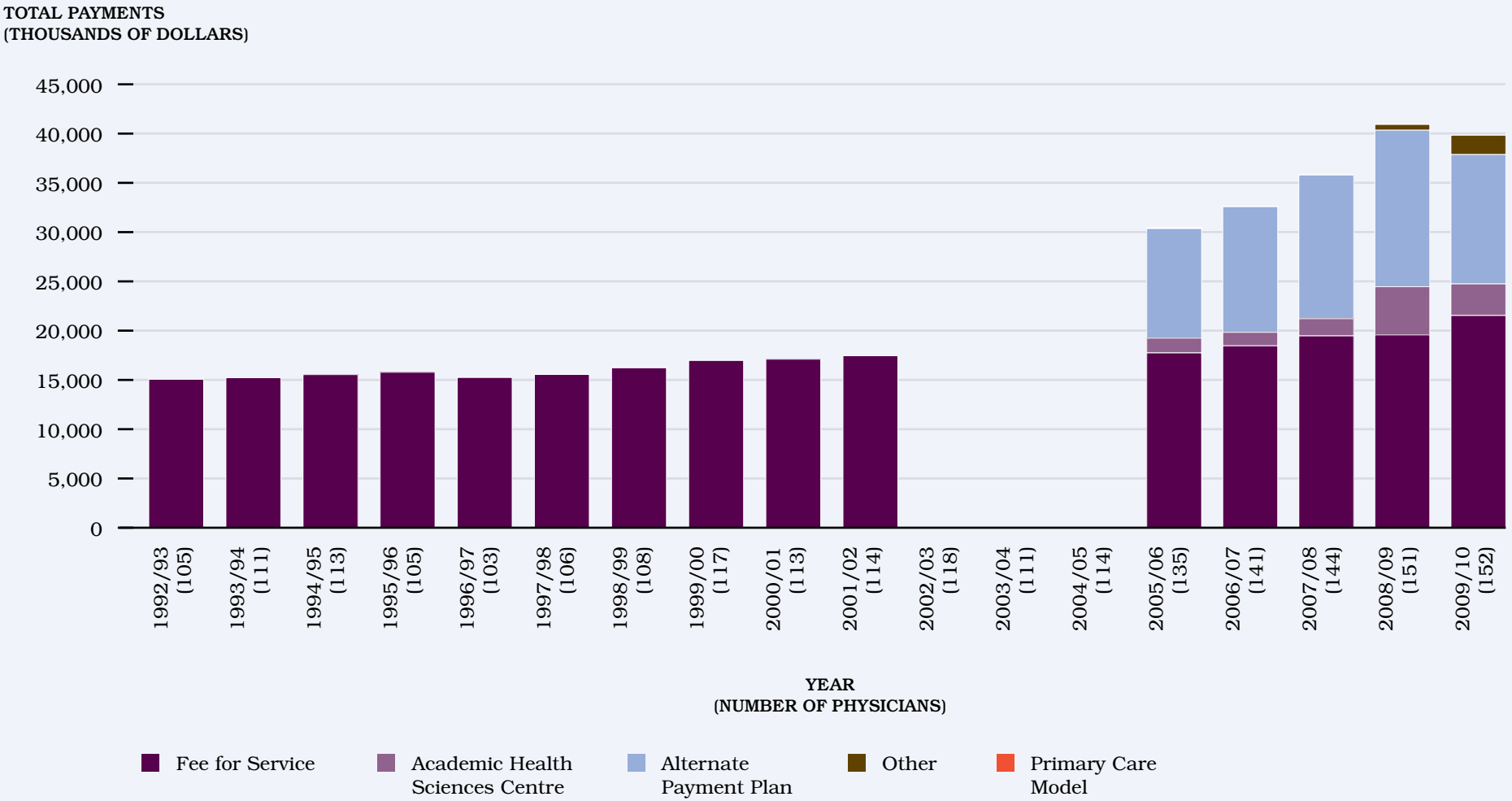
**EXHIBIT 5.17 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to hematologists, in Ontario, 1992/93 to 2009/10**




Note: Results for 2002/03 to 2004/05 have been suppressed due to missing data.

## HEMATOLOGISTS

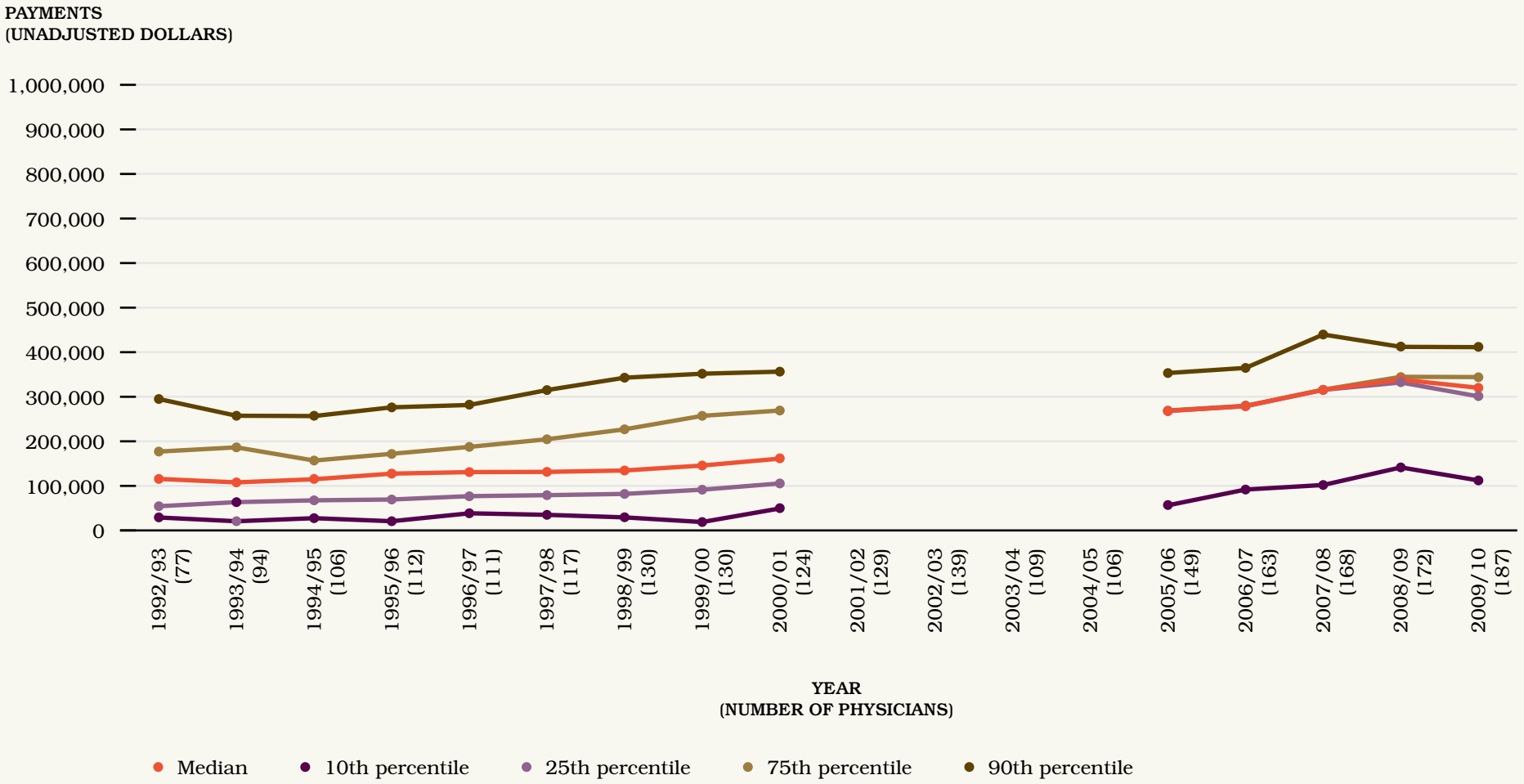
**EXHIBIT 5.18 Total payments to hematologists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Results for 2002/03 to 2004/05 have been suppressed due to missing data.

## MEDICAL ONCOLOGISTS

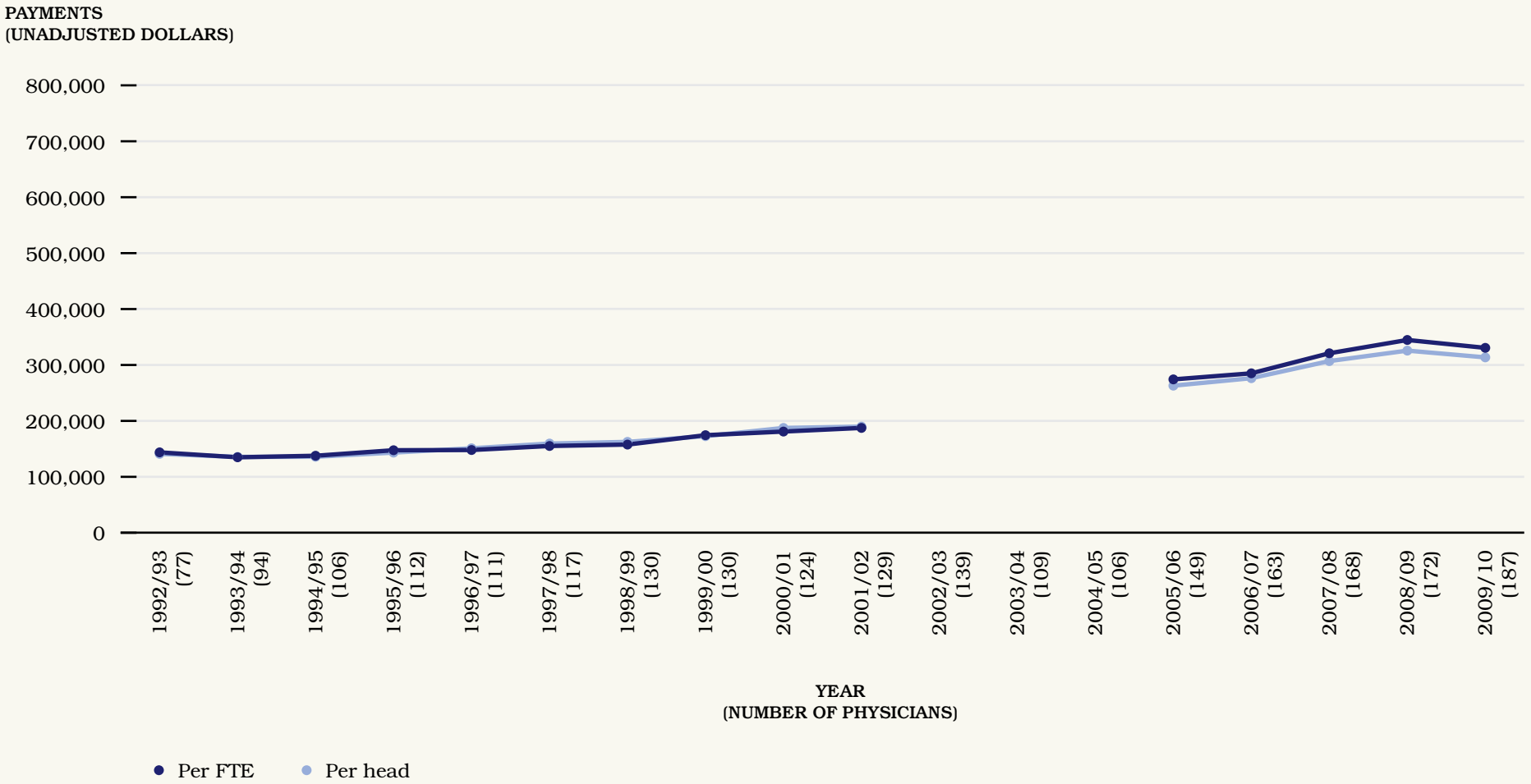
**EXHIBIT 5.19 Median and percentiles of payments (in unadjusted dollars) to individual medical oncologists, in Ontario, 1992/93 to 2009/10**




Note: Results for 2002/03 to 2004/05 have been suppressed due to missing data.

## MEDICAL ONCOLOGISTS

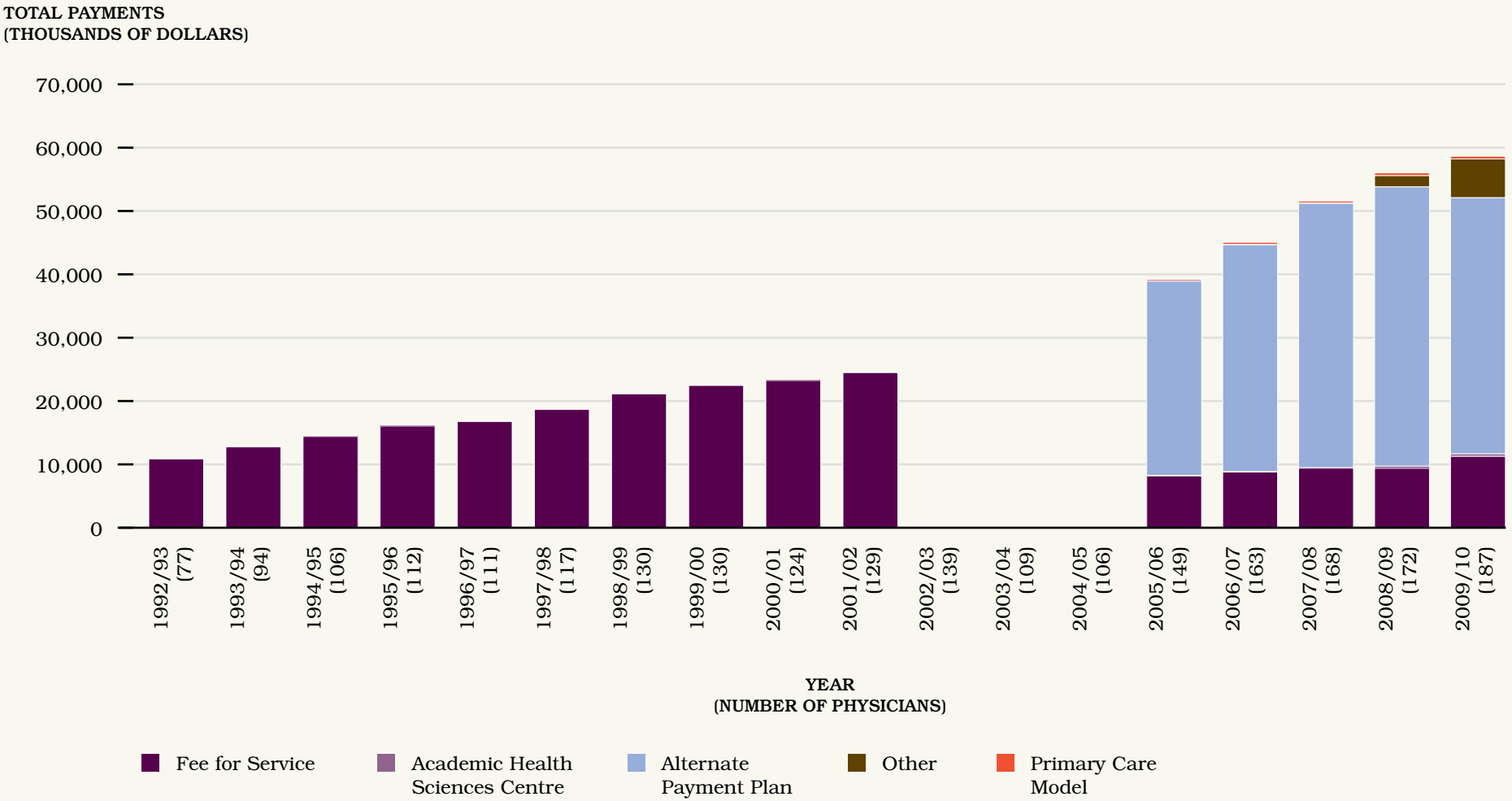
**EXHIBIT 5.20 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to medical oncologists, in Ontario, 1992/93 to 2009/10**




Note: Results for 2002/03 to 2004/05 have been suppressed due to missing data.

## MEDICAL ONCOLOGISTS

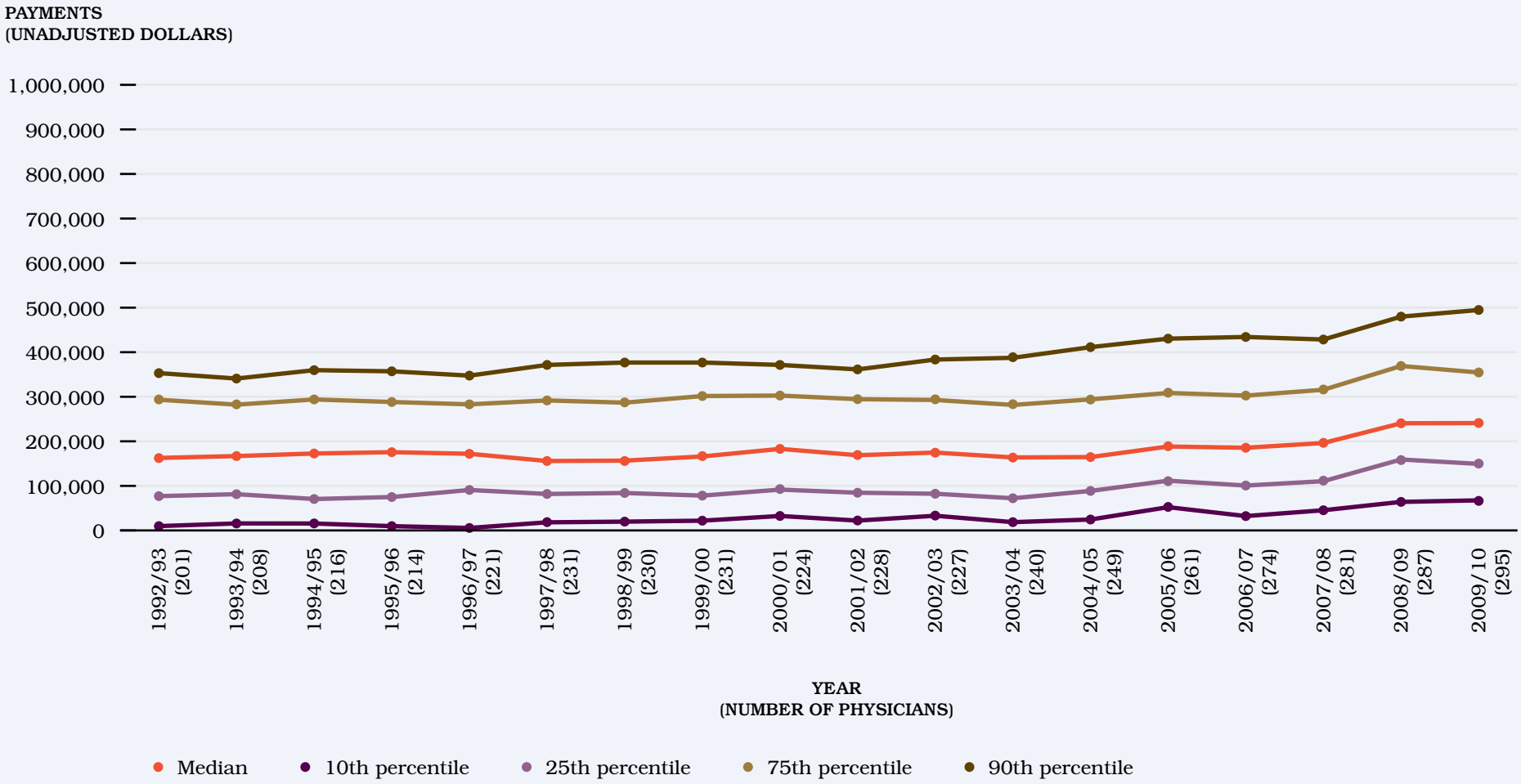
**EXHIBIT 5.21 Total payments to medical oncologists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Results for 2002/03 to 2004/05 have been suppressed due to missing data.

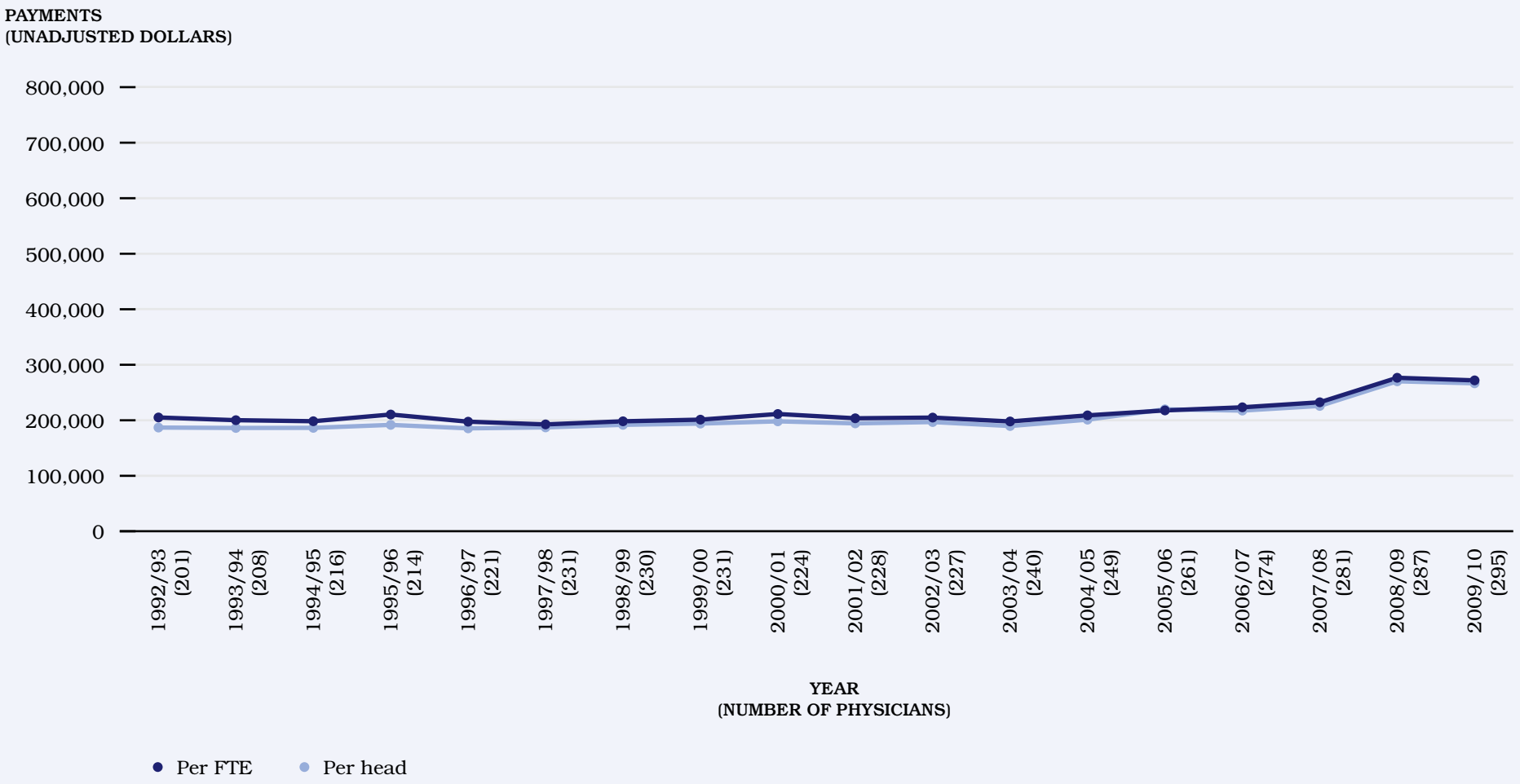
## NEUROLOGISTS

**EXHIBIT 5.22 Median and percentiles of payments (in unadjusted dollars) to individual neurologists, in Ontario, 1992/93 to 2009/10**



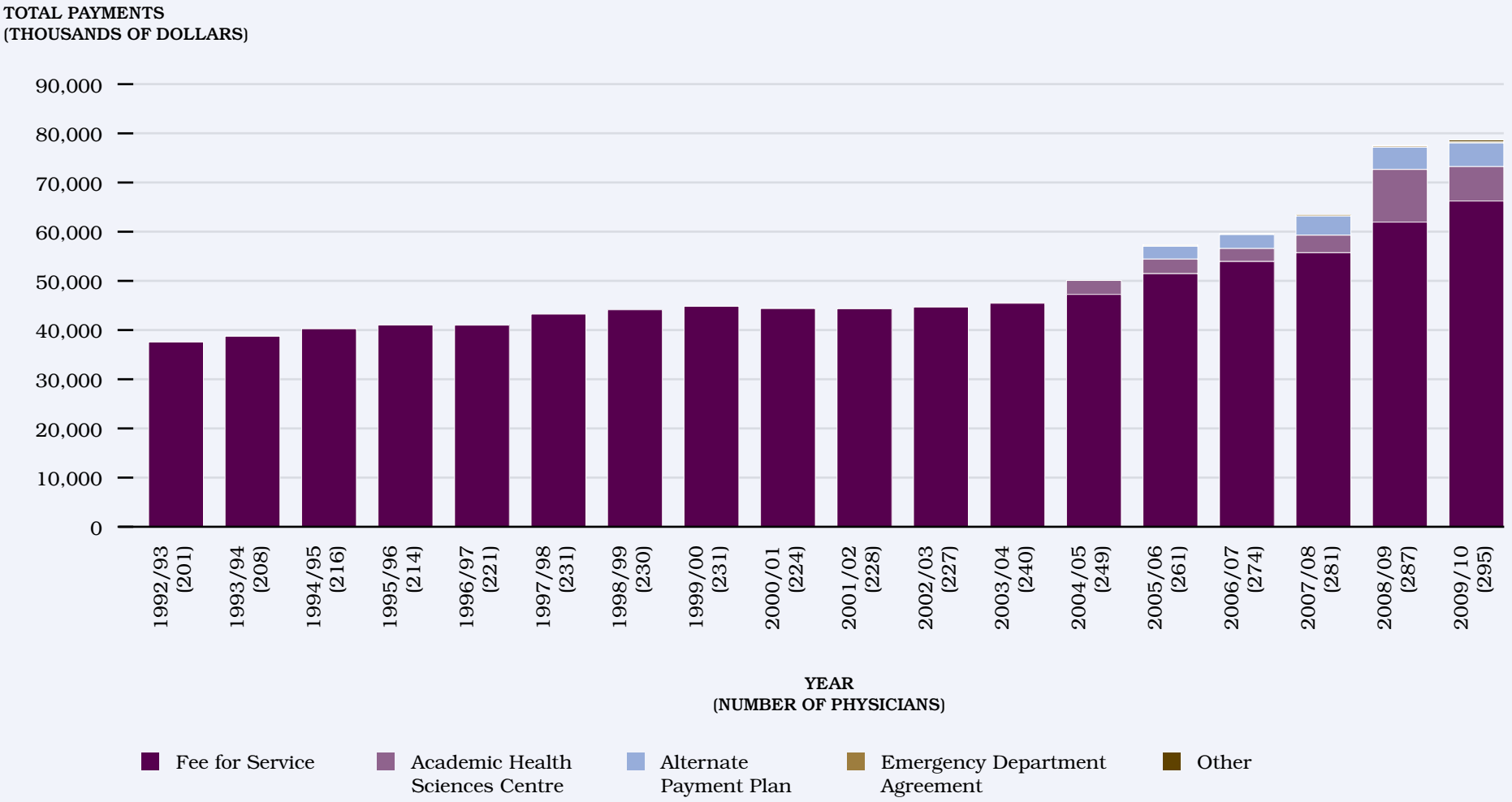
## NEUROLOGISTS

**EXHIBIT 5.23 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to neurologists, in Ontario, 1992/93 to 2009/10**



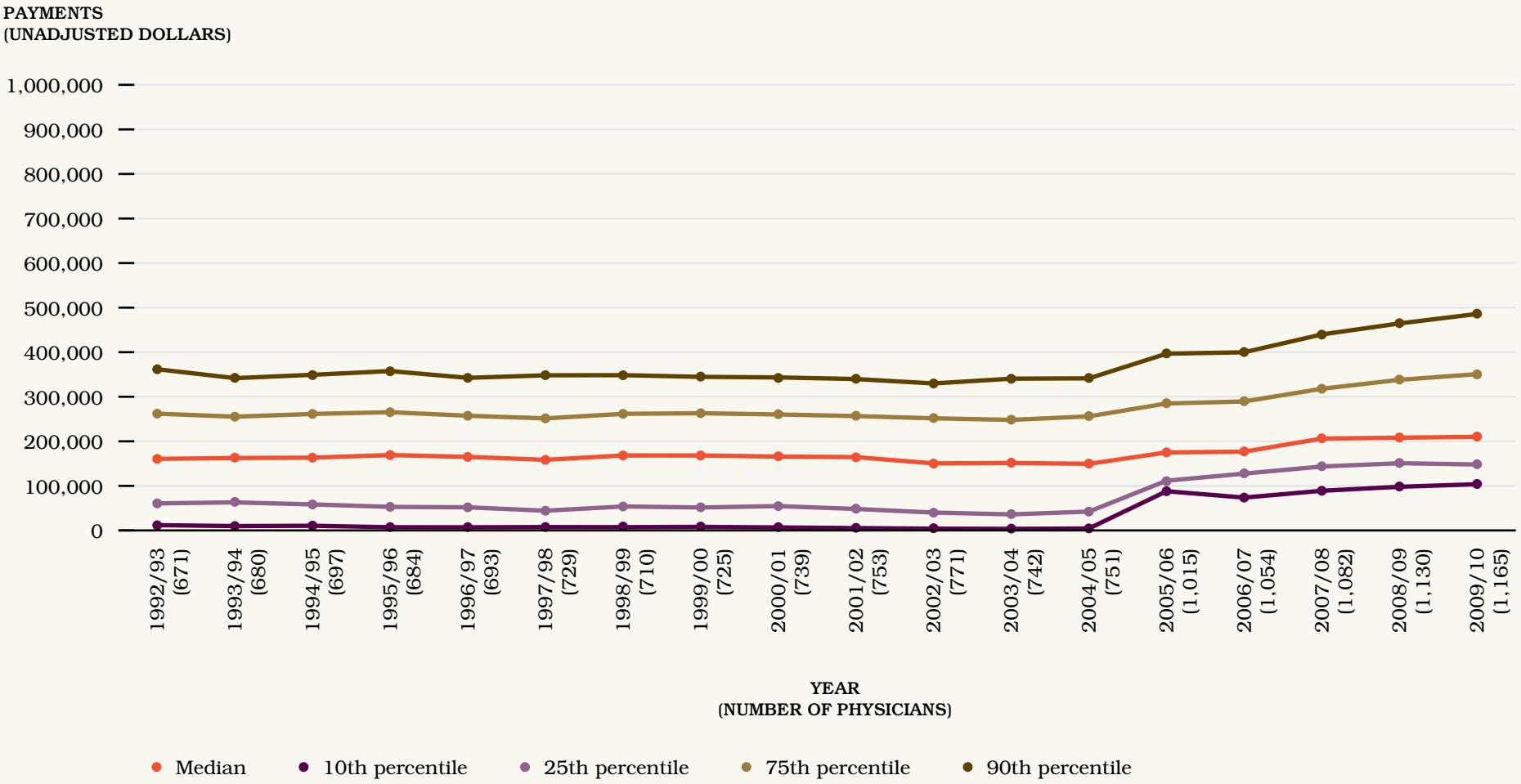
## NEUROLOGISTS

**EXHIBIT 5.24 Total payments to neurologists by payment source, in Ontario, 1992/93 to 2009/10**



## PEDIATRICIANS

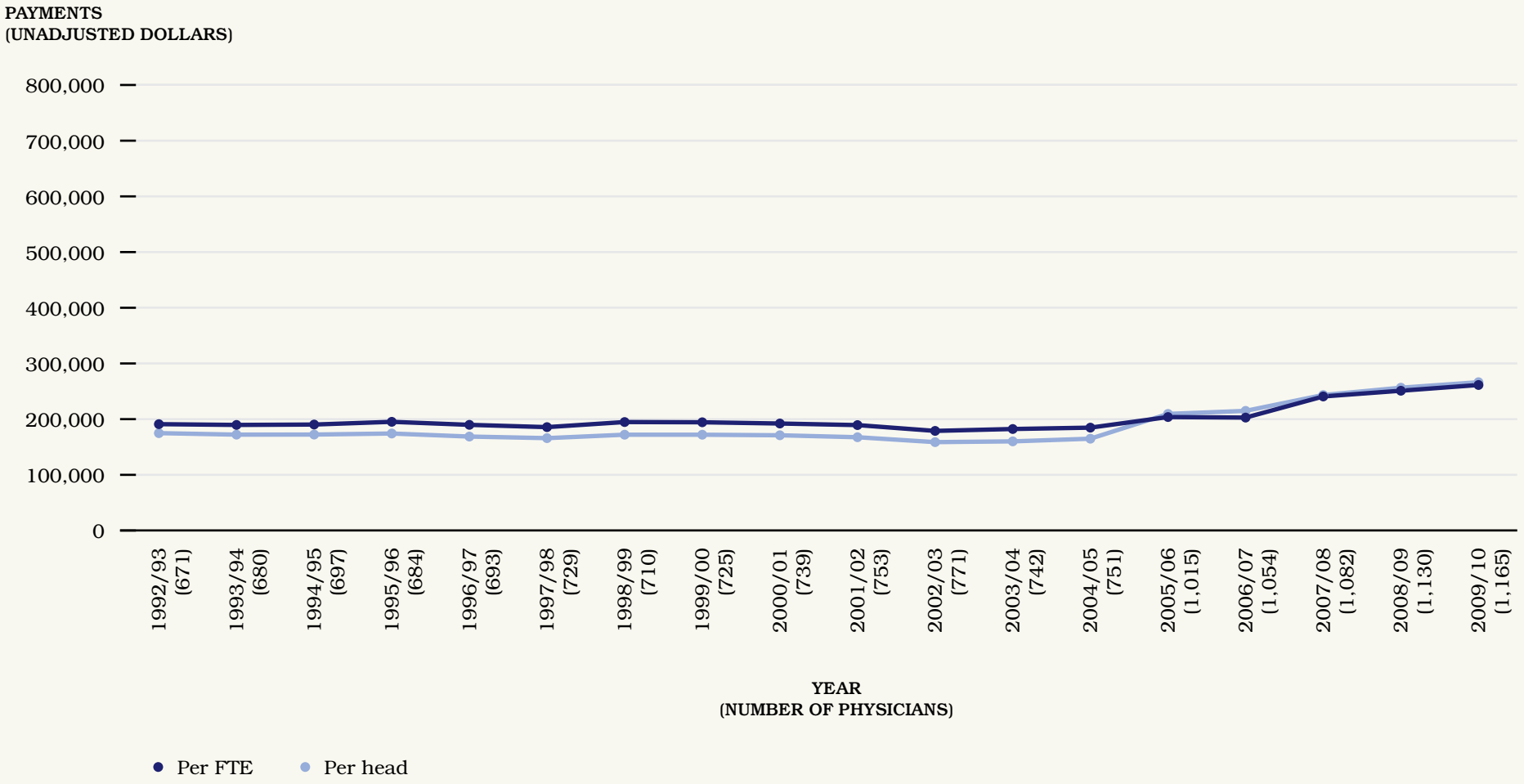
**EXHIBIT 5.25 Median and percentiles of payments (in unadjusted dollars) to individual pediatricians, in Ontario, 1992/93 to 2009/10**




Note: Data from 2001/02 to 2004/05 should be treated with caution due to missing APP payment information.

## PEDIATRICIANS

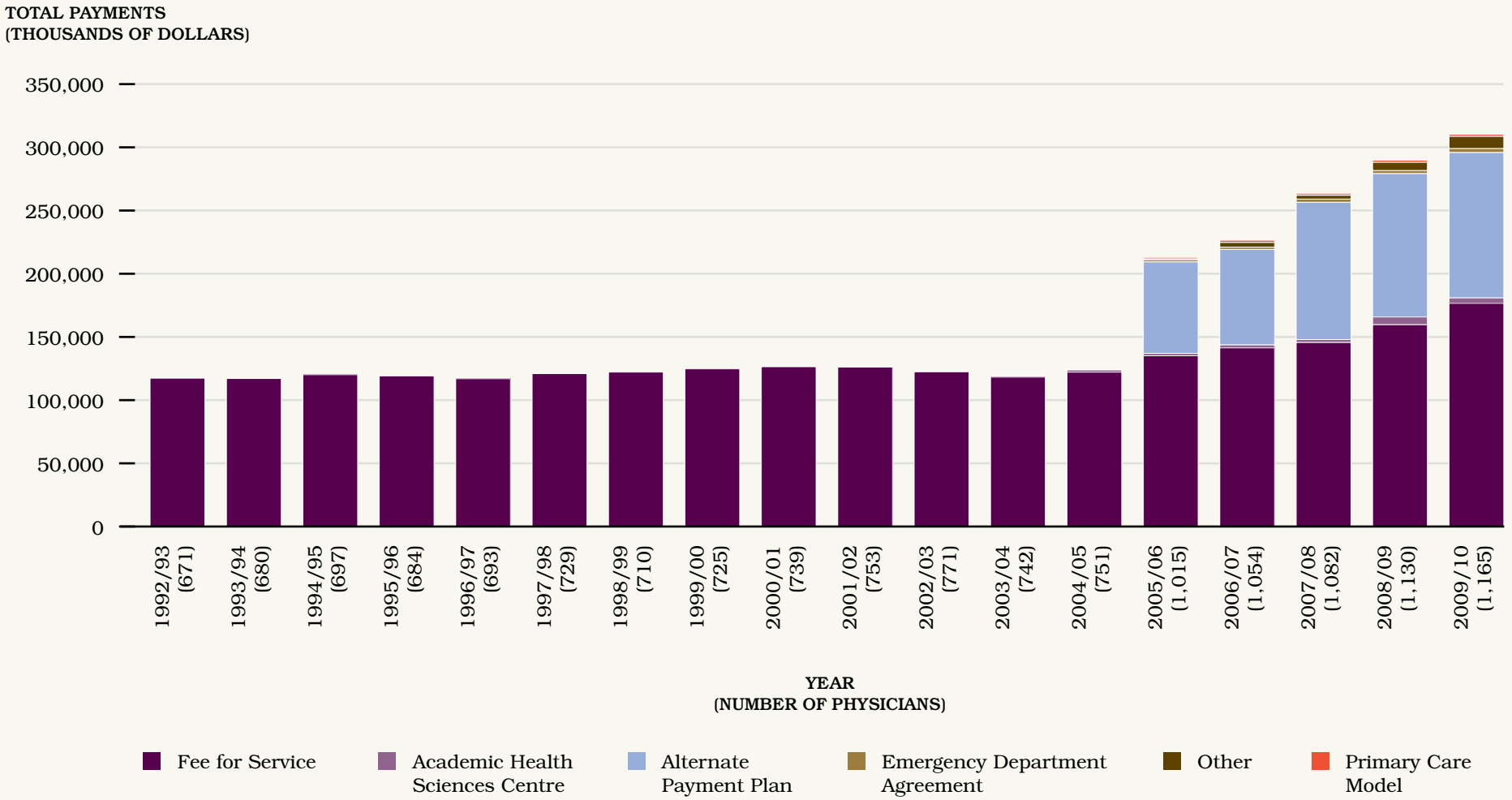
**EXHIBIT 5.26 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to pediatricians, in Ontario, 1992/93 to 2009/10**




Note: Data from 2001/02 to 2004/05 should be treated with caution due to missing APP payment information.

## PEDIATRICIANS

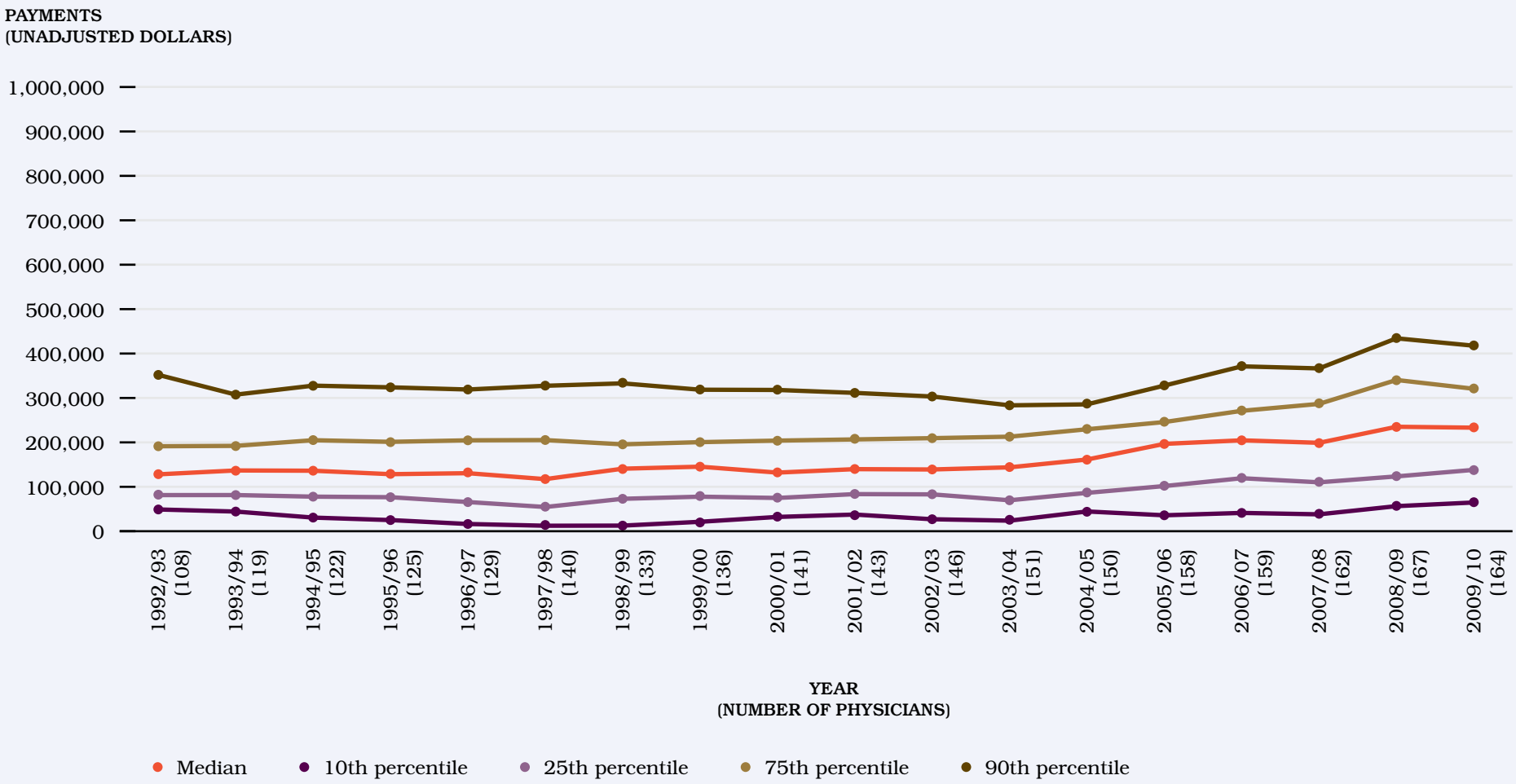
**EXHIBIT 5.27 Total payments to pediatricians by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data from 2001/02 to 2004/05 should be treated with caution due to missing APP payment information.

