

Explore infectious diseases careers

Learn the journey

What we'll cover



1

Did you know?

2

What is ID and what do
ID professionals do?

3

Career paths in ID

4

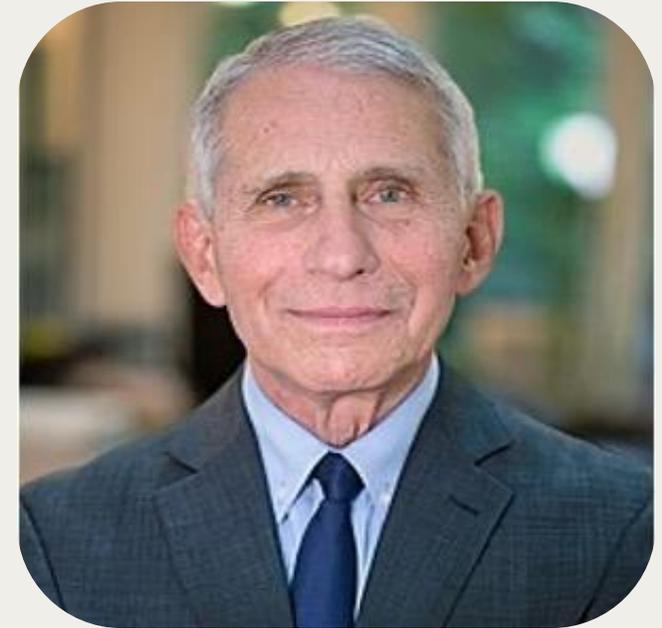
Opportunities for
impact in ID



Want to pursue cutting-edge research?

Want to lead policies addressing local outbreaks or
the next global pandemic?

Did you know?



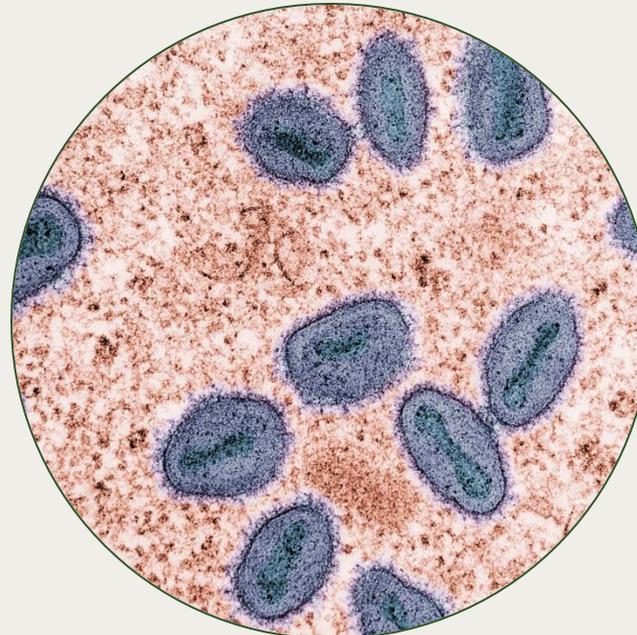
Modern ID luminaries

Top left:

Jeanne Marrazzo, MD, MPH, FIDSA: Director, National Institute of Allergy and Infectious Diseases (2023-2025)

Anthony Fauci, MD, FIDSA: Director, National Institute of Allergy and Infectious Diseases (1984 to 2022)

Matifadza Hlatshwayo Davis, MD, MPH, FIDSA: Director, Department of Health, City of St. Louis (2021-2025)



Did you know?



Modern ID luminaries cont.

Top left:

Kizzmekia S. Corbett-Helaire, PhD: A key scientist behind COVID-19 vaccine

Rochelle Walensky, MD, MPH, FIDSA: Director, Centers for Disease Control and Prevention (2021-2023)

Katalin Kariko, PhD: Biochemist specializing in protein replacement therapy



Did you know?



Historical ID luminaries

Top left:

Florence Nightingale: Founder of modern nursing

Edward Jenner: Physician and scientist who pioneered the concept of vaccines and created the smallpox vaccine

Alexander Fleming: Scottish physician and microbiologist

Joseph Lister: Experimental pathologist and a pioneer of antiseptic surgery and preventive health care



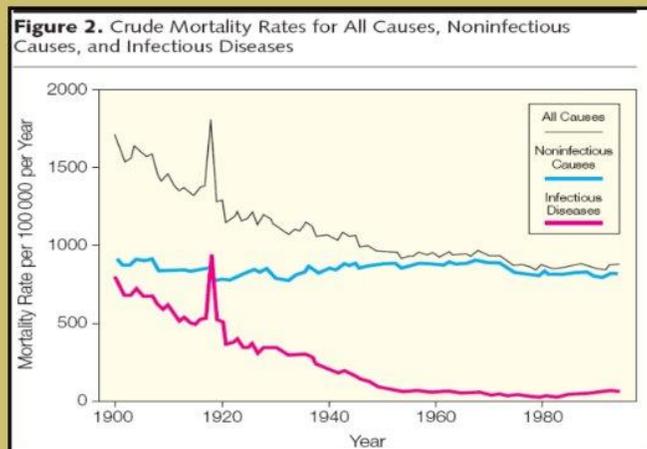


What is ID?
What do ID professionals do?



