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The Value of the Infectious Disease Specialist: Clinical Impact, Economic Contribution, and a Roadmap for Improved Compensation

Brian P. Harting, MD [1,*] and Russell M. Petrak, MD [1]

[1] Metro Infectious Disease Consultants, Burr Ridge, IL 60527, USA
* Corresponding author: hartingafc@gmail.com

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Abstract: Infectious disease (ID) physicians have long provided demonstrable value to patients, healthcare systems, and the broader community. Over more than 25 years of peer-reviewed literature, ID specialists have been associated with reduced mortality, shorter hospital stays, lower costs, and improved antimicrobial stewardship outcomes. Despite this well-documented clinical and economic impact, ID physicians remain among the lowest-compensated internal medicine subspecialists in the United States. This paper synthesizes the historical and contemporary evidence for the value of ID physicians, with particular attention to private practice, and proposes a framework for practice models that align compensation with demonstrated value. Key domains include directive clinical care, outpatient parenteral antimicrobial therapy (OPAT), antimicrobial stewardship, infection prevention, emerging pathogen management, and lifestyle considerations unique to the specialty.

Keywords: infectious disease; antibiotic stewardship; infection prevention; physician compensation; outpatient parenteral antimicrobial therapy

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1. Introduction

Dating back more than 25 years, leaders in infectious disease (ID) medicine have systematically documented the value that ID physicians bring to patients and healthcare systems alike [1,2]. These contributions span improved patient outcomes including reduced mortality and lower rates

of treatment failure, enhanced diagnostic accuracy, more rational antibiotic use, reduced hospital length of stay (LOS), and lower overall healthcare costs. In the wake of the COVID-19 pandemic, this value became more conspicuous, as private practice ID clinicians served as frontline warriors for both community health efforts and hospital systems unprepared for a novel respiratory pathogen.

Value, in the context of an ID physician, can be understood as a measurable contribution to the improvement of a patient's health or well-being. This contribution may be delivered at the level of an individual patient, a cohort of high-risk patients, a hospital system, or the community at large. Critically, perceived value and actual compensation for that value are distinct but intertwined constructs, each essential to physician career satisfaction. When compensation does not reflect the complexity or breadth of the services provided, the result is often professional dissatisfaction and, increasingly, burnout.

In recent years, ID clinicians have expressed frustration with compensation and job satisfaction through social media, professional surveys, online forums, and editorials [3,4]. Although ID physicians provide well-recognized value, reported compensation has consistently lagged behind that of comparable internal medicine subspecialties [5]. The etiology of this compensation deficiency is multifactorial, encompassing limited contract negotiation culture within the specialty, inadequate revenue diversification, and structural underpayment of cognitive specialties relative to those with a procedural expertise.

This paper reviews the historical and contemporary evidence for the value of ID physicians, highlights distinctive characteristics of private practice ID, and proposes a model for practice development that leads to improved professional satisfaction and compensation.

2. Clinical Expertise and Direct Patient Outcomes

The clinical impact of ID consultation has been a subject of systematic study since the early 1990s. In 2003, the Infectious Diseases Society of America (IDSA) Clinical Affairs Committee (CAC) produced a landmark review demonstrating that ID physician involvement was associated with reduced disease-specific mortality, shorter hospital LOS, lower costs of care, more appropriate antibiotic utilization, and improved infection prevention outcomes [2]. At the individual patient level, bacteremic patients with care directed by ID clinicians experienced significant reductions in risk of death, lower likelihood of relapse, improved empiric antibiotic selection, and more successful de-escalation to targeted therapy.

These findings have been replicated and extended across a diverse range of pathogens and clinical scenarios. Studies examining patients with methicillin-resistant *Staphylococcus aureus* (MRSA), *Candida*, and *Pseudomonas* bloodstream infections have documented lower mortality in ID-managed cohorts [6]. Similar benefit has been reported in patients with *S. aureus* bacteremia [7,8], gram-negative bacteremia including AmpC-producing organisms [9,10], candidemia [11,12], enterococcal bacteremia [8], and COVID-19 [13].