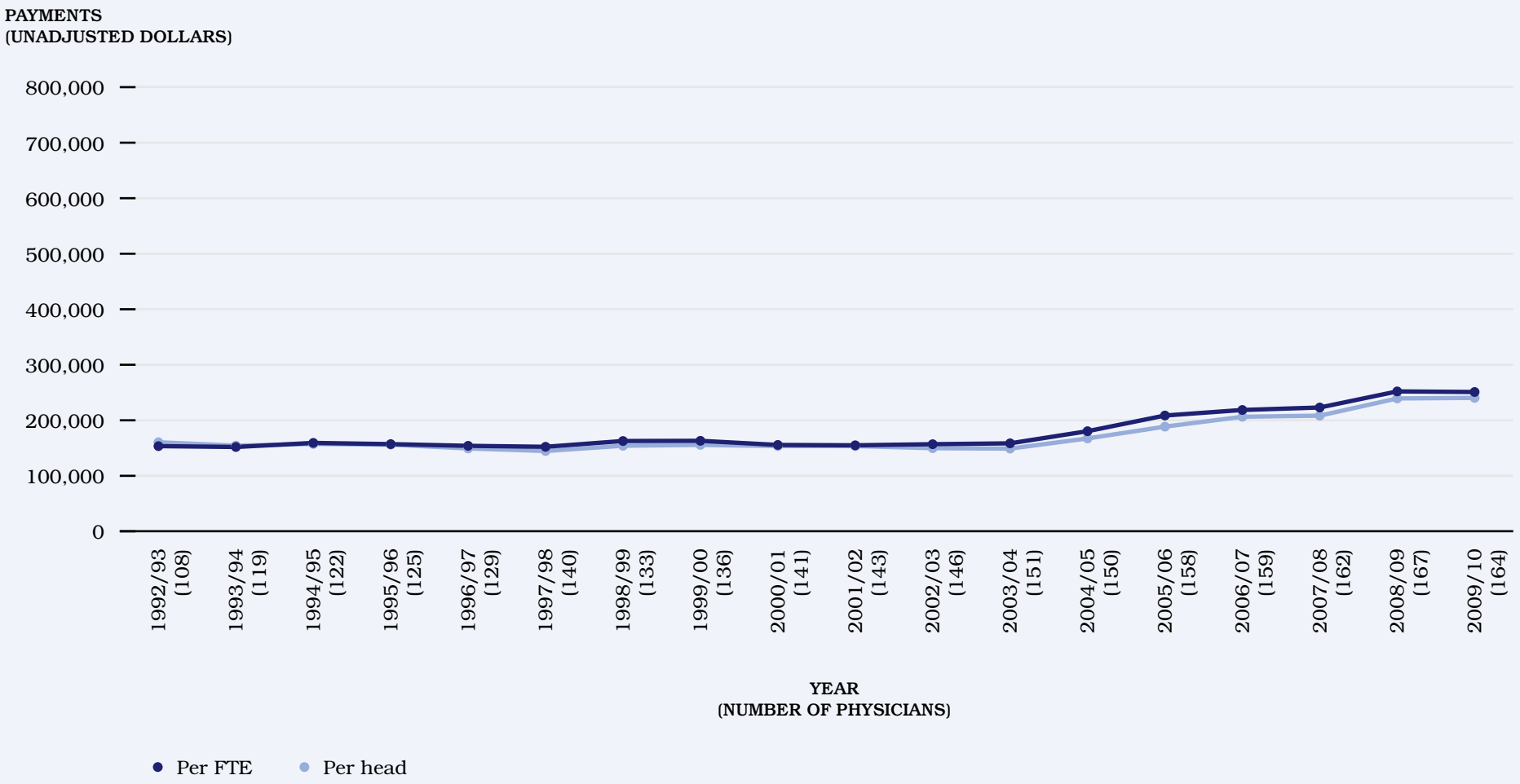
## PHYSICAL MEDICINE AND REHABILITATION SPECIALISTS

**EXHIBIT 5.28 Median and percentiles of payments (in unadjusted dollars) to individual physical medicine and rehabilitation specialists, in Ontario, 1992/93 to 2009/10**



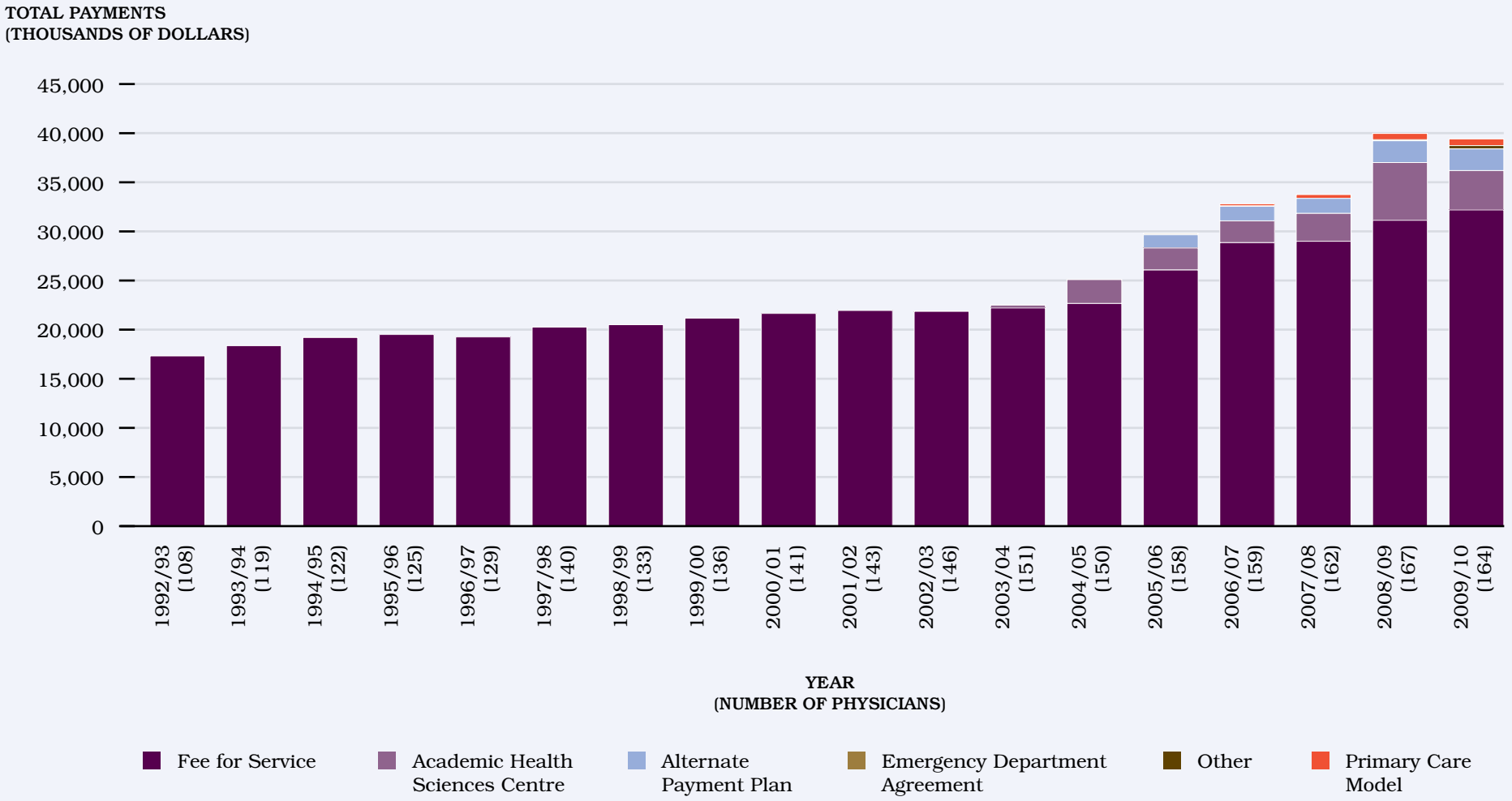
## PHYSICAL MEDICINE AND REHABILITATION SPECIALISTS

**EXHIBIT 5.29 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to physical medicine and rehabilitation specialists, in Ontario, 1992/93 to 2009/10**



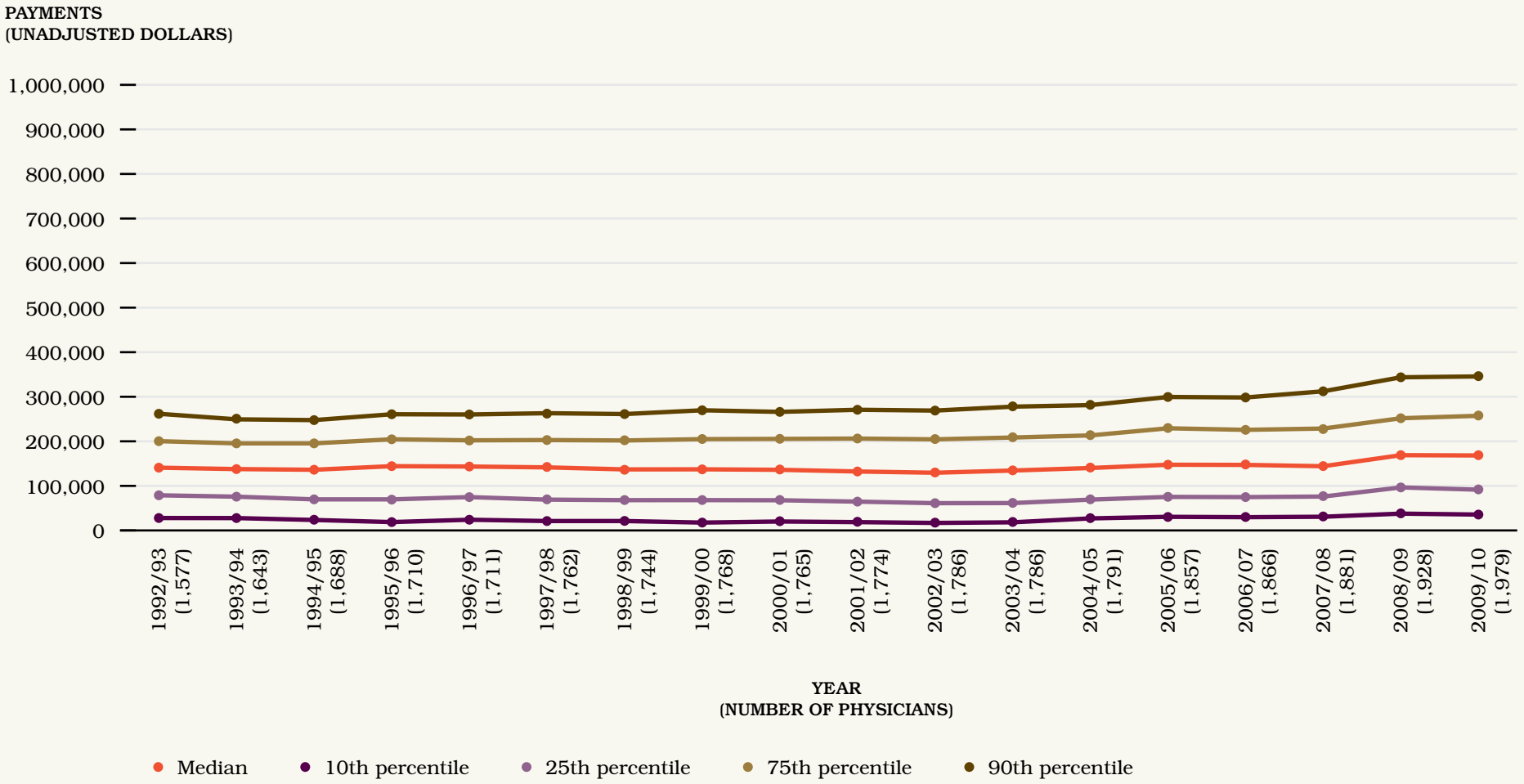
## PHYSICAL MEDICINE AND REHABILITATION SPECIALISTS

**EXHIBIT 5.30 Total payments to physical medicine and rehabilitation specialists by payment source, in Ontario, 1992/93 to 2009/10**



## PSYCHIATRISTS

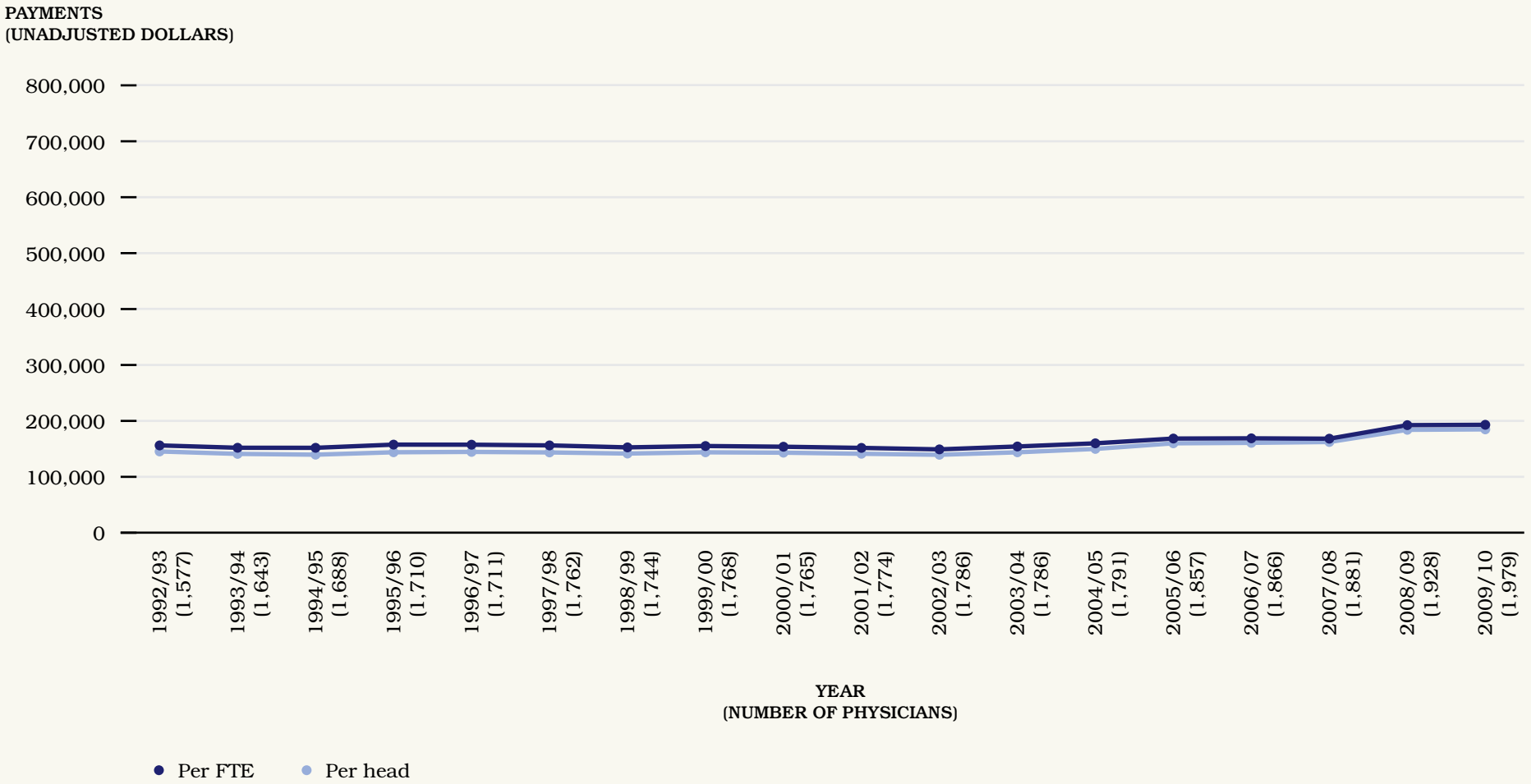
**EXHIBIT 5.31 Median and percentiles of payments (in unadjusted dollars) to individual psychiatrists, in Ontario, 1992/93 to 2009/10**




Note: The data do not include payments from provincial psychiatric hospitals or mental health sessional fees.

## PSYCHIATRISTS

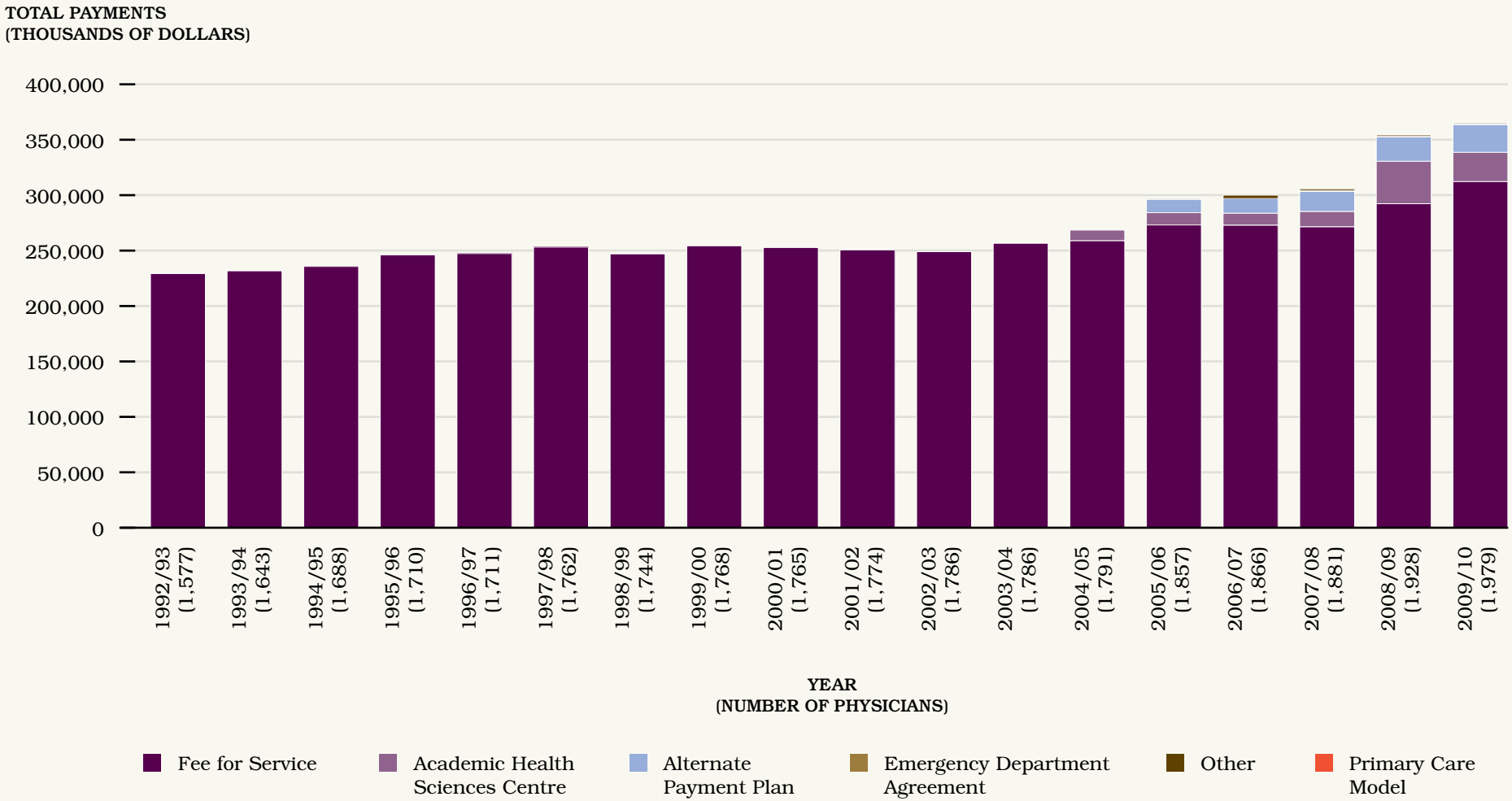
**EXHIBIT 5.32 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to psychiatrists, in Ontario, 1992/93 to 2009/10**




Note: The data do not include payments from provincial psychiatric hospitals or mental health sessional fees.

## PSYCHIATRISTS

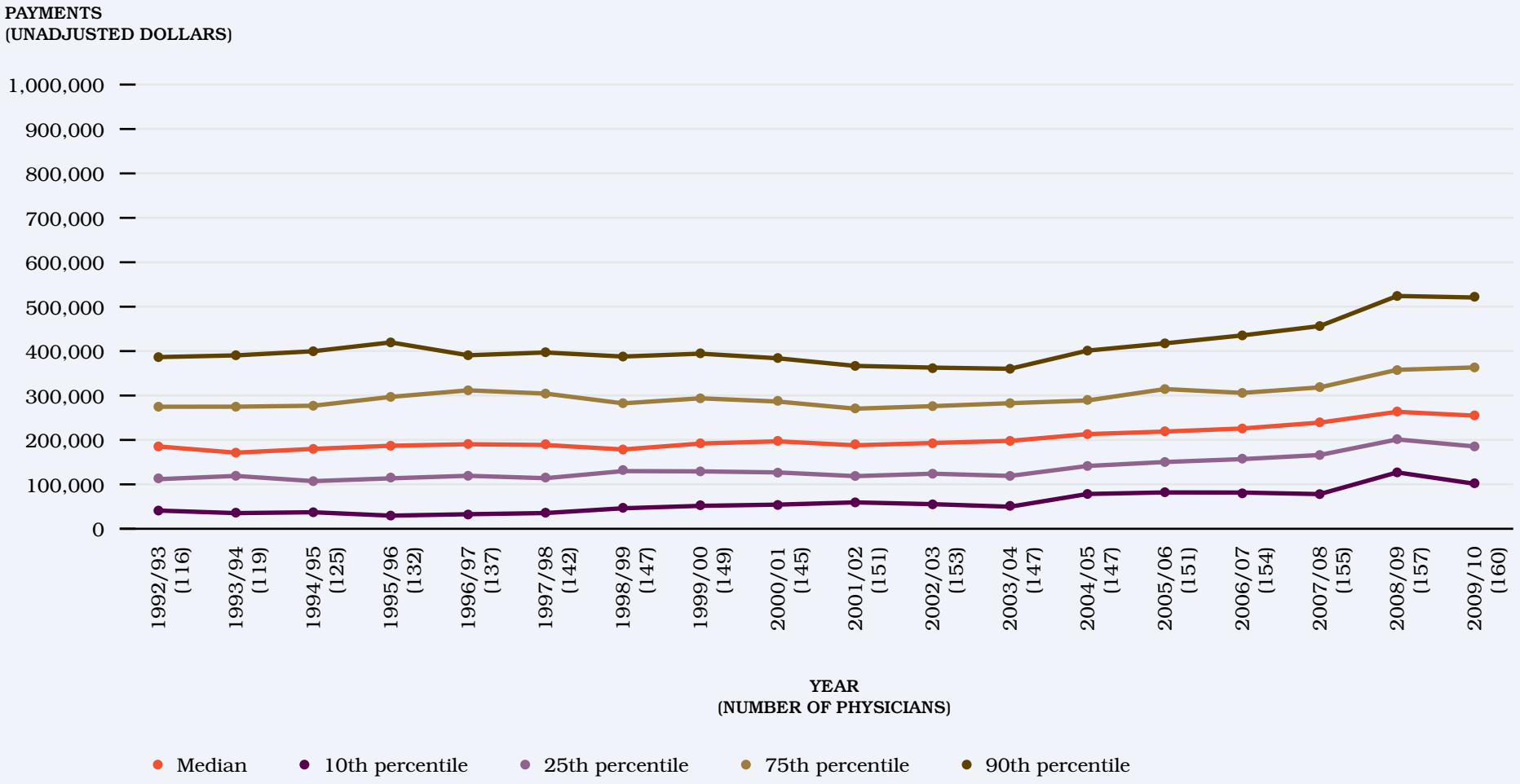
**EXHIBIT 5.33 Total payments to psychiatrists by payment source, in Ontario, 1992/93 to 2009/10**




Note: The data do not include payments from provincial psychiatric hospitals or mental health sessional fees.

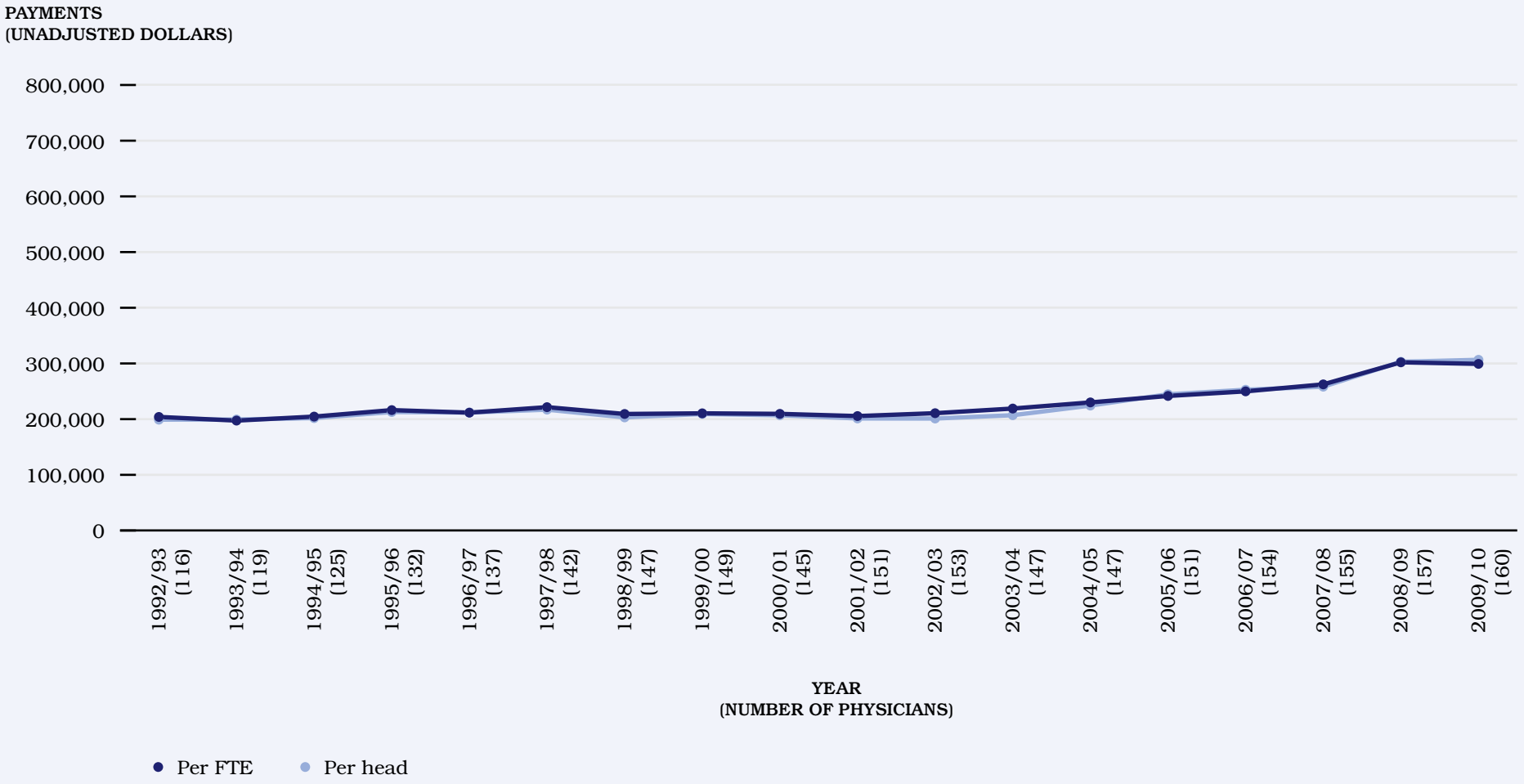
## RHEUMATOLOGISTS

**EXHIBIT 5.34 Median and percentiles of payments (in unadjusted dollars) to individual rheumatologists, in Ontario, 1992/93 to 2009/10**



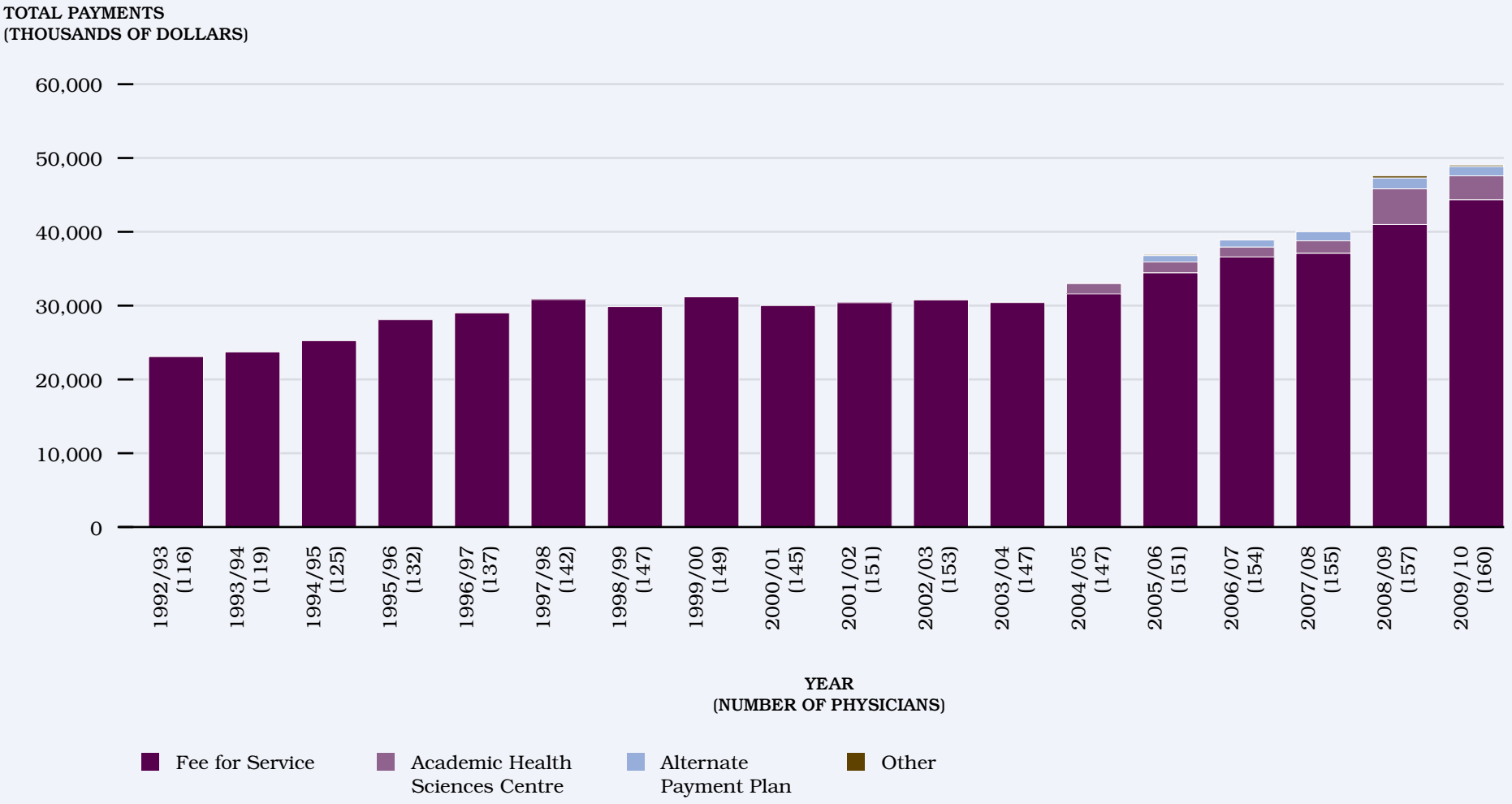
## RHEUMATOLOGISTS

**EXHIBIT 5.35 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to rheumatologists, in Ontario, 1992/93 to 2009/10**



## RHEUMATOLOGISTS

**EXHIBIT 5.36 Total payments to rheumatologists by payment source, in Ontario, 1992/93 to 2009/10**



CHAPTER 6

# Results for Medical Procedural Specialists

CARDIOLOGY
GASTROENTEROLOGY
NEPHROLOGY
RADIATION ONCOLOGY
RESPIROLOGY

## INTRODUCTION

Medical procedural specialists are specialist physicians who perform procedures that are not considered surgical because they are either non-invasive (do not involve working through a sterile incision in an operating room), do not require anesthesia, or can be performed on an outpatient basis. Many (but not all) of the procedures performed by specialists in this category involve visualization of the gastrointestinal tract, the respiratory tract, and the cardiovascular system through the use of fibre-optic endoscopes or catheters placed in blood vessels. Medical procedural specialists perform procedures such as biopsies, removal of small lesions, dilation of strictures and placement of stents through endoscopes or catheters. Some of these procedures have replaced open surgery—for instance, the shift from open coronary bypass surgery to angioplasty and stent placement in recent years. These specialties also include some physicians who do not perform procedures, but we cannot easily separate them in this analysis, but for practical reasons they have been categorized as belonging to this group. We included radiation oncology in this group as these physicians perform a range of increasingly sophisticated procedures that utilize ionizing radiation and nephrology, as these practitioners are extensively involved in the provision of dialysis to patients with end-stage renal failure.

Demand for the services provided by some procedural specialists has increased dramatically in the past decade or so. Some of this is related to the rapid development of technology that enables non-invasive procedures that previously required surgery, and some is related to increasing demand due to an aging population and the rising prevalence of many chronic conditions. For example, renal failure is a complication of diabetes, and the increase in the prevalence of Type II diabetes over the past two decades has led to an increased need for dialysis, which is managed by nephrologists. Similarly, an increase in the prevalence of congestive heart failure has led to an increased demand for echocardiograms and other studies of heart function. In the case of gastro-enterology, the campaign to encourage Ontarians 50 years and older to get screened for colorectal cancer has increased demand for colonoscopy.

For some procedures there are two types of fees: a technical fee, which is payable to the institution to cover infrastructure costs and equipment, and a professional fee, which is paid to the physician who performs or supervises the procedure and interprets the results. Where these were billed separately, the technical fees have been excluded from our analyses. In the 1990s, there were a few procedures for which physicians could bill a combined technical and professional fee. Such fees were discontinued in 2000/01, and some of the exhibits illustrate a drop in payments from 2000/01 to 2001/02 resulting from this change. This change is most noticeable in the case of respirologists, where it affected billings for sleep studies. There was a lesser effect on payments to cardiologists. Payments to the other specialties in this group were unaffected by this change.

## FINDINGS FOR INDIVIDUAL SPECIALTIES

### Cardiology (exhibits 6.1 to 6.3)

By 2009/10, there were 590 cardiologists practicing in Ontario, an increase of 74% from 1992/93. This is one of the larger specialties, and total payments in 2009/10 were $316 million. In 2009/10, individual cardiologists received, on average, approximately 75% more in payments compared with all physicians combined. The 90$^{th}$ percentile for payments in 2009/10 was $940,000, meaning that 10% of cardiologists were paid more than this. Ten percent of cardiologists were paid less than $155,000 in that year. The 90$^{th}$ percentile for payments increased from being 75% higher than the median in the 1990s to nearly 95% higher in 2009/10, indicating a widening variation in payments to cardiologists. Cardiologists are primarily paid on a FFS basis, with 93% of their 2009/10 payments coming from this source.

### Gastroenterology (exhibits 6.4 to 6.6)

In 2009/10, there were 289 gastro-enterologists practicing in Ontario, an increase of 82% from 1992/93. Total payments to gastroenterologists were nearly $150 million in 2009/10. Median and mean annual payments to individual gastro-enterologists increased steadily from 1997/98 and were about $500,000 in 2009/10, over

60% higher than the average for all physicians in Ontario. The distribution of payments was wide and increased over the period of the study, particularly since 2002/03. As a result, the top 10% of gastroenterologists were paid over $850,000 in 2009/10 and the lowest 10% were paid $175,000 or less. The great majority of payments (93%) to this specialty are from FFS.

## Nephrology (exhibits 6.7 to 6.9)

This specialty has grown substantially. In 2009/10, there were 191 practicing nephrologists in Ontario, an increase of 136% from 1992/93. Total payments to nephrologists in 2009/10 were $102 million. The median payment to a nephrologist in 2009/10 was $500,000 and the mean was approximately $550,000. The median payment in 2009/10 was more than double that in 1992/03, was 75% higher than that for all physicians, and increased steadily throughout the observation period. In contrast to the average results for payments to all doctors, payments to nephrologists did not display the flat trend observed during the 1990s when income capping was in place. The variation in payments was wide and increased throughout the study. By 2009/10, the upper 10% of nephrologists were paid over $900,000 (88% higher than the equivalent value for all physicians), and the lowest 10% were paid $145,000 or less. The great majority of nephrologists (94%) are paid through FFS.

## Radiation Oncology (exhibits 6.10 to 6.12)

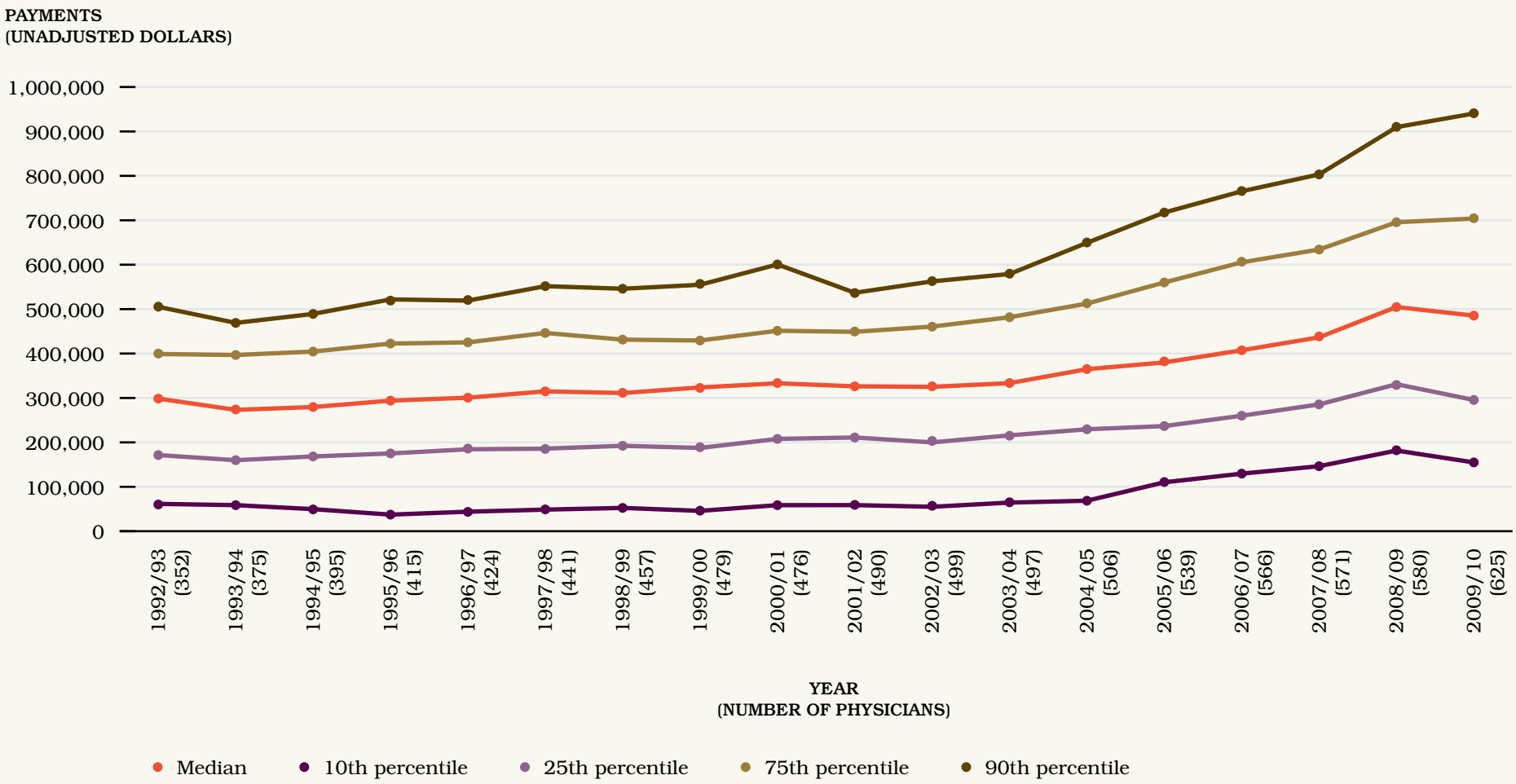
The number of radiation oncologists in Ontario rose from 105 in 1992/93 to 182 in 2009/10, a 73% increase. Total payments in 2009/10 were $76 million. We cannot analyze the increase in payments due to missing data prior to 2005/06, so apparent trends prior to that date need to be regarded with caution. Payments to radiation oncologists are more complex than for other procedural specialties in that approximately 63% are in the form of FFS, with the remaining 37% through APPs. In 2009/10, the mean payment to radiation oncologists was over $400,000, about 30% higher than for all physicians. This value increased by about 16% from 2005/06 to 2009/10 (the period for which we have reliable data). In 2009/10, the median payment to radiation oncologists was approximately 50% higher than for all physicians. The observed distribution in payments is quite narrow. The highest 10% of radiation oncologists were paid just over $500,000 or more, a value that is only 25% more than those at the median. The lowest 10% were paid approximately $280,000 or less.

## Respirology (exhibits 6.13 to 6.15)

The number of respirologists increased 72% during the study period, from 137 in 1992/93 to 236 in 2009/10. Total payments in 2009/10 were just under $80 million. Average payments to individual respirologists increased modestly by 19% between 2005/06 to 2009/10, a period during which there was rapid growth in some other specialties. This value was lower than the 28% increase in average annual payments to all physicians. Nevertheless, the median and mean payments in 2009/10 were slightly higher than the average for all physicians. In other words, respirologists have not seen the large increases in payments evident with other procedural specialists. The variation in payments across this specialty is narrower than that seen with other procedural physicians. In 2009/10, the highest 10% of respirologists earned $580,000 or more, compared with $100,000 or less for the lowest 10%. In 2009/10, nearly 90% of payments were in the form of FFS.

## CARDIOLOGISTS

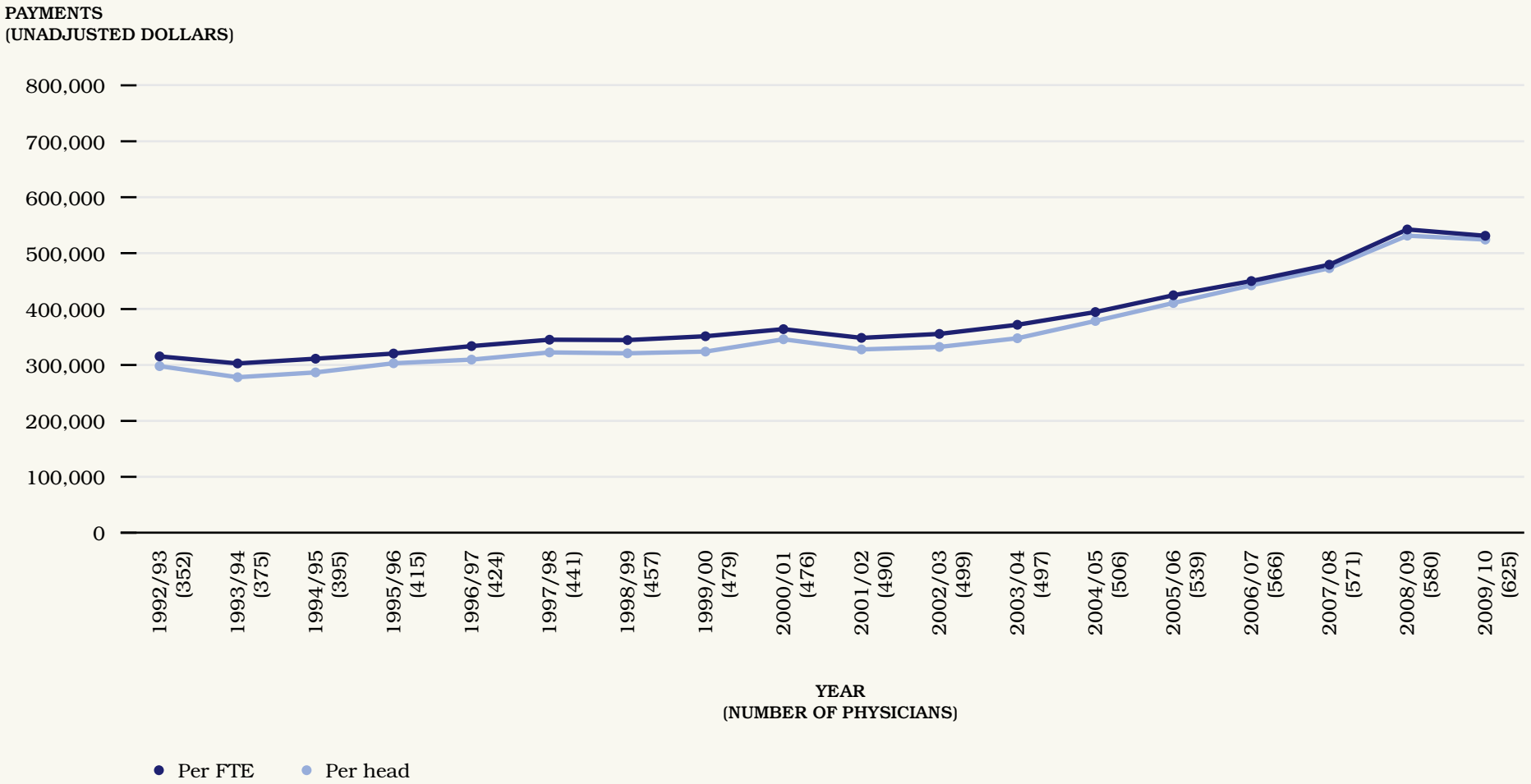
**EXHIBIT 6.1 Median and percentiles of payments (in unadjusted dollars) to individual cardiologists, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/021 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

## CARDIOLOGISTS

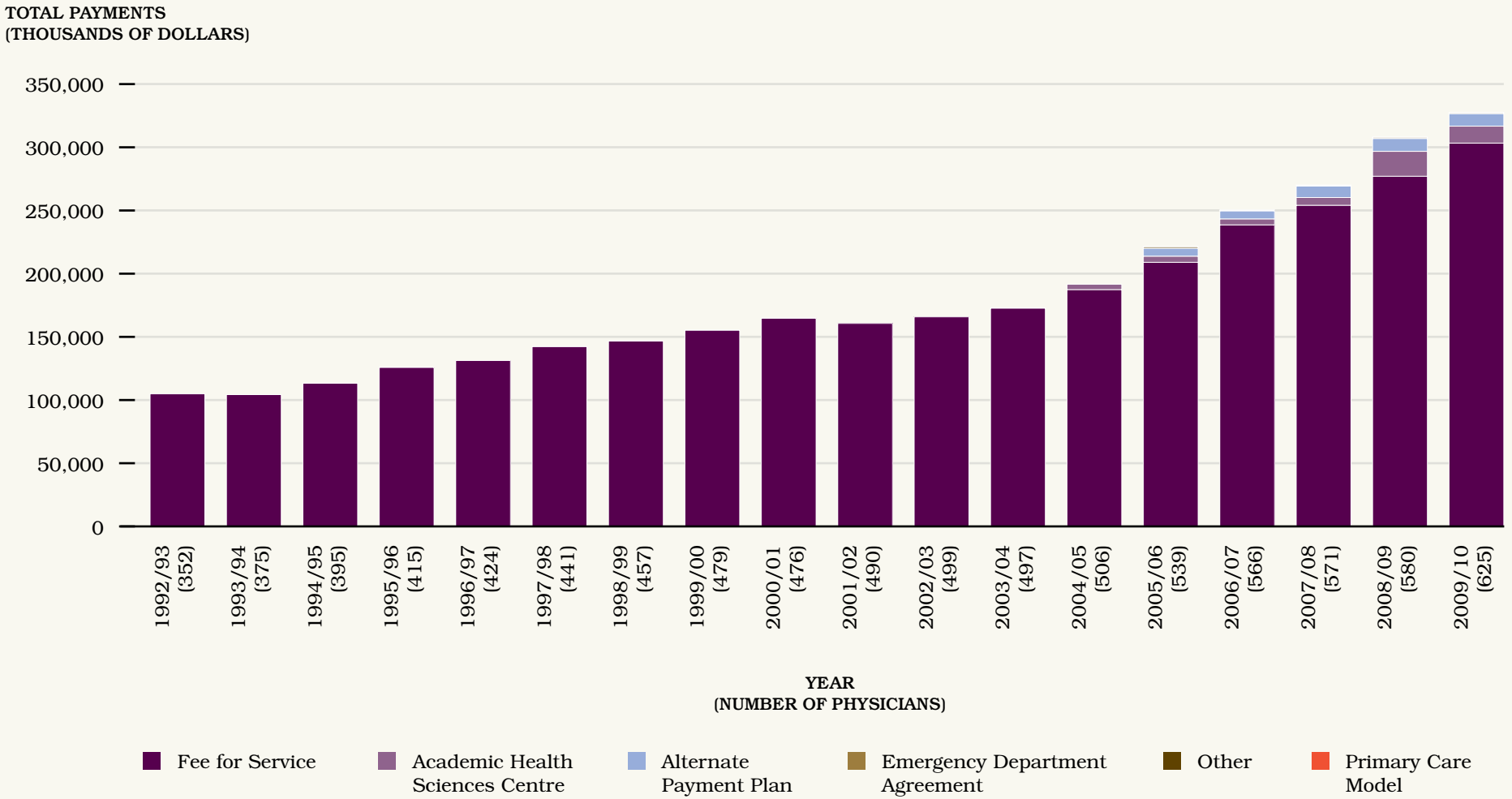
**EXHIBIT 6.2 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to cardiologists, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/02 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

## CARDIOLOGISTS

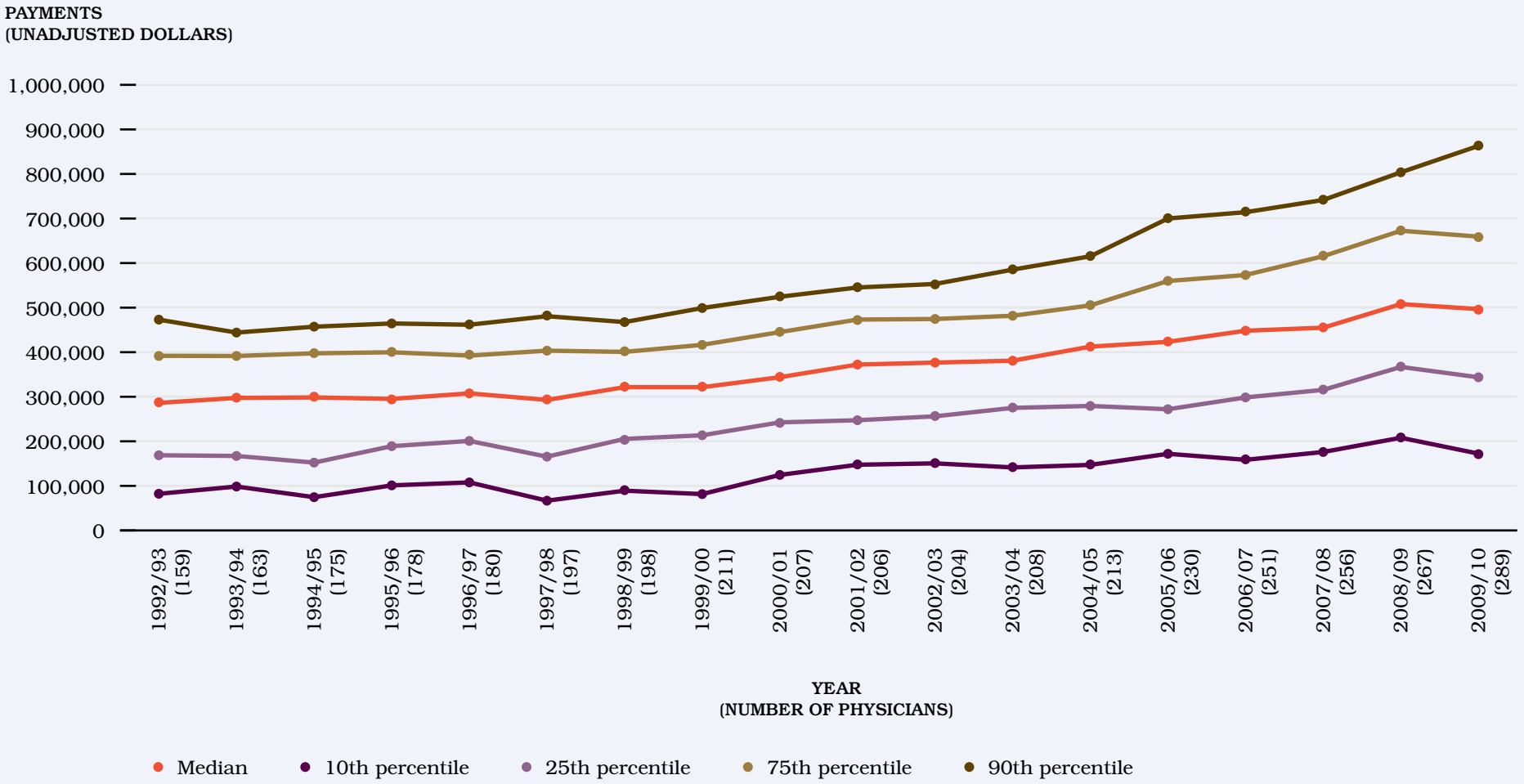
**EXHIBIT 6.3 Total payments to cardiologists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/02 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