Introduction to infectious diseases

Infectious Diseases & Mortality: U.S. 1900-2000



- The treatment, management and prevention of infectious diseases has had a broad, far-reaching impact on every segment of our society.
- The ID field has led to dramatic improvements in the outcomes & survival in children and adults over the past decade.
- These improvements in survival are due to ID professionals' ability to recognize, diagnose, and promptly treat infections.
- We are always looking for ways to prevent infections from occurring!
- Cancer, leukemia, transplants and serious traumatic injuries: Patients receiving care for these and other conditions require a team of practitioners including ID physicians and ID pharmacists.

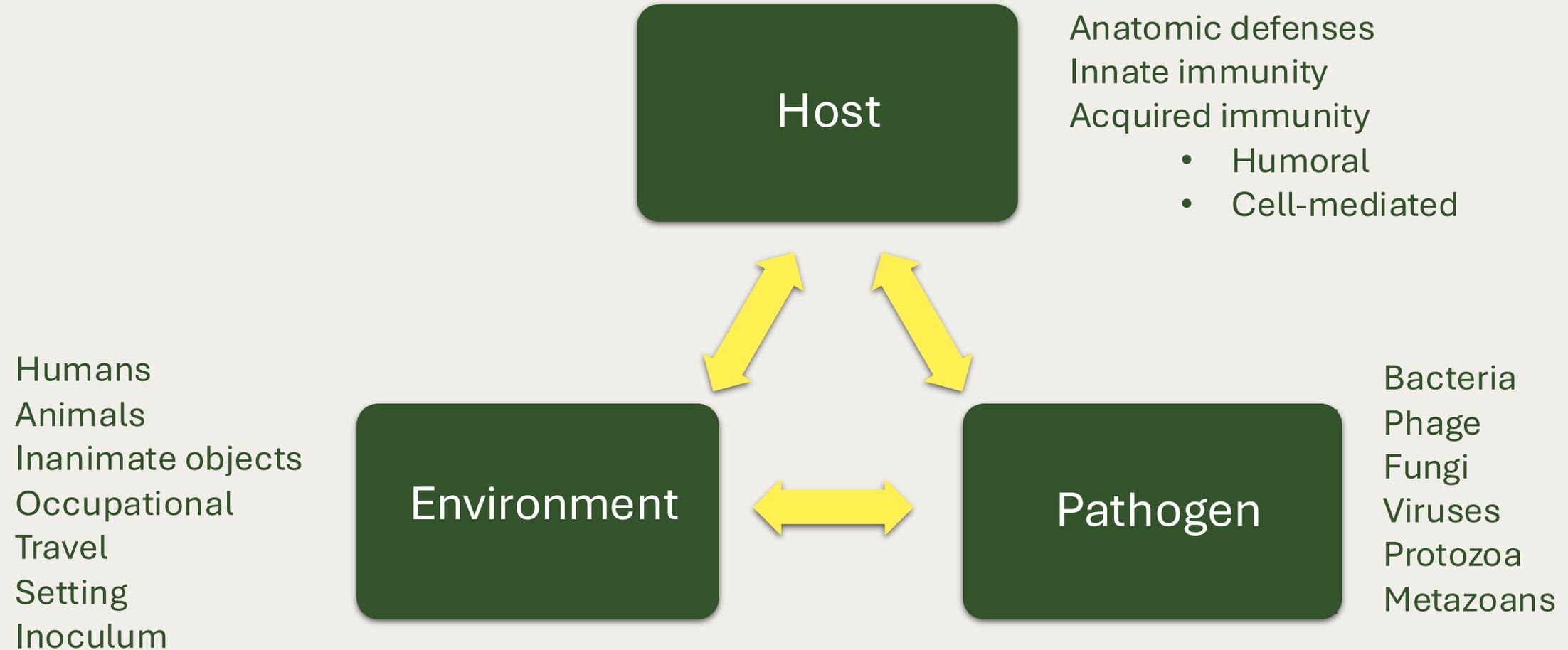
What is ID?



- Leading causes of death worldwide
- Major advances in public health all related to ID
- Sanitation
- Immunization
- Antibiotics
- Acute versus chronic
- Benign versus fatal
- Many career options (patient care, education, industry, global health CDC/WHO, research, etc.)