Perhaps the most compelling large-scale evidence comes from a 2014 IDSA analysis of Medicare claims data. Approximately 102,000 patients who received an ID consultation were compared to 170,000 matched patients with the same diagnoses but who did not receive ID care. The ID-consulted group demonstrated lower mortality, fewer hospital readmissions, shorter intensive care unit LOS, and lower Medicare expenditures. Importantly, patients who received ID intervention within the first two days of hospital admission experienced the greatest benefit, underscoring the importance of early consultation [14,15].

3. Directive Care: A Defining Competency

One of the most underappreciated skills of the ID clinician is what the literature has termed "directive care" [2]. This encompasses the comprehensive gathering of historical and microbiological data, the

formulation and communication of initial recommendations, the articulation of explicit contingency plans, and the effective dissemination of management guidance to all members of the care team. Unlike consultants who provide brief assessments and defer to the primary team, the ID specialist who practices directive care assumes an active and ongoing role in shaping the patient's clinical trajectory.

ID physicians also provide unique expertise at transitions of care, particularly in restructuring treatment from the inpatient to the outpatient setting. The management of outpatient parenteral antimicrobial therapy (OPAT) is emblematic of this role. OPAT planning requires sophisticated clinical judgment in patient identification, antibiotic selection, dosing, monitoring for adverse effects, and adjustment in response to culture data or clinical changes. This requires a level of sophistication analogous to the management of chemotherapy regimens in oncology. ID-directed OPAT has been shown to reduce emergency department evaluations, hospital readmissions, and overall healthcare costs [5,16]. From a practice economics standpoint, investment in OPAT infrastructure is one of the most significant opportunities for revenue diversification in private practice ID.

4. Antimicrobial Stewardship

Antimicrobial stewardship is among the most economically quantifiable contributions of the ID specialist. The 2008 IDSA CAC review, dedicated specifically to non-patient care activities, described an ID-supervised antimicrobial management program at a 174-bed community hospital that yielded approximately $250,000 in annual cost savings, along with significant reductions in *Clostridium difficile* infection rates and drug-resistant *Enterobacteriaceae* [17]. Similar findings have been reproduced across institutions of varying sizes and geographic settings.

More recent data reinforce the stewardship value of ID consultation. A 2023 study demonstrated that mandatory ID specialist approval for restricted antimicrobials was associated with statistically significant reductions in hospital-onset *C. difficile* infection rates and improved appropriateness of diagnostic testing [18]. Additionally, ID consultation has been associated with more judicious antimicrobial prescribing in community hospital settings, with measurable reductions in both unnecessary antibiotic use and associated adverse events [19]. Because antimicrobial resistance continues to emerge as a major global health threat, the role of the ID specialist in preserving the effectiveness of existing agents becomes increasingly critical, and increasingly difficult to reduce to a simple billing metric.

5. Infection Prevention and Emerging Pathogen Management

The 2003 IDSA CAC review recognized ID specialists as essential advisors to hospital infection prevention programs. ID physicians occupy a unique position at the intersection of clinical medicine, microbiology, epidemiology, and public health, enabling them to identify and contain outbreaks, implement evidence-based isolation protocols, and advise on institutional policies that affect infection rates across entire patient populations.

The emerging pathogen management role of ID physicians has been particularly visible over the past 25 years. Fellowship-trained ID specialists have led clinical and public health responses to H1N1 influenza, MERS-CoV, West Nile virus, *Candida auris*, Ebola, mpox, and most recently SARS-CoV-2. Less publicized, but equally important, are responses to healthcare-associated outbreaks, such as *Serratia marcescens* bacteremia traced to contaminated prefilled saline syringes [14] and fungal meningitis linked to contaminated surgical products. In each of these scenarios, the ID specialist's fellowship training provides an irreplaceable knowledge base that primary care physicians and hospitalists are not equipped to replicate.

Private practice ID physicians were particularly visible during the COVID-19 pandemic, serving as trusted advisors for community hospitals, skilled nursing facilities, and public health agencies

that lacked in-house ID expertise. This pandemic role, often performed without commensurate compensation, demonstrated both the indispensability of the specialty and the structural gaps in how that expertise is valued and reimbursed.