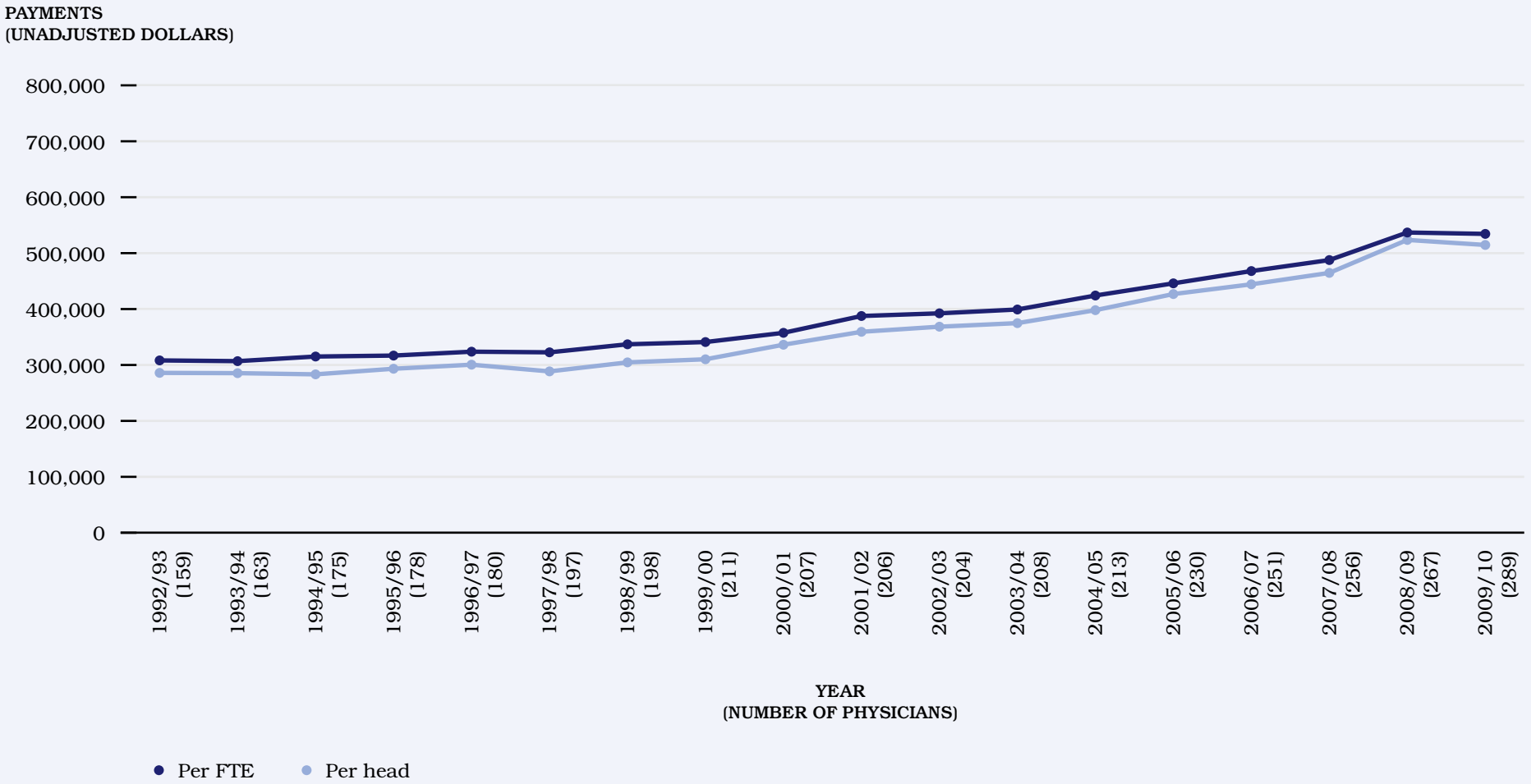
## GASTROENTEROLOGISTS

**EXHIBIT 6.4 Median and percentiles of payments (in unadjusted dollars) to individual gastroenterologists, in Ontario, 1992/93 to 2009/10**



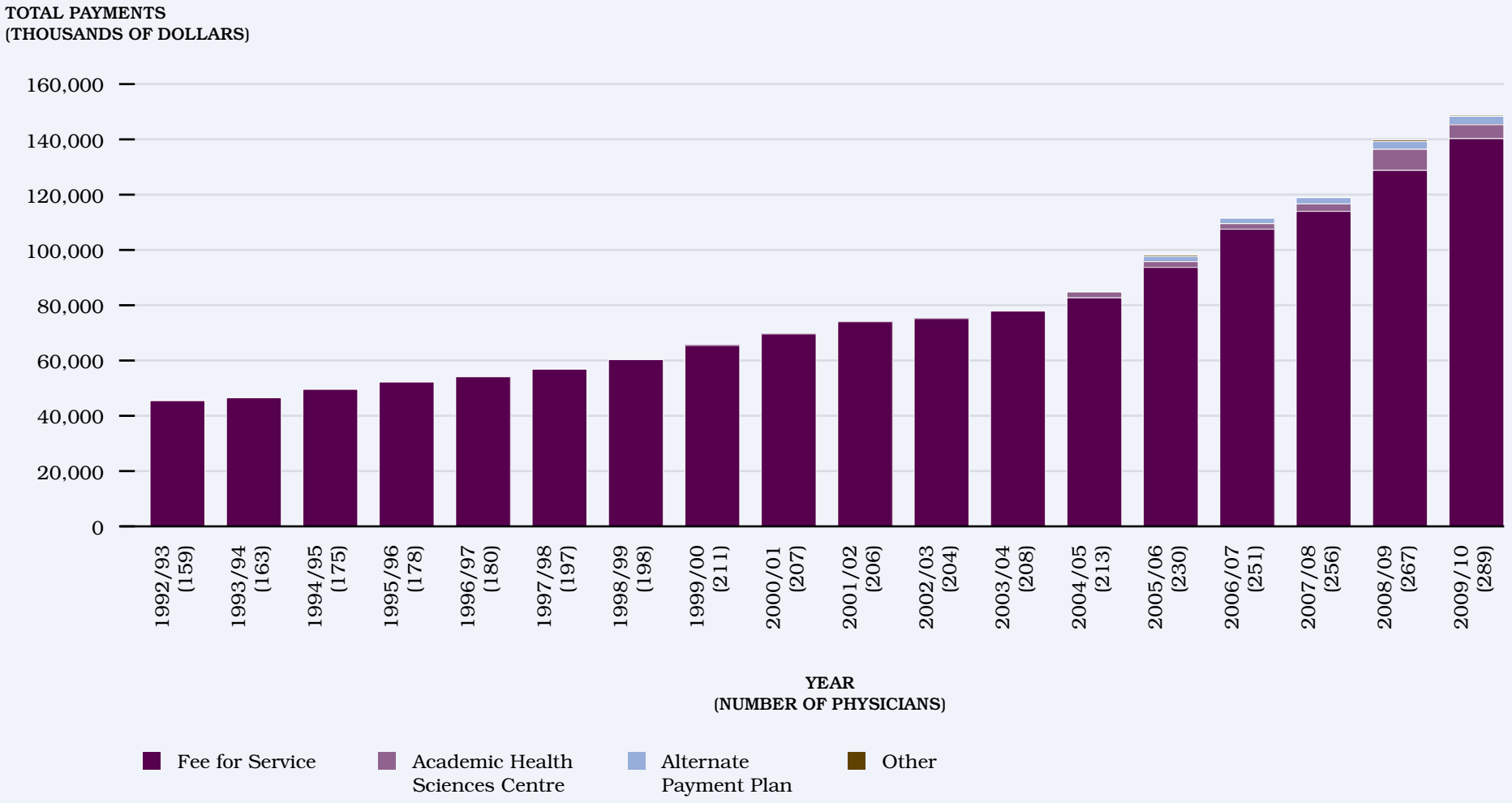
## GASTROENTEROLOGISTS

**EXHIBIT 6.5 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to gastroenterologists, in Ontario, 1992/93 to 2009/10**



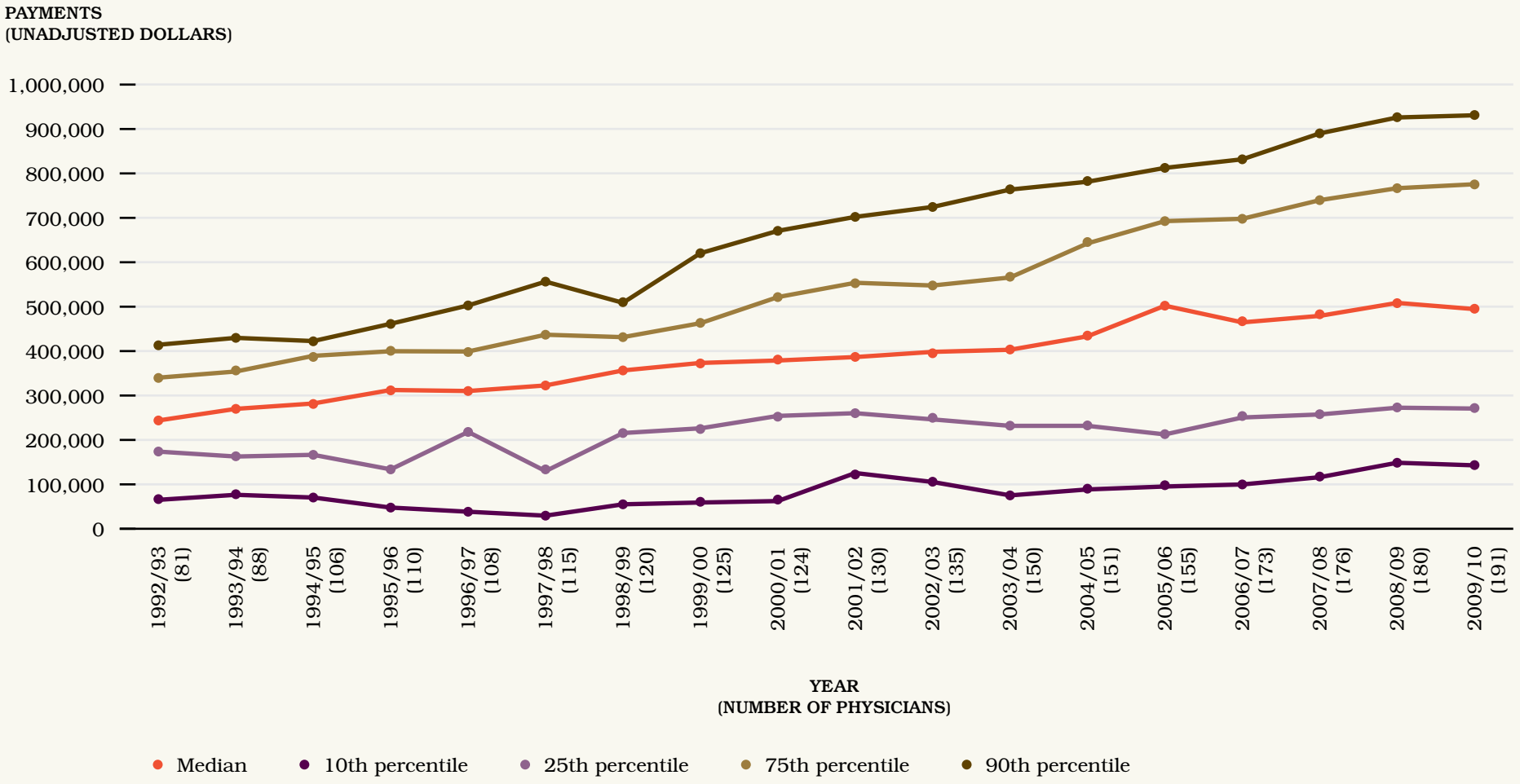
## GASTROENTEROLOGISTS

**EXHIBIT 6.6 Total payments to gastroenterologists by payment source, in Ontario, 1992/93 to 2009/10**



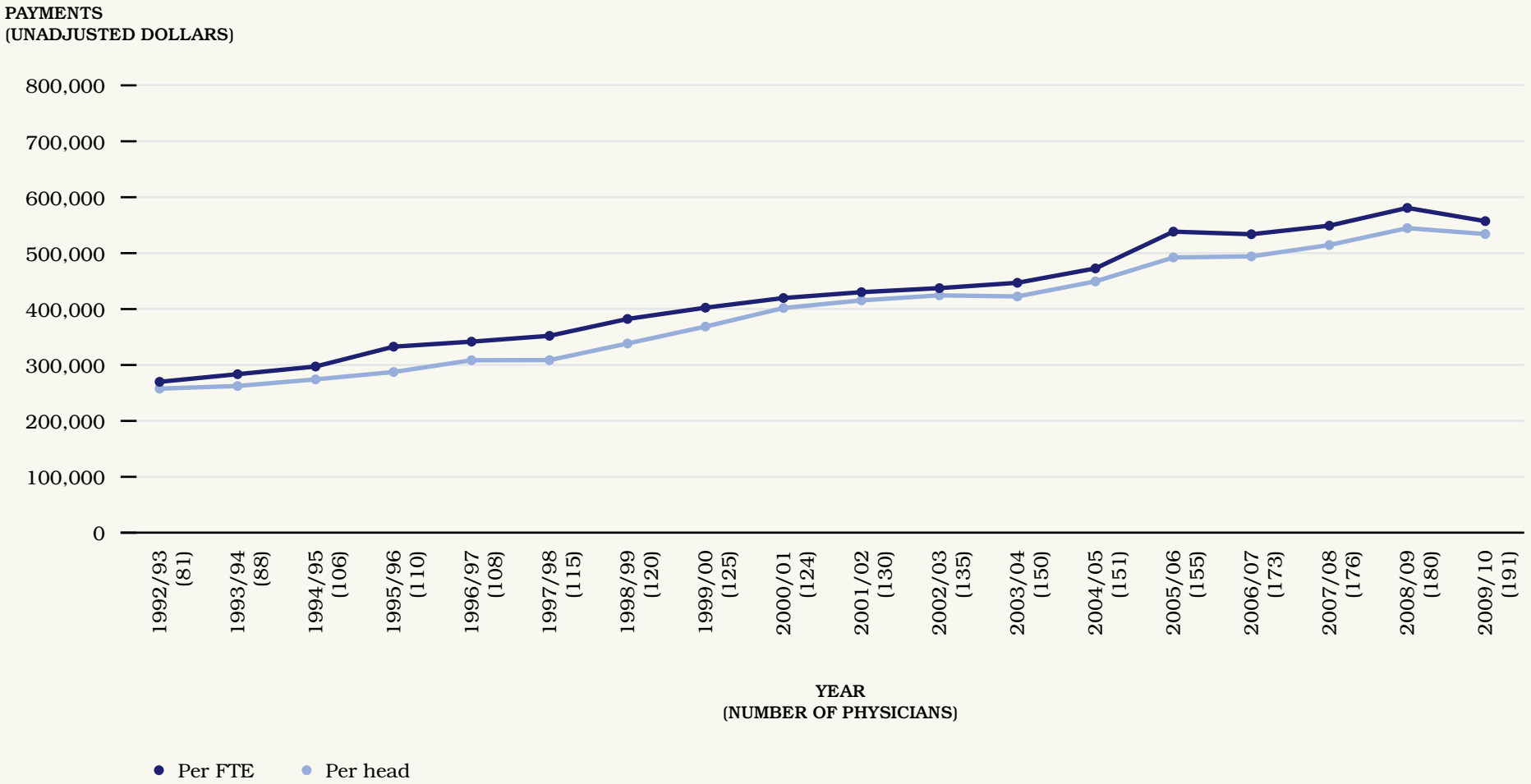
## NEPHROLOGISTS

**EXHIBIT 6.7 Median and percentiles of payments (in unadjusted dollars) to individual nephrologists, in Ontario, 1992/93 to 2009/10**



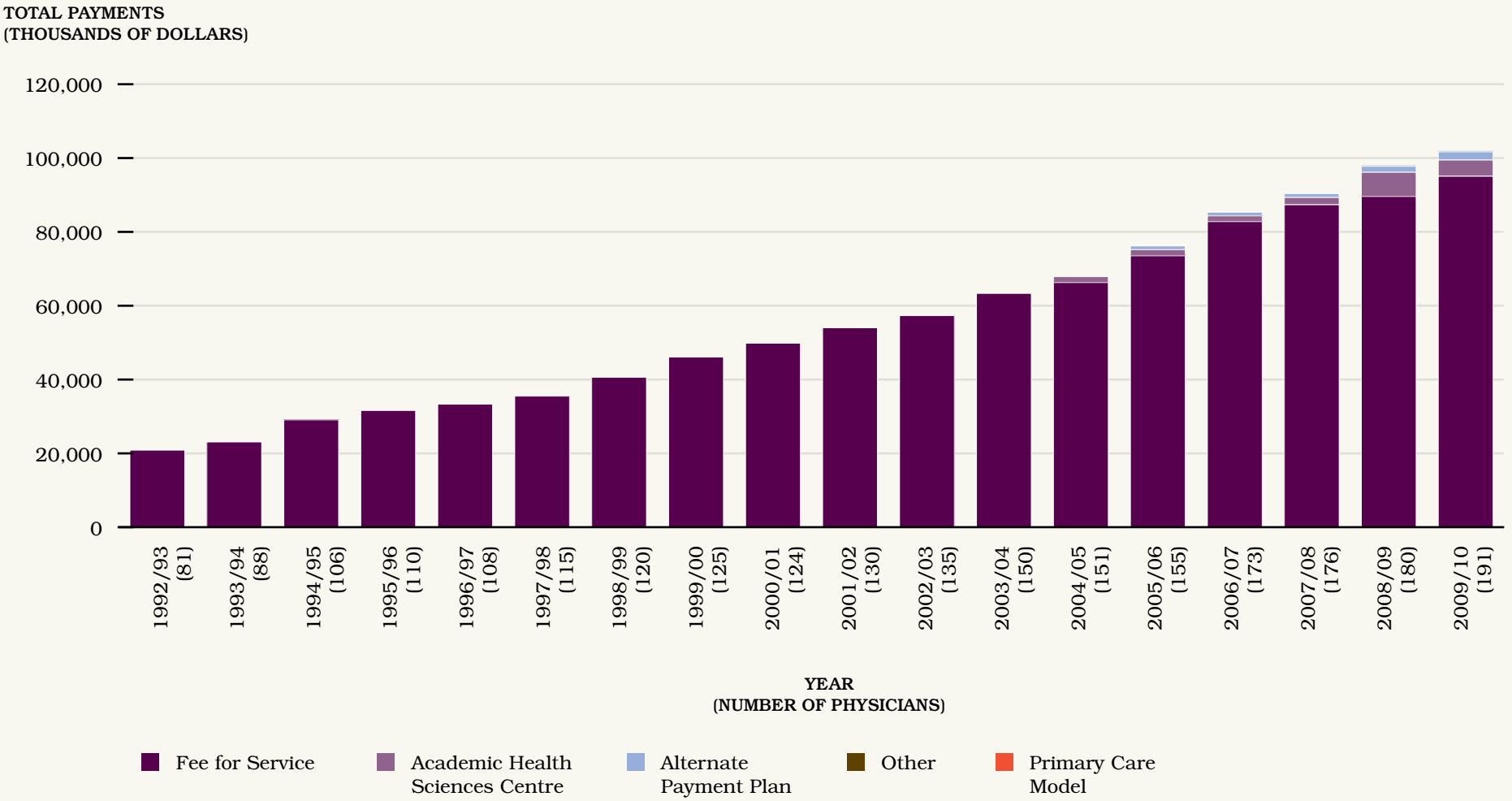
## NEPHROLOGISTS

**EXHIBIT 6.8 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to nephrologists, in Ontario, 1992/93 to 2009/10**



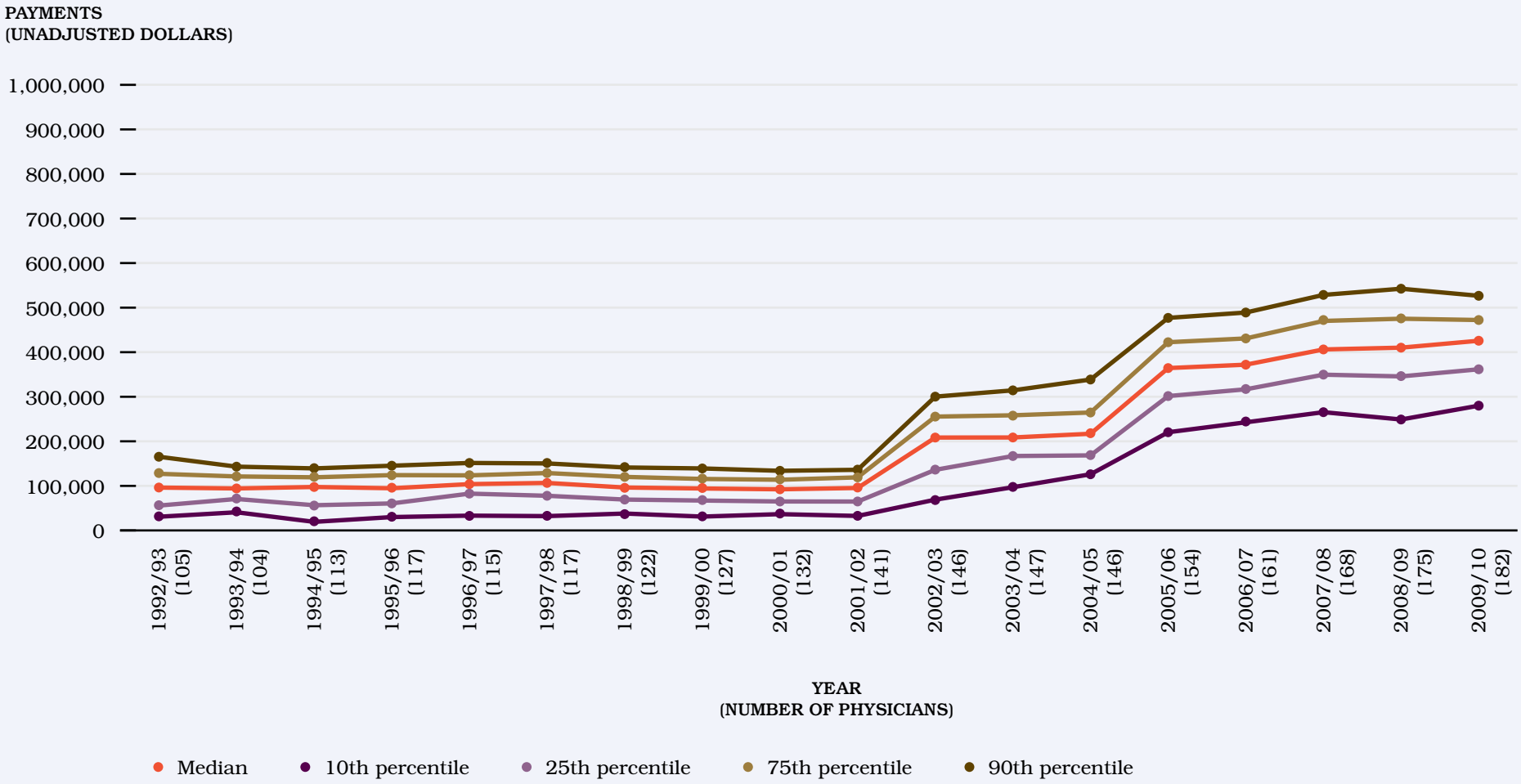
## NEPHROLOGISTS

**EXHIBIT 6.9 Total payments to nephrologists by payment source and year, in Ontario, 1992/93 to 2009/10**



## RADIATION ONCOLOGISTS

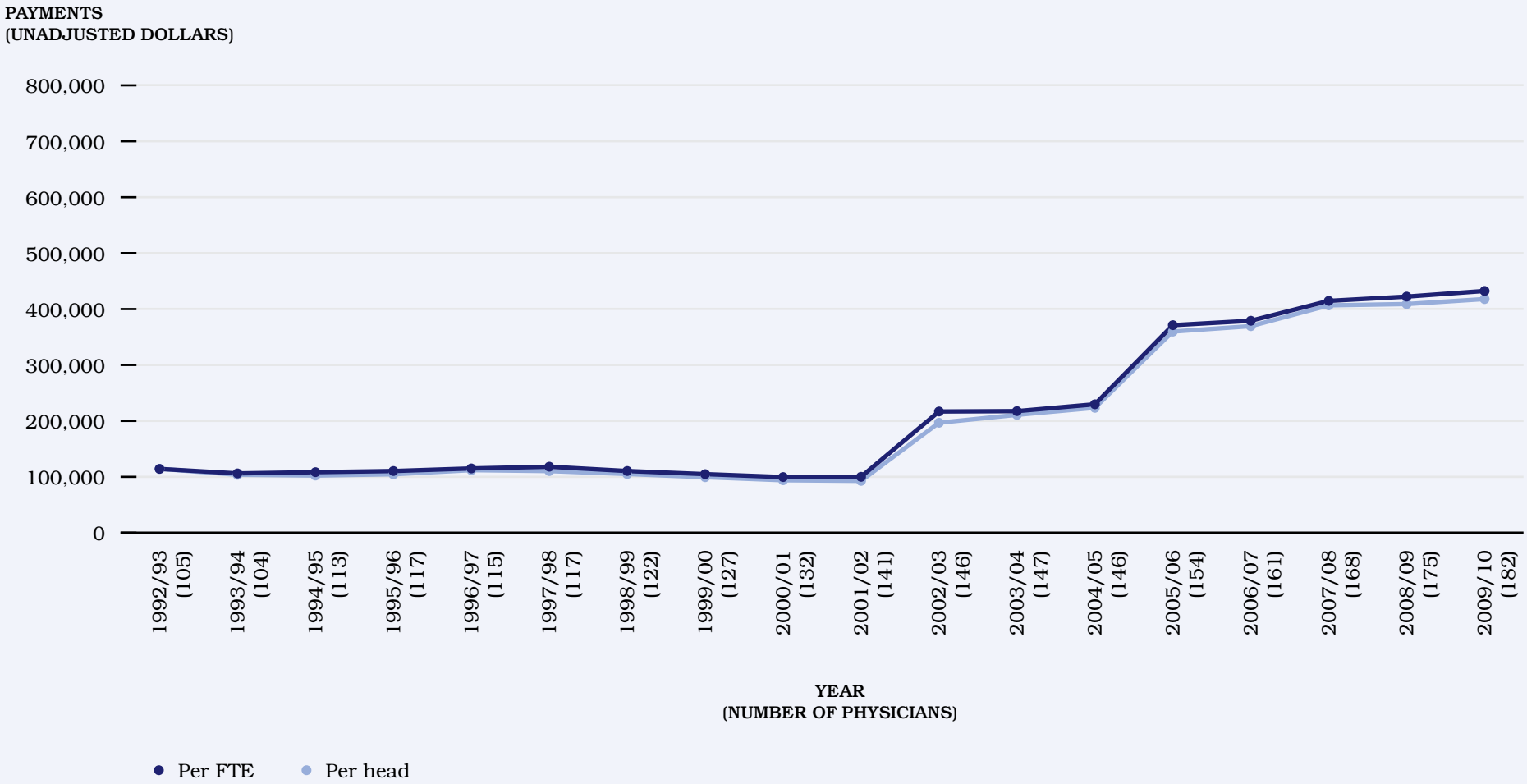
**EXHIBIT 6.10 Median and percentiles of payments (in unadjusted dollars) to individual radiation oncologists, in Ontario, 1992/93 to 2009/10**




Note: Results for radiation oncologists must be treated with caution prior to 2005/06 due to missing data.

## RADIATION ONCOLOGISTS

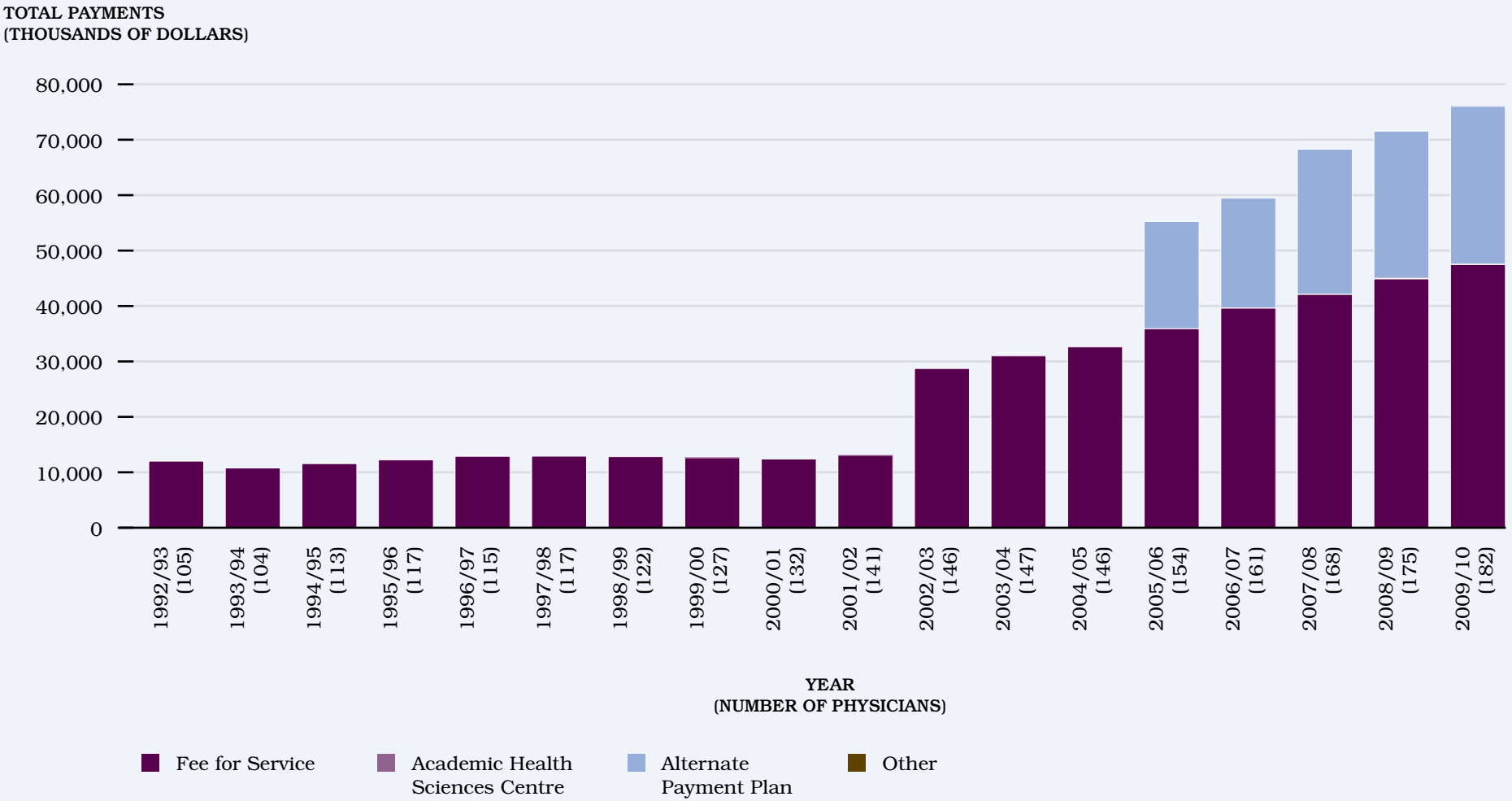
**EXHIBIT 6.11 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to radiation oncologists, in Ontario, 1992/93 to 2009/10**




Note: Results for radiation oncologists must be treated with caution prior to 2005/06 due to missing data.

## RADIATION ONCOLOGISTS

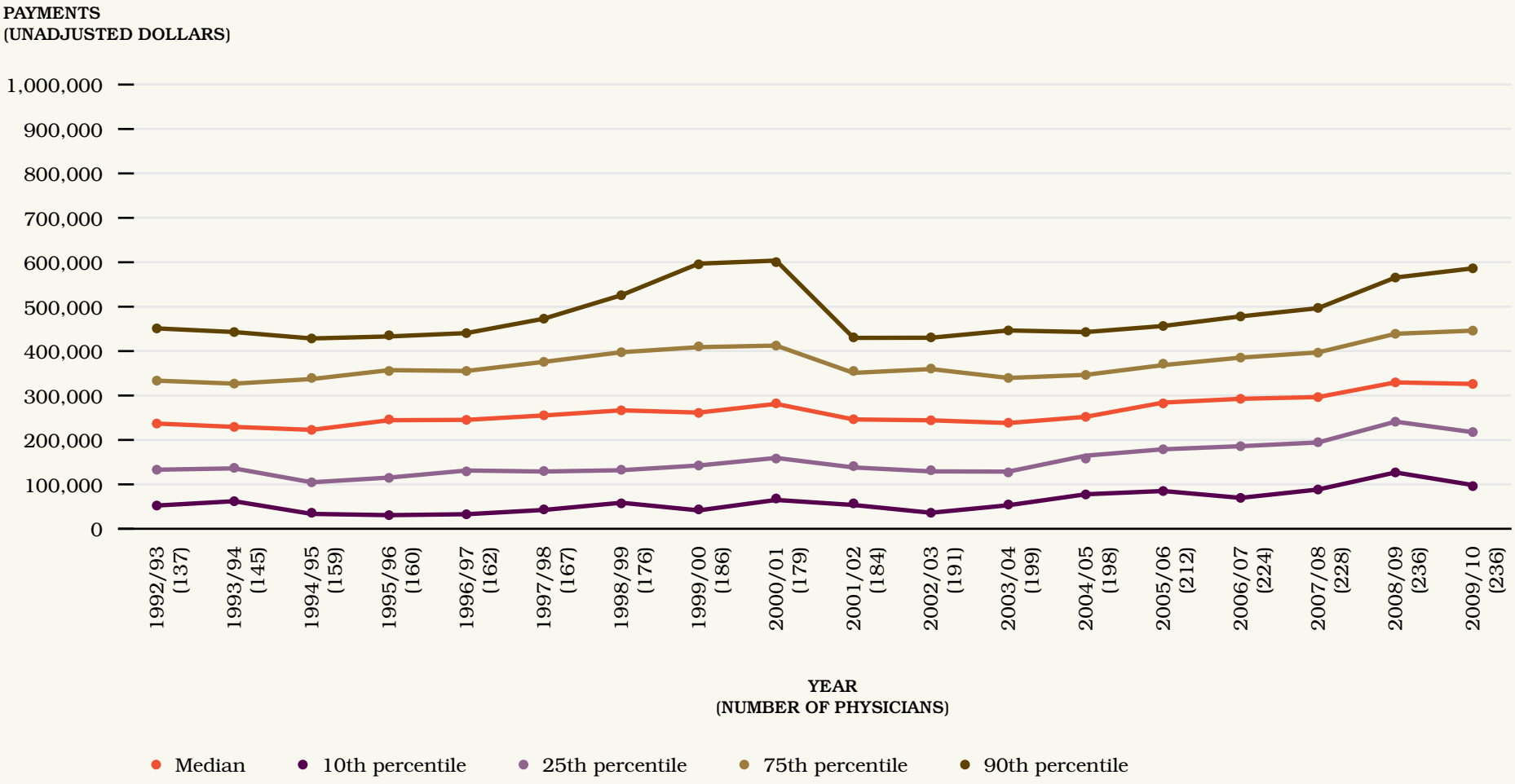
**EXHIBIT 6.12 Total payments to radiation oncologists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Results for radiation oncologists must be treated with caution prior to 2005/06 due to missing data.

## RESPIROLOGISTS

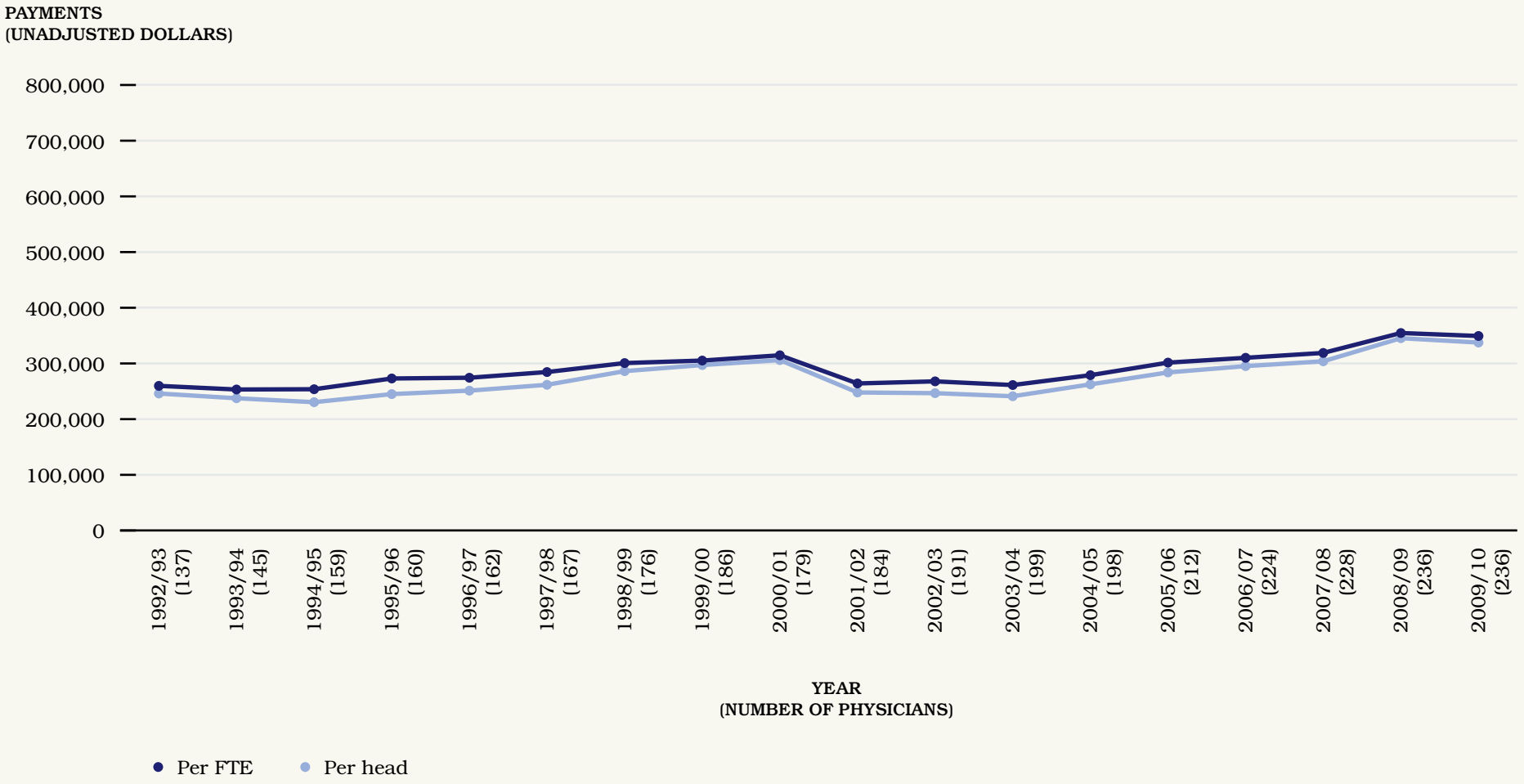
**EXHIBIT 6.13 Median and percentiles of payments (in unadjusted dollars) to individual respirologists, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/02 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

## RESPIROLOGISTS

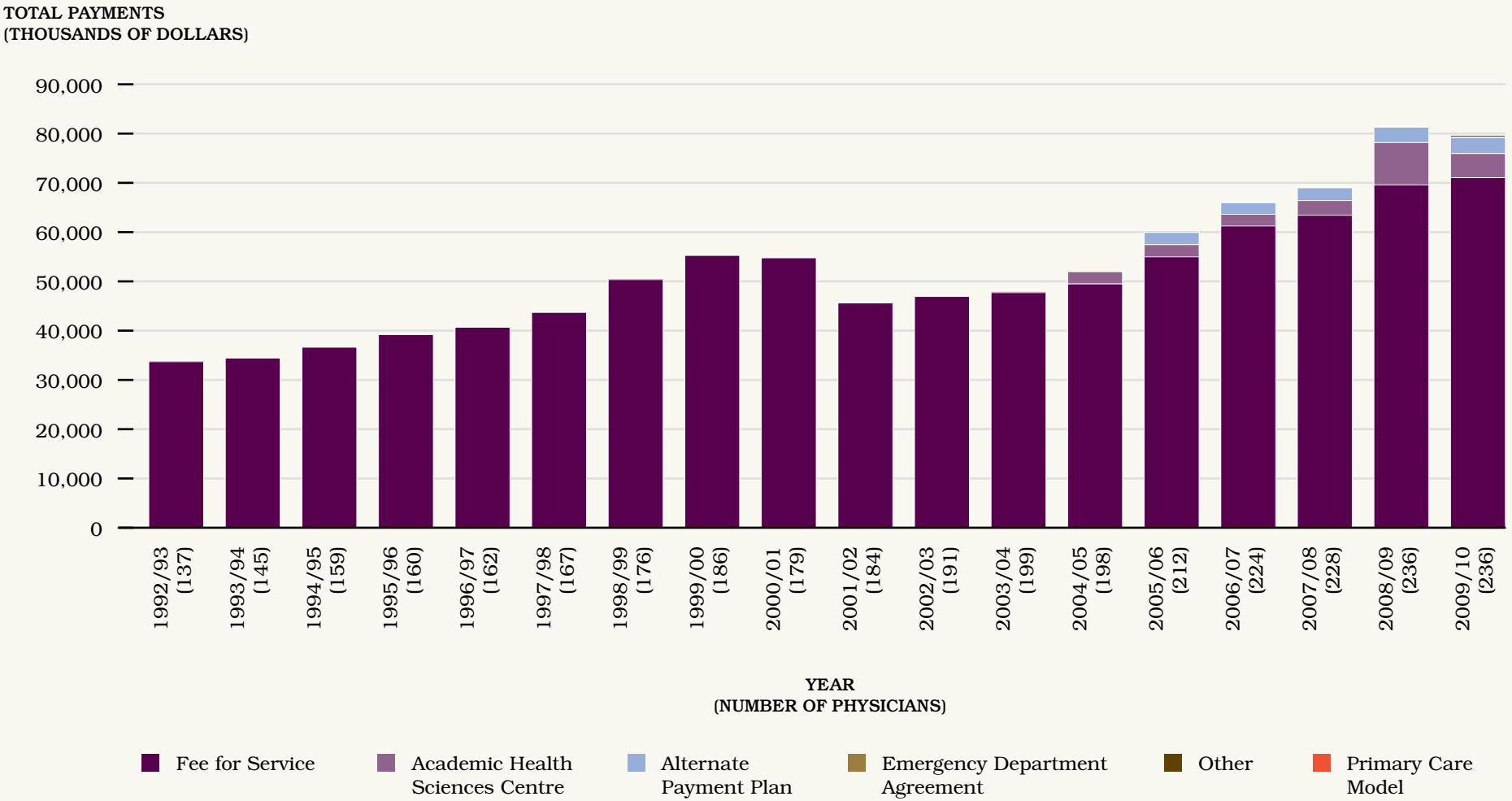
**EXHIBIT 6.14 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to respirologists, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/02 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

## RESPIROLOGISTS

**EXHIBIT 6.15 Total payments to respirologists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/02 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

CHAPTER 7

# Results for Surgical Specialties

CARDIAC AND THORACIC SURGEONS

GENERAL SURGEONS
(INCLUDING PEDIATRIC GENERAL SURGEONS)

NEUROSURGEONS

OBSTETRICIANS/GYNECOLOGISTS

OPHTHALMOLOGISTS

ORTHOPEDIC SURGEONS

OTOLARYNGOLOGISTS

PLASTIC SURGEONS

UROLOGISTS

VASCULAR SURGEONS

## INTRODUCTION

This chapter describes payments to physicians who perform surgical procedures.

Surgery, perhaps more than other types of medical practice, is a collaborative effort. Most surgeries require, in addition to a surgeon, access to an operating room, an anesthesiologist, nursing staff and sometimes one or more additional doctors to provide assistance. Limits in any of these areas can have an effect on the number of surgeries performed and thus on payment levels. Conversely, investment in these areas, such as opening and staffing additional operating rooms, can increase the number of surgeries.

As noted elsewhere in this report, Ontario made a commitment in the early 2000s to reduce wait times for a range of surgical procedures. Hospitals received funding to increase the number of surgeries performed and thus reduce their waiting lists and patients' wait times. The initial strategy focused on wait times for three types of surgery: cataract removal, hip and knee replacement and cancer surgery. Subsequent funding initiatives have included general and pediatric surgery.

As discussed in the previous chapter in relation to procedural specialists, advances in technology have enabled a widening array of minimally invasive procedures to be performed under imaging guidance or through catheters or fibre-optic endoscopes. Some of these procedures (e.g., laparoscopic cholecystectomy and hysterectomy) continue to be performed by surgeons, but others are performed by medical procedural specialists, which are reviewed elsewhere in this report. Some surgeons have found efficiencies by focusing on a small range of procedures, with staffing and protocols in place that allow the surgeon to maximize the number of procedures that can be performed in a given time period. Two examples of this are cataract surgery and arthroscopic knee surgery.

Note: In compiling this chapter, we combined cardiac, cardiothoracic and thoracic surgeons into one group called 'cardiac and thoracic surgeons' because of the small number in the thoracic surgery group. For the same reason, pediatric general surgeons were included with general surgeons.

# FINDINGS FOR INDIVIDUAL SPECIALTIES

## Cardiac and Thoracic Surgery (exhibits 7.1 to 7.3)

Cardiac and thoracic (CT) surgery is a relatively small specialty. Although its numbers increased by 50% during the study period, there were fewer than 100 practicing CT surgeons in Ontario in 2009/10. Total payments to this group in 2009/10 amounted to $45 million. The median and mean annual payments to CT surgeons rose steadily through the period, amounting to $500,000 in 2009/10, an increase of about 20% from 2005/06. The median annual payment to CT surgeons was consistently higher than for all physicians combined. In 1992/93, it was about 82% higher; in 2009/10, it was 79% higher. The range of payments was wide, with the top 10% of CT surgeons being paid a minimum of $800,000 compared to the bottom 10% who received $100,000 or less. The size of this difference suggests a wide variation in practice patterns, with those at the low end either working part-time or perhaps devoting more time to teaching or research.

## General Surgery (exhibits 7.4 to 7.6)

The supply of active general surgeons fell 12% during the 1990s from 655 in 1992/93 to 575 in 2001/02. Since then it has grown to 699 in 2009/10, an overall increase of only 7% from 1992/93. Total payments to general surgeons in 2009/10 amounted to $264 million. The median and mean annual payments to general surgeons have increased steadily since around 1997/98 and have remained above the levels paid to all physicians. Approximately 10% of general surgeons were paid more than $650,000 in 2009/10 and the lowest 10% were paid $50,000 or less. General surgeons received about 88% of their payments from FFS in 2009/10.

## Neurosurgery (exhibits 7.7 to 7.9)

This is a relatively small specialty. The number of neurosurgeons declined from 85 in 1992/93 to 65 in 2003/04 (a 24% decrease) before rebounding to 97 in 2009/10 (an overall increase of 14%). The total of all payments to neurosurgeons in 2009/10 was $41 million. The median payment for this specialty in 1992/93 was higher than that for all physicians. The median payment began to increase in 1997/98 and by 2009/10 had risen 126%. The range of payment was wide with 10% of neurosurgeons being paid more than $800,000 and 10% less than $100,000. Alternate funding in addition to FFS for neurosurgery was introduced in 2002/03 (although data were only available from 2005/06). In 2009/10, only 68% of neurosurgery funding was by FFS; the rest was from alternate funding sources.

## Obstetrics and Gynecology (exhibits 7.10 to 7.12)

Obstetricians and gynecologists (OB/GYNs) comprise a large specialty that numbered 790 in 2009/10, an increase of 18% from 1992/03 (667). The total of all payments to this specialty in 2009/10 was $323 million. The median and mean payments to OB/GYNs rose steadily from 1999/00 and remained approximately 50% higher than those for all physicians throughout the period of observation. Ten percent of OB/GYNs were paid more than $670,000 in 2009/10 and 10% were paid less than $100,000. The great majority of payments (89%) were by FFS.