- It affects EVERY single person
- It affects EVERY body part
- Relevant factors:
 - Social determinants of health and other exposure factors
 - Globalization and geographic distributions
 - Climate change
 - Social justice
- New emerging infections
- Bioterrorism agents

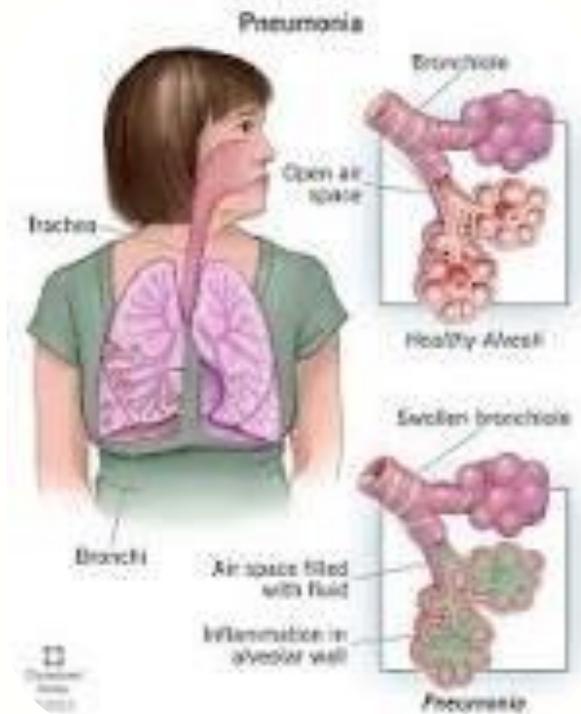
The triad of infectious diseases





Common infectious diseases

- Pneumonia
- Urinary tract infection
- Meningitis
- Rabies
- Chickenpox
- HIV
- Malaria
- Tuberculosis



Notable 20th century infectious diseases events



Flu pandemic
1918



Malaria eliminated as a health concern in the U.S.
1950s



Start of TB control
1950s and 1960s



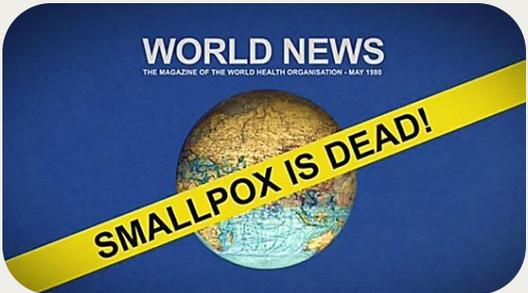
HIV identified
1983



Antibiotics popularized
1940s



Polio vaccine
1955



Smallpox eradicated 1980



“I cannot think of any specialty that is as dynamic and exciting as infectious diseases. ID is never boring.”

David N. Gilbert, MD, FIDSA



Climate change impacts infectious diseases



- Easier spread of bugs, animals and ticks that expand into new geographic areas and infect more people
- Rising temperatures allow disease-prone fungi to spread
- Changed rain patterns, more extensive storms, etc. create active periods for diseases to spread
- Impacts on agriculture and food safety, affecting foodborne pathogens like *Salmonella* and *E. coli*
- Waterborne illnesses emerge that impact humans



ID professionals support health equity



Source: NCHHSTP Health Equity CDC

What is health equity?

- Pursuing the elimination of health disparities

What does inequity look like?

- Lack of expansion of health resources
- Inadequate access to health care resources
- Lack of health education
- High costs for medical services
- Foster opportunities for equity in research, clinical practices, services

ID professionals address many social justice issues



- Realities of stigmatization, bias, exclusion
 - Historical experiments on African Americans/Native Americans
 - Social injustice impediments in urban and rural communities
 - Spread of diseases due to poverty, inequality, inaccessible health care, etc.
 - Emerging pandemics, diseases
- Lack of access to clinics and services in underserved communities
 - Lack of collaborative partnerships between communities and healthcare infrastructure
 - Lack of health information and education
 - Health deserts in rural communities
 - Unequal treatment options

Why choose a career in ID?



1

Impact on public health

- Play a crucial role in preventing the spread of infectious diseases through vaccination, education and public health initiatives.
- Work on the front lines during outbreaks, helping to control and manage epidemics and pandemics.

2

Diverse and dynamic field

- Encounter a wide range of diseases, from common infections to emerging pathogens.
- The field is ever-evolving, offering continuous learning opportunities as new pathogens and treatments emerge.

3

Interdisciplinary collaboration

- Collaborate with physicians, microbiologists, immunologists, public health officials, etc.
- Opportunities to work internationally, addressing infectious diseases in different cultural and geographical contexts.

Why choose a career in ID?



4

Intellectual challenge

- Tackle complex medical cases that require critical thinking and problem-solving skills.
- Engage in cutting-edge research to develop new treatments, vaccines and diagnostic tools

5

Patient advocacy & care

- Build long-term relationships with patients, especially those with chronic infectious diseases.
- Provide holistic care that addresses the physical, emotional and social aspects of ID.