6. The Hospital Efficiency Improvement Plan Model

In 2017, the IDSA CAC introduced the concept of the ID physician as a strategic executive within a hospital efficiency improvement plan (HEIP) [15]. In this model, the ID specialist is formally compensated for management responsibilities spanning 4 domains: infection prevention, antimicrobial stewardship, OPAT, and biopreparedness and emerging infections. Rather than functioning solely as a reactive consultant, the ID physician assumes a proactive institutional role, with defined deliverables and negotiated compensation commensurate with those responsibilities.

This framework proved prescient. The COVID-19 pandemic validated the HEIP concept, as hospitals with established ID leadership infrastructure were better positioned to mount coordinated responses. However, the pandemic also exposed a persistent vulnerability: many contract-based ID positions had been negotiated without adequate compensation for the surge demands of emerging infection management. This underscores the critical importance of disciplined, proactive contract negotiation. Accordingly, this skill must be cultivated alongside clinical expertise within the ID community.

7. The Compensation Problem

Despite the breadth and depth of their contributions, ID physicians remain among the lowest-compensated subspecialists in internal medicine. Compensation is predominantly driven by inpatient consultation and outpatient follow-up, with reimbursement determined by the number of patients seen and the level of service billed. This fee-for-service structure systematically undervalues the cognitive complexity of ID work, the time spent on stewardship and infection prevention activities, and the informal expert guidance that ID clinicians routinely provide without formal billing.

This last point, the so-called “Achilles heel” of the specialty, deserves particular attention. Curbside consultations, in which ID physicians field clinical questions from colleagues without generating a formal consultation record or billing for the encounter, represent a significant source of uncompensated value. Helping a busy internist choose the appropriate antibiotic for a urinary tract infection, or advising that antibiotics are not warranted at all, delivers genuine clinical value for the patient and the requesting clinician. Yet this type of interaction is frequently dismissed as informal or insufficiently complex to merit compensation, even as the cognitive effort involved in such consultations is directly analogous to the interpretation of an electrocardiogram by a cardiologist or the review of a sleep study by a pulmonologist, both of which are routinely billable services.

Beyond the curbside consultation problem, compensation deficiency in ID is driven by several structural factors: limited tradition of contract negotiation within the specialty, inadequate diversification of revenue streams beyond direct patient care billing, and a reimbursement system that historically rewards procedural over cognitive complexity. A 2022 analysis in *The Lancet Infectious Diseases* documented the relative undervaluation of ID physician services in the United States compared to peer nations, further contextualizing the problem within a systemic framework [5].

More recently, through the efforts of IDSA, a code for specific ID inpatient consultative services has been authorized for both in-person and telemedicine activities. Labeled G0545, the add-on code has addressed, in part, the aforementioned ID reimbursement gap [20]. Usage guidelines highlight the cognitive skills now compensated by the G0545 code.

8. Strategies for Revenue Diversification in Private Practice

Diversification of revenue is an anchor tenet for financial stability. Private practice ID clinicians are uniquely positioned to develop these revenue models that more fully capture the value they provide. The following strategies represent the most viable and evidence-supported avenues for compensation improvement.

OPAT Program Development. Investment in OPAT infrastructure, including dedicated infusion nursing, pharmacy partnerships, and monitoring protocols, creates a sustainable revenue stream analogous to biologic infusion programs operated by rheumatology and oncology practices. The clinical complexity of OPAT management justifies compensation levels commensurate with those procedural specialties, and ID-directed OPAT has demonstrated measurable reductions in hospitalizations and emergency department utilization [16,21].

Contractual Hospital and Facility Relationships. Numerous contractual opportunities are available to private practice ID physicians. Acute care hospitals, long-term acute care facilities, and skilled nursing facilities require insightful and available ID direction. This may take the structure of ongoing consultation, program development and maintenance, or support for infection prevention staff. Contract terms should explicitly address compensation and account for emerging infection management, pandemic response, and program leadership.