## Ophthalmology (exhibits 7.13 to 7.15)

The number of ophthalmologists rose only 8% over the study period, from 408 in 1992/93 to 441 in 2009/10. Total payments to this specialty amounted to $257 million in 2009/10. The median payment rose steadily from just under $300,000 in 1997/98 to $500,000 in 2009/10 and remained well above that of all physicians with the difference increasing over time. However, the mean payment to ophthalmologists rose sharply to around $600,000 in 2009/10, indicating a skewed distribution of values. This is confirmed by the fact that 10% of ophthalmologists were paid more than $1.1 million in 2009/10, whereas the bottom 10% were paid $100,000 or less. The great majority of payments (98%) were by FFS.

## Orthopedic Surgery (exhibits 7.16 to 7.18)

The supply of orthopedic surgeons in Ontario increased by 40%, from 374 in 1992/93 to 524 in 2009/10. The total of all payments to this specialty in 2009/10 was $192 million. The median payment to orthopedic surgeons was about $100,000 higher than for all physicians throughout the study period. Payments were fairly flat during the 1990s and rose after 2003/04. The mean and median values were quite similar with a fairly equal distribution of values above and below the median. The top 10% of orthopedic surgeons were paid more than $600,000 in 2009/10 and the bottom 10% received less than $50,000. Approximately 90% of payments were by FFS.

## Otolaryngology (exhibits 7.19 to 7.21)

The supply of otolaryngologists changed very little over the study period, rising from 235 in 1992/93 to 248 in 2009/10. All payments to this specialty totalled $97 million in 2009/10. Mean and median annual payments to individuals in this group remained about $100,000 higher than for all physicians, staying fairly flat through the 1990s and rising after 2003/04. The median payment in 2009/10 was around $400,000 with 10% of otolaryngologists being paid more than $600,000 and 10% being paid $100,000 or less. About 90% of payments were by FFS.

## Plastic Surgery (exhibits 7.22 to 7.24)

The number of plastic surgeons practicing in Ontario increased by 29% from 1992/93 to 200 in 2009/10, with payments totaling nearly $64 million in that year. Mean and median payments to individuals remained fairly flat and only rose after 2004/05, by about 21%. Median payments to plastic surgeons were about 40% higher than median payments to all physicians in 1992/93, compared with 15% higher in 2009/10. Mean payments followed a similar trend. In 2009/00, 10% of plastic surgeons were paid over $550,000 and 10% were paid less than $100,000. Eighty-six percent of payments were from FFS and 14% from alternate payment sources.

## Urology (exhibits 7.25 to 7.27)

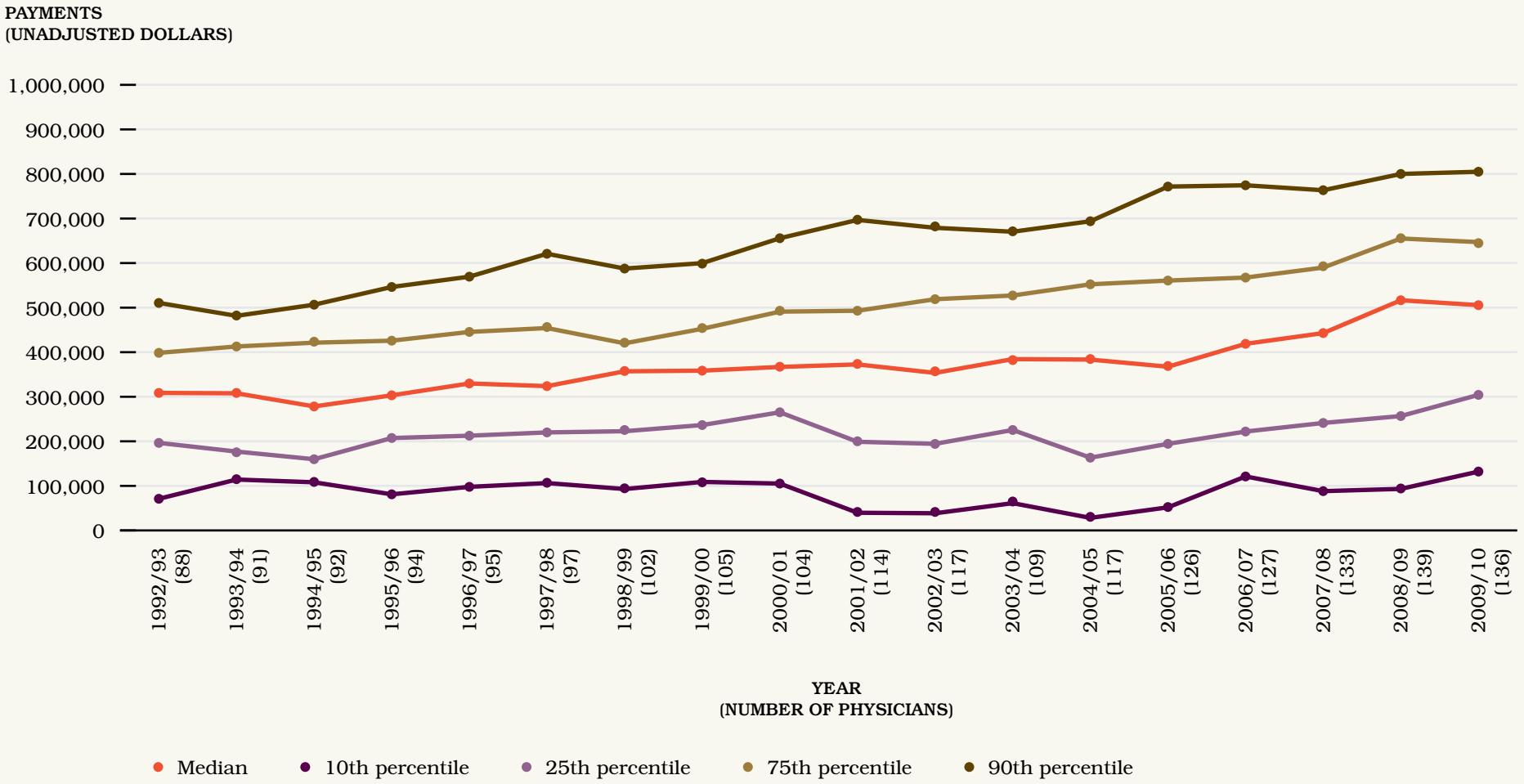
The number of practicing urologists increased by 31%, from 205 in 1992/93 to 268 in 2009/10. The total of all payments in 2009/10 was $106 million. Median and mean annual payments to individual urologists were similar and rose from about $300,000 in 1999/00 to around $400,000 in 2009/10. The mean payment for urologists was around $100,000, more than the average for all physicians during much of the period of observation. Ten percent of urologists were paid $665,000 or more in 2009/10, and 10% received less than $100,000. Ninety percent of payments were by FFS.

## Vascular Surgery (exhibits 7.28 to 7.30)

This is a small specialty with 50 surgeons practicing in 1992/93 and 72 in 2009/10. Payments totalled $38 million in the latter year. The median payment to vascular surgeons was 75% higher than the median payment for all physicians, increasing by 22% between 2005/06 and 2009/10. Exhibit 7.28 does not include the 10$^{th}$ and 90$^{th}$ percentiles because they would be based on payments to a small number of physicians and therefore would be very unstable (e.g., the top and bottom 10% each included only five physicians in 1992/93 and only seven in 2009/10). Seventy-nine percent of payments reported for this specialty were from FFS and 21% from alternate payment sources.

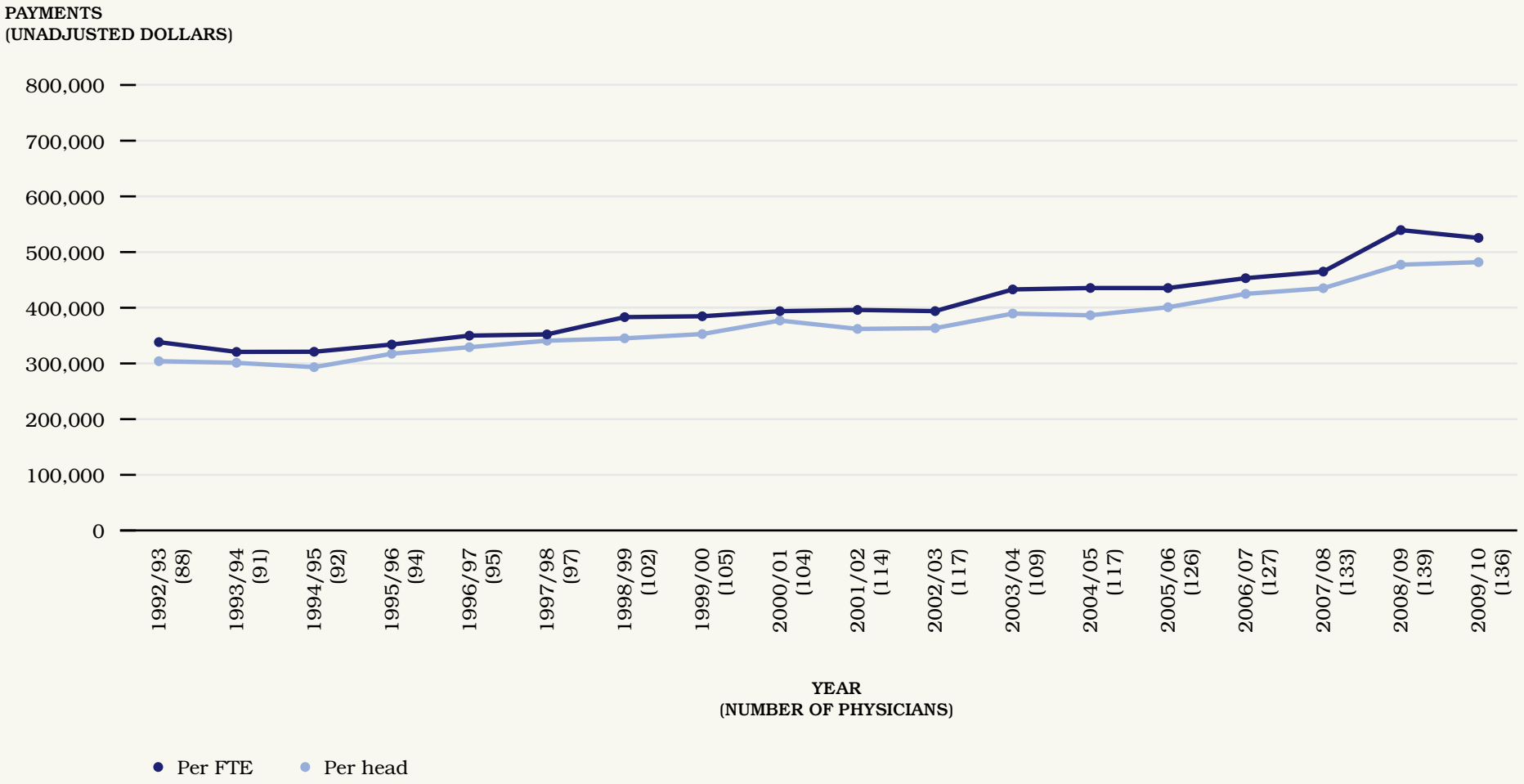
## CARDIAC AND THORACIC SURGEONS

**EXHIBIT 7.1 Median and percentiles of payments (in unadjusted dollars) to individual cardiac and thoracic surgeons, in Ontario, 1992/93 to 2009/10**



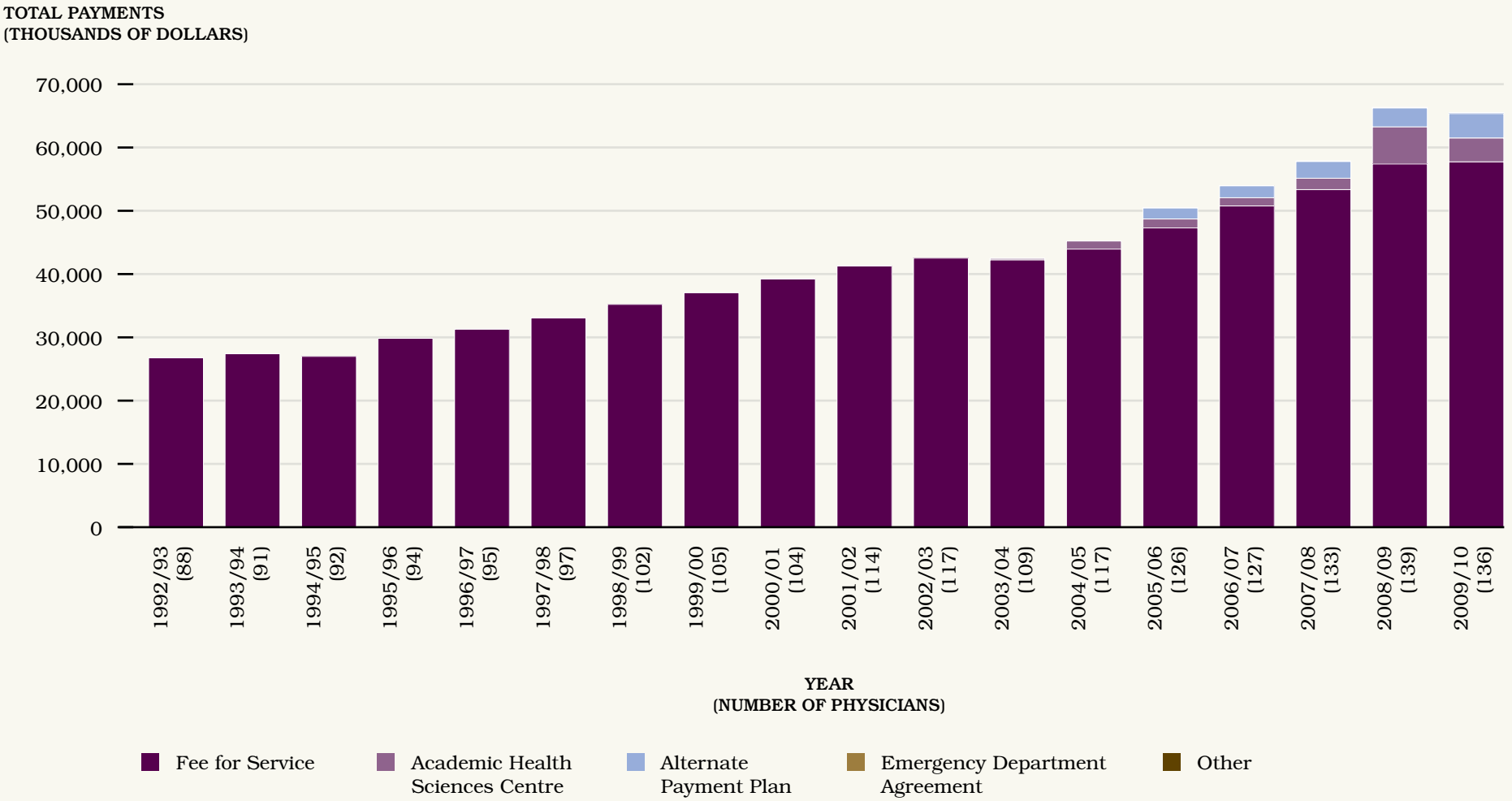
## CARDIAC AND THORACIC SURGEONS

**EXHIBIT 7.2 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to cardiac and thoracic surgeons, in Ontario, 1992/93 to 2009/10**



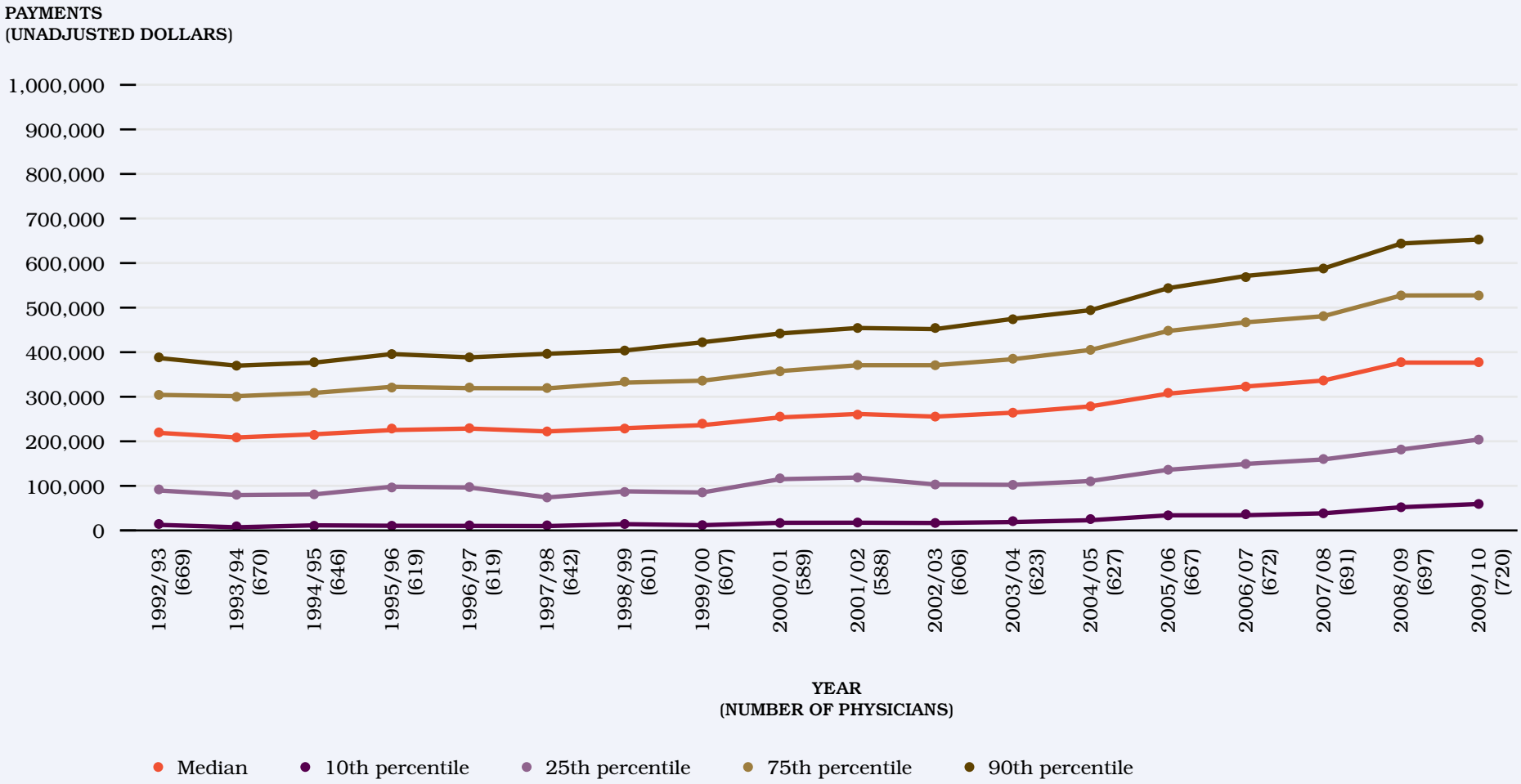
## CARDIAC AND THORACIC SURGEONS

**EXHIBIT 7.3 Total payments to cardiac and thoracic surgeons by payment source, in Ontario, 1992/93 to 2009/10**



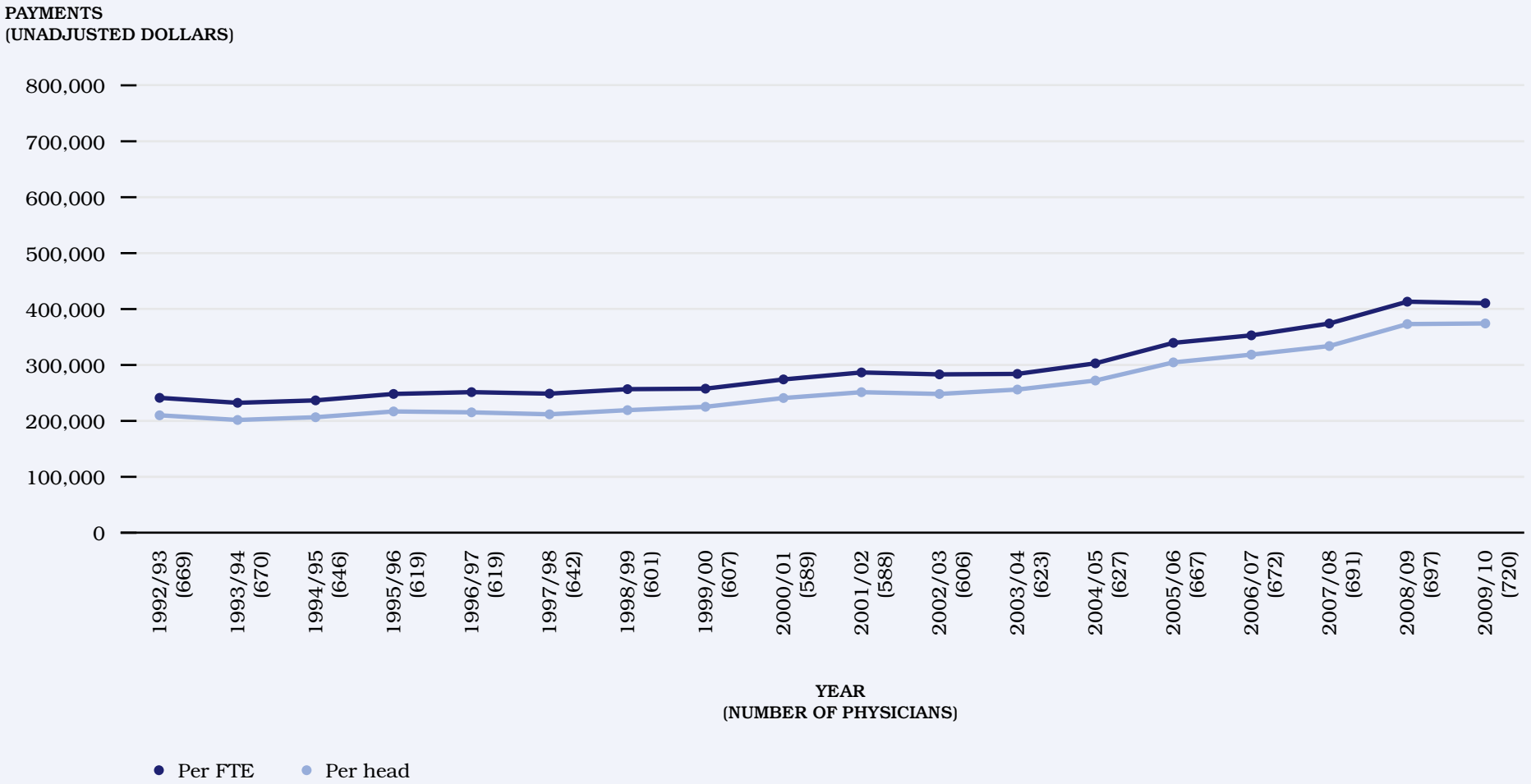
## GENERAL SURGEONS

**EXHIBIT 7.4 Median and percentiles of payments (in unadjusted dollars) to individual general surgeons, in Ontario, 1992/93 to 2009/10**



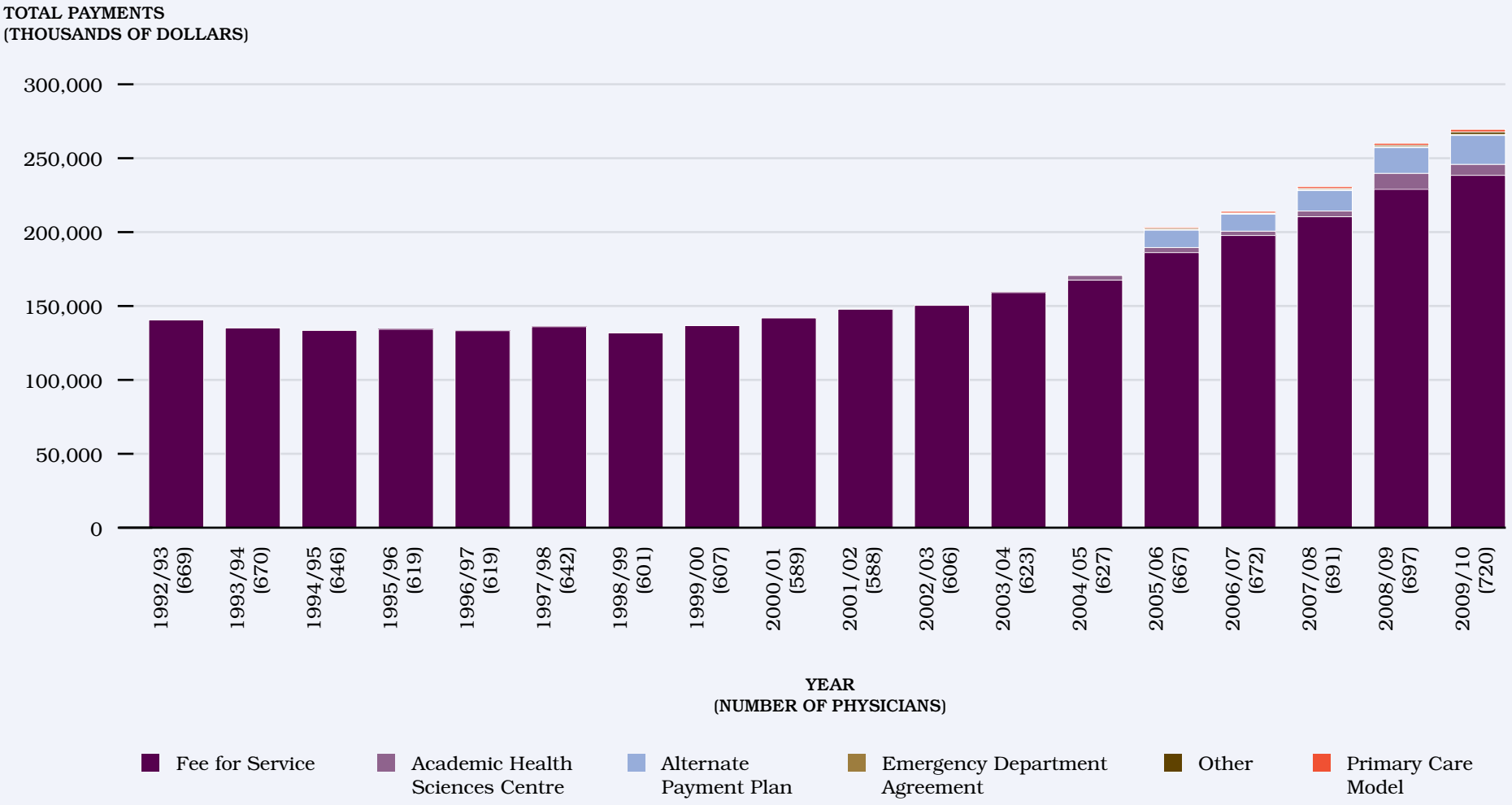
## GENERAL SURGEONS

**EXHIBIT 7.5 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE), to general surgeons, in Ontario, 1992/93 to 2009/10**



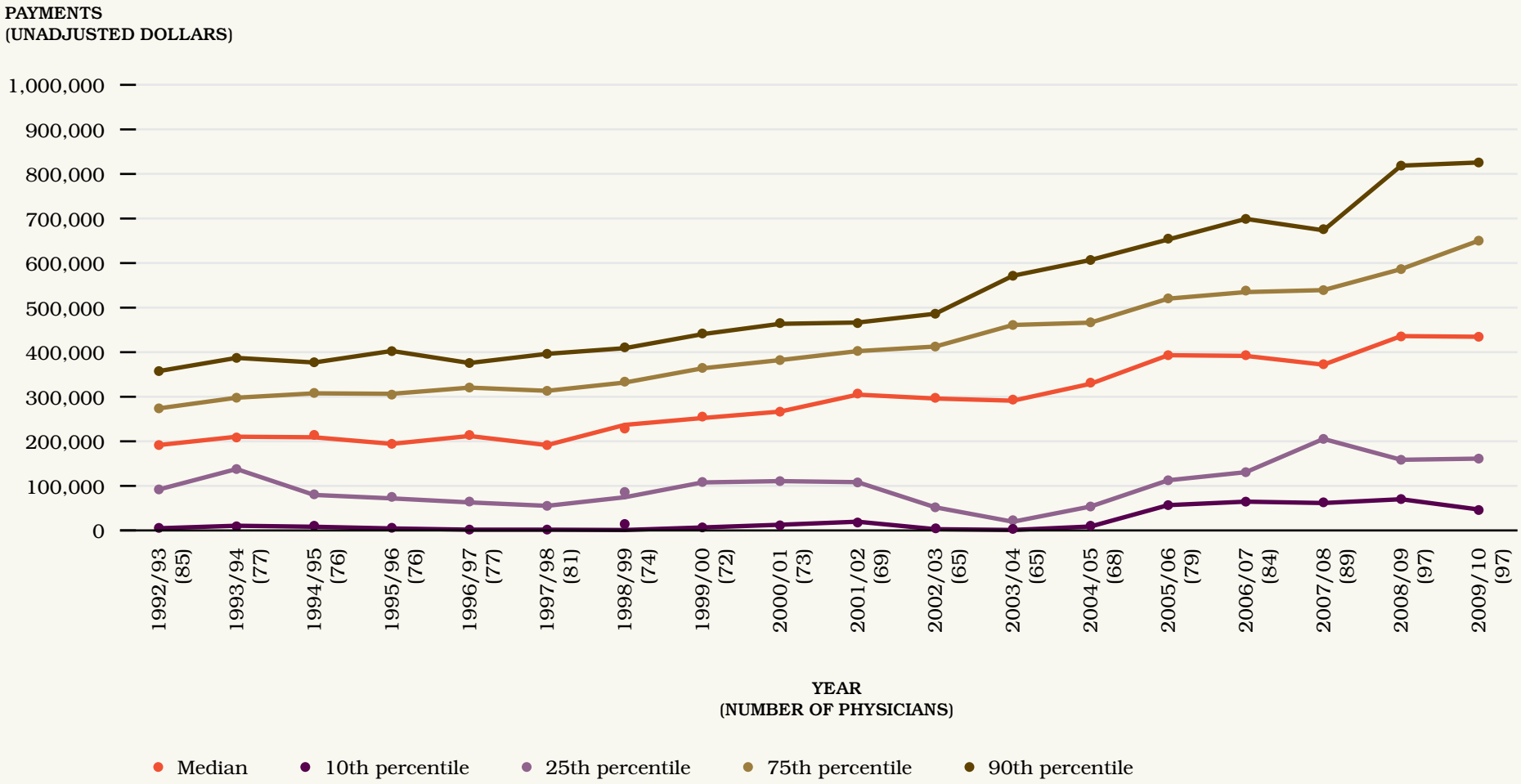
## GENERAL SURGEONS

**EXHIBIT 7.6 Total payments to general surgeons by payment source, in Ontario, 1992/93 to 2009/10**



## NEUROSURGEONS

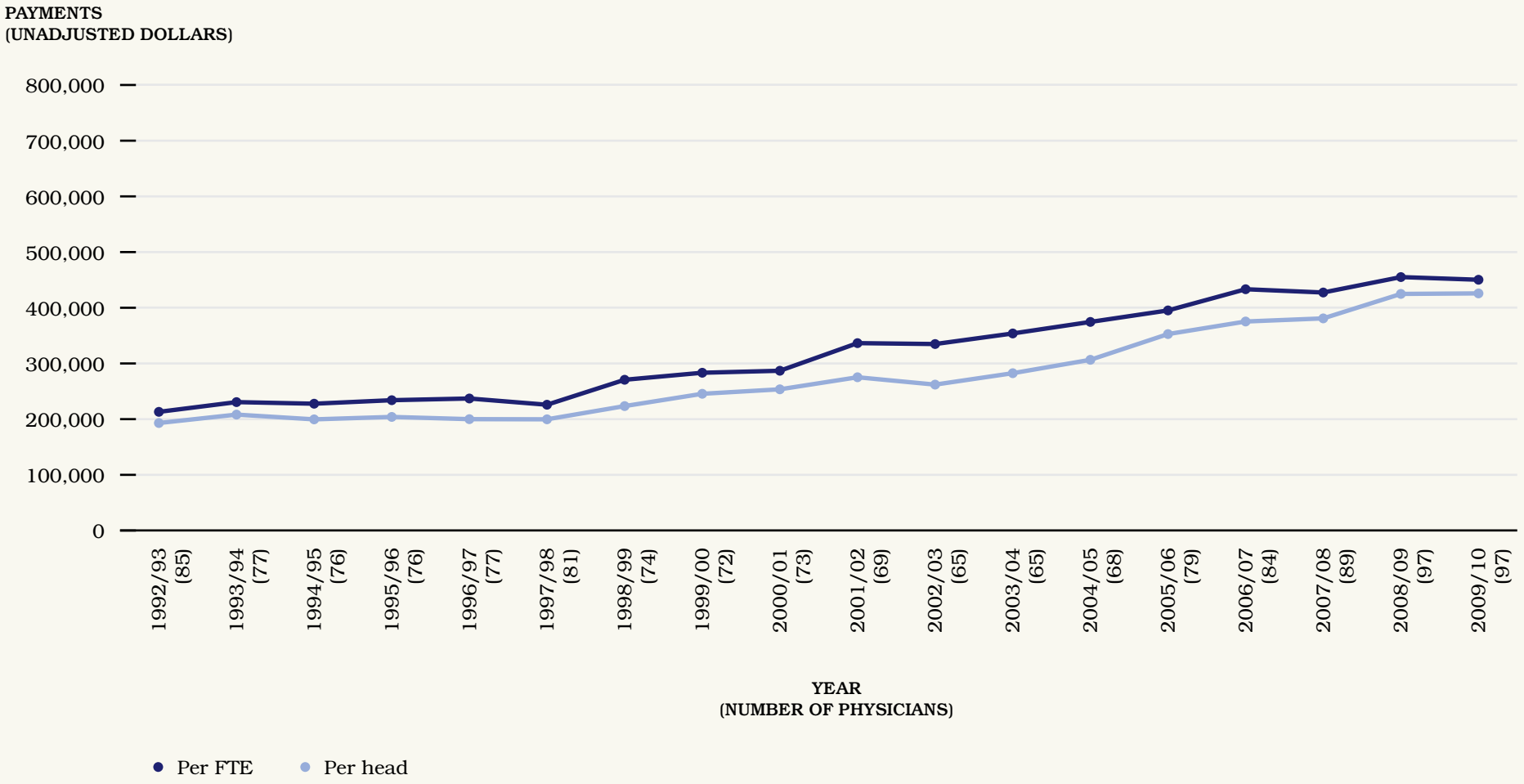
**EXHIBIT 7.7 Median and percentiles of payments (in unadjusted dollars) to individual neurosurgeons, in Ontario, 1992/93 to 2009/10**




Note: Data from 2002/03 to 2004/05 should be treated with caution due to missing APP payment information.

## NEUROSURGEONS

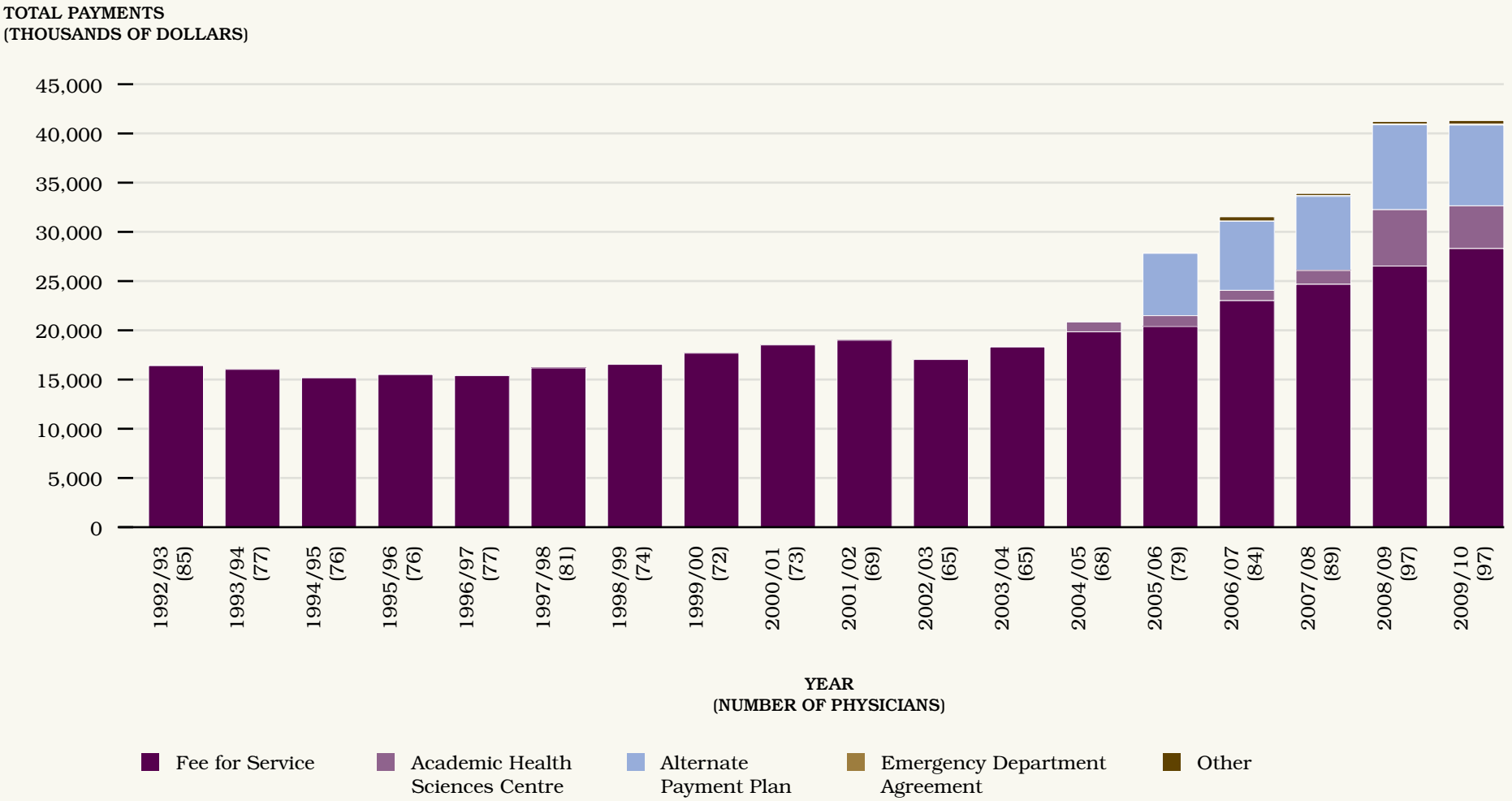
**EXHIBIT 7.8 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to neurosurgeons, in Ontario, 1992/93 to 2009/10**




Note: Data from 2002/03 to 2004/05 should be treated with caution due to missing APP payment information.

## NEUROSURGEONS

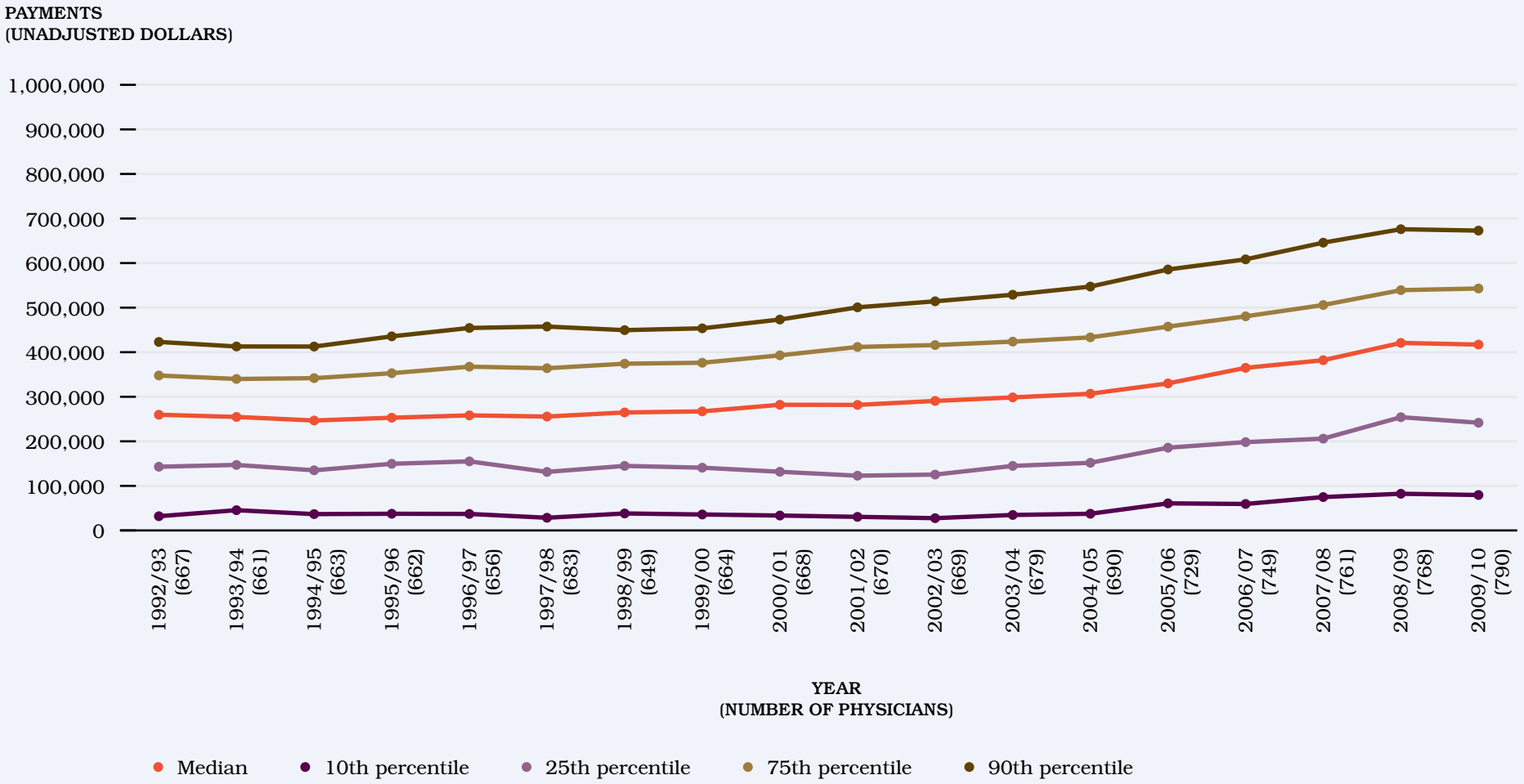
**EXHIBIT 7.9 Total payments to neurosurgeons by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data from 2002/03 to 2004/05 should be treated with caution due to missing APP payment information.