6

Professional growth and recognition

- Gain recognition as an expert in a highly specialized and respected field.
- Opportunities to lead infection control, hospital epidemiology departments, and public health organizations.

7

Job security and demand

- The need for ID specialists is consistently high due to ongoing and emerging ID threats.
- Enjoy job stability and diverse career options in hospitals, academic institutions, government and nonprofits.



Career paths in ID

Infectious diseases physician



HOSPITALS

- ID physicians provide consultation on complex infections, diagnose and manage infections, oversee antibiotic stewardship programs, and contribute to control and prevention efforts.
- **Academic/Teaching hospitals:** Teaching students, residents and fellows in addition to clinical practice.
- **Community hospitals:** Focus primarily on clinical care, with less emphasis on teaching or research.



CLINICS

- ID physicians may run or work in outpatient clinics, seeing patients for follow-up care, chronic infections, HIV/AIDS management, travel medicine and other ID consultations.
- They provide long-term care, manage chronic infectious conditions and offer preventive care, such as vaccinations and travel health advice



ACADEMIC/RESEARCH INSTITUTIONS

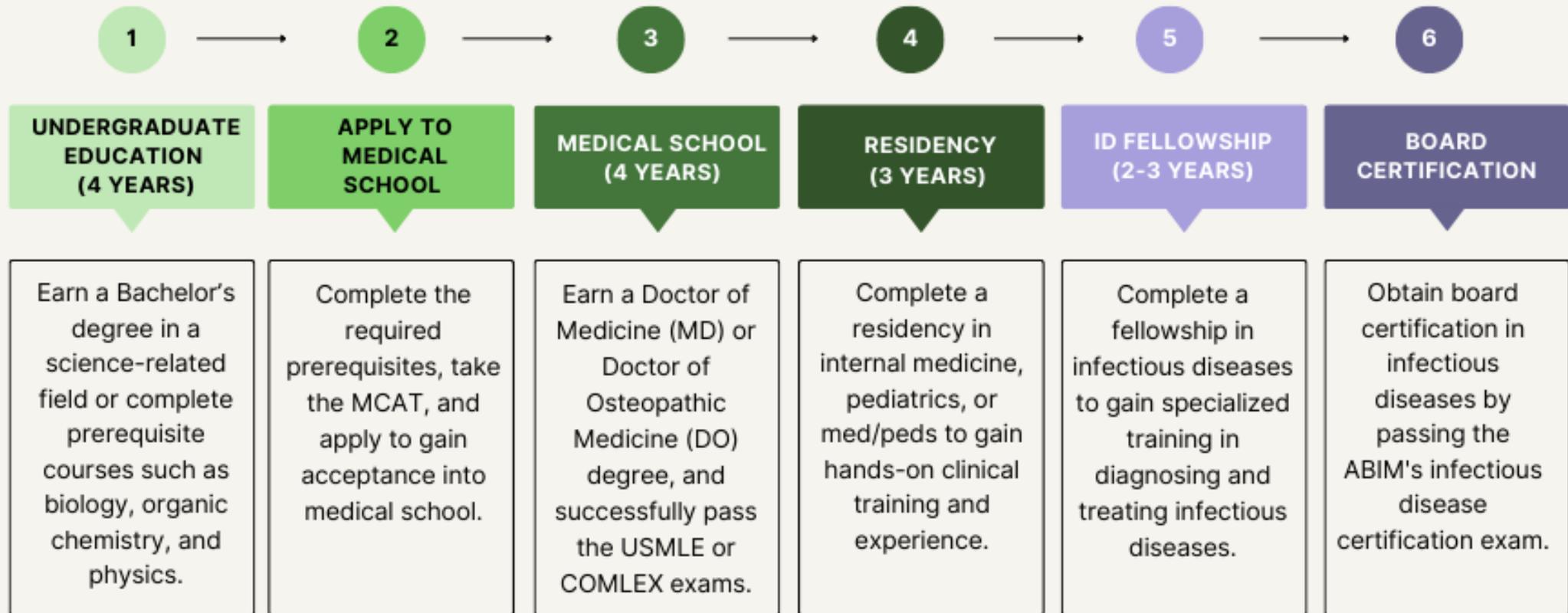
- Many ID physicians work in academic settings where they split their time between patient care, research and teaching.
- They conduct research on infectious diseases, develop new treatments or vaccines, publish papers and teach future health care providers.



PRIVATE PRACTICE

- ID physicians also work in private practice, either independently or as part of a group practice.
- They see patients in an outpatient setting, manage infections, provide consultative services to local hospitals and possibly specialize in areas like travel medicine or HIV care.

How to become an ID physician





Career road map to becoming an ID physician