Antimicrobial Stewardship Program Leadership. Regulatory requirements for antimicrobial stewardship programs at accredited hospitals create a natural market for ID physician leadership. Formal stewardship director roles, with defined administrative compensation, represent an underutilized revenue stream for private practice clinicians with the appropriate expertise.

Translational Medicine and Clinical Research. The private practice ID specialist is uniquely positioned to participate in clinical research. Clinical trials for novel antimicrobials, vaccines, and diagnostic platforms offer both intellectual engagement and supplemental compensation. The infrastructure for these studies is typically offset by the stipends for patient enrollment and can be accommodated by most reasonably sized private practice groups.

Medical Education. As a cognitive-based specialty, educating others is a skill possessed by the vast majority of ID specialists. Engagement in educational activities, curriculum development, and digital content creation represent growing avenues for supplemental compensation. Whether continuing medical education (CME) or graduate medical education (GME), participation enhances the reputation of the practice and the specialist. Accordingly, even without a contractual stipend, active support for either CME or GME serves to bolster the growth of an ID private practice.

9. Infectious Disease as a Lifestyle Specialty

The combination of clinical sophistication, professional flexibility, and intellectual variety makes ID a compelling subspecialty choice for internists who prioritize work–life integration. The qualities of an effective consultant—affability, availability, and ability—are foundational to the ID specialist's professional identity. Effective ID consultation requires sound clinical judgment delivered in a timely and collegial manner. These demands, however, need not translate into an unsustainable professional lifestyle. Infectious disease, as a subspecialty, affords a degree of schedule flexibility that is uncommon in other fields of internal medicine. Inpatient consultation is generally unscheduled and rarely requires urgent after-hours in-person evaluation. Outpatient care is structured and schedulable. Most ID clinicians, therefore, are not expected to perform emergent bedside procedures in the middle of the night.

10. The Workforce Crisis and the Case for Systemic Change

The compensation–value misalignment in infectious disease has serious workforce consequences. ID clinicians have increasingly voiced dissatisfaction through formal surveys and professional forums, and fellowship programs in some regions have struggled to fill their complement of trainees [3,4]. Swartz and Aberg, in 2023, framed the problem in stark terms: unless the compensation gap is meaningfully addressed, the pipeline of fellowship-trained ID physicians will be insufficient to meet the clinical, stewardship, infection prevention, and public health demands of the coming decades [4].

Addressing this crisis requires action at multiple levels. Individual clinicians must develop the negotiating skills and business acumen necessary to advocate effectively for their own compensation. Professional societies, including the IDSA, must continue to produce and disseminate evidence quantifying the economic and clinical value of ID intervention. Subsequently, we must actively engage payers, hospital administrators, and policymakers with that evidence. Healthcare systems must recognize that the cost savings attributable to ID consultation, stewardship programs, and infection prevention activities far exceed the investment required to support robust ID departments.

Residency program directors and faculty mentors must articulate these lifestyle advantages to attract talented trainees to the specialty.

Lastly, successful ID physicians must become more vocal and transparent about their paths to success, their passion for the specialty, and the abundant opportunities available. Failure to do so may result in an even more severe drought of qualified candidates and thwart the growth and availability of ID to the communities at large.

11. Conclusions

Infectious disease medicine occupies an indispensable position within the modern healthcare system. Over more than 2 decades of rigorous study, ID physicians have demonstrated measurable reductions in mortality, hospital length of stay, readmission rates, antimicrobial costs, and healthcare-associated infections across diverse patient populations and clinical settings. Their expertise in emerging pathogens, antimicrobial stewardship, OPAT, and infection prevention creates value at every level of the healthcare enterprise—from the individual patient to the health system and the public at large.

Yet this value is systematically undercompensated, and the resulting professional dissatisfaction threatens the specialty's long-term workforce. The path forward requires both structural advocacy and individual initiative. Private practice ID clinicians should actively pursue diversified revenue models built around the full scope of their expertise, such as OPAT programs, stewardship facility contracts, and research engagement. Investing in the negotiating skills necessary to capture that value will enhance the likelihood of contractual success. The specialty's future depends on closing the gap between the value delivered and the compensation received.

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