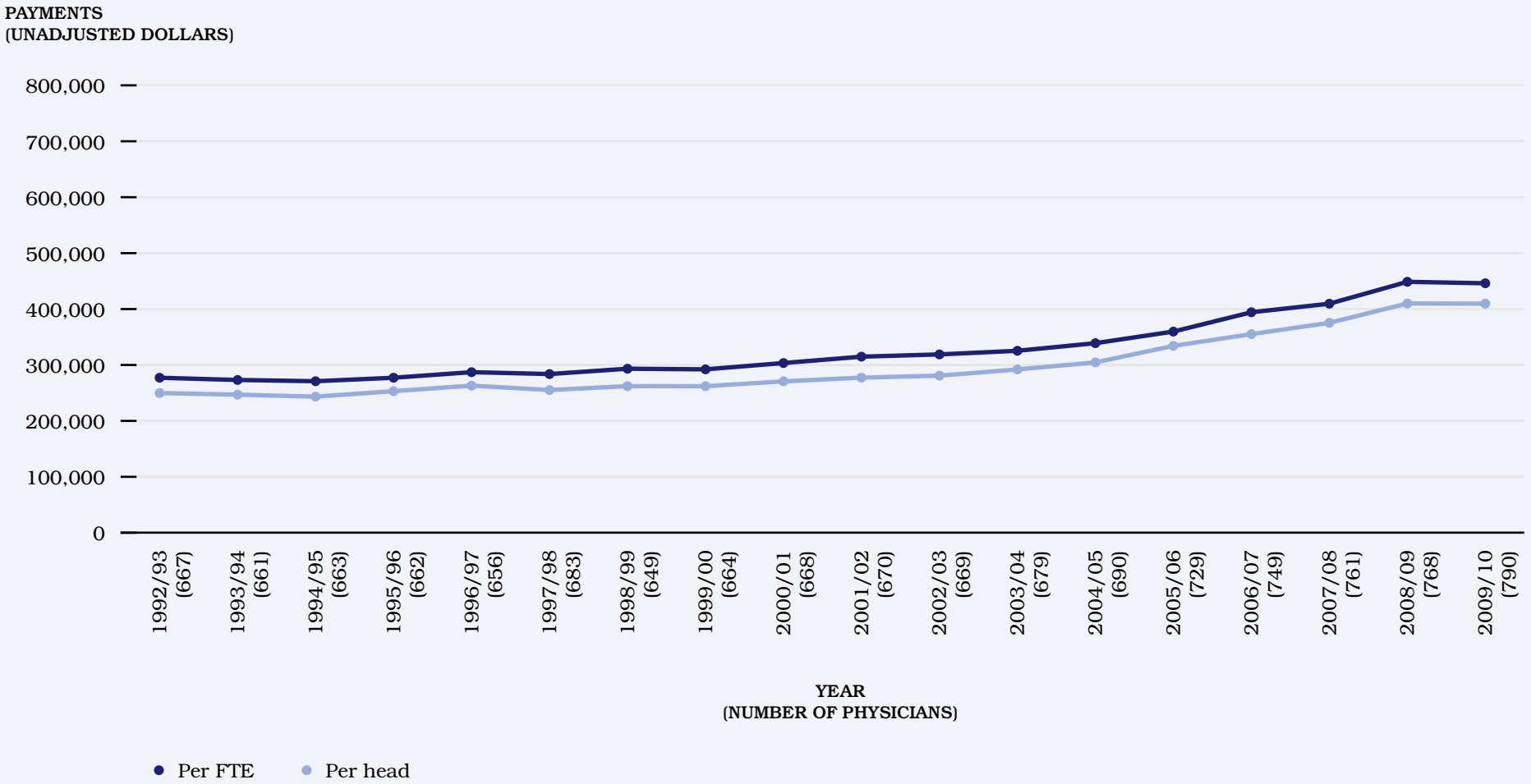
## OBSTETRICIANS AND GYNECOLOGISTS

**EXHIBIT 7.10 Median and percentiles of payments (in unadjusted dollars) to individual obstetricians and gynecologists, in Ontario, 1992/93 to 2009/10**



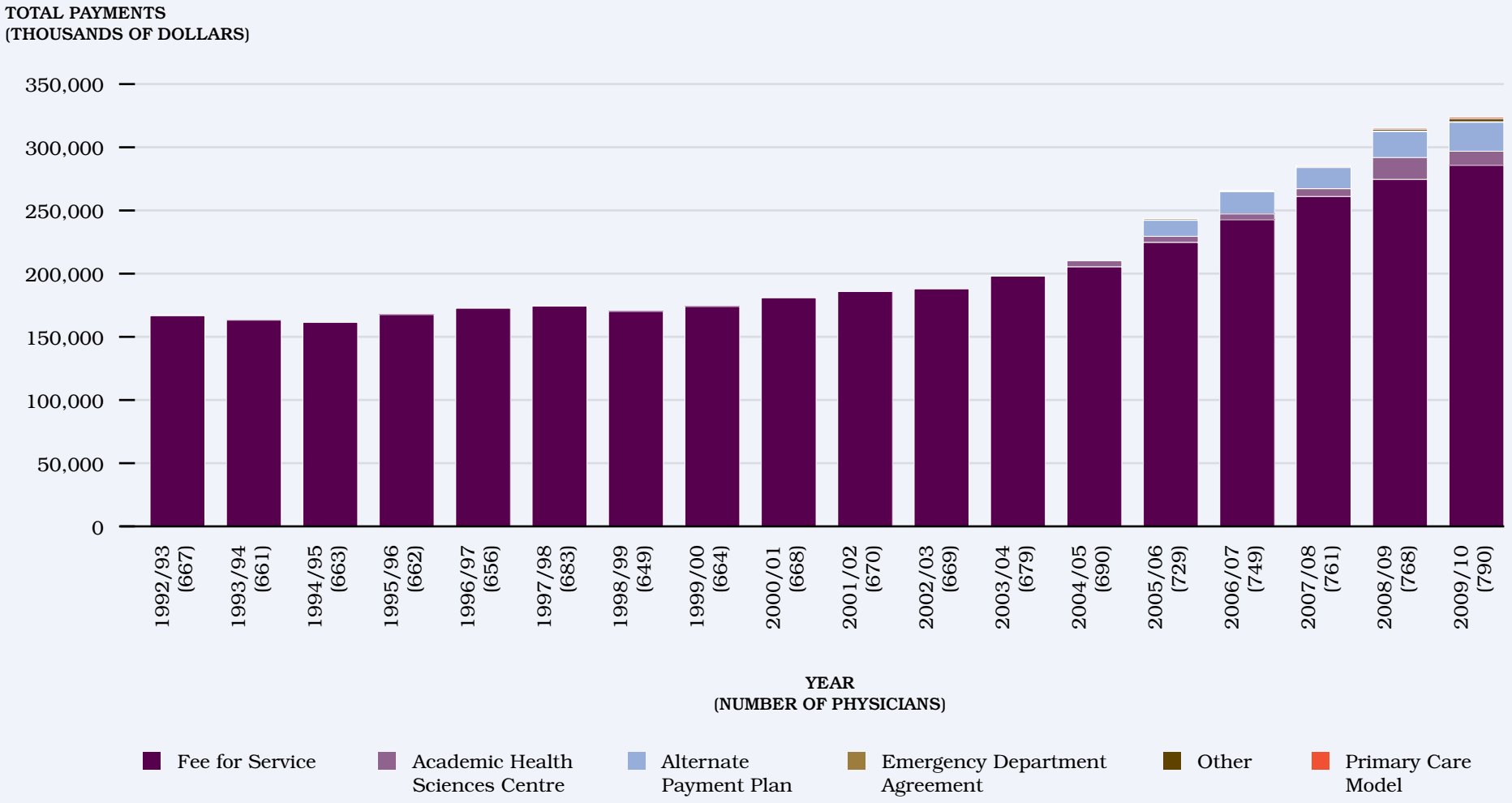
## OBSTETRICIANS AND GYNECOLOGISTS

**EXHIBIT 7.11 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to obstetricians and gynecologists, in Ontario, 1992/93 to 2009/10**



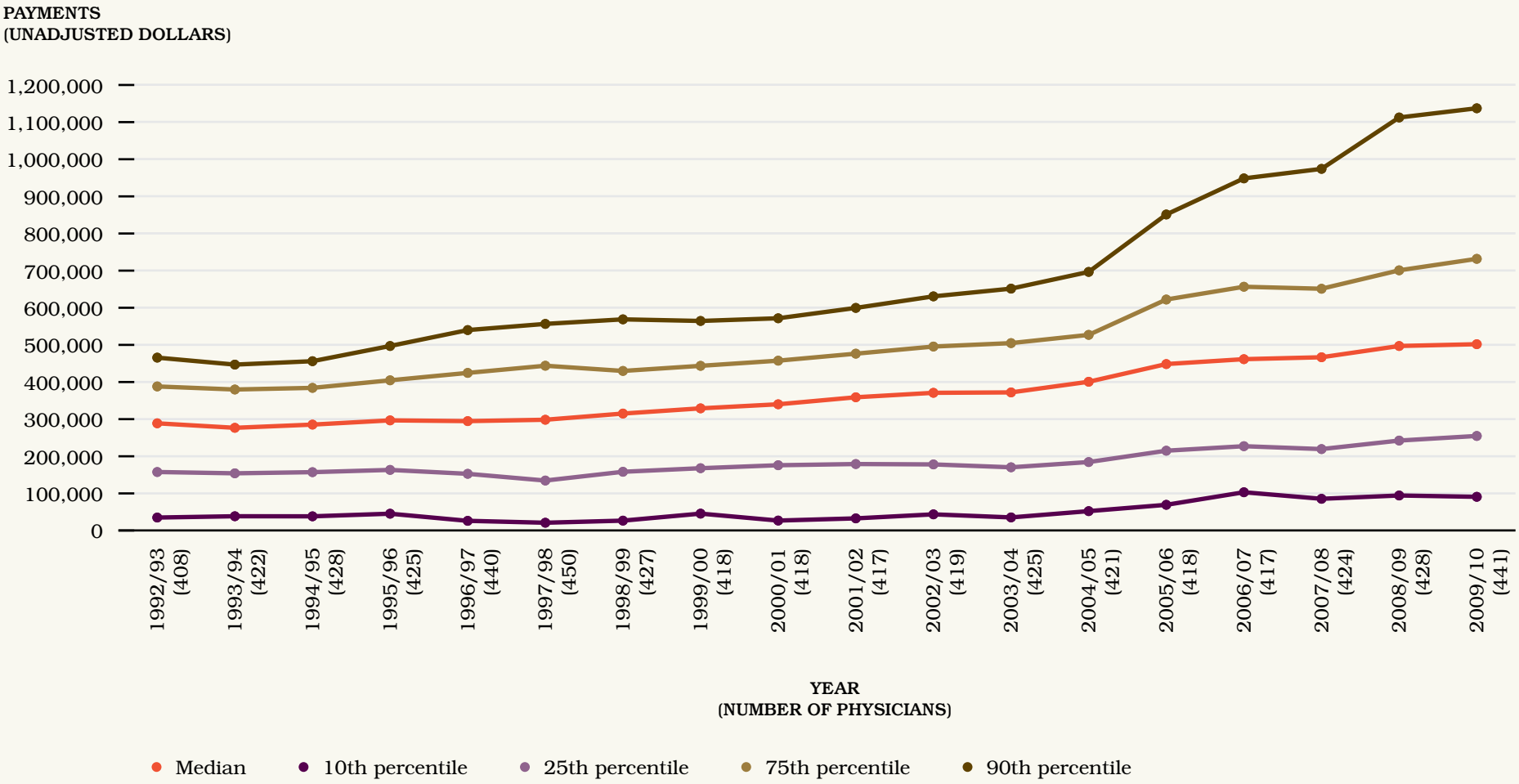
## OBSTETRICIANS AND GYNECOLOGISTS

**EXHIBIT 7.12 Total payments to obstetricians and gynecologists by payment source, in Ontario, 1992/93 to 2009/10**



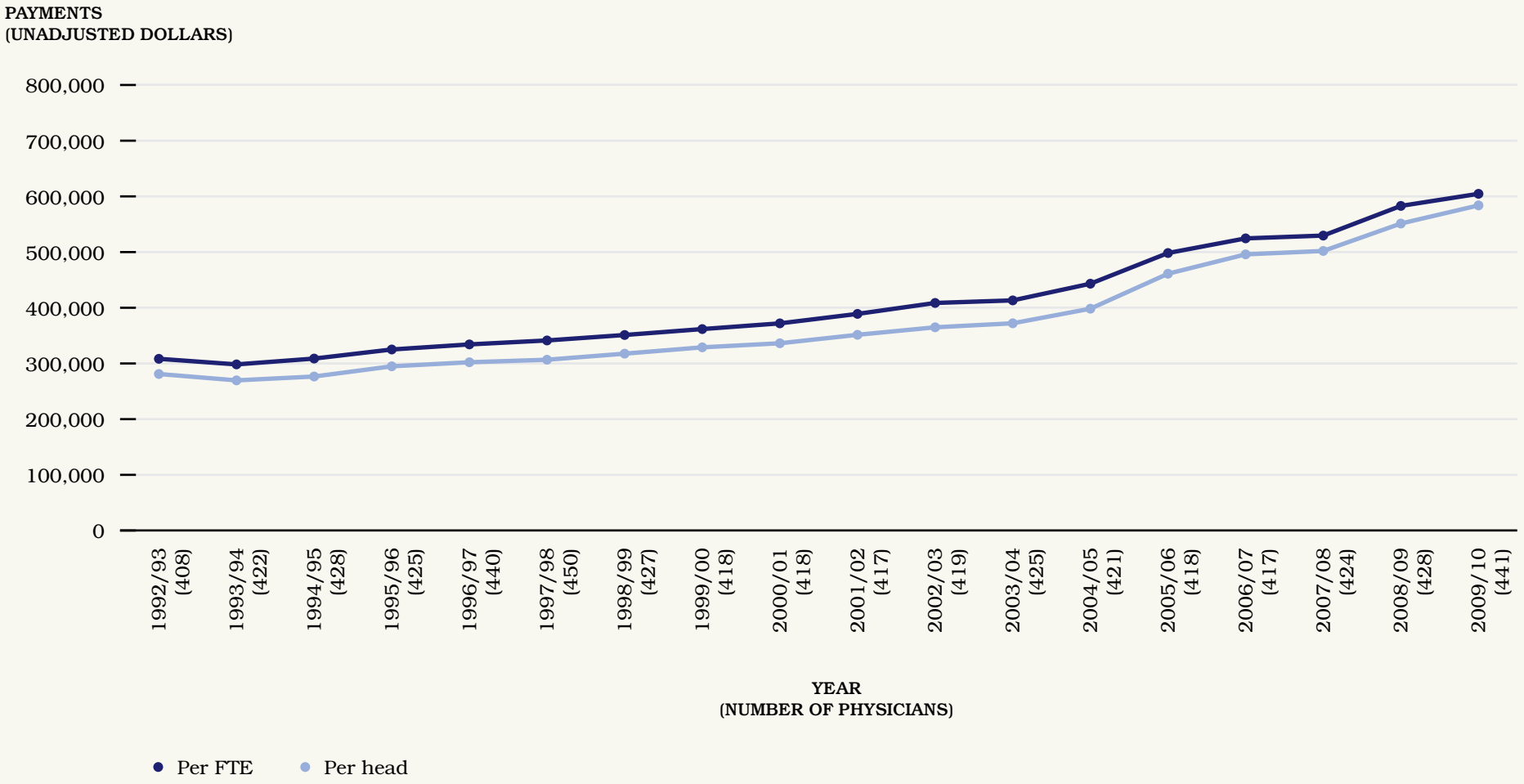
## OPHTHALMOLOGISTS

**EXHIBIT 7.13 Median and percentiles of payments (in unadjusted dollars) to individual ophthalmologists, in Ontario, 1992/93 to 2009/10**



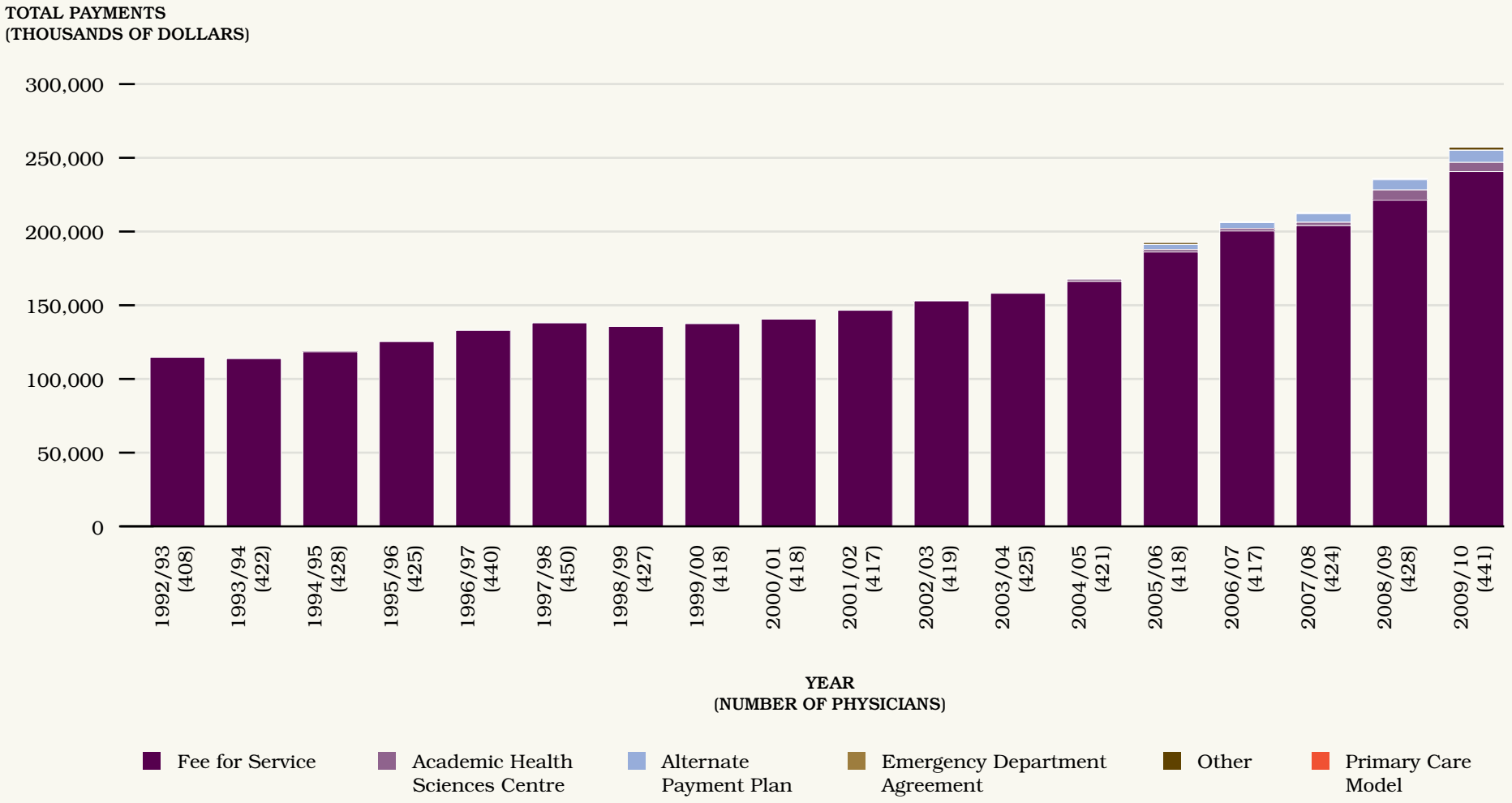
## OPHTHALMOLOGISTS

**EXHIBIT 7.14 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to ophthalmologists, in Ontario, 1992/93 to 2009/10**



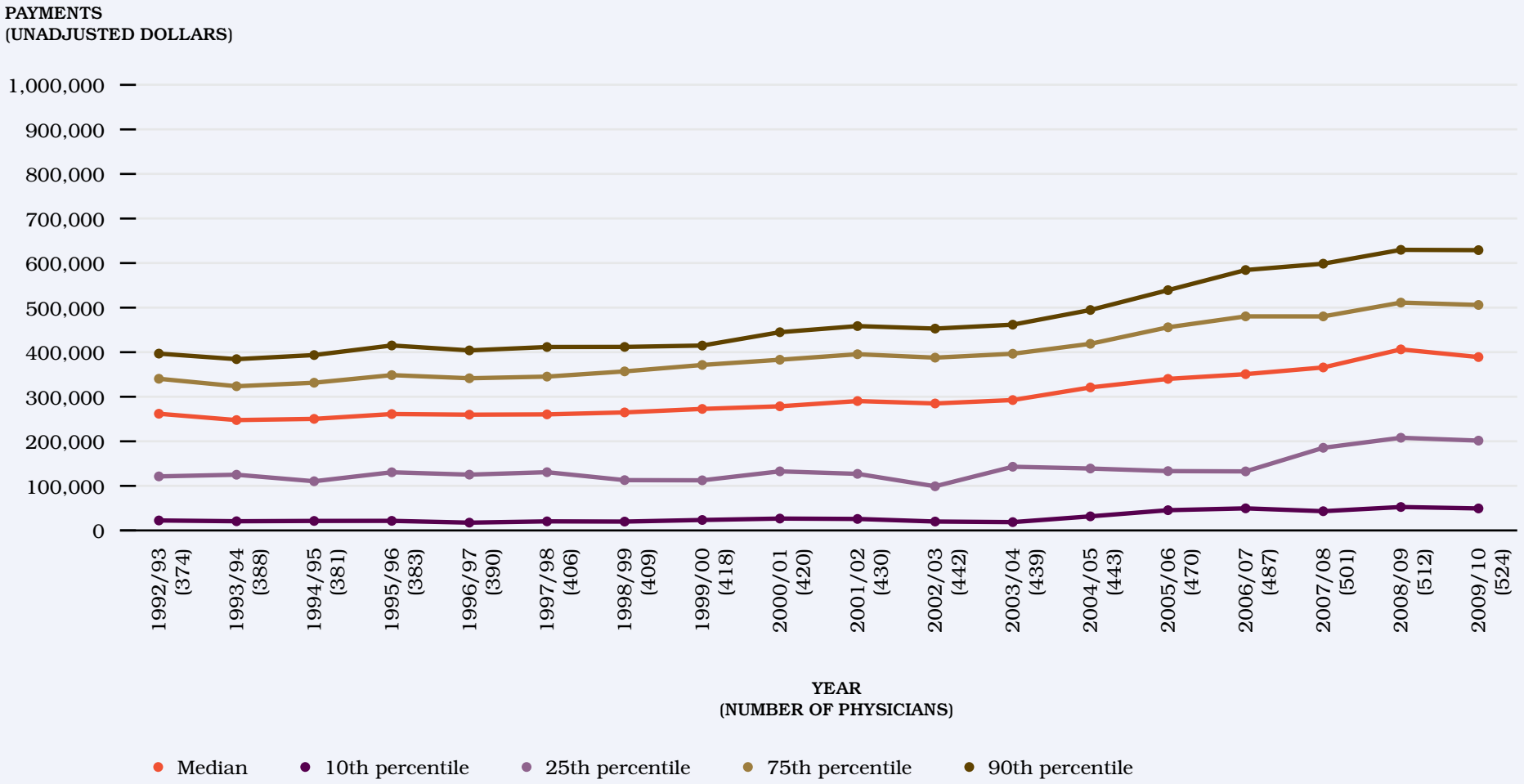
## OPHTHALMOLOGISTS

**EXHIBIT 7.15 Total payments to ophthalmologists by payment source, in Ontario, 1992/93 to 2009/10**



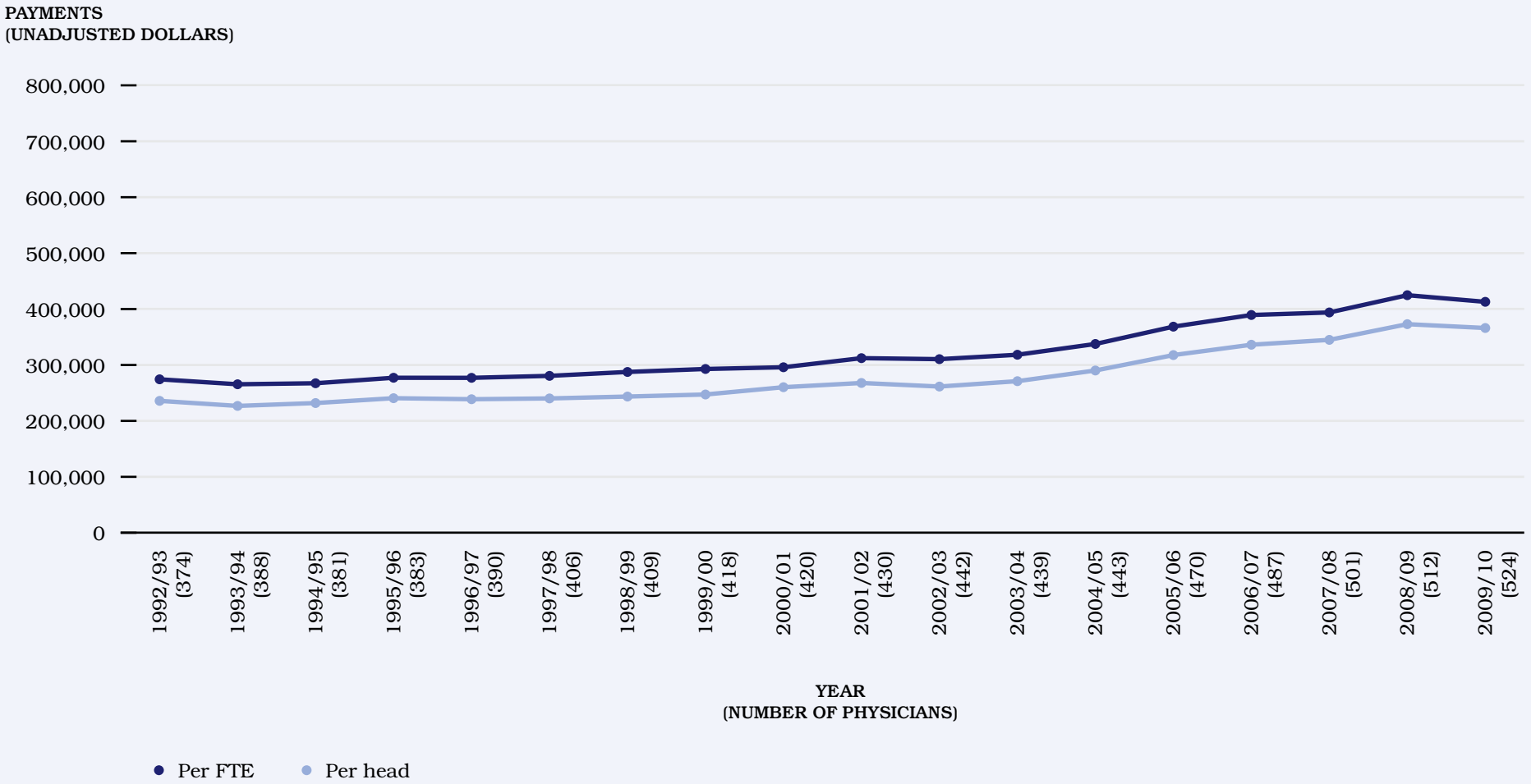
## ORTHOPEDIC SURGEONS

**EXHIBIT 7.16 Median and percentiles of payments (in unadjusted dollars) to individual orthopedic surgeons, in Ontario, 1992/93 to 2009/10**



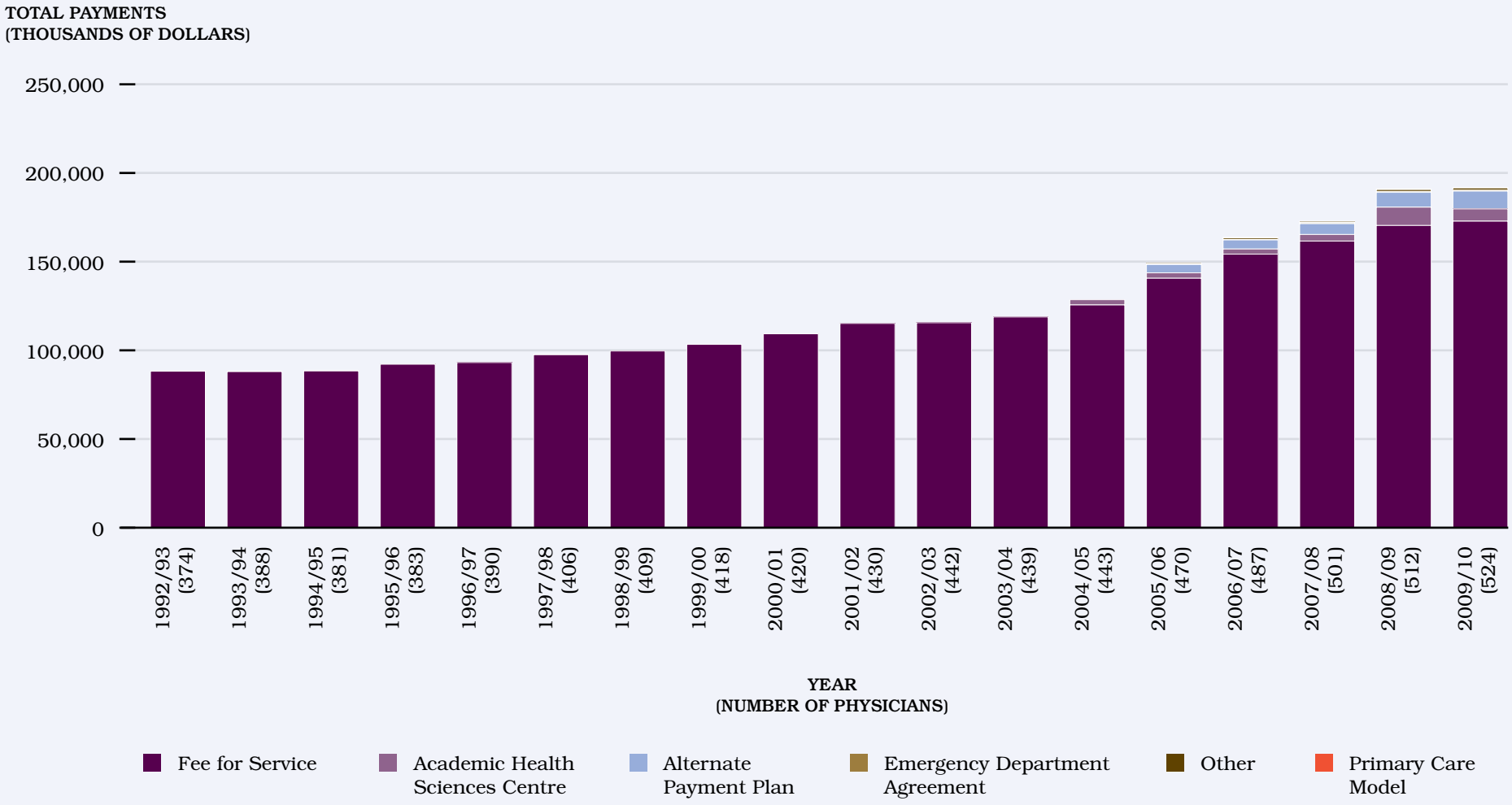
## ORTHOPEDIC SURGEONS

**EXHIBIT 7.17 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to orthopedic surgeons, in Ontario, 1992/93 to 2009/10**



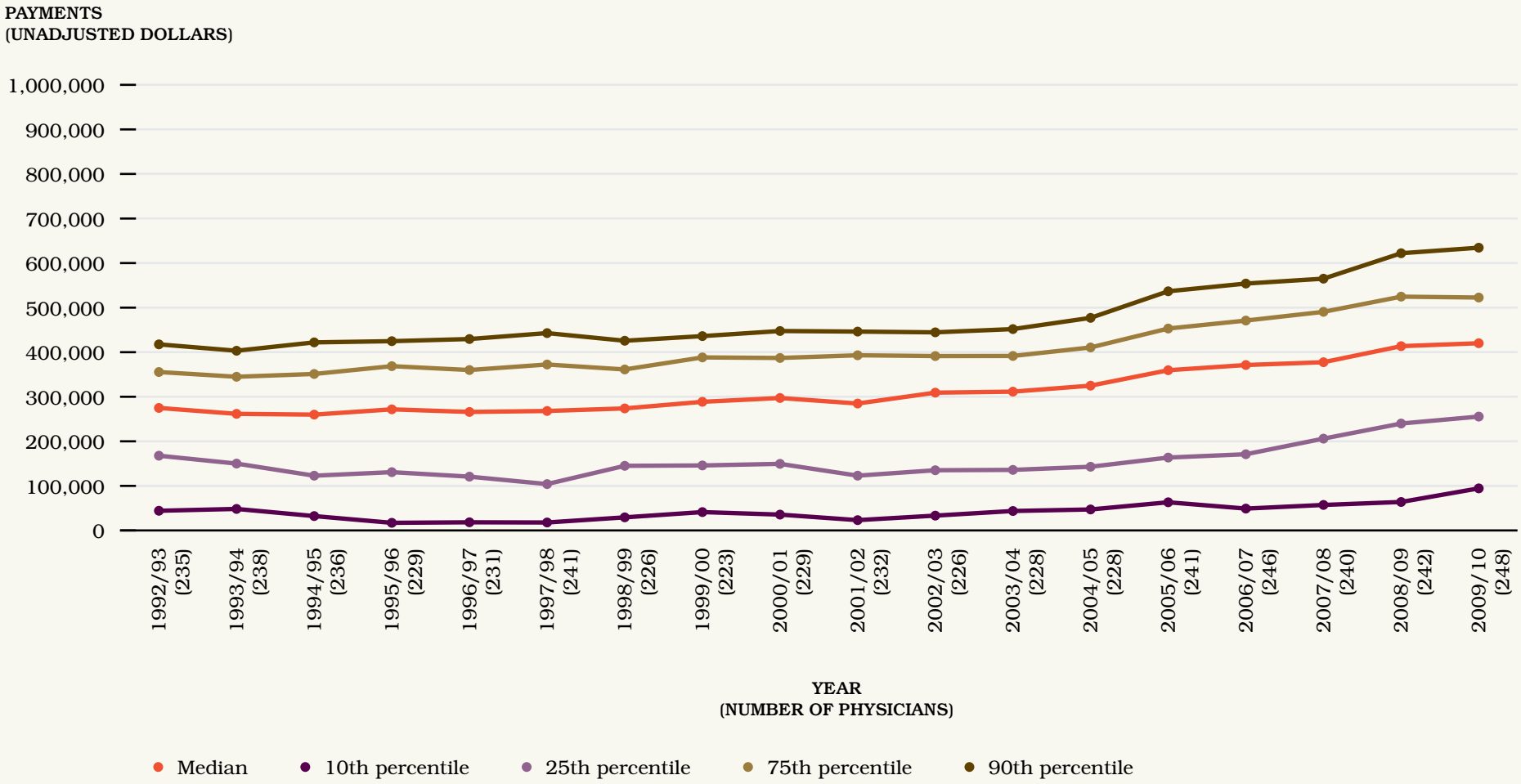
## ORTHOPEDIC SURGEONS

**EXHIBIT 7.18 Total payments to orthopedic surgeons by payment source, in Ontario, 1992/93 to 2009/10**



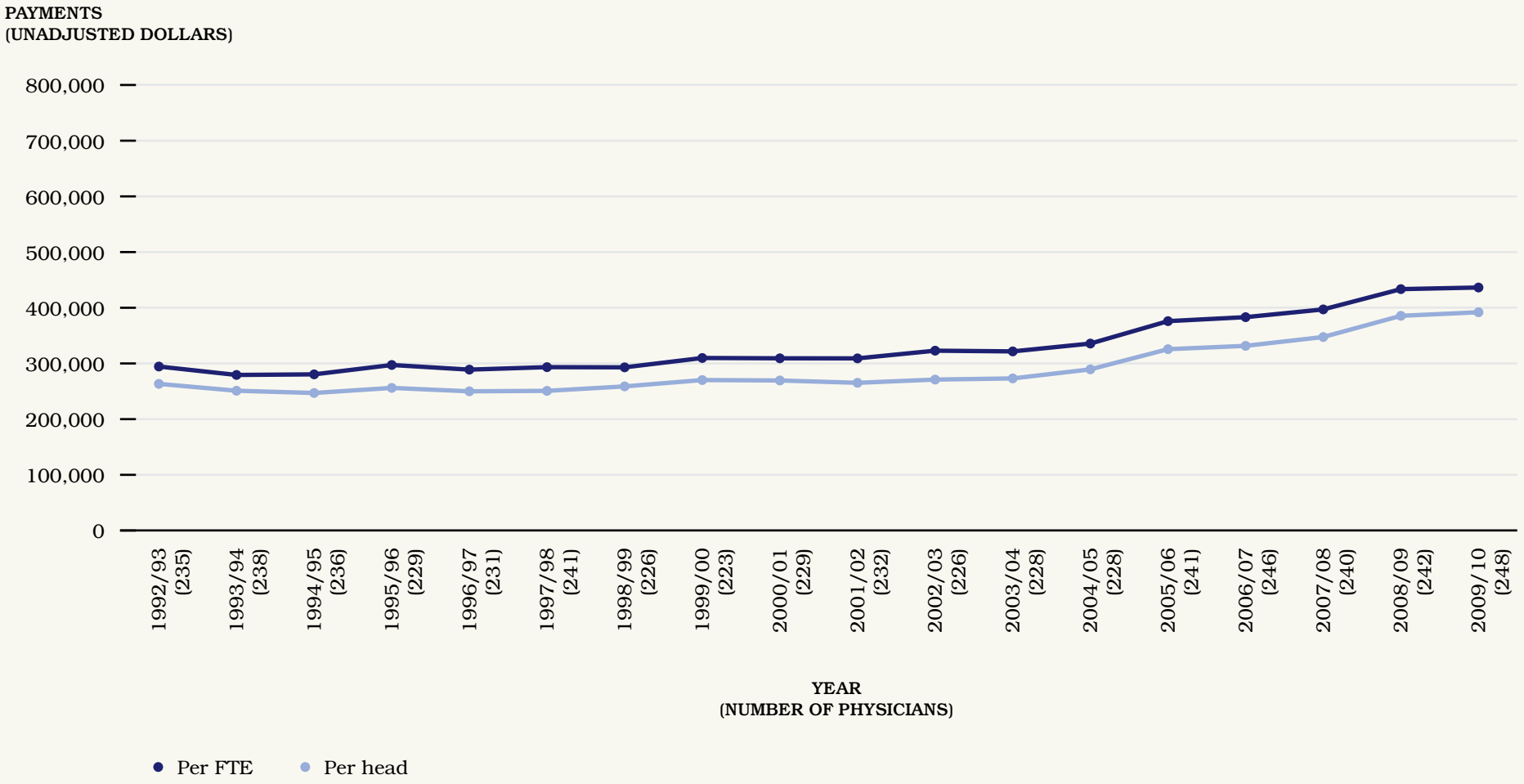
## OTOLARYNGOLOGISTS

**EXHIBIT 7.19 Median and percentiles of payments (in unadjusted dollars) to individual otolaryngologists, in Ontario, 1992/93 to 2009/10**



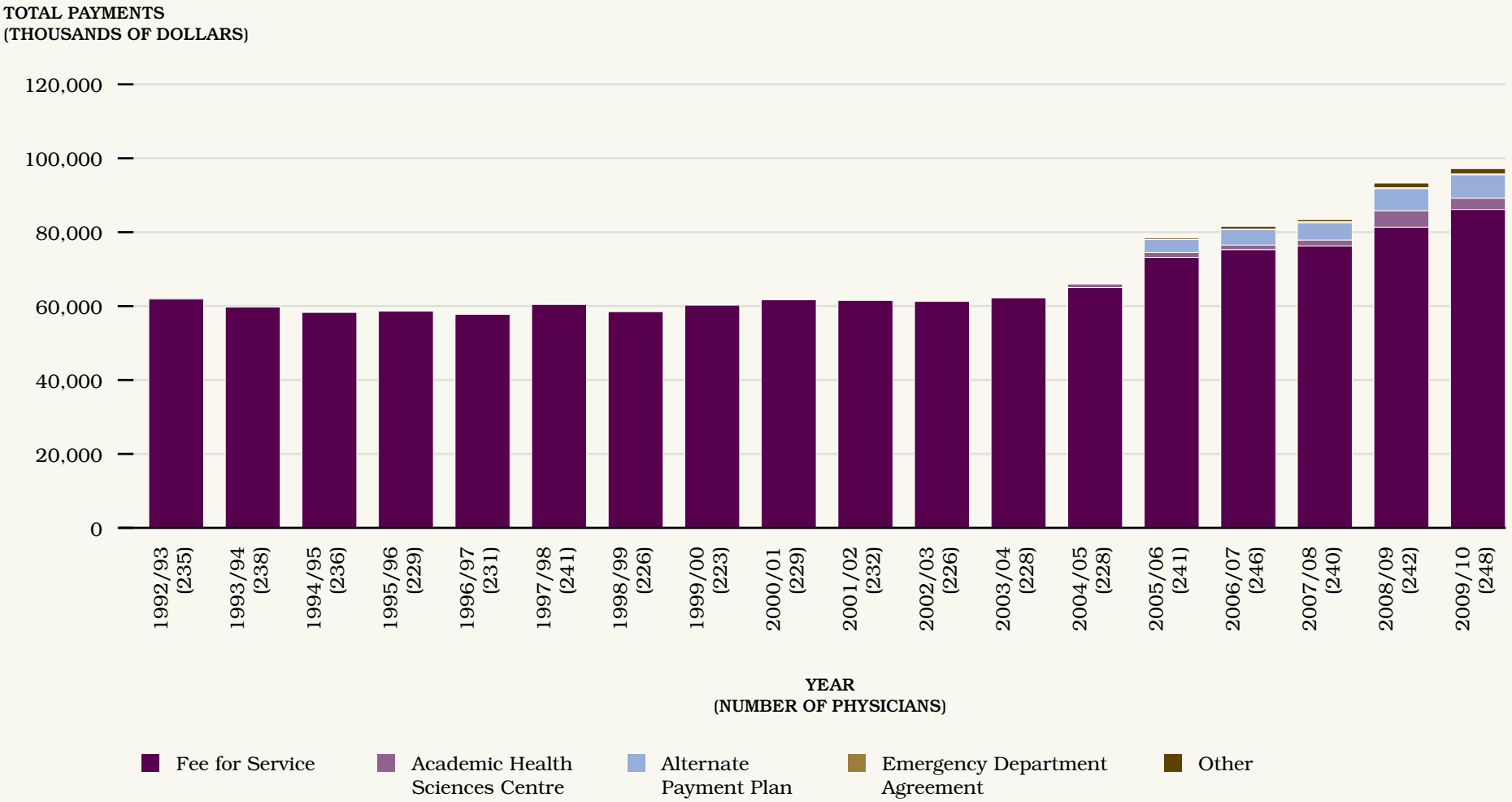
## OTOLARYNGOLOGISTS

**EXHIBIT 7.20 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to otolaryngologists, in Ontario, 1992/93 to 2009/10**



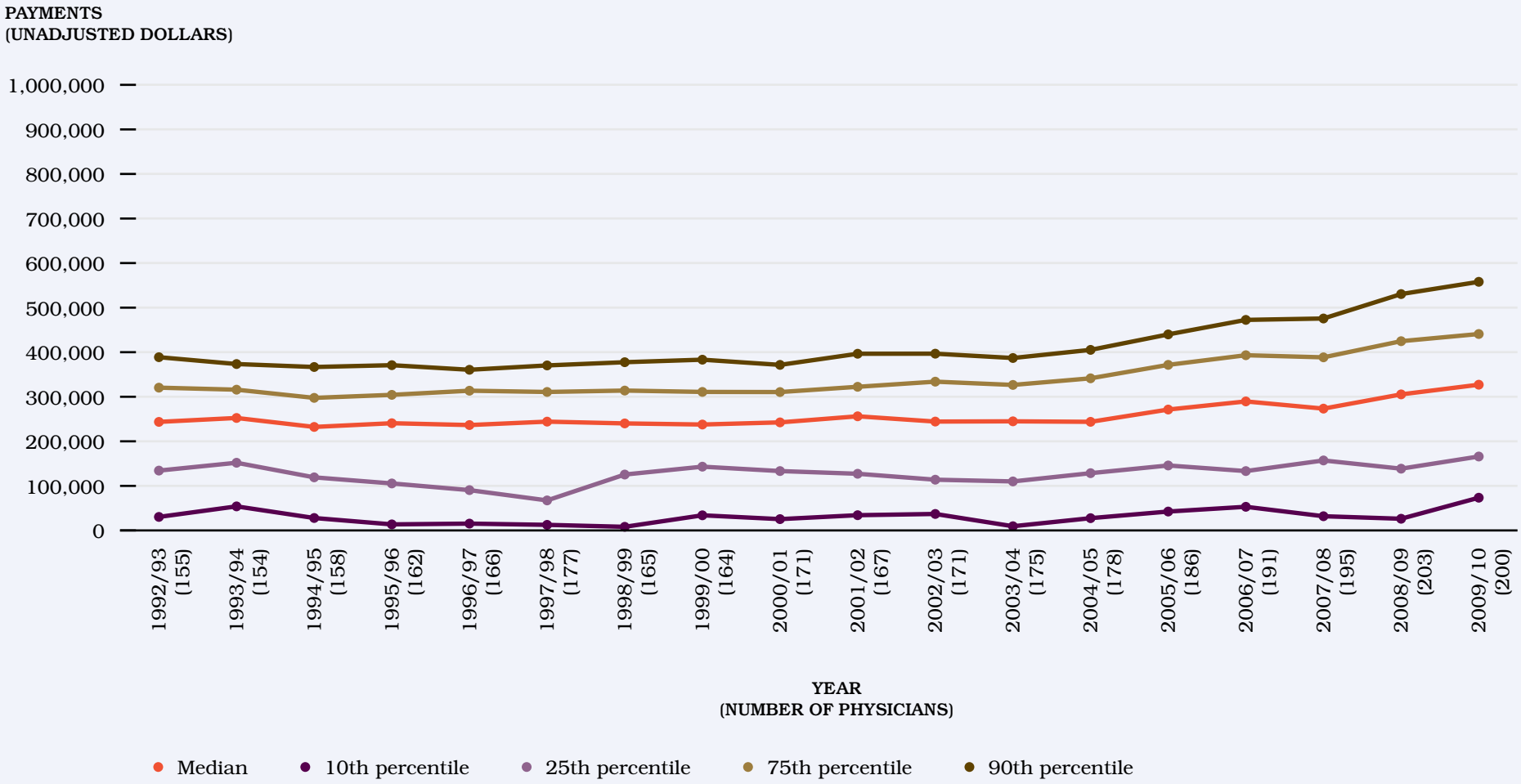
## OTOLARYNGOLOGISTS

**EXHIBIT 7.21 Total payments to otolaryngologists by payment source, in Ontario, 1992/93 to 2009/10**



## PLASTIC SURGEONS

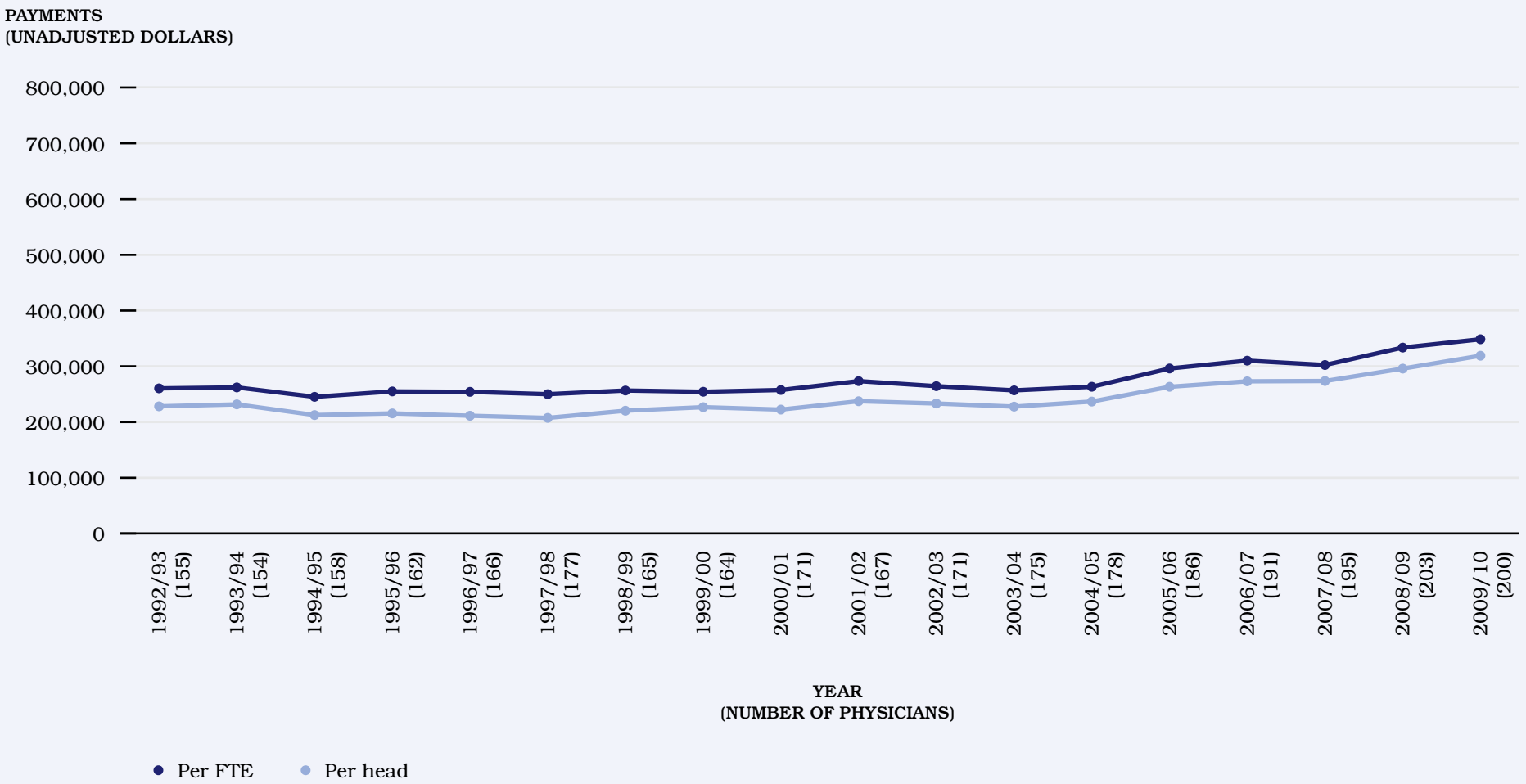
**EXHIBIT 7.22 Median and percentiles of payments (in unadjusted dollars) to individual plastic surgeons, in Ontario, 1992/93 to 2009/10**




Note: Data include payments for OHIP-insured services only and do not reflect payments for cosmetic surgery or other non-insured services.

## PLASTIC SURGEONS

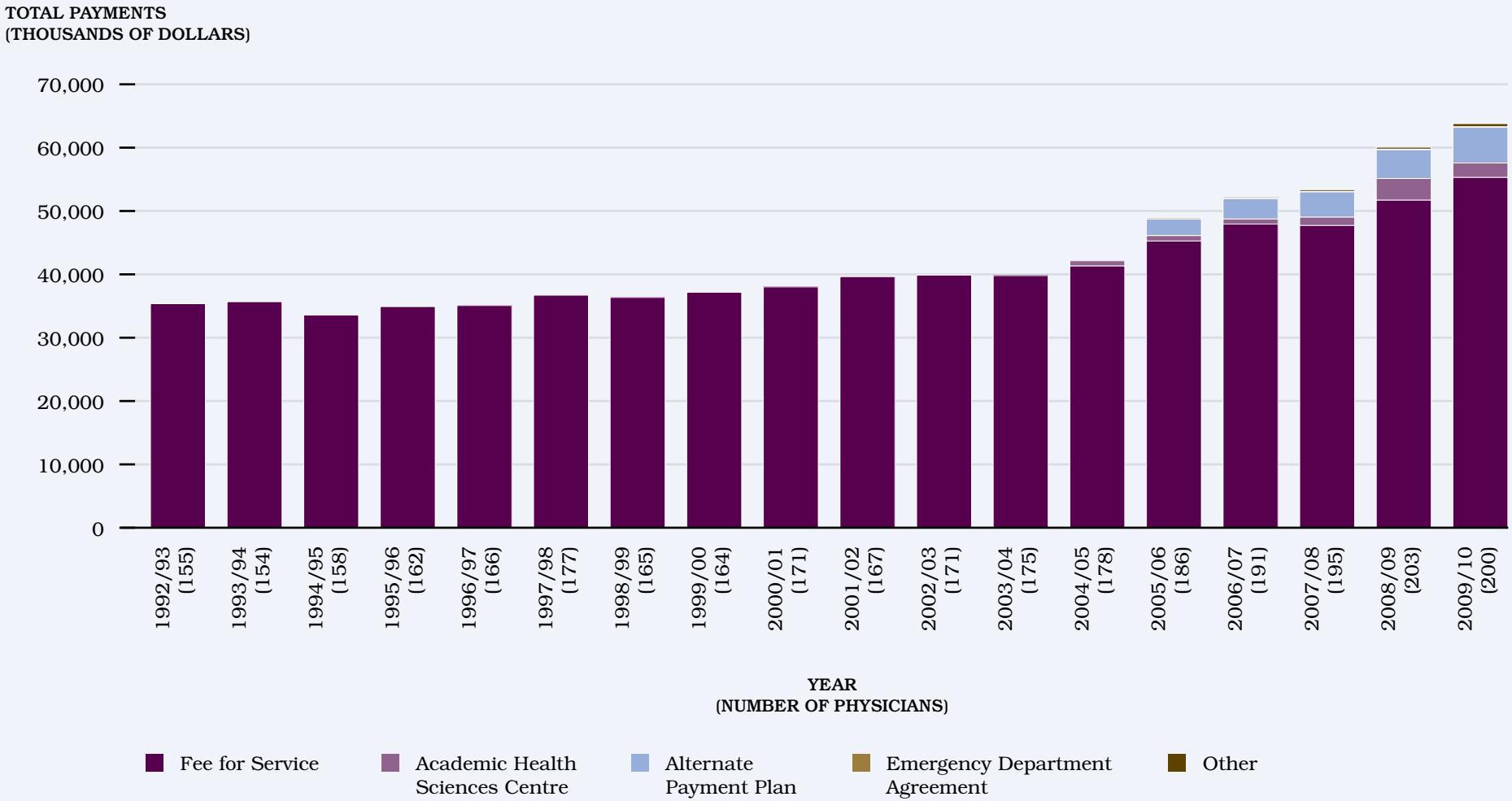
**EXHIBIT 7.23 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to plastic surgeons, in Ontario, 1992/93 to 2009/10**




Note: Data include payments for OHIP-insured services only and do not reflect payments for cosmetic surgery or other non-insured services.

## PLASTIC SURGEONS

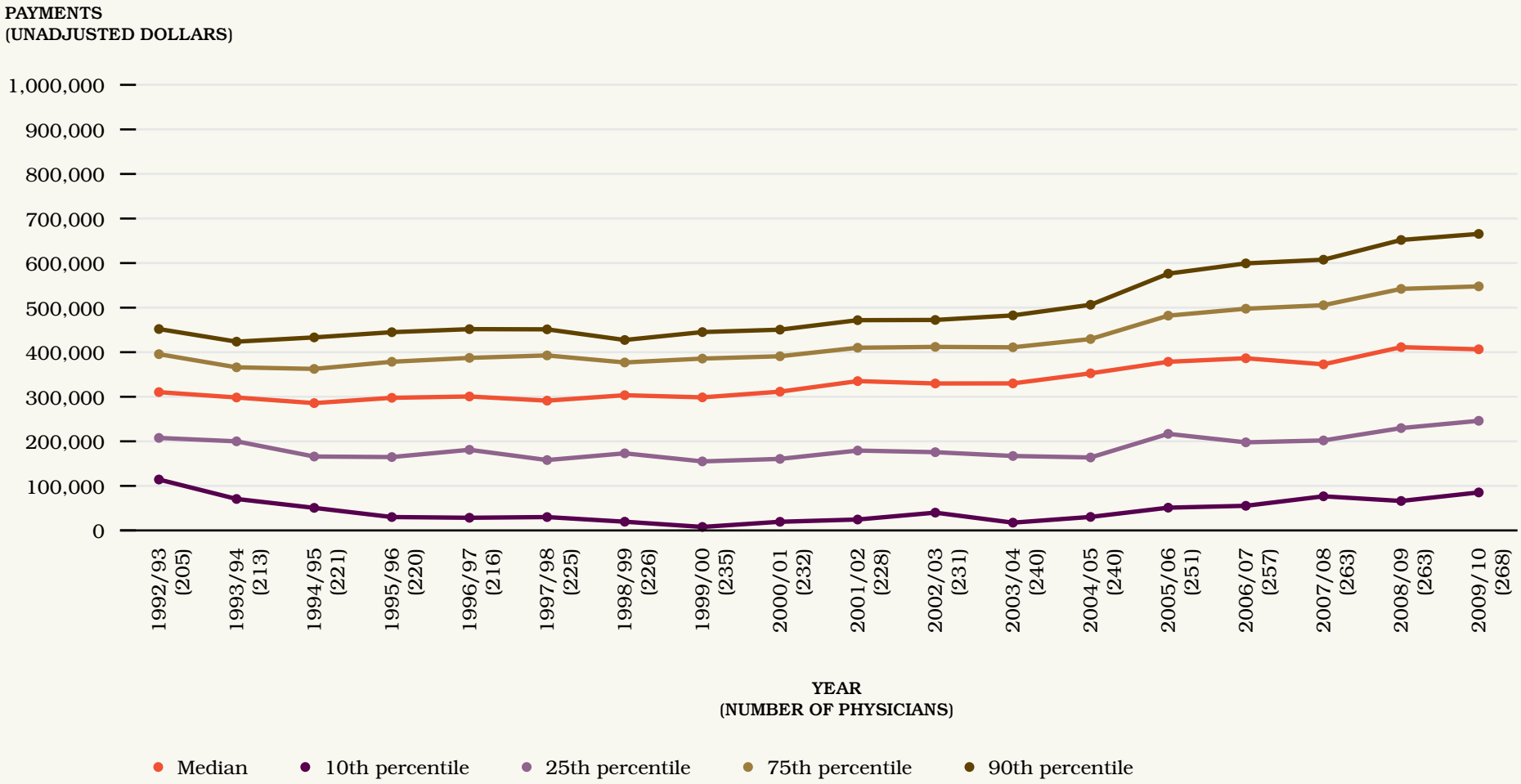
**EXHIBIT 7.24 Total payments to plastic surgeons by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data include payments for OHIP-insured services only and do not reflect payments for cosmetic surgery or other non-insured services.

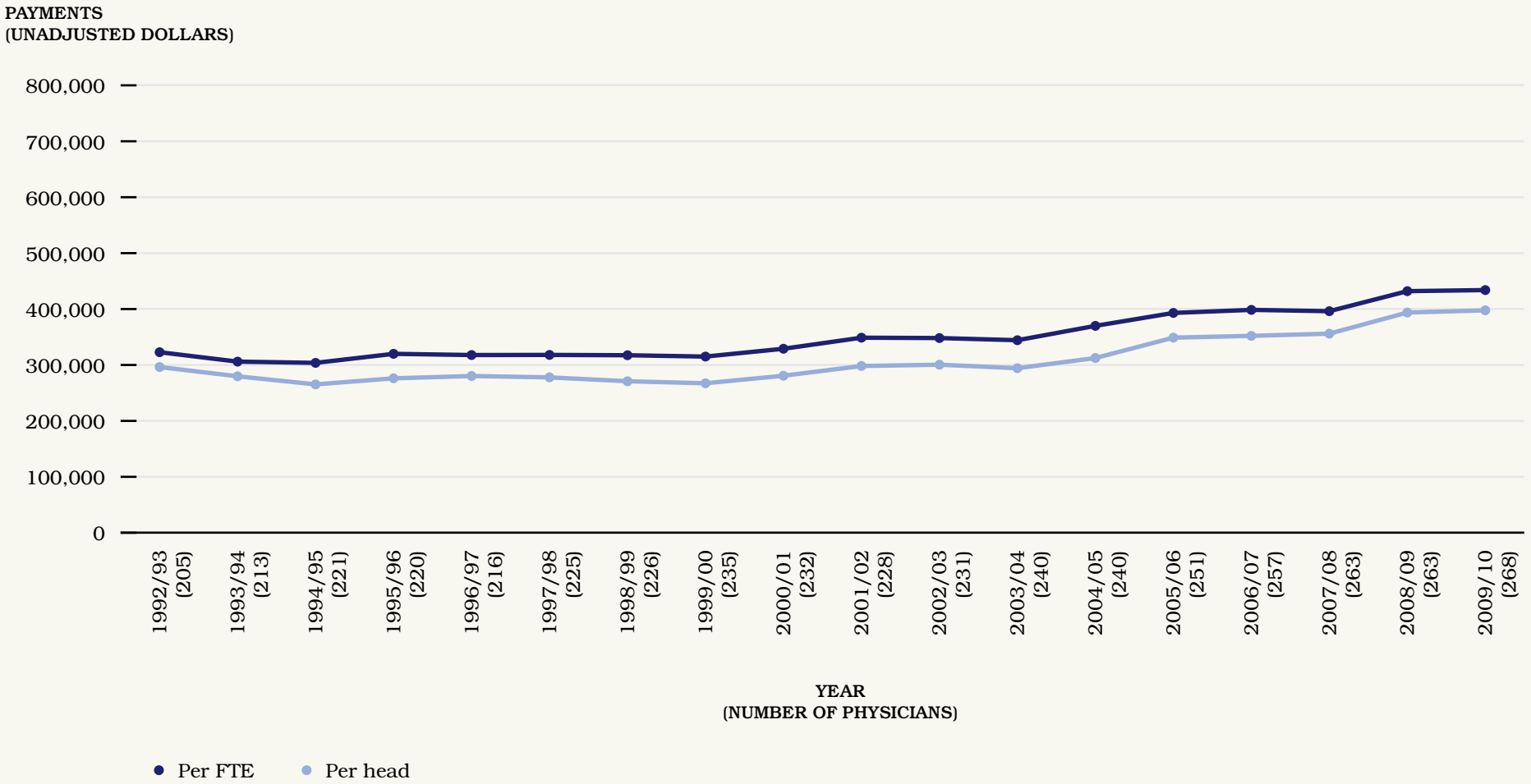
## UROLOGISTS

**EXHIBIT 7.25 Median and percentiles of payments (in unadjusted dollars) to individual urologists, in Ontario, 1992/93 to 2009/10**



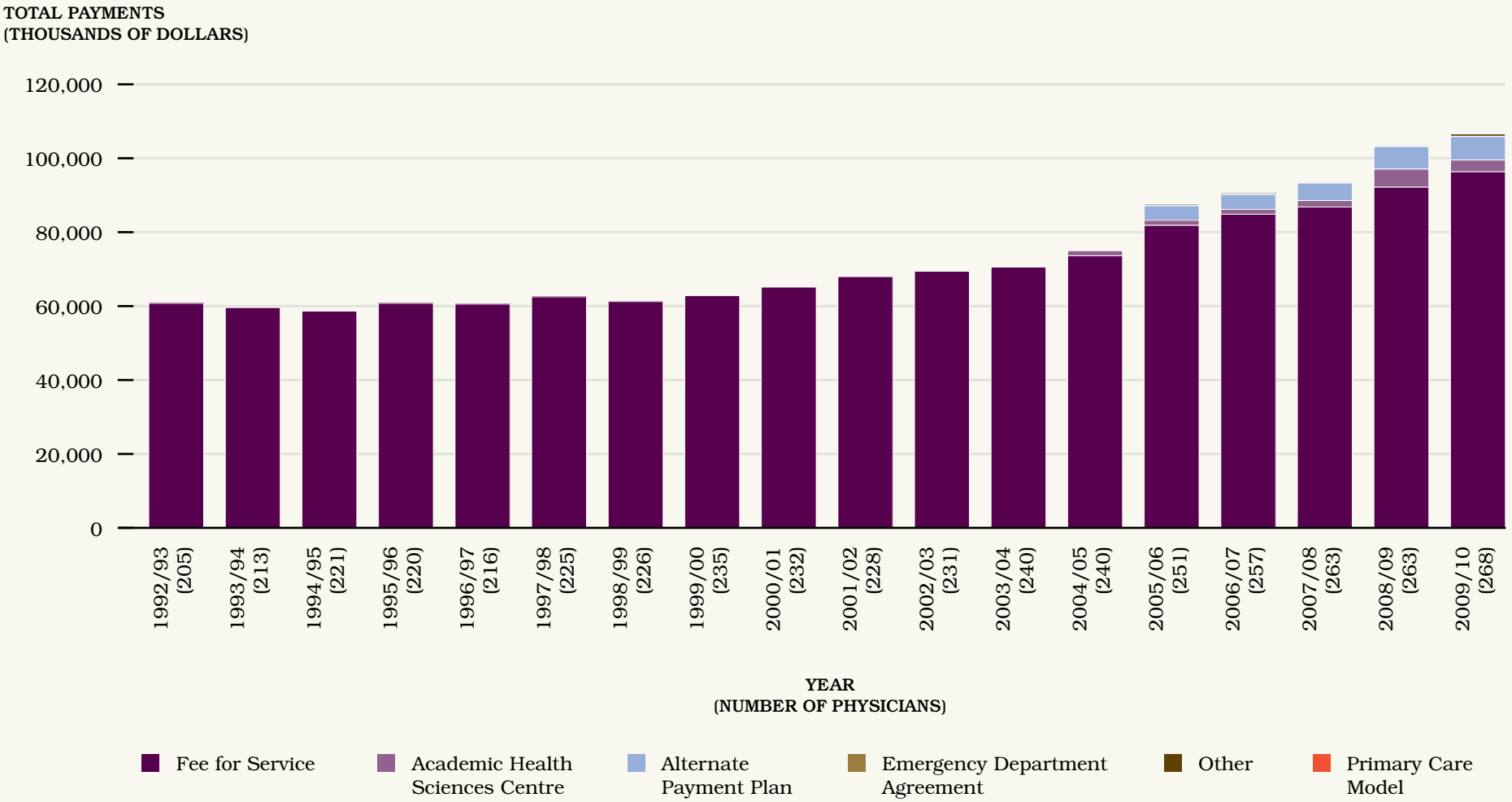
## UROLOGISTS

**EXHIBIT 7.26 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to urologists, in Ontario, 1992/93 to 2009/10**



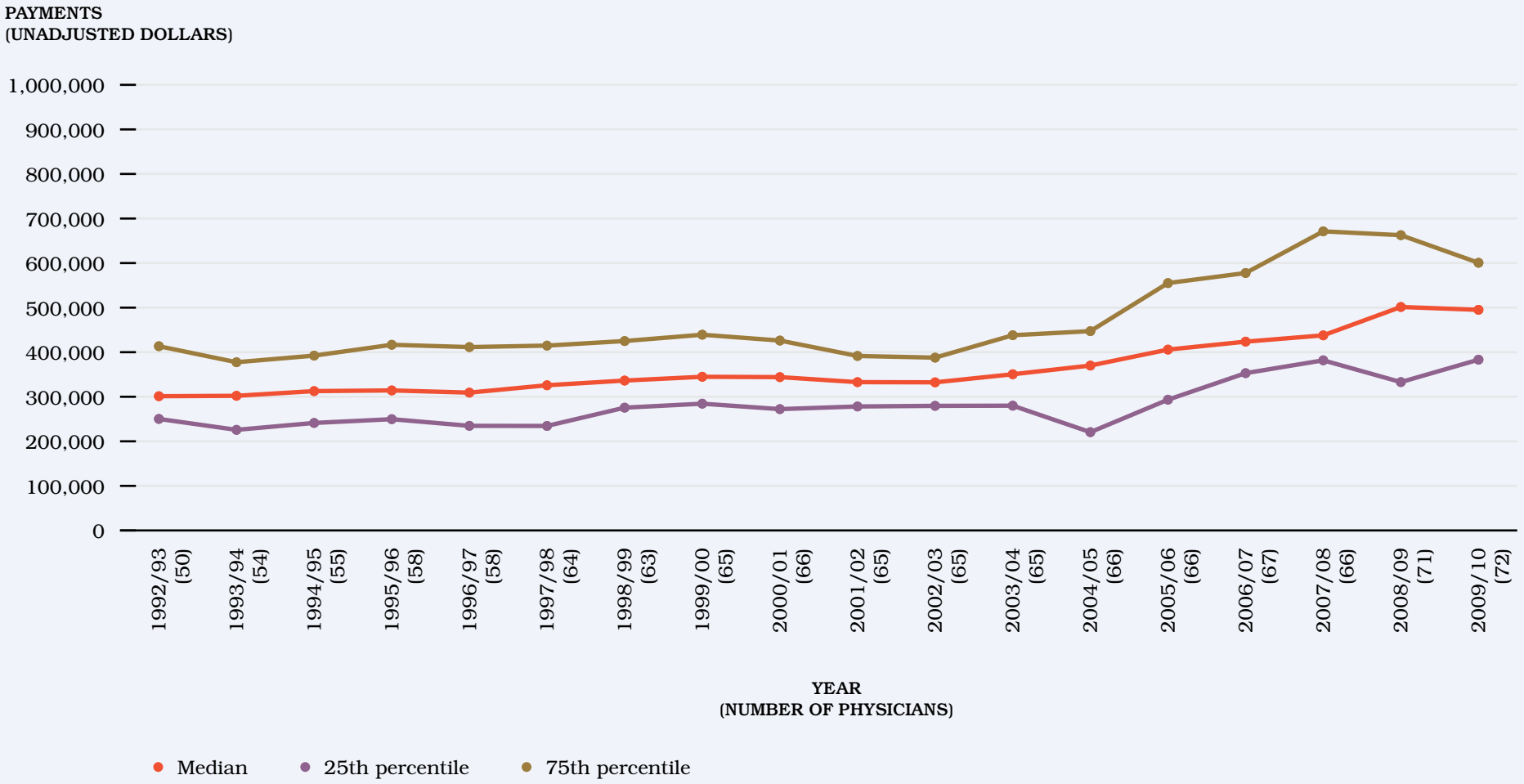
## UROLOGISTS

**EXHIBIT 7.27 Total payments to urologists by payment source, in Ontario, 1992/93 to 2009/10**



## VASCULAR SURGEONS

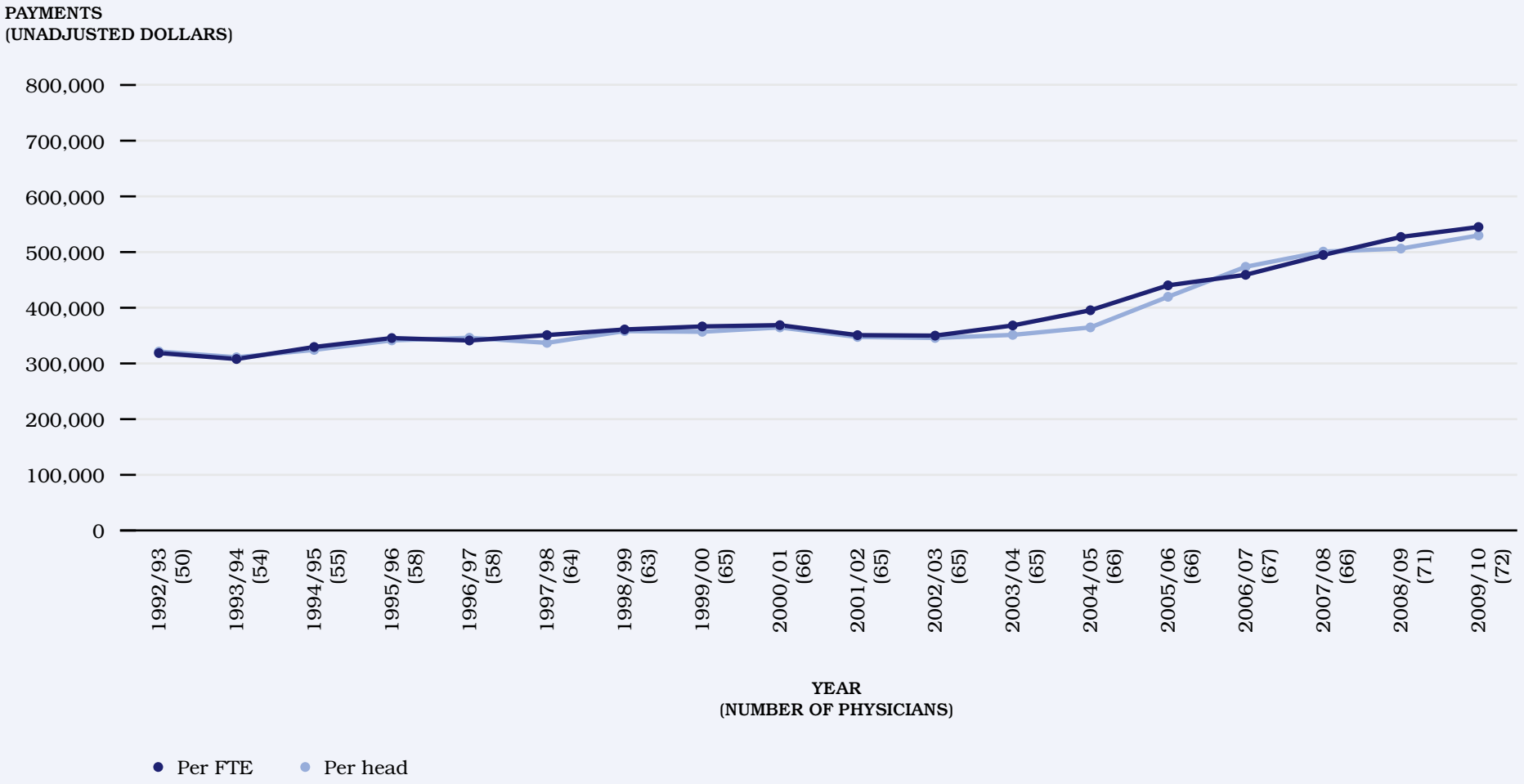
**EXHIBIT 7.28 Median and percentiles of payments (in unadjusted dollars) to individual vascular surgeons, in Ontario, 1992/93 to 2009/10**




Note: The 10th and 90th percentiles are omitted due to the small number of physicians in the top and bottom 10%.

## VASCULAR SURGEONS

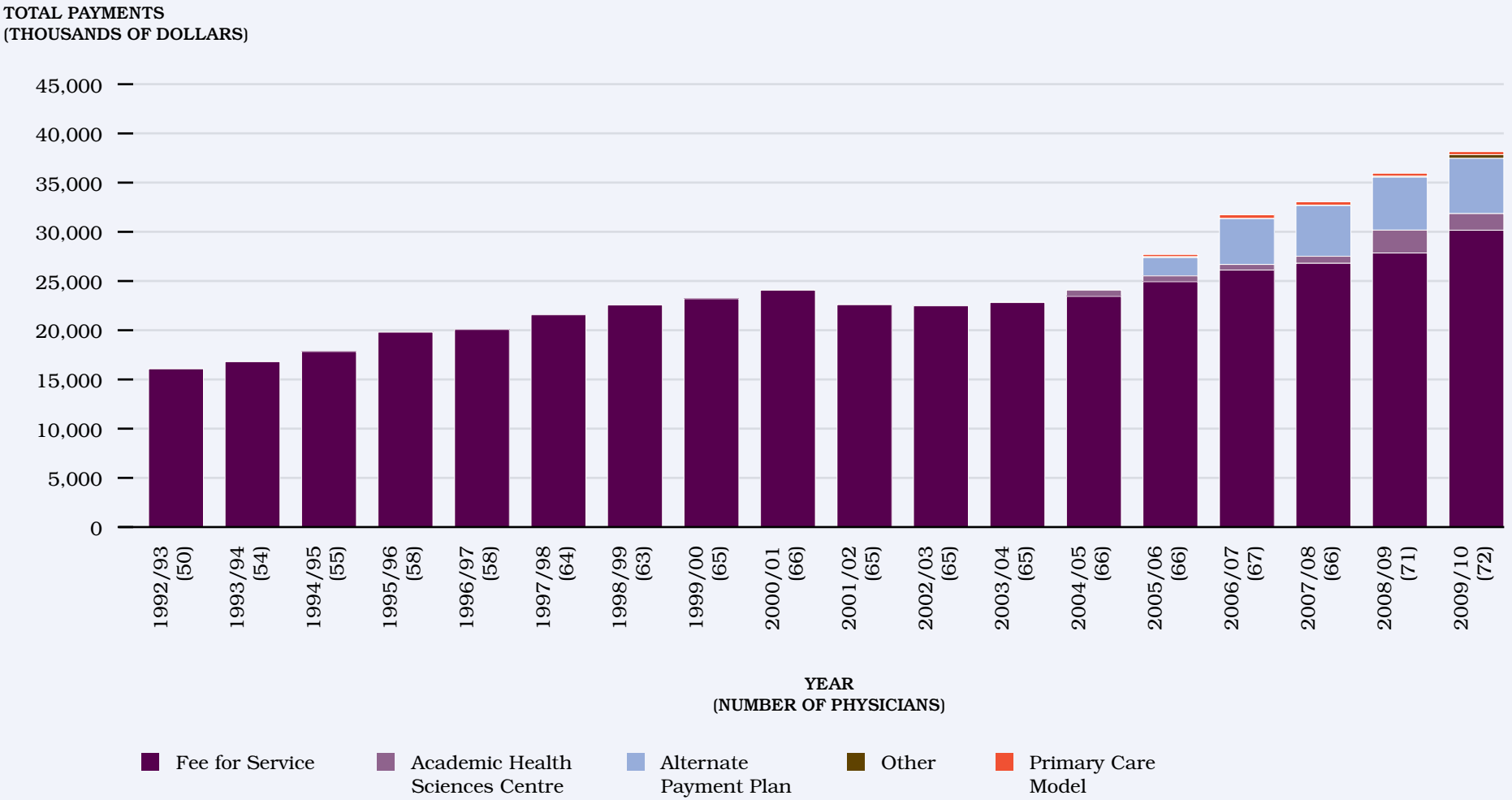
**EXHIBIT 7.29 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to vascular surgeons, in Ontario, 1992/93 to 2009/10**




Note: The 10th and 90th percentiles are omitted due to the small number of physicians in the top and bottom 10%.

## VASCULAR SURGEONS

**EXHIBIT 7.30 Total payments to vascular surgeons by payment source, in Ontario, 1992/93 to 2009/10**




Note: The 10th and 90th percentiles are omitted due to the small number of physicians in the top and bottom 10%.

CHAPTER 8

# Results for Imaging Specialists

## INTRODUCTION

The imaging specialty group includes diagnostic radiologists and nuclear medicine specialists. Radiologists use a range of imaging modalities to aid in the diagnosis of disease. The range of imaging techniques has progressively widened to include traditional X-rays, computerized tomography (CT), ultrasound and magnetic resonance imaging (MRI). Radiologists use a variety of contrast agents to enhance definition of certain tissues. They provide imaging guidance for certain procedures (for instance, biopsies, placement of stents). Radiologists increasingly perform these procedures, and interventional radiology has developed as a discipline that uses minimally-invasive, image-guided procedures to diagnose and treat diseases in nearly every organ system. Modern radiologists perform a wide variety of diagnostic and some therapeutic procedures, and two of these, CT and MRI, have been the subject of additional public funding to reduce wait times in Ontario.

Nuclear medicine is sometimes called radiology 'inside out' as this specialty records radiation emitting from within the body rather than radiation that is generated by external sources like X-rays. This is achieved by administering a range of radio-pharmaceuticals to the patient that localize to particular tissues, organs and cellular receptors. By doing this, nuclear medicine specialists can study disease through altered cellular function and physiology rather than relying on physical changes in the tissue anatomy. This can enable a better definition of the extent of disease. Nuclear medicine is a much smaller specialty than radiology, with a limited number of procedures. One of these, positron emission tomography, has been subject to an evaluation program in Ontario, which has restricted access to public funding. In October 2009, OHIP coverage was extended to a range of diseases where conventional imaging could not provide essential information.[1]

Historically, two fees have applied to diagnostic tests: a professional fee and a technical fee. Professional fees are paid to the physician who performs and interprets the test, whereas technical fees are paid to the imaging facility (e.g., the hospital) to offset the costs associated with providing the imaging services (including the costs of paying technicians, overhead expenditures, capital outlays and amortization).[2] In this report, we are concerned with the professional fees paid to radiologists and nuclear medicine specialists. As the footnotes to the exhibits indicate, payments before 2000 included some professional and technical fees and those after that did not, so data from the two periods should not be compared.

# FINDINGS FOR INDIVIDUAL SPECIALTIES

## Diagnostic Radiology (exhibits 8.1 to 8.3)

The supply of diagnostic radiologists increased steadily throughout the study period. In 2009/10, there were 975 radiologists, about 43% more than in 1992/93. Total payments to this specialty in 2009/10 were about $550 million, an increase of about $250 million (82%) compared with 2003. Radiologist numbers increased by 145 (approximately 18%) during this period. Diagnostic radiologists had the highest mean payments per FTE of any specialty in 2009/10 ($606,700), which was almost double the average paid to all physicians in the province in that year. The median payment was lower than this (about $555,000), and the variation in payments was very wide, with 10% of radiologists paid more than $945,000 and 25% paid more than $775,000. At the other end of the scale, 25% of radiologists were paid less than $300,000 and 10% were paid less than $132,000. This very wide variation in payments may indicate that a significant proportion of radiologists worked part-time. Almost all payments were by FFS.

### Nuclear Medicine (exhibits 8.4 to 8.6)

By comparison with diagnostic radiology, nuclear medicine is a small specialty with only 54 practitioners in 1992/93, increasing to 88 in 2009/10. Total payments to this specialty in 2009/10 were approximately $46 million. The median payment to nuclear medicine specialists in 2009/10 was approximately $500,000, substantially more than the average payment to all physicians. The mean payment was slightly higher than the median. The great majority of payments (97%) were by FFS.

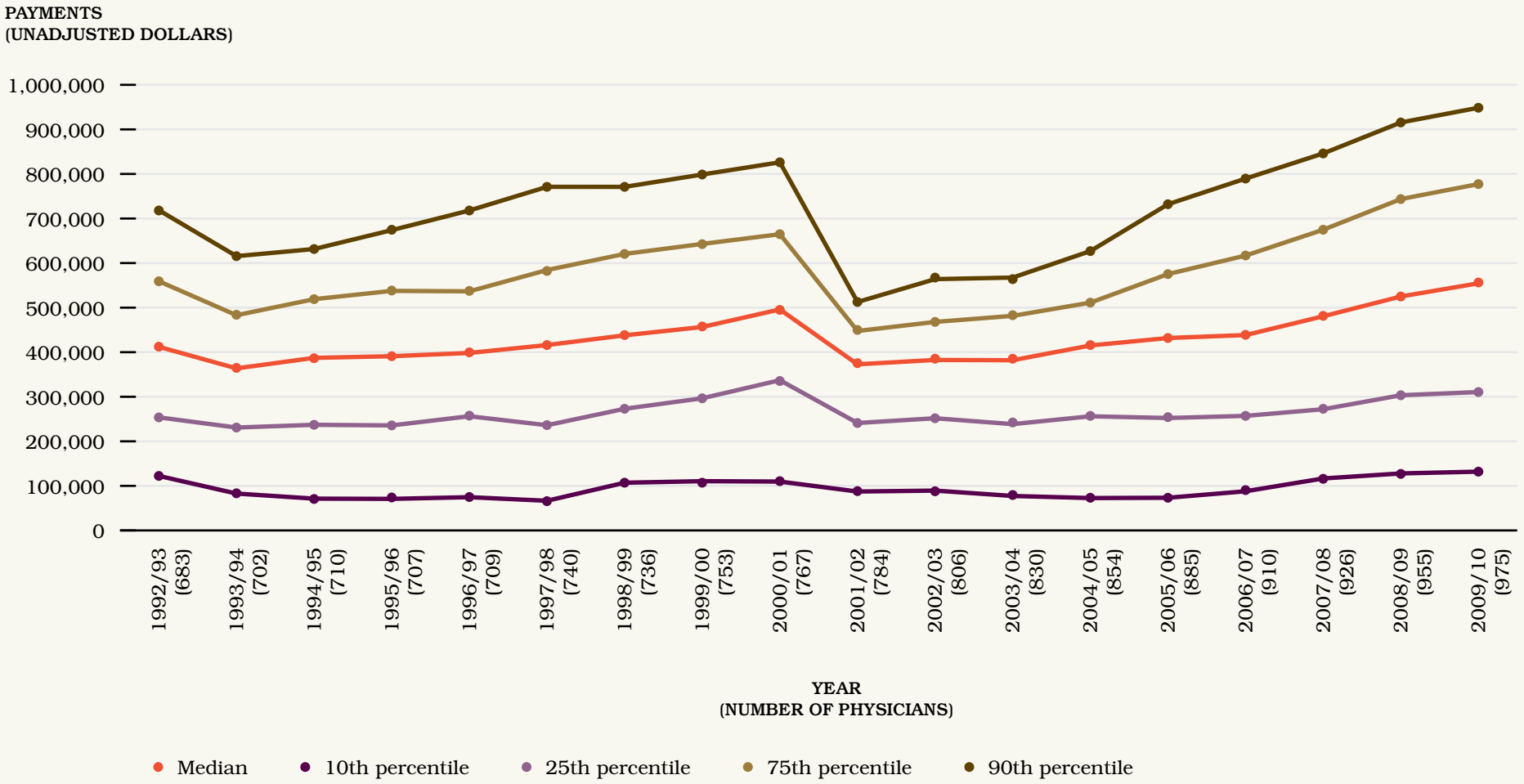
## REFERENCES

1 Ontario Ministry of Heath and Long-Term Care. OHIP Coverage for Positron Emission Tomography (PET) Scanning, Effective October 1, 2009. Accessed January 16, 2012 at http://health.gov.on.ca/en/public/publications/ohip/pet.aspx

2 Toronto Health Economics and Technology Assessment Collaborative. *The Relative Cost-effectiveness of Five Non-invasive Cardiac Imaging Technologies for Diagnosing Coronary Artery Disease in Ontario*. Toronto: THETA; 2010. Accessed January 16, 2012 at http://theta.utoronto.ca/papers/theta_report_007.pdf

## DIAGNOSTIC RADIOLOGISTS

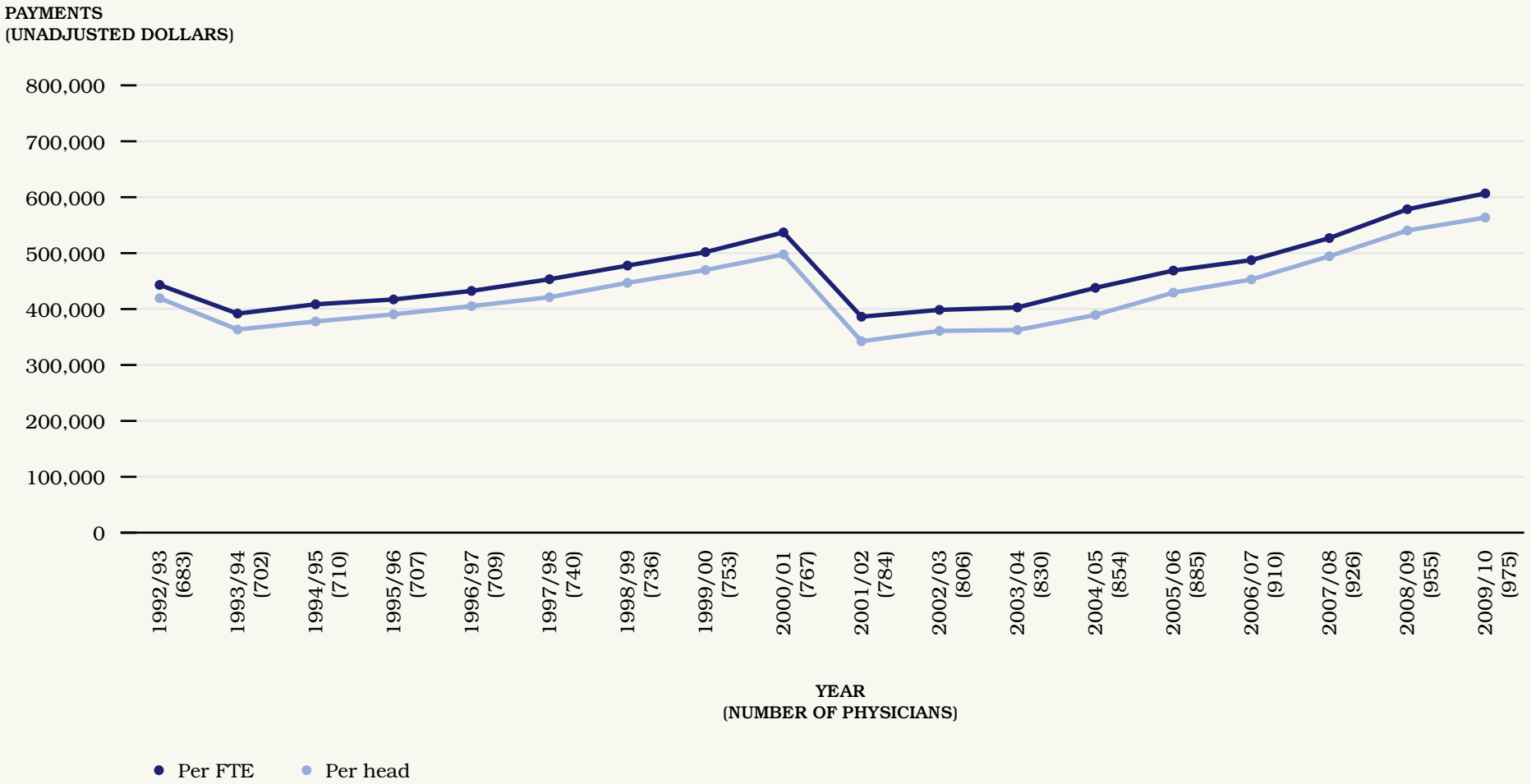
**EXHIBIT 8.1 Median and percentiles of payments (in unadjusted dollars) to individual diagnostic radiologists, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/021 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

## DIAGNOSTIC RADIOLOGISTS

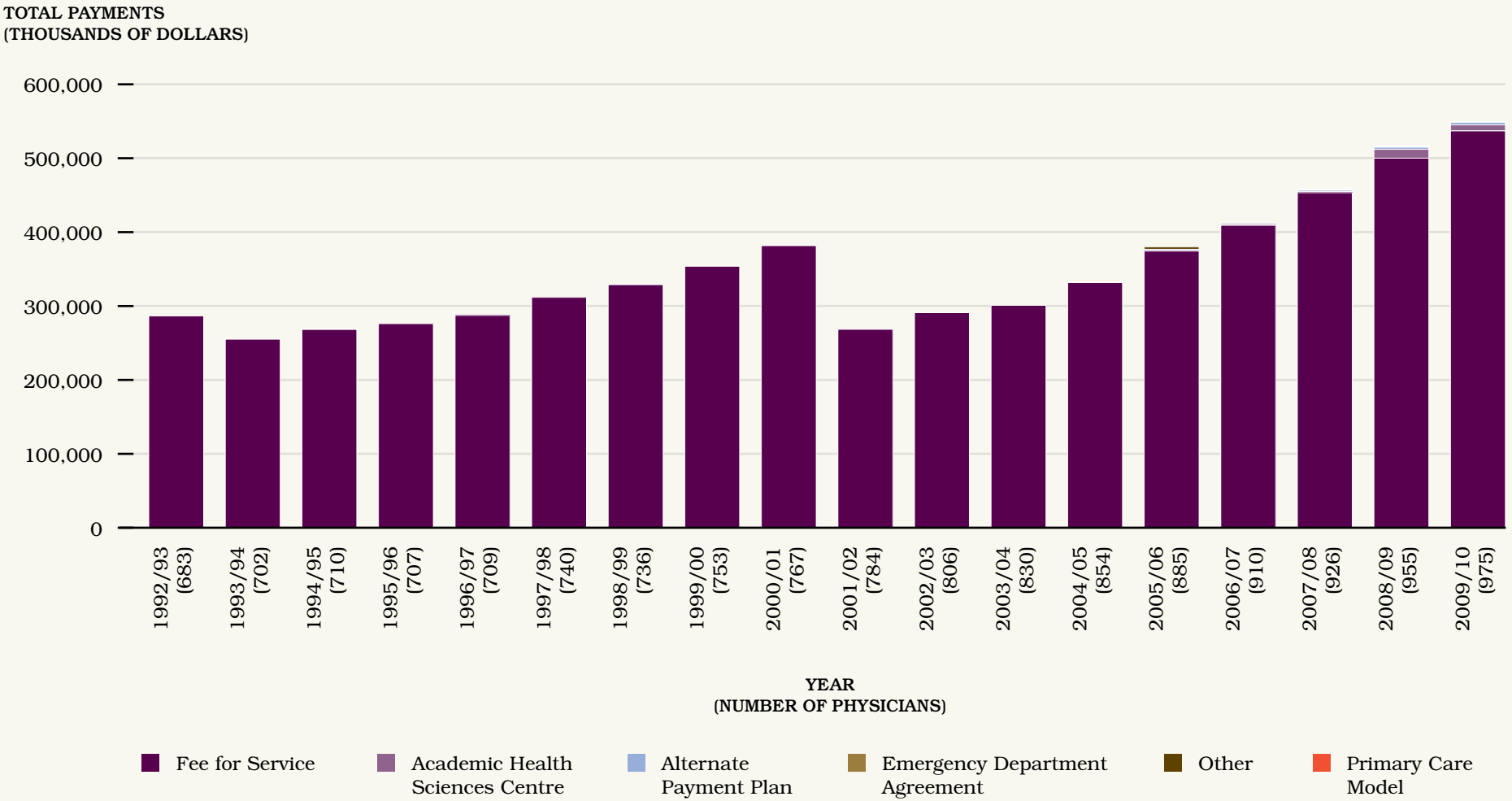
**EXHIBIT 8.2 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to diagnostic radiologists, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/021 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

## DIAGNOSTIC RADIOLOGISTS

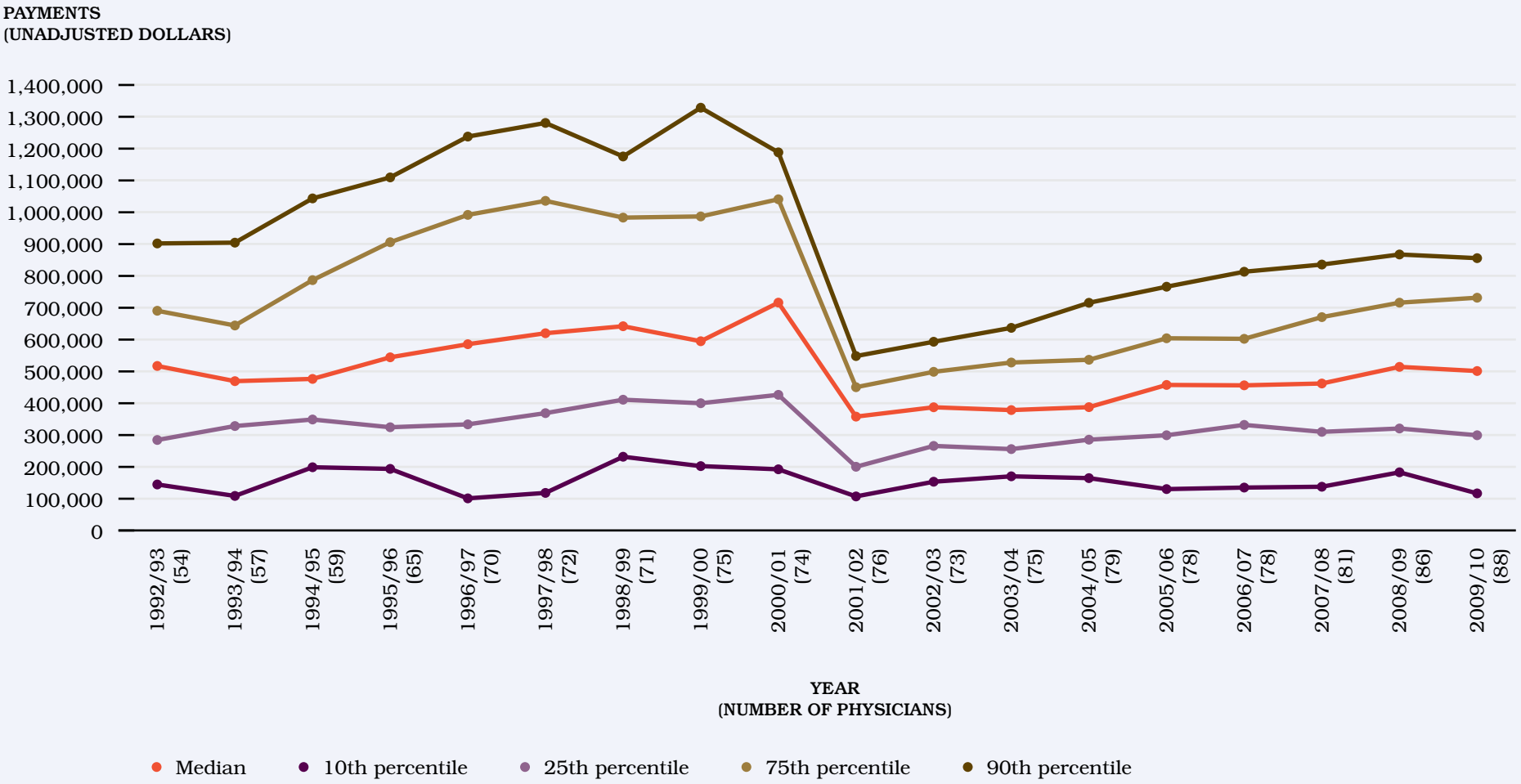
**EXHIBIT 8.3 Total payments to diagnostic radiologists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2001/021 include some fees that combined technical and professional fees. Such combined fees were discontinued in 2000/01.

## NUCLEAR MEDICINE SPECIALISTS

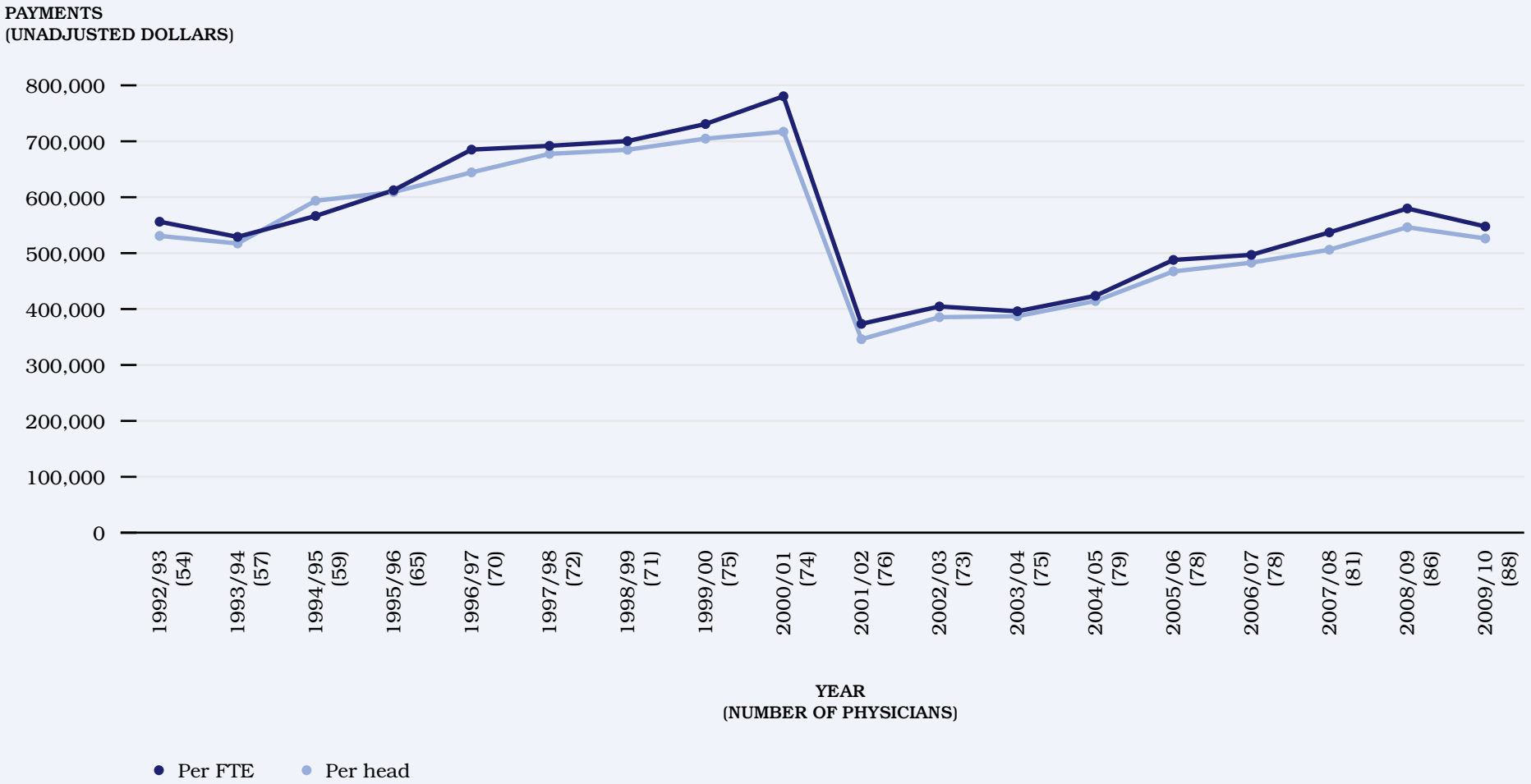
**EXHIBIT 8.4 Median and percentiles of payments (in unadjusted dollars) to individual nuclear medicine specialists, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2000/01 may include some technical and professional fees.

## NUCLEAR MEDICINE SPECIALISTS

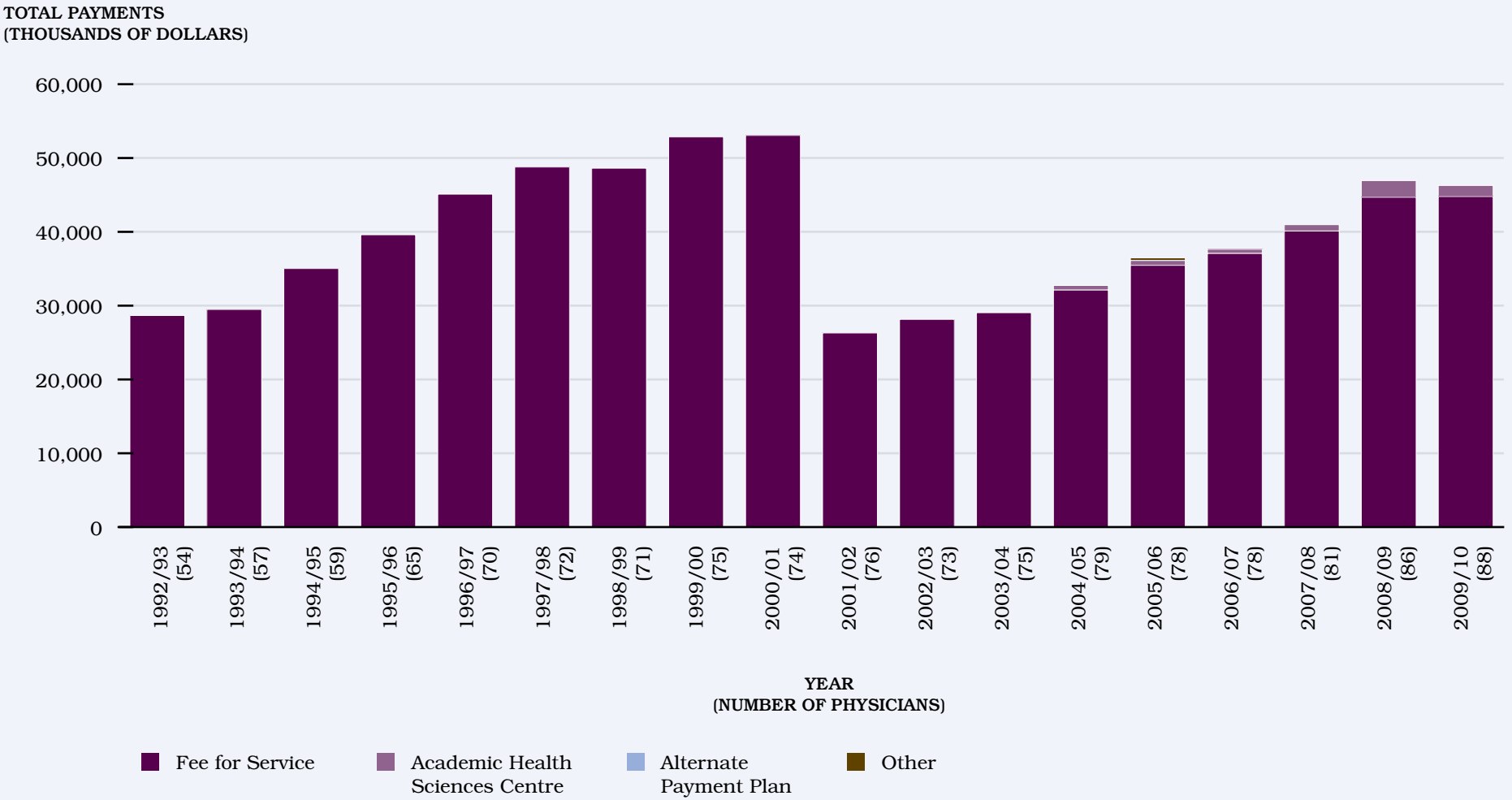
**EXHIBIT 8.5 Mean payments (unadjusted dollars) per head and full-time equivalent (FTE) to nuclear medicine specialists, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2000/01 may include some technical and professional fees.

## NUCLEAR MEDICINE SPECIALISTS

**EXHIBIT 8.6 Total payments to nuclear medicine specialists by payment source, in Ontario, 1992/93 to 2009/10**




Note: Data prior to 2000/01 may include some technical and professional fees.

CHAPTER 9

# Results for Anesthesiologists

## INTRODUCTION

The administration of anesthesia is an important component of surgery and a number of other clinical procedures. Anesthesiologists play a key collaborative role with surgeons and physicians from a variety of clinical specialties and have provided important support to the wait times strategy in recent years. In this report, we have decided to present anesthesiologists separately from other specialties because of the diversity of their role in the health care system. Operating room time and the availability of anesthesiologists are two factors that can affect surgical wait times.

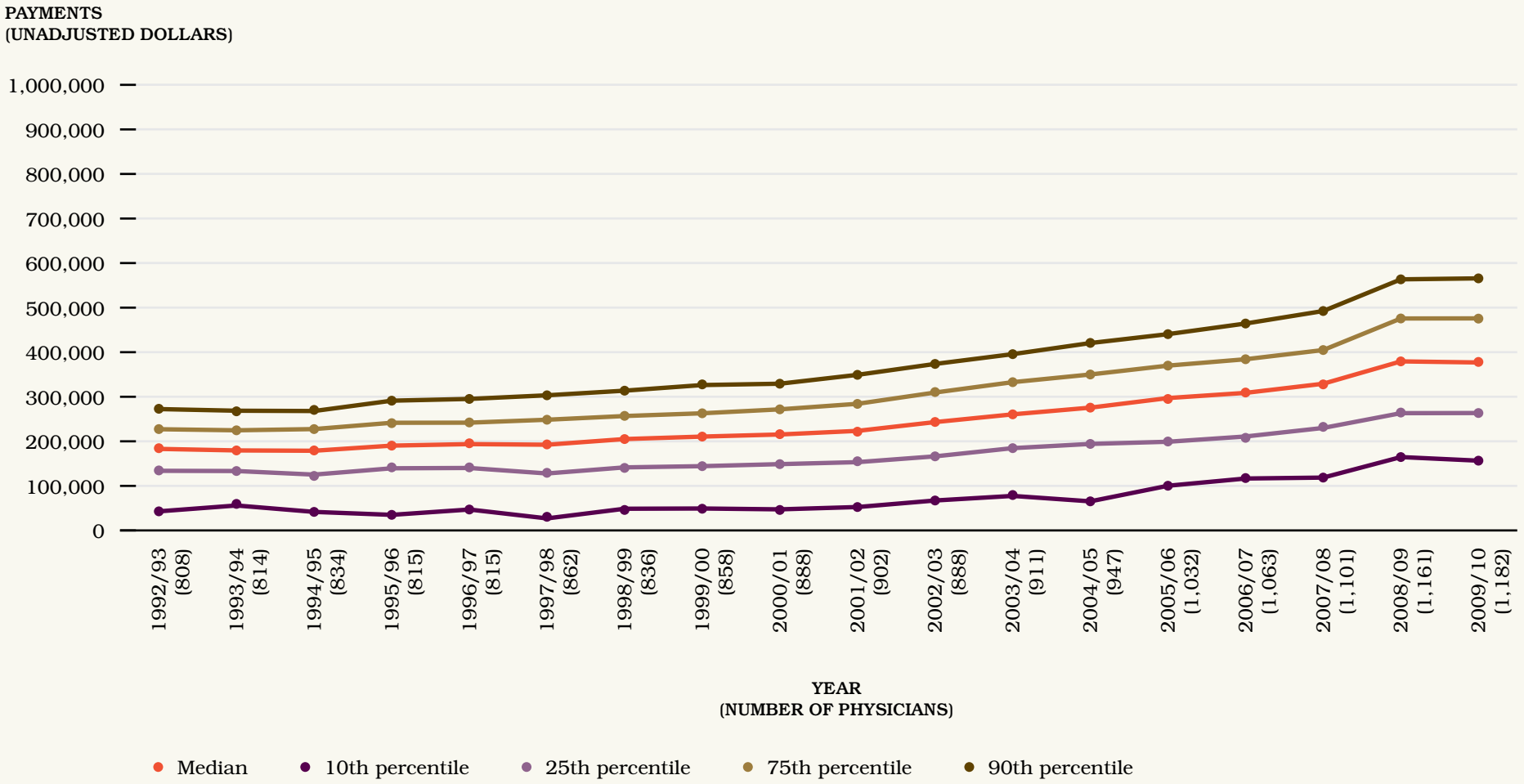
# FINDINGS

## Median, Mean and Total Payments (exhibits 9.1 to 9.3)

The number of anesthesiologists in Ontario rose from 808 in 1992/93 to 1,182 in 2009/10, an increase of 46%. Total payments to this specialty tripled in that period: from about $143 million to over $440 million (in unadjusted dollars). During the 1990s, the median payment to anesthesiologists was slightly higher than for all physicians; subsequently, the median payment rose 79% between 1999/00 and 2009/10. The mean payment doubled between 1992/93 and 2009/10, with most of the increase occurring after 1999/00. The distribution of payments was relatively narrow, with the 90th percentile being 50% higher than the median. In 2009/10, 85% of payments were from fee for service, 7% from academic health sciences centres, 6% from alternate payment plans, and the remainder from other non-FFS sources.

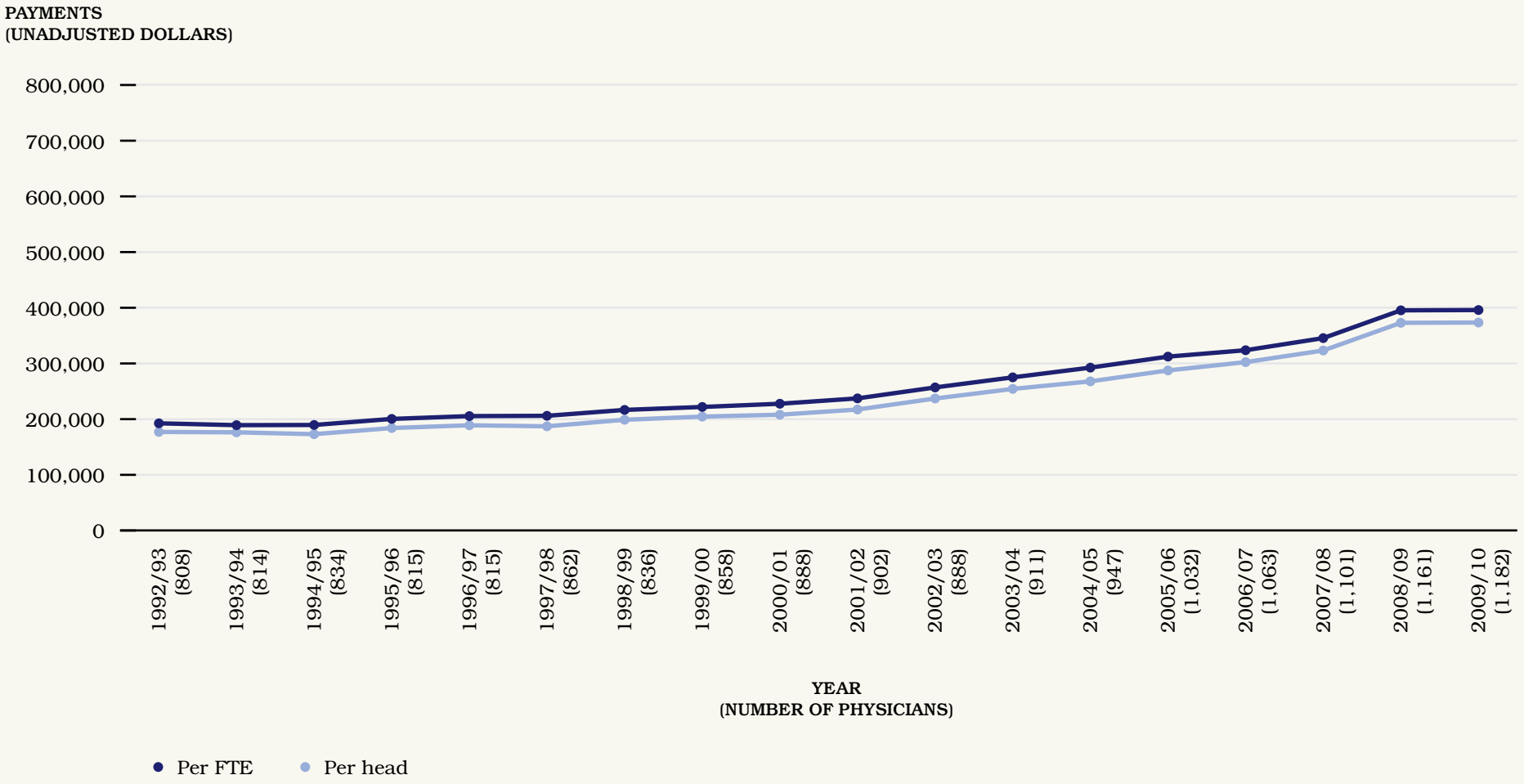
## ANESTHESIOLOGISTS

**EXHIBIT 9.1 Median and percentiles of payments (in unadjusted dollars) to individual anesthesiologists, in Ontario, 1992/93 to 2009/10**



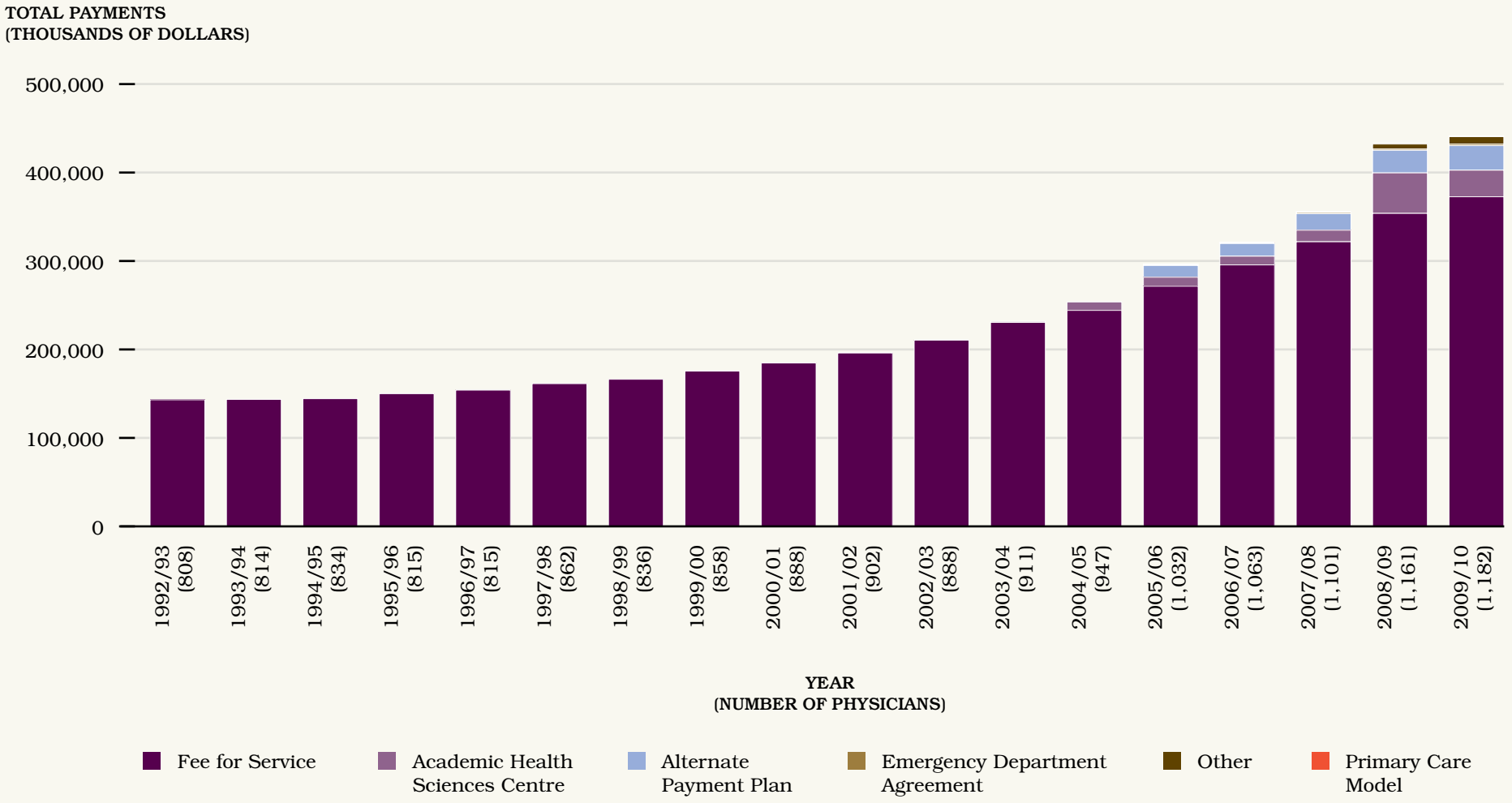
## ANESTHESIOLOGISTS

**EXHIBIT 9.2 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to anesthesiologists, in Ontario, 1992/93 to 2009/10**



## ANESTHESIOLOGISTS

**EXHIBIT 9.3 Total payments to anesthesiologists by payment source, in Ontario, 1992/93 to 2009/10**



CHAPTER 10

# Results for Emergency Department Physicians

## INTRODUCTION

Emergency departments (EDs) in Ontario hospitals may be staffed by:

- general practitioners/family physicians;
- family physicians with an additional year of training in emergency medicine and certification from the Canadian College of Family Physicians (CCFP(EM)s); or
- physicians who have completed a five-year residency and passed certifying exams to earn the designation of Fellow of the Royal College of Physicians and Surgeons of Canada (FRCPC EM specialists).

For the purposes of this report, an emergency medicine physician is any physician who has more than 50% of billings for services rendered in the ED. It includes physicians from all three groups listed above. In this chapter, we will refer to them collectively as ED physicians.

Staffing and funding EDs has long presented a challenge to health planners and policy makers. A 2001 ICES report found that the total number of physicians working in EDs declined from 2,525 in 1993/94 to 1,987 in 2000/01.[1] There were reports in the media from time to time of EDs having to close temporarily due to a lack of physician coverage. For this reason, EDs were one of the first physician sectors in the health care system to see the introduction of widespread alternate funding arrangements. As Chan et

al. reported, this began in 1996 with the introduction of sessional fees for after-hours and weekend coverage. In the same year, the MOHLTC began offering Alternate Funding Plans (AFPs) as a recruiting tool to physicians in rural Northern Ontario. In 1999, the MOHLTC implemented a new Alternate Funding Arrangement (AFA) that was intended to replace sessional fees, any existing AFPs and fee-for-service billings. It was offered to most EDs in the province, and introduced on an interim basis in three waves between September 1999 and November 2000. Permanent AFAs were introduced in 2002.

All of these funding changes have implications for the results presented in this chapter. No payment information was available for AFAs prior to 2005/06 or for the earlier AFPs (data were available for FFS payments and sessional fees). From 1996/97 to 1998/99, we are missing data on payments to Northern Ontario physicians who were part of AFPs. From 1999/00 to 2004/05, we are missing data for nearly all payments to ED physicians, which is why the results for these years have been suppressed. The data for 1992/93 to 1995/96 and 2005/06 to 2009/10 are complete.

# FINDINGS

## Median, Mean and Total Payments (exhibits 10.1 to 10.3)

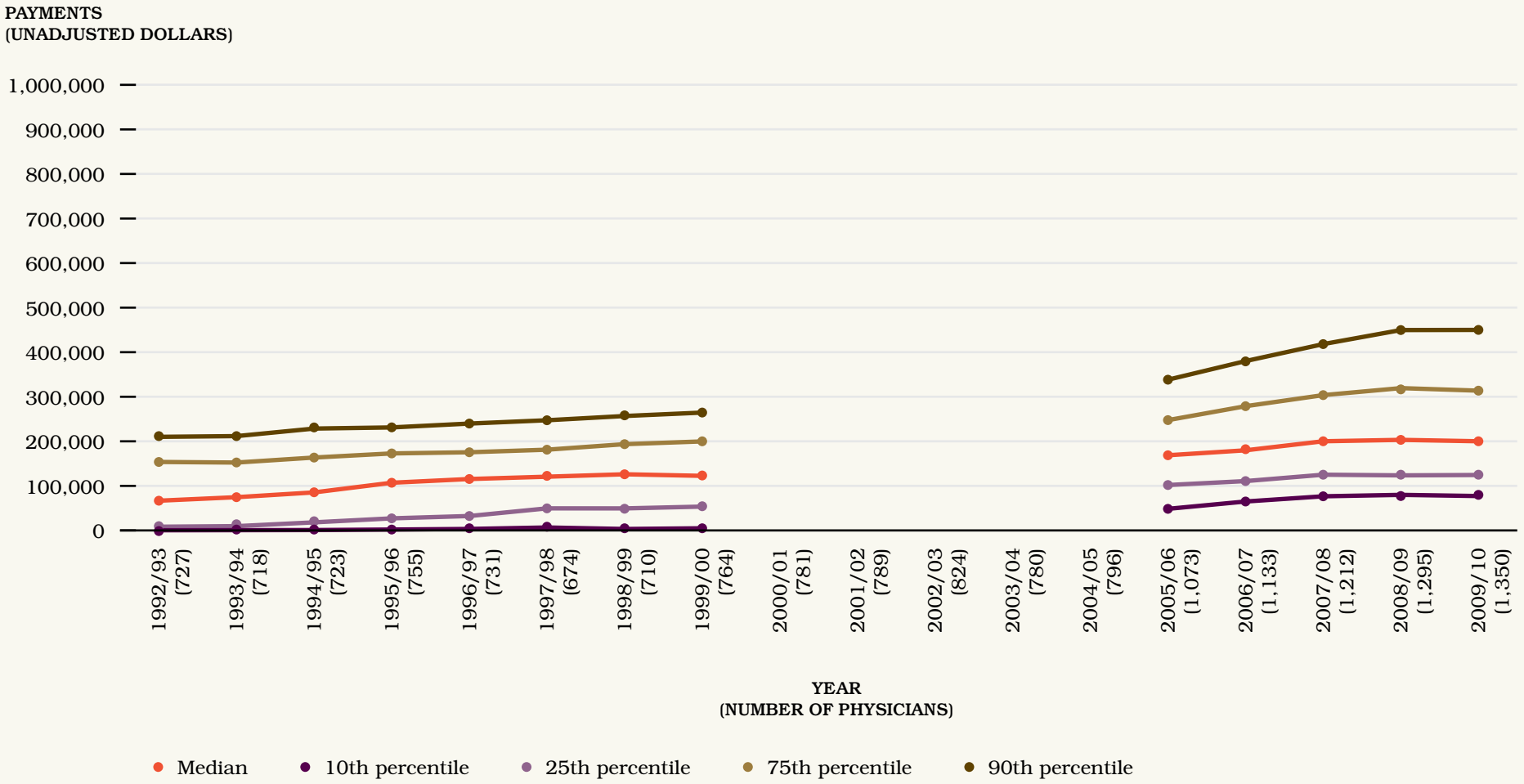
In 1992/93, there were 727 ED physicians in Ontario, 75% of whom were GP/FPs; the remainder were evenly split between 84 CCFP(EM)s and 85 FRCPC-EM specialists. By contrast, of the 1,350 ED physicians in 2009/10, 550 (41%) were GP/FPs, 43% (578) were CCFP(EM)s and 16% were EM specialists. In 2005/06, the median payment to ED physicians was just under $170,000, much lower than the $226,000 median for all physician in that year. The low median for ED physicians may reflect the fact that this group includes a significant proportion of newly graduated physicians who, not having started their own practices, chose to work part-time or do locums in the ED. ED physicians in the top 10% earned more than $338,000, while those in the lowest 10% earned less than $50,000. The mean payment per full-time equivalent (FTE) increased by about 24% between 2005/06 and 2009/10, from approximately $190,000 to $235,000. Payments to ED physicians totalled about $323 million in 2009/10, with only 27% coming from FFS billings.

# REFERENCE

1 Chan BTB, Schull MJ, Schultz SE. *Emergency Department Services in Ontario*. Toronto: Institute for Clinical Evaluative Sciences; 2001. Accessed January 13, 2012 at http://www.ices.on.ca/file/Emergency_department_services_in_Ontario.pdf.

## EMERGENCY DEPARTMENT PHYSICIANS

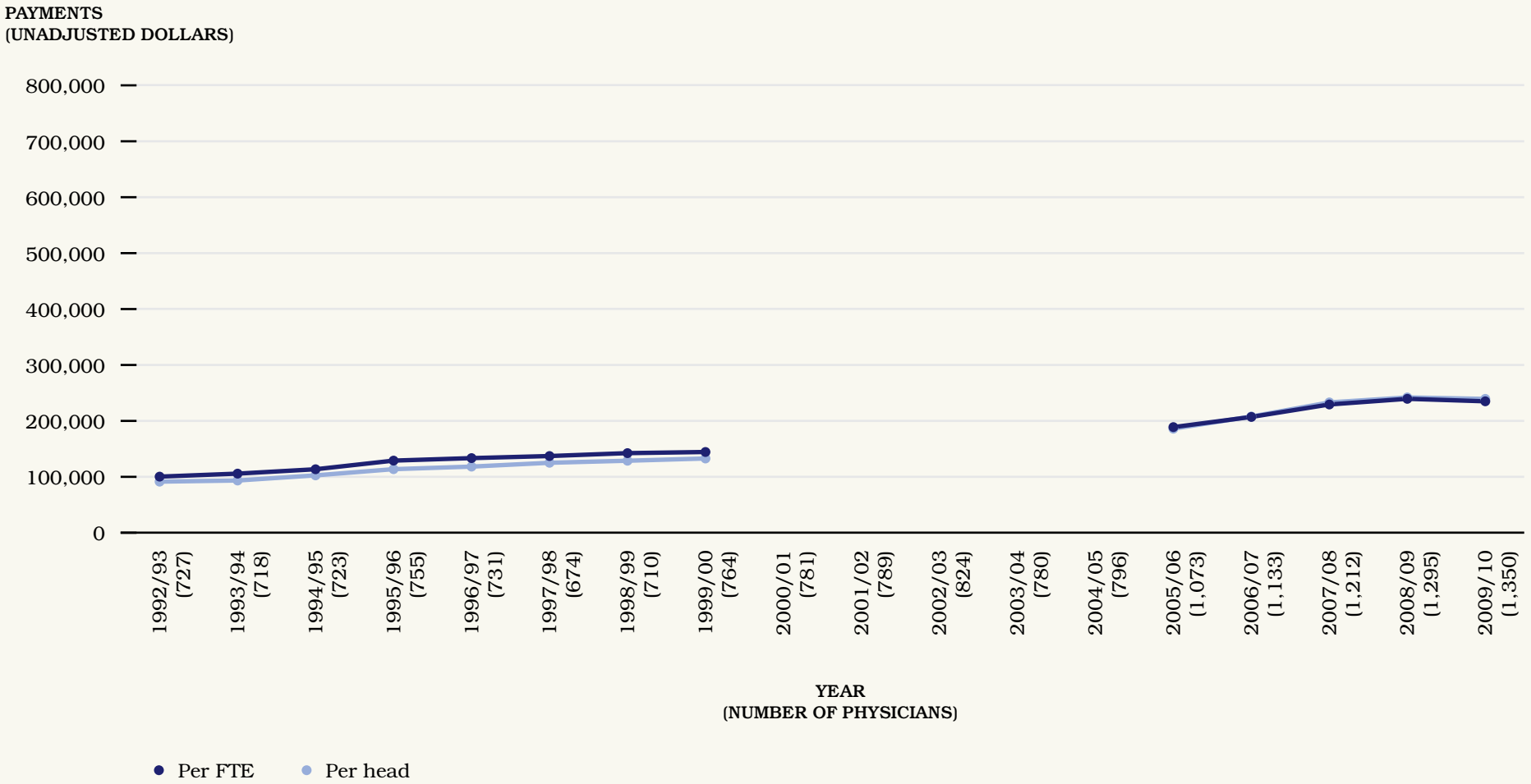
**EXHIBIT 10.1 Median and percentiles of payments (in unadjusted dollars) to individual emergency department physicians, in Ontario, 1992/93 to 2009/10**




Note: Results for 2000/01 to 2004/05 have been suppressed due to missing data.

## EMERGENCY DEPARTMENT PHYSICIANS

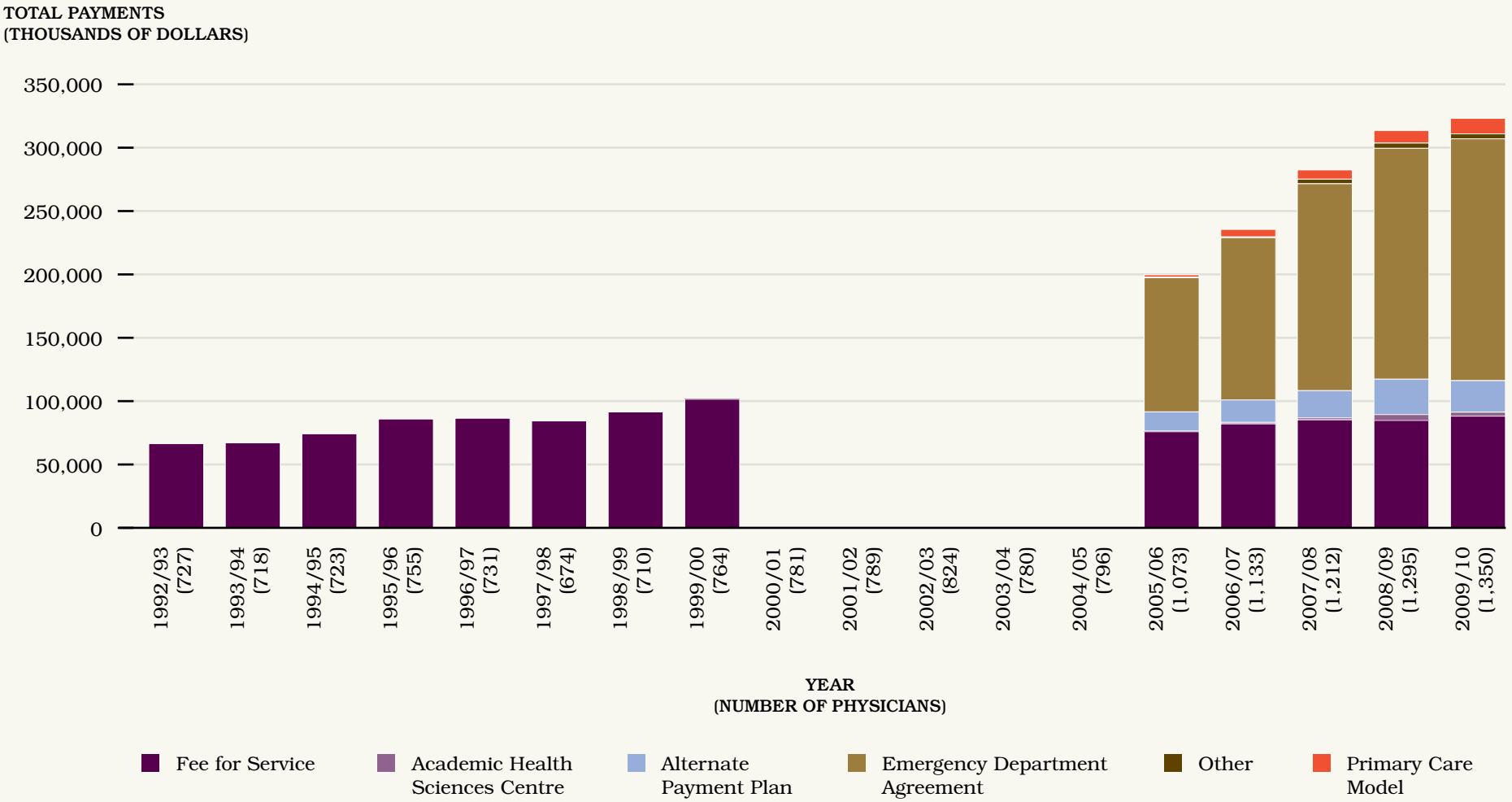
**EXHIBIT 10.2 Mean payments (in unadjusted dollars) per head and full-time equivalent (FTE) to emergency department physicians, in Ontario, 1992/93 to 2009/10**




Note: Results for 2000/01 to 2004/05 have been suppressed due to missing data.

## EMERGENCY DEPARTMENT PHYSICIANS

**EXHIBIT 10.3 Total payments to emergency department physicians by payment source, in Ontario, 1992/93 to 2009/10**




Note: Results for 2000/01 to 2004/05 have been suppressed due to missing data.

CHAPTER 11

# Summary

Chapters 4 to 10 reported payments to physicians in individual specialties separately. In this chapter we bring the results together to show how physician supply and payments and the changes within them varied among specialties between 1992/93 and 2009/10.

## Physician Supply (exhibits 11.1 and 11.2)

The overall number of physicians for whom we had payment information increased by 4,811 (24%) between 1992/93 and 2009/10. This is slightly higher than Ontario's overall population growth (20%) in this period. Growth was not constant over time; in fact, there was a slight contraction in the number of doctors between 1993/94 and 1999/00. Growth was greatest between 2005/06 and 2009/10 (2.3% per year).

Growth in physician supply was variable across specialty groups. Proportionally, the greatest increases were seen in emergency medicine and the medical procedural specialties. As a group, the procedural specialties showed the largest increase, with the number of physicians in this group growing by 58% between 1992/93 and 2009/10. The smallest overall proportional increase (4.5% between 1992/93 and 2009/10) was among GP/FPs. However, this overall figure disguises a decline of almost 8% between 1993/94 and 1999/00, which then reversed. Significantly, the numbers of GP/FPs grew substantially between 1999/00 and

2009/10 (the largest growth in any specialty seen during this period). These growth periods compensated for the loss of GP/FPs between 1992/93 and 1999/00.

Among specialist groups, the combined surgical specialties grew the least, with overall growth of only 18% between 1992/93 and 2009/10. Within a number of specialties in this group, supply remained flat or contracted between 1992/93 and 1999/00. Overall, specialist numbers increased to a proportionally greater extent than did the numbers of GP/FPs.

We estimate that the density of physicians in Ontario in 2009/10 was 1.9 per 1,000 population. An analysis of the situation in Canada prepared by the Canadian Institute for Health Information found that Canada has an overall physician supply of 2.2 per 1,000 population, which is lower than other OECD countries such as Australia (3.2 per 1,000), the United Kingdom (2.5 per 1,000) and the United States (2.6 per 1,000).[1]

## Overall Payments to Physicians (exhibits 11.3 to 11.7)

We identified payments of almost $8 billion to doctors in Ontario in 2009/10, $4.3 billion more than they were paid in 1992/93. These estimates are in unadjusted dollars. Exhibit 11.3 presents a breakdown of the total payments by physician groups in 2009/10. Thirty-nine percent of the expenditure went to GP/FPs, with 18% and 17% going to surgical and medical non-procedural specialist groups, respectively. Comparing this with physician supply, GP/FPs comprise 43% of the physician population, medical non-procedural specialists 22%, and surgical specialists only 14%.

Exhibits 11.4 to 11.6 present the distribution of overall payments within the large multispecialty groups. With respect to the non-medical procedural specialists, 22% of payments in 2009/10 went to pediatricians. This is commensurate with the fact that they make up 21% of all non-procedural specialists. Psychiatrists, on the other hand, received the largest proportion of payments, 26%, but they make up 35% of all non-procedural specialists. The discrepancy is due, in part, to the fact that we are missing mental health sessional fees and other payments to psychiatrists. Within the procedural specialty group, cardiologists received 45% of payments followed by gastroenterologists at 20%. Among the surgical specialist group, obstetricians/gynecologists received the largest proportion (21%), followed by general surgeons (19%) and ophthalmologists (18%); these specialties comprised 23%, 21% and 13% of the surgical specialty group, respectively.

By far the largest increase in total payments was to family physicians—an increase of more than $1.5 billion between 1993 and 2009 (exhibit 11.7). Next in rank order were anesthesiologists ($298 million), diagnostic radiologists ($294 million), emergency department physicians ($256 million), cardiologists ($223 million) and pediatricians ($193 million). Four of these are in the top five specialties ranked by increase in numbers of active physicians. The list also includes specialties that have been key to the wait times strategy.

### Payments per Physician (exhibit 11.8 and 11.9)

Average payments per full-time equivalent (FTE) are summarized in exhibit 11.8. Diagnostic radiologists had the highest payments per FTE, with ophthalmologists, nephrologists, nuclear medicine specialists and vascular surgeons rounding out the top five. Among the multispecialty groups, imaging specialties had the highest payments per FTE, followed by procedural and surgical specialties. All of these groups rank higher than the mean for all physicians combined.

When we looked at the change in mean payments to physician specialties since 2005/06, GP/FPs came out on top with a 31% increase in four years (exhibit 11.9). This is related to the introduction and uptake of new models of funding primary care. The most lucrative of the models, the Family Health Organization, was also the most popular as at the end of 2009/10.

Other specialties that experienced relatively large increases in the past four years include diagnostic radiology (29%), clinical immunology (29%), geriatric medicine (29%) and pediatrics (28%). However, although the rate of increase might be the same, the average payments per physician were not. Pediatricians, for example, ranked 29th out of 32 specialties in their mean payments per FTE. Geriatricians ranked 28th and clinical immunologists 18th; diagnostic radiologists were first overall. Pediatricians with an average payment per physician of $260,000 ranked far below diagnostic radiologists and ophthalmologists at over $600,000 each.

## REFERENCE

1 Canadian Institute for Health Information. *Health Care Cost Drivers: The Facts*. Ottawa: CIHI; 2011. Accessed January 13, 2012 at http://secure.cihi.ca/cihiweb/products/health_care_cost_drivers_the_facts_en.pdf.

## ALL PHYSICIANS

**EXHIBIT 11.1 Total and percent change in number of active physicians by specialty and specialty group, in Ontario, 1993/94, 1999/00, 2005/06 and 2009/10**

| | NUMBER OF ACTIVE PHYSICIANS | | | | PERCENT CHANGE IN PHYSICIAN SUPPLY | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Specialty/Specialty Group** | **1993/94** | **1999/00** | **2005/06** | **2009/10** | **1993/94-1999/00** | **1999/00-2005/06** | **2005/06-2009/10** | **1993/94-2009/10** | **Rank, 1993/94-2009/10** |
| Anesthesiology | 814 | 858 | 1,032 | 1,182 | 5.9 | 19.7 | 14.5 | 45.2 | 13 |
| Emergency department physicians | 718 | 764 | 1,073 | 1,350 | 7.2 | 39.4 | 25.8 | 88.0 | 4 |
| General practice/family medicine | 10,329 | 9,529 | 10,238 | 10,799 | -7.5 | 7.3 | 5.4 | 4.5 | 29 |
| **IMAGING SPECIALTIES** | | | | | | | | | |
| Diagnostic radiology | 702 | 753 | 885 | 975 | 7.3 | 17.5 | 10.2 | 38.9 | 16 |
| Nuclear medicine | 57 | 75 | 78 | 88 | 31.6 | 4.0 | 12.8 | 54.4 | 11 |
| **Group Total** | **759** | **828** | **963** | **1,063** | **9.1** | **16.3** | **10.4** | **40.1** | |
| **MEDICAL NON-PROCEDURAL SPECIALTIES AND SUBSPECIALTIES** | | | | | | | | | |
| Clinical immunology | 49 | 60 | 63 | 62 | 22.4 | 5.0 | -1.6 | 26.5 | 23 |
| Dermatology | 207 | 207 | 188 | 200 | 0.0 | -9.2 | 6.4 | -3.4 | 32 |
| Endocrinology | 112 | 139 | 151 | 174 | 25.9 | 7.1 | 15.2 | 55.4 | 10 |
| Geriatric medicine | 53 | 83 | 90 | 102 | 58.5 | 7.1 | 13.3 | 92.5 | 3 |
| Hematology | 111 | 117 | 135 | 152 | 8.8 | 9.8 | 12.6 | 34.5 | 19 |
| Internal medicine | 671 | 517 | 827 | 966 | -22.9 | 60.0 | 16.5 | 43.8 | 14 |
| Medical oncology | 94 | 130 | 149 | 187 | 39.4 | 13.7 | 25.5 | 98.9 | 2 |
| Neurology | 208 | 231 | 261 | 295 | 13.4 | 10.1 | 13.0 | 41.1 | 15 |
| Pediatrics | 680 | 725 | 1,015 | 1,165 | 10.3 | 26.2 | 14.8 | 59.8 | 9 |
| Physical medicine and rehabilitation | 119 | 136 | 158 | 164 | 15.0 | 14.5 | 3.8 | 36.7 | 17 |
| Psychiatry | 1,643 | 1,768 | 1,857 | 1,979 | 8.1 | 4.6 | 6.6 | 20.5 | 26 |

Note: Totals include only physicians for whom payment information was available.

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EXHIBIT 11.1 CONTINUED...

| | NUMBER OF ACTIVE PHYSICIANS | | | | PERCENT CHANGE IN PHYSICIAN SUPPLY | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Specialty/Specialty Group** | **1993/94** | **1999/00** | **2005/06** | **2009/10** | **1993/94-1999/00** | **1999/00-2005/06** | **2005/06-2009/10** | **1993/94-2009/10** | **Rank, 1993/94-2009/10** |
| Rheumatology | 119 | 149 | 151 | 160 | 29.4 | -1.9 | 6.0 | 34.5 | 20 |
| **Group Total** | **4,066** | **4,262** | **5,045** | **5,606** | **6.5** | **16.6** | **11.3** | **38.2** | |
| **MEDICAL PROCEDURAL SPECIALTIES AND SUBSPECIALTIES** | | | | | | | | | |
| Cardiology | 375 | 479 | 539 | 625 | 27.9 | 11.8 | 16.0 | 65.8 | 7 |
| Gastroenterology | 163 | 211 | 230 | 289 | 27.5 | 8.0 | 25.7 | 73.1 | 6 |
| Nephrology | 88 | 125 | 155 | 191 | 41.6 | 23.0 | 23.2 | 114.6 | 1 |
| Radiation oncology | 104 | 127 | 154 | 182 | 22.1 | 21.3 | 18.2 | 75.0 | 5 |
| Respirology | 145 | 186 | 212 | 236 | 30.8 | 11.0 | 11.3 | 61.6 | 8 |
| **Group Total** | **875** | **1,128** | **1,290** | **1,523** | **23.5** | **9.8** | **16.6** | **58.1** | |
| **SURGICAL SPECIALTIES** | | | | | | | | | |
| Cardiac and thoracic surgery | 91 | 105 | 126 | 136 | 16.5 | 18.9 | 7.9 | 49.5 | 12 |
| General surgery | 670 | 607 | 667 | 720 | -9.0 | 9.3 | 7.9 | 7.5 | 28 |
| Neurosurgery | 77 | 72 | 79 | 97 | 0.0 | 2.6 | 22.8 | 26.0 | 24 |
| Obstetrics/gynecology | 661 | 664 | 729 | 790 | 0.5 | 9.8 | 8.4 | 19.5 | 27 |
| Ophthalmology | 422 | 418 | 418 | 441 | -0.9 | 0.0 | 5.5 | 4.5 | 30 |
| Orthopedic surgery | 388 | 418 | 470 | 524 | 7.7 | 12.4 | 11.5 | 35.1 | 18 |
| Otolaryngology | 238 | 223 | 241 | 248 | -5.5 | 7.1 | 2.9 | 4.2 | 31 |
| Plastic surgery | 154 | 164 | 186 | 200 | 6.5 | 13.4 | 7.5 | 29.9 | 22 |
| Urology | 213 | 235 | 251 | 268 | 10.3 | 6.8 | 6.8 | 25.8 | 25 |
| Vascular surgery | 54 | 65 | 66 | 72 | 20.4 | 1.5 | 9.1 | 33.3 | 21 |
| **Group Total** | **2,968** | **2,971** | **3,233** | **3,496** | **0.5** | **8.4** | **8.1** | **17.8** | |
| **ONTARIO** | **20,529** | **20,340** | **22,874** | **25,019** | **-0.9** | **12.5** | **9.4** | **21.9** | |

Note: Totals include only physicians for whom payment information was available.

## ALL PHYSICIANS

**EXHIBIT 11.2 Total and percent change in number of physician full-time equivalents (FTES) by specialty and specialty group, in Ontario, 1993/94, 1999/00, 2005/06 and 2009/10**

| | NUMBER OF FTES | | | | PERCENT CHANGE IN FTES | | |
|---|---|---|---|---|---|---|---|
| **Specialty/Specialty Group** | **1993/94** | **1999/00** | **2005/06** | **2009/10** | **1993/94-1999/00** | **1999/00-2005/06** | **2005/06-2009/10** |
| Anesthesiology | 758 | 791 | 950 | 1,115 | 4 | 20 | 17 |
| Emergency department physicians | 634 | 703 | 1,057 | 1,375 | 11 | 50 | 30 |
| General practice/family medicine | 9,105 | 8,657 | 9,500 | 10,220 | -5 | 10 | 8 |
| **IMAGING SPECIALTIES** | | | | | | | |
| Diagnostic radiology | 651 | 705 | 810 | 906 | 8 | 15 | 12 |
| Nuclear medicine | 56 | 72 | 75 | 85 | 30 | 3 | 13 |
| **Group Total** | **707** | **777** | **885** | **990** | **10** | **14** | **12** |
| **MEDICAL NON-PROCEDURAL SPECIALTIES AND SUBSPECIALTIES** | | | | | | | |
| Clinical immunology | 46 | 55 | 60 | 60 | 19 | 10 | -1 |
| Dermatology | 186 | 185 | 173 | 198 | 0 | -7 | 15 |
| Endocrinology | 117 | 136 | 150 | 174 | 17 | 10 | 16 |
| Geriatric medicine | 56 | 80 | 87 | 100 | 45 | 8 | 15 |
| Hematology | 105 | 107 | 120 | 137 | 2 | 13 | 13 |
| Internal medicine | 635 | 491 | 753 | 887 | -23 | 53 | 18 |
| Medical oncology | 94 | 129 | 143 | 177 | 36 | 11 | 24 |
| Neurology | 193 | 223 | 263 | 289 | 15 | 18 | 10 |
| Pediatrics | 617 | 642 | 1,043 | 1,187 | 4 | 63 | 14 |
| Physical medicine and rehabilitation | 121 | 130 | 143 | 157 | 7 | 10 | 10 |
| Psychiatry | 1,525 | 1,640 | 1,763 | 1,895 | 8 | 8 | 8 |

Note: Totals include only physicians for whom payment information was available.

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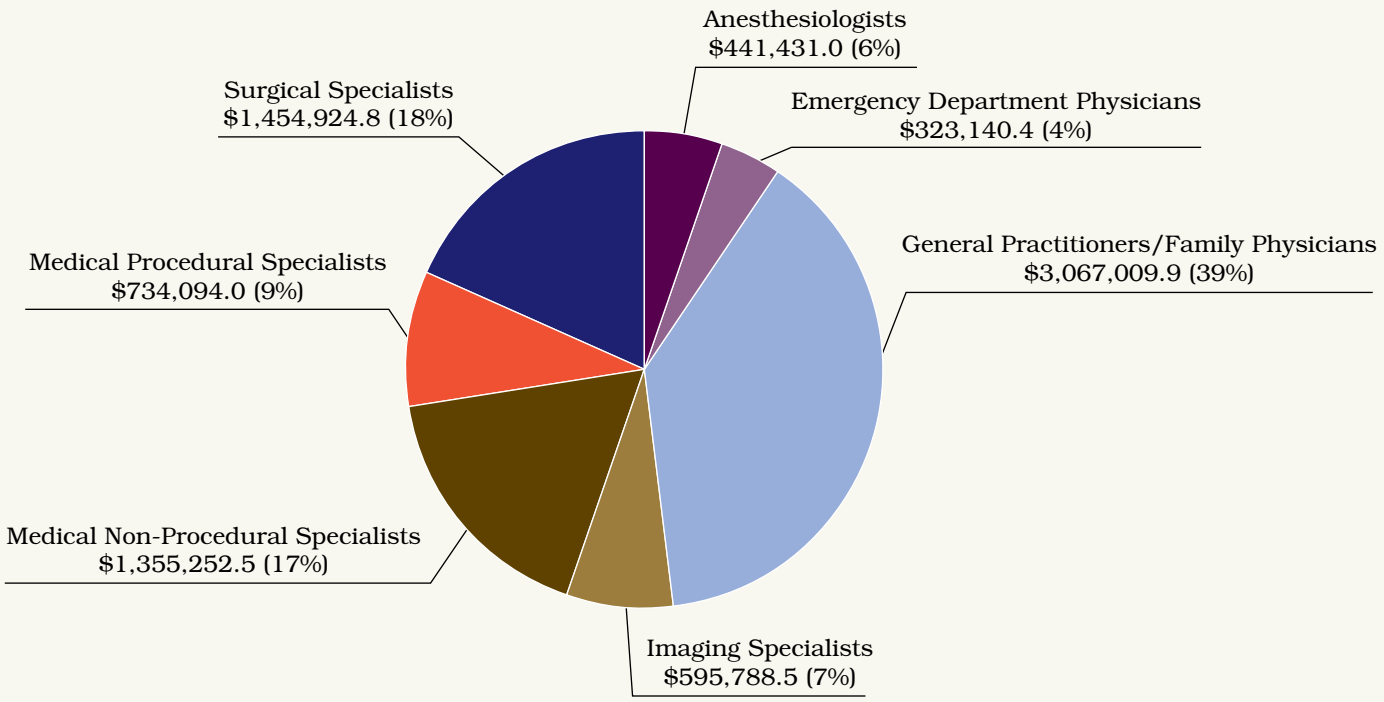
EXHIBIT 11.2 CONTINUED...

| | NUMBER OF FTES | | | | PERCENT CHANGE IN FTES | | |
|---|---|---|---|---|---|---|---|
| **Specialty/Specialty Group** | **1993/94** | **1999/00** | **2005/06** | **2009/10** | **1993/94-1999/00** | **1999/00-2005/06** | **2005/06-2009/10** |
| Rheumatology | 120 | 148 | 153 | 164 | 23 | 3 | 7 |
| **Group Total** | **3,816** | **3,966** | **4,851** | **5,425** | **4** | **24** | **12** |
| **MEDICAL PROCEDURAL SPECIALTIES AND SUBSPECIALTIES** | | | | | | | |
| Cardiology | 344 | 442 | 521 | 617 | 28 | 18 | 18 |
| Gastroenterology | 152 | 192 | 220 | 278 | 27 | 15 | 26 |
| Nephrology | 81 | 115 | 142 | 183 | 41 | 24 | 29 |
| Radiation oncology | 102 | 120 | 149 | 176 | 19 | 24 | 18 |
| Respirology | 136 | 181 | 200 | 228 | 33 | 10 | 14 |
| **Group Total** | **815** | **1,050** | **1,232** | **1,482** | **23** | **14** | **20** |
| **SURGICAL SPECIALTIES** | | | | | | | |
| Cardiac and thoracic surgery | 85 | 96 | 116 | 125 | 13 | 21 | 8 |
| General surgery | 582 | 531 | 598 | 656 | -9 | 13 | 10 |
| Neurosurgery | 70 | 62 | 71 | 92 | -10 | 13 | 30 |
| Obstetrics/gynecology | 597 | 596 | 677 | 725 | 0 | 14 | 7 |
| Ophthalmology | 381 | 380 | 387 | 426 | 0 | 2 | 10 |
| Orthopedic surgery | 331 | 353 | 405 | 465 | 7 | 15 | 15 |
| Otolaryngology | 214 | 194 | 209 | 223 | -9 | 7 | 7 |
| Plastic surgery | 136 | 146 | 165 | 183 | 7 | 13 | 11 |
| Urology | 195 | 199 | 223 | 246 | 2 | 12 | 10 |
| Vascular surgery | 55 | 63 | 63 | 70 | 16 | -1 | 11 |
| **Group Total** | **2,646** | **2,621** | **2,914** | **3,210** | **-1** | **11** | **10** |
| **ONTARIO** | **18,481** | **18,565** | **21,389** | **23,818** | **1** | **15** | **11** |

Note: Totals include only physicians for whom payment information was available.

## ALL PHYSICIANS

**EXHIBIT 11.3 Distribution of all payments (in thousands of dollars) to physicians by specialty group, in Ontario, 2009/10**

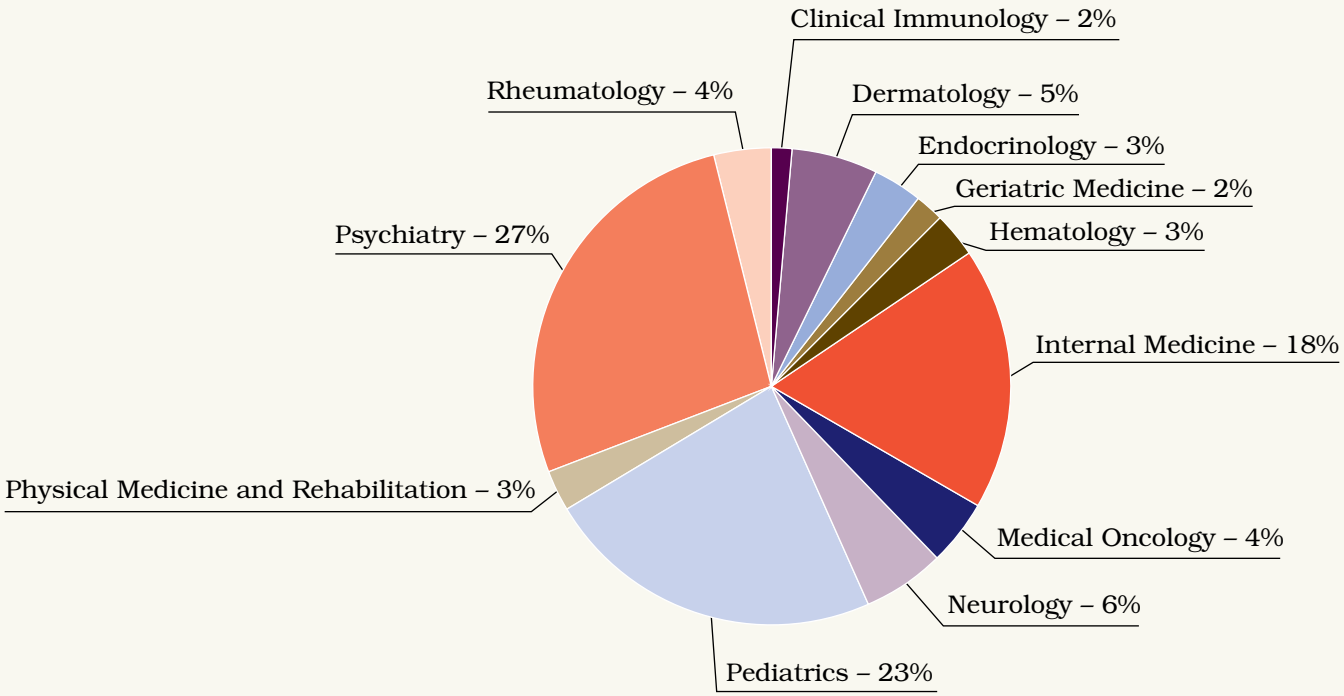



**Total: $7,971,641.2**

Note: All payment estimates are rounded to the nearest hundred and presented in thousands of dollars. Percents are calculated on unrounded numbers and rounded to the nearest integer.

## MEDICAL NON-PROCEDURAL SPECIALISTS

**EXHIBIT 11.4 Distribution of payments to medical non-procedural specialists, in Ontario, 2009/10**

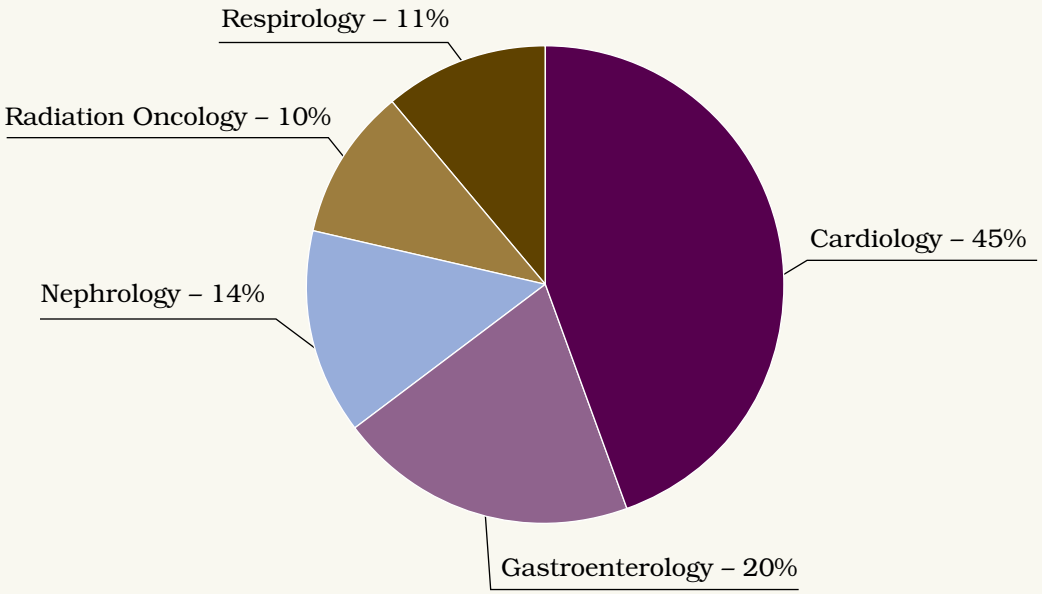



**Total (in thousands of dollars): $1,355,252.5**

Note: Payment estimates are rounded to the nearest hundred and presented in thousands of dollars. Percents are calculated on unrounded numbers and rounded to the nearest integer.

## MEDICAL PROCEDURAL SPECIALISTS

**EXHIBIT 11.5 Distribution of payments to medical procedural specialists, in Ontario, 2009/10**

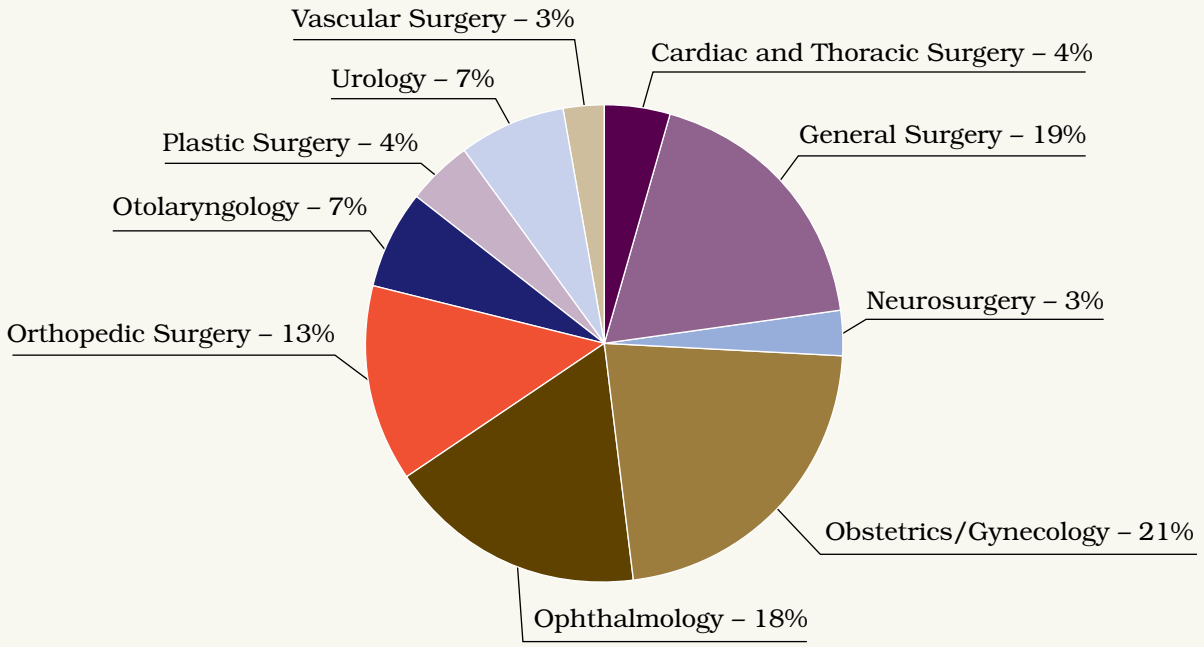



**Total (in thousands of dollars): $734,094.0**

Note: Payment estimates are rounded to the nearest hundred and presented in thousands of dollars. Percents are calculated on unrounded numbers and rounded to the nearest integer.

## SURGICAL SPECIALISTS

**EXHIBIT 11.6 Distribution of payments to surgical specialists, in Ontario, 2009/10**




**Total (in thousands of dollars): $1,454,924.8**

Note: Payment estimates are rounded to the nearest hundred and presented in thousands of dollars. Percents are calculated on unrounded numbers and rounded to the nearest integer.

## ALL PHYSICIANS

**EXHIBIT 11.7 Total and percent change in payments from all MOHLTC sources to physicians by specialty and specialty group, in Ontario, 1993/94, 1999/00, 2005/06 and 2009/10**

| | PAYMENTS FROM ALL SOURCES, IN THOUSANDS OF DOLLARS | | | | CHANGE IN TOTAL PAYMENTS, IN THOUSANDS OF DOLLARS (% CHANGE) | | | |
|---|---|---|---|---|---|---|---|---|
| **Specialty/Specialty Group** | **1993/94** | **1999/00** | **2005/06** | **2009/10** | **1993/94-1999/00** | **1999/00-2005/06** | **2005/06-2009/10** | **1993/94-2009/10** |
| Anesthesiology | 143,531.7 | 175,534.0 | 296,667.6 | 441,431 | 32,002.3 (22) | 121,133.6 (69) | 144,763.4 (49) | 297,899.3 (208) |
| Emergency department physicians | 67,077.6 | 101,464.7 | 199,660.6 | 323,140.4 | 34,387.1 (51) | 98,195.9 (97) | 123,479.8 (62) | 256,062.8 (382) |
| General practice/family medicine | 1,513,228.0 | 1,612,869.7 | 2,176,527.1 | 3,067,009.9 | 99,641.7 (7) | 563,657.4 (35) | 890,482.8 (41) | 1,553,781.9 (103) |
| **IMAGING SPECIALTIES** | | | | | | | | |
| Diagnostic radiology | 255,123.2 | 353,764.1 | 379,946.2 | 549,480.9 | 98,640.9 (39) | 26,182.1 (7) | 169,534.7 (45) | 294,357.7 (115) |
| Nuclear medicine | 29,485.4 | 52,853.4 | 36,445.2 | 46,307.7 | 23,368.0 (79) | -16,408.2 (-31) | 9,862.5 (27) | 16,822.3 (57) |
| **Group Total** | **284,608.6** | **406,617.5** | **416,391.3** | **595,788.5** | **122,008.9 (43)** | **9,773.8 (2)** | **179,397.2 (43)** | **311,179.9 (109)** |
| **MEDICAL NON-PROCEDURAL SPECIALTIES AND SUBSPECIALTIES** | | | | | | | | |
| Clinical immunology | 10,545.6 | 13,445.9 | 17,504.2 | 22,407.7 | 2,900.3 (28) | 4,058.3 (30) | 4,903.5 (28) | 11,862.1 (112) |
| Dermatology | 53,120.8 | 53,191.2 | 55,354.8 | 76,090.8 | 70.4 ( 0) | 2,163.6 (4) | 20,736.0 (37) | 22,970.0 (43) |
| Endocrinology | 21,738.5 | 26,377.8 | 32,463.8 | 47,854.8 | 4,639.3 (21) | 6,086.0 (23) | 15,391.0 (47) | 26,116.3 (120) |
| Geriatric medicine | 5,027.7 | 11,120.0 | 17,801.1 | 26,365.6 | 6,092.3 (121) | 6,681.1 (60) | 8,564.5 (48) | 21,337.9 (424) |
| Hematology | 15,222.1 | 16,971.6 | 30,442.7 | 39,828.8 | 1,749.5 (11) | 13,471.1 (79) | 9,386.1 (31) | 24,606.7 (162) |
| Internal medicine | 103,324.3 | 78,499.2 | 168,113.7 | 240,869.8 | -24,825.1 (-24) | 89,614.5 (114) | 72,756.1 (43) | 137,545.5 (133) |
| Medical oncology | 12,752.1 | 22,458.3 | 39,189.5 | 58,643.2 | 9,706.2 (76) | 16,731.2 (74) | 19,453.7 (50) | 45,891.1 (360) |
| Neurology | 38,732.5 | 44,827.3 | 57,355.2 | 78,650.2 | 6,094.8 (16) | 12,527.9 (28) | 21,295.0 (37) | 39,917.7 (103) |
| Pediatrics | 117,090.4 | 124,729.9 | 212,546.3 | 310,240.7 | 7,639.5 (7) | 87,816.4 (70) | 97,694.4 (46) | 193,150.3 (165) |
| Physical medicine and rehabilitation | 18,366.7 | 21,172.3 | 29,794.2 | 39,413.2 | 2,805.6 (15) | 8,621.9 (41) | 9,619.0 (32) | 21,046.5 (115) |
| Psychiatry | 231,716.3 | 254,314.3 | 296,987.6 | 365,840.1 | 22,598.0 (10) | 42,673.3 (17) | 68,852.5 (23) | 134,123.8 (58) |

Note: Payment estimates are rounded to the nearest hundred and presented in thousands of dollars.
Percentages are calculated on unrounded numbers and rounded to the nearest integer.

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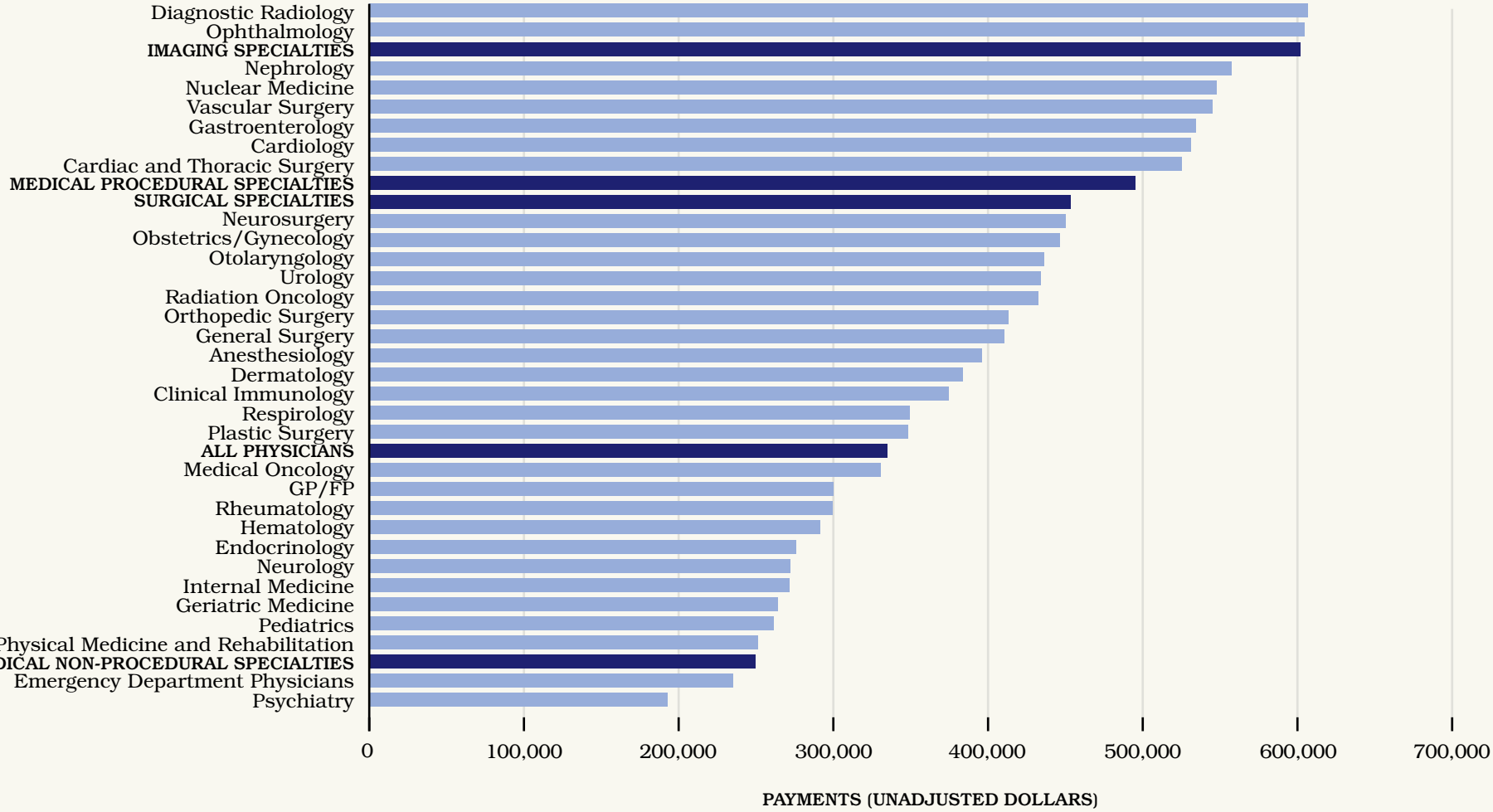
EXHIBIT 11.7 CONTINUED...

| | PAYMENTS FROM ALL SOURCES, IN THOUSANDS OF DOLLARS | | | | CHANGE IN TOTAL PAYMENTS, IN THOUSANDS OF DOLLARS (% CHANGE) | | | |
|---|---|---|---|---|---|---|---|---|
| **Specialty/Specialty Group** | **1993/94** | **1999/00** | **2005/06** | **2009/10** | **1993/94-1999/00** | **1999/00-2005/06** | **2005/06-2009/10** | **1993/94-2009/10** |
| Rheumatology | 23,721.9 | 31,185.3 | 36,933.2 | 49,047.6 | 7,463.4 (31) | 5,747.9 (18) | 12,114.4 (33) | 25,325.7 (107) |
| **Group Total** | **651,358.9** | **698,293.1** | **994,486.3** | **1,355,252.5** | **46,934.2 (7)** | **296,193.2 (42)** | **360,766.2 (36)** | **703,893.6 (108)** |
| **MEDICAL PROCEDURAL SPECIALTIES AND SUBSPECIALTIES** | | | | | | | | |
| Cardiology | 104,288.7 | 155,158.6 | 221,417.7 | 327,642.4 | 50,869.9 (49) | 66,259.1 (43) | 106,224.7 (48) | 223,353.7 (214) |
| Gastroenterology | 46,515.8 | 65,447.6 | 98,168.9 | 148,718.1 | 18,931.8 (41) | 32,721.3 (50) | 50,549.2 (51) | 102,202.3 (220) |
| Nephrology | 23,093.6 | 46,081.9 | 76,294.8 | 102,022.3 | 22,988.3 (100) | 30,212.9 (66) | 25,727.5 (34) | 78,928.7 (342) |
| Radiation oncology | 10,779.6 | 12,626.1 | 55,399.5 | 76,050.0 | 1,846.5 (17) | 42,773.4 (339) | 20,650.5 (37) | 65,270.4 (605) |
| Respirology | 34,438.2 | 55,269.1 | 60,186.8 | 79,661.2 | 20,830.9 (60) | 4,917.7 (9) | 19,474.4 (32) | 45,223.0 (131) |
| **Group Total** | **219,115.9** | **334,583.4** | **511,467.7** | **734,094** | **115,467.5 (53)** | **176,884.3 (53)** | **222,626.3 (44)** | **514,978.1 (235)** |
| **SURGICAL SPECIALTIES** | | | | | | | | |
| Cardiac and thoracic surgery | 27,404.1 | 37,042.6 | 50,525.1 | 65,534.8 | 9,638.5 (35) | 13,482.5 (36) | 15,009.7 (30) | 38,130.7 (139) |
| General surgery | 135,125.0 | 136,705.7 | 203,194.2 | 269,461.2 | 1,580.7 (1) | 66,488.5 (49) | 66,267.0 (33) | 134,336.2 (99) |
| Neurosurgery | 16,029.9 | 17,678.7 | 27,867.3 | 41,302.8 | 1,648.8 (10) | 10,188.6 (58) | 13,435.5 (48) | 25,272.9 (158) |
| Obstetrics/gynecology | 163,179.5 | 174,001.8 | 243,598.4 | 323,594.1 | 10,822.3 (7) | 69,596.6 (40) | 79,995.7 (33) | 160,414.6 (98) |
| Ophthalmology | 113,782.2 | 137,503.4 | 192,750 | 257,465.6 | 23,721.2 (21) | 55,246.6 (40) | 64,715.6 (34) | 143,683.4 (126) |
| Orthopedic surgery | 88,001.4 | 103,339.3 | 149,319 | 191,847.6 | 15,337.9 (17) | 45,979.7 (44) | 42,528.6 (28) | 103,846.2 (118) |
| Otolaryngology | 59,740.1 | 60,256.6 | 78,476.7 | 97,196.9 | 516.5 (1) | 18,220.1 (30) | 18,720.2 (24) | 37,456.8 (63) |
| Plastic surgery | 35,679.4 | 37,171.5 | 48,960.3 | 63,792.0 | 1,492.1 (4) | 11,788.8 (32) | 14,831.7 (30) | 28,112.6 (79) |
| Urology | 59,594.7 | 62,809.8 | 87,566.6 | 106,580.4 | 3,215.1 (5) | 24,756.8 (39) | 19,013.8 (22) | 46,985.7 (79) |
| Vascular surgery | 16,799.7 | 23,196.7 | 27,698.6 | 38,149.4 | 6,397.0 (38) | 4,501.9 (19) | 10,450.8 (38) | 21,349.7 (127) |
| **Group Total** | **715,336.1** | **789,706.1** | **1,109,956.1** | **1,454,924.8** | **74,370.0 (10)** | **320,250.0 (41)** | **344,968.7 (31)** | **739,588.7 (103)** |
| **ONTARIO** | **3,594,256.8** | **4,119,068.5** | **5,705,156.7** | **7,971,641.2** | **524,811.7 (15)** | **1,586,088.2 (39)** | **2,266,484.5 (40)** | **4,377,384.4 (122)** |

Note: Payment estimates are rounded to the nearest hundred and presented in thousands of dollars. Percentages are calculated on unrounded numbers and rounded to the nearest integer.

## ALL PHYSICIANS

**EXHIBIT 11.8 Mean payments per full-time equivalent (FTE) by specialty and specialty group, in Ontario, 2009/10**



## ALL PHYSICIANS

**EXHIBIT 11.9 Mean payments per full-time equivalent (FTE) and percent change in payments by specialty and specialty group, in Ontario, 1993/94, 1999/00, 2005/06 and 2009/10**

| | MEAN PAYMENTS PER FTE | | | | | CHANGE IN MEAN PAYMENTS PER FTE (% CHANGE) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1993/94 | 1999/00 | 2005/06 | 2009/10 | Rank, 2009 | 1993/94-1999/00 | 1999/00-2005/06 | 2005/06-2009/10 | Rank of % change, 2005/06-2009/10 | 1993/94-2009/10 |
| Anesthesiology | 189,200 | 221,900 | 312,300 | 395,900 | 16 | 32,700 (17) | 90,400 (41) | 83,600 (27) | 6 | 206,700 (109) |
| Emergency department physicians | 105,700 | 144,400 | 188,900 | 235,000 | 31 | 38,700 (37) | 44,500 (31) | 46,100 (24) | 10 | 129,300 (122) |
| General practice/family medicine | 166,200 | 186,300 | 229,100 | 300,100 | 22 | 20,100 (12) | 42,800 (23) | 71,000 (31) | 1 | 133,900 (81) |
| **IMAGING SPECIALTIES** | | | | | | | | | | |
| Diagnostic radiology | 391,900 | 501,800 | 468,800 | 606,700 | 1 | 109,900 (28) | -33,000 (-7) | 137,900 (29) | 2 | 214,800 (55) |
| Nuclear medicine | 529,000 | 730,800 | 487,800 | 547,700 | 4 | 201,800 (38) | -243,000 (-33) | 59,900 (12) | 29 | 18,700 (4) |
| **Group Total** | **402,700** | **523,100** | **470,400** | **601,700** | | **120,400 (30)** | **-52,700 (-10)** | **131,300 (28)** | | **199,000 (49)** |
| **MEDICAL NON-PROCEDURAL SPECIALTIES AND SUBSPECIALTIES** | | | | | | | | | | |
| Clinical immunology | 229,000 | 244,500 | 290,600 | 374,400 | 18 | 15,500 (7) | 46,100 (19) | 83,800 (29) | 3 | 145,400 (63) |
| Dermatology | 285,400 | 287,000 | 320,000 | 383,400 | 17 | 1,600 (1) | 33,000 (11) | 63,400 (20) | 19 | 98,000 (34) |
| Endocrinology | 186,300 | 193,500 | 216,600 | 275,600 | 25 | 7,200 (4) | 23,100 (12) | 59,000 (27) | 7 | 89,300 (48) |
| Geriatric medicine | 90,400 | 138,200 | 205,000 | 264,100 | 28 | 47,800 (53) | 66,800 (48) | 59,100 (29) | 4 | 173,700 (192) |
| Hematology | 145,200 | 158,700 | 252,700 | 291,500 | 24 | 13,500 (9) | 94,000 (59) | 38,800 (15) | 26 | 146,300 (101) |
| Internal medicine | 162,600 | 159,800 | 223,400 | 271,500 | 27 | -2,800 (-2) | 63,600 (40) | 48,100 (22) | 14 | 108,900 (67) |
| Medical oncology | 135,000 | 174,500 | 274,200 | 330,600 | 21 | 39,500 (29) | 99,700 (57) | 56,400 (21) | 15 | 195,600 (145) |
| Neurology | 200,200 | 201,200 | 217,800 | 271,900 | 26 | 1,000 (0) | 16,600 (8) | 54,100 (25) | 8 | 71,700 (36) |
| Pediatrics | 189,600 | 194,400 | 203,800 | 261,300 | 29 | 4,800 (3) | 9,400 (5) | 57,500 (28) | 5 | 71,700 (38) |
| Physical medicine and rehabilitation | 151,900 | 163,000 | 208,600 | 251,000 | 30 | 11,100 (7) | 45,600 (28) | 42,400 (20) | 20 | 99,100 (65) |
| Psychiatry | 152,000 | 155,100 | 168,400 | 193,000 | 32 | 3,100 (2) | 13,300 (9) | 24,600 (15) | 27 | 41,000 (27) |

Note: Payment estimates are rounded to the nearest hundred. Percentages are calculated on unrounded numbers and rounded to the nearest integer.

continued on next page...

EXHIBIT 11.9 CONTINUED...

| | MEAN PAYMENTS PER FTE | | | | | CHANGE IN MEAN PAYMENTS PER FTE (% CHANGE) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1993/94 | 1999/00 | 2005/06 | 2009/10 | Rank, 2009 | 1993/94-1999/00 | 1999/00-2005/06 | 2005/06-2009/10 | Rank of % change, 2005/06-2009/10 | 1993/94-2009/10 |
| Rheumatology | 197,400 | 210,500 | 241,600 | 299,200 | 23 | 13,100 (7) | 31,100 (15) | 57,600 (24) | 11 | 101,800 (52) |
| **Group Total** | **170,700** | **176,100** | **205,000** | **249,800** | | **5,400 (3)** | **28,900 (16)** | **44,800 (22)** | | **79,100 (46)** |
| **MEDICAL PROCEDURAL SPECIALTIES AND SUBSPECIALTIES** | | | | | | | | | | |
| Cardiology | 302,800 | 351,400 | 424,700 | 531,000 | 7 | 48,600 (16) | 73,300 (21) | 106,300 (25) | 9 | 228,200 (75) |
| Gastroenterology | 306,900 | 341,000 | 446,000 | 534,400 | 6 | 34,100 (11) | 105,000 (31) | 88,400 (20) | 21 | 227,500 (74) |
| Nephrology | 283,500 | 402,500 | 538,400 | 557,200 | 3 | 119,000 (42) | 135,900 (34) | 18,800 (3) | 32 | 273,700 (97) |
| Radiation oncology | 106,100 | 104,800 | 371,200 | 432,400 | 13 | -1,300 (-1) | 266,400 (254) | 61,200 (16) | 23 | 326,300 (307) |
| Respirology | 253,200 | 305,200 | 301,500 | 349,300 | 19 | 52,000 (21) | -3,700 (-1) | 47,800 (16) | 24 | 961,00 (38) |
| **Group Total** | **268,800** | **318,800** | **415,100** | **495,200** | | **50,000 (19)** | **96,300 (30)** | **80,100 (19)** | | **226,400 (84)** |
| **SURGICAL SPECIALTIES** | | | | | | | | | | |
| Cardiac and thoracic surgery | 320,800 | 384,700 | 435,500 | 525,400 | 8 | 63,900 (20) | 50,800 (13) | 89,900 (21) | 16 | 204,600 (64) |
| General surgery | 232,400 | 257,600 | 339,600 | 410,500 | 15 | 25,200 (11) | 82,000 (32) | 70,900 (21) | 17 | 178,100 (77) |
| Neurosurgery | 230,600 | 283,300 | 395,200 | 450,300 | 9 | 52,700 (23) | 111,900 (39) | 55,100 (14) | 28 | 219,700 (95) |
| Obstetrics/gynecology | 273,200 | 292,200 | 359,700 | 446,100 | 10 | 19,000 (7) | 67,500 (23) | 86,400 (24) | 12 | 172,900 (63) |
| Ophthalmology | 298,300 | 361,700 | 498,300 | 604,600 | 2 | 63,400 (21) | 136,600 (38) | 106,300 (21) | 18 | 306,300 (103) |
| Orthopedic surgery | 265,500 | 292,800 | 368,500 | 412,900 | 14 | 27,300 (10) | 75,700 (26) | 44,400 (12) | 30 | 147,400 (56) |
| Otolaryngology | 279,400 | 309,800 | 376,000 | 436,400 | 11 | 30,400 (11) | 66,200 (21) | 60,400 (16) | 25 | 157,000 (56) |
| Plastic surgery | 262,100 | 254,300 | 296,100 | 348,500 | 20 | -7,800 (-3) | 41,800 (16) | 52,400 (18) | 22 | 86,400 (33) |
| Urology | 306,000 | 315,000 | 393,100 | 433,900 | 12 | 9,000 (3) | 78,100 (25) | 40,800 (10) | 31 | 127,900 (42) |
| Vascular surgery | 308,000 | 366,500 | 440,200 | 545,000 | 5 | 58,500 (19) | 73,700 (20) | 104,800 (24) | 13 | 237,000 (77) |
| **Group Total** | **270,400** | **301,300** | **380,900** | **453,200** | | **30,900 (11)** | **79,600 (26)** | **72,300 (19)** | | **182,800 (68)** |
| **ONTARIO** | **194,500** | **221,900** | **266,700** | **334,700** | | **27,400 (14)** | **44,800 (20)** | **68,000 (25)** | | **140,200 (72)** |

Note: Payment estimates are rounded to the nearest hundred. Percentages are calculated on unrounded numbers and rounded to the nearest integer.

CHAPTER 12

# Discussion and Conclusion

## DISCUSSION

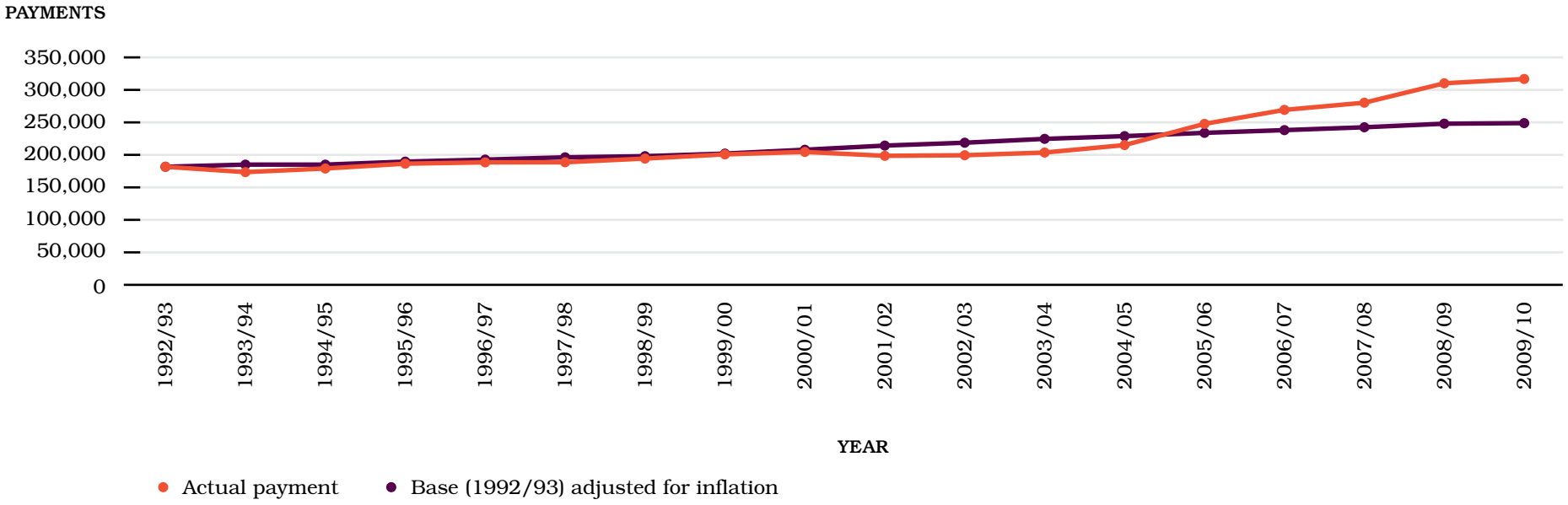
This report has documented payments to physicians during two different policy environments. The first phase included the period up to 1998 when, in common with other provinces, Ontario capped payments to physicians and restricted the numbers of physicians who could receive full payment of fees under the Ontario Health Insurance Plan (OHIP). Most payments during this period were made under fee-for-service (FFS) arrangements. The second period from 1998 onward represented a sharp change in policies with a shift to alternate payment plans (including capitation) to bolster recruitment and retention in certain specialties and in general/family medicine in particular. This period also coincided with the implementation of a range of interventions designed to reduce wait times for certain surgical procedures and diagnostic tests.

There were many other factors in play during this second period; examples include the promotion of screening tests for colorectal and breast cancer and major changes in the treatment of coronary heart disease, with increasing use of angioplasty and stents rather than open heart surgery. The period also coincides with a better appreciation of the importance of chronic diseases, including diabetes, congestive heart failure and chronic pulmonary disease in an aging population. It is to be expected that these trends would be reflected in payments for services provided by particular groups of physicians.

The two policy environments had different impacts on the trajectory of payments, as exhibit 12.1 illustrates.

The average per capita payment to Ontario physicians remained at or below the rate of inflation until 2004/05, after which it increased sharply and exceeded inflation (using Ontario's consumer price index) until the end of the study period. This finding is consistent with a 2011 CIHI study that found that across Canada the rates of increase in physician compensation followed rates of increase in the Government Current Expenditure Implicit Price Index (GCEIPI) prior to 1998.[1] Since 1998, rates of increase in physician compensation have exceeded rates of increase in the GCEIPI. CIHI reported that physician compensation grew faster than wages for other health and social services workers. There are a number of theoretical reasons for this recent increase, including a rise in the number of patients treated since 2004/05, an increase in services received by each patient, a rise in fees, and a shift to more expensive services.

**EXHIBIT 12.1 Mean annual payments per head to all Ontario physicians and inflation-adjusted base (1992/93) payment, 1992/93 to 2009/10**



A full evaluation of these potential explanations is beyond the scope of this report as it would require that analyses be performed at the level of individual patients. However, to get a lead on the main drivers of the increase in payments we performed some additional analyses at the physician level. Approximately 63% of the $4.3 billion increase in total payments was related to an increase in average payments per physician. The other 37% was a result of the increase in physician supply. Between 2004/05 and 2009/10, the substantial increases in OHIP payments to radiologists, nephrologists and ophthalmologists were due almost exclusively due to an increase in the average number of services provided by each specialist.

In its report, CIHI concluded that fee increases were the major cost driver for physician expenditure during the last 10 years. Per capita utilization (adjusted for aging) was the second major cost driver, and population growth and aging were the third and fourth most important.[1] Our data suggest that for key growth specialties, fee increases per se were not the main factor, and utilization (as reflected in services provided per physician) was more important, at least during the all-important period between 2005 and 2009. CIHI also reported that for both medical and surgical specialties a rise in the use of diagnostic and therapeutic services has been a significant cost driver. Population aging on its own was responsible for a relatively modest rate of growth in expenditure: 0.6% per year.[1] Further elucidation of these trends will require a patient-level analysis of the types of services provided and how these have changed over time. This is beyond the scope of the present analysis.

## Payments to Specialists

As noted earlier, the policy initiatives directed at specialists have included a wide variety of alternate payment plans. The analyses presented here indicate that they have become significant payment programs for geriatrics, pediatrics, medical oncology, radiation oncology, hematology, and emergency medicine. Doubtless these payment models, as an alternative to FFS, have helped to retain practitioners in these specialties all of which have seen an increase in physician supply in recent years. However, with the exception of radiation oncology, payments to these specialties remain below the average for all specialist physicians. Those that rank highest include specialties that have had a key role in the government's wait times strategy. Those specialties, for instance ophthalmology and radiology, continue to have a high dependence on payments under FFS. As noted earlier the increased number of services provided by them in recent years has been the main cost driver rather than an increase in the scheduled fees. This increase in productivity may have resulted from longer working hours, but it is also likely that these specialties have benefitted from improvements in technology, and access to hospital facilities, which have allowed them to manage increased numbers of patients in a working day.

Under fee-for-service arrangements, more treated patients translates directly into more money. Doubtless, patients have been beneficiaries, but we undertook no patient-level analysis in this work and are not able to comment on clinical outcomes.

## Payments to General Practitioners/ Family Physicians

We found that the numbers of GP/FPs have increased significantly since reaching a nadir in 2001/02. Their payments have increased, and the majority have enrolled in an alternative funding model. Arguably, these are the most important findings in this report. GP/FPs are the first point of contact for many patients, provide consultation and care for common problems and have a key role in disease prevention (through immunization, screening and risk factor reduction). They are the largest group of physicians in Ontario, and therefore, changes in their payments have a large financial impact.

Alternatives to FFS in general/family practice are not new. Before the start of our observation period, Ontario had a number of health service organizations that paid physicians on a capitation basis, and Community Health Centres, where physicians were (and still are)

salaried employees. However, prior to 2000 the number of physicians being paid primarily through non-FFS sources was quite low, estimated at 2–5% of the total physician pool.[2] The process of deliberately moving GP/FPs away from a purely FFS model began in earnest in 1999/00. In that year, several primary care capitation pilot projects (called Primary Care Networks) began. A major expansion of primary care models began in 2001/02 with blended capitation Family Health Networks (FHNs), in 2003 with blended fee-for-service Family Health Groups (FHGs) and Comprehensive Care Models (CCMs, similar to FHGs but for solo-practice physicians), in 2004 with the group payment-based Rural-Northern Physician Group Agreement (RNPGA), and in 2006 with blended capitation Family Health Organizations (FHOs), into which the old HSOs and PCNs were integrated. By 2010, more than two-thirds of Ontario's primary care physicians belonged to one of these models, with FHOs being the most popular.

The financial results of this reform program are seen here. Total payments to GP/FPs in 2009/10 were $3.1 billion, an increase of $1.3 billion (77%) from 2003/04, or 58% after adjustment for inflation. Fee-for-service payments remained relatively flat over the whole time period. Payments specific to primary care models, the majority of which was capitation, rose very rapidly after 2004/05 and accounted for a large proportion of the increase in payments. Payments to physicians outside of patient enrolment models decreased after 2005/06 and payment in other models remained relatively flat between 2005/06 and 2009/10. Average payments per active GP/FP were highest among those in FHOs, followed by FHNs and FHGs. Payments in all these models showed a general increase between 2005/06 and 2009/10.

It appears clear that more GP/FPs were recruited and retained as a result of the new funding models. What is unclear at this time is the extent to which this has translated into better access and better services for patients. Two recent reviews have found mixed results.

In a 2011 report, the Auditor General for Ontario noted that the MOHLTC had not yet conducted any formal analysis of whether the expected benefits of these alternate payment plans have materialized.[3] The Auditor General reported: "Although many more Ontarians are enrolled with multi-physician practices under the new alternate funding arrangements than in the 2006/07 fiscal year, the wait time to see a family physician if they become sick has not changed as a result. Based on ministry survey results, while more than 40% of patients got in to see their physician within a day, the rest indicated that they had to wait up to a week or longer."

Health Quality Ontario in its 2011 annual report observed that the number of individuals without a regular family doctor has dropped in recent years and is on a par with the best results of 11 countries that were surveyed.[4] However, fewer than 50% are able to see their doctor on the same day when they are sick and in that regard Ontario (and the rest of Canada) lags behind other countries.[4]

## Report Limitations

It is important to recognize a number of limitations to this work, most of which relate to incomplete capture of payments and as a result may hamper the interpretation of some of the data. At the outset we will make the point that these errors will have tended to underestimate the payments to physicians, meaning that the numbers given here are probably conservative. A few doctors are salaried and their payments come from hospital budgets and are not tracked here. Some physicians may work in more than one specialty; usually this will be general internal medicine combined with another (e.g., diabetes/endocrinology). For some years of observation, data were missing and we have highlighted these in the relevant exhibits. The analyses are fairly high level and cannot capture all the details and intricacies of alternate payment plans that apply to individual specialties. When a block grant was provided to a specialist group under an alternate payment plan, we allocated this equally across all members of that plan, which will have led to some inaccuracies at the individual level.

With the exception of the exhibit in this chapter which explicitly compares the overall increase in physician payments with inflation, none of the figures in this report have been adjusted for inflation. No adjustments were made for the overhead costs of running a medical practice. These are widely believed to average around 30% but vary among specialties. It is unclear to what extent overhead costs rise with increased numbers of services. There is likely to be both a fixed and a variable component, and we did not have data to inform this question.

We did not investigate the very wide variation in payments among some specialty groups. In some cases (e.g., ophthalmologists, radiologists, cardiologists and nephrologists), these variations increased substantially over time. It is not clear if the highest paid physicians in a specialty are seeing more patients, doing more procedures, or both. It is also unclear if the lowest paid physicians are working part-time. This is an important issue that we flag here as needing further investigation.

## CONCLUSION

Physician payments comprise approximately 20% of total health care costs in Ontario. Although overall physician supply rose in line with population growth, it varied substantially among specialties. The rise in physician payments since the turn of the century was considerably greater than the overall growth in physician numbers and has been growing significantly above the average rate of inflation since 2004/05. Directed increases in physician payments through negotiated agreements with the OMA in 2004 and 2008 were aimed primarily at improving patient access to primary care and reducing wait times.

Primary care-related policies represent the largest financial investment in doctors that has been made by the provincial government. The most important positive change resulting from these policies has been the reversal of the decline in numbers of GP/FPs seen in the 1990s. Much of this impact appears to have been related to the change in financial models, with a shift from fee for service to capitation-based payments.

Efforts to reduce wait times in a fee-for-service environment have disproportionately benefited key surgical, medical procedural and diagnostic specialties. These groups have also gained financially from demographic changes, technological advances and increased health system capacity (i.e., increased hospital funding) that have enabled larger numbers of services to be provided by certain specialists in recent years.

The government of Ontario spent $8 billion on physician services in 2009, $4.3 billion more than in 1992. This investment has resulted in more practising physicians and an increase in services, particularly in areas targeted by certain policies. Alternative payment plans have supported certain government priorities and policy directions, particularly in general/family practice and the non-procedural medical specialties. This report cannot answer whether increased investment has led to better patient outcomes or improved functioning of the health care system. To our knowledge, no such impact analysis has been undertaken. We believe this subsequent work is critical to ensuring that taxpayer dollars invested in the health care system provide maximal benefits for the patients of Ontario.

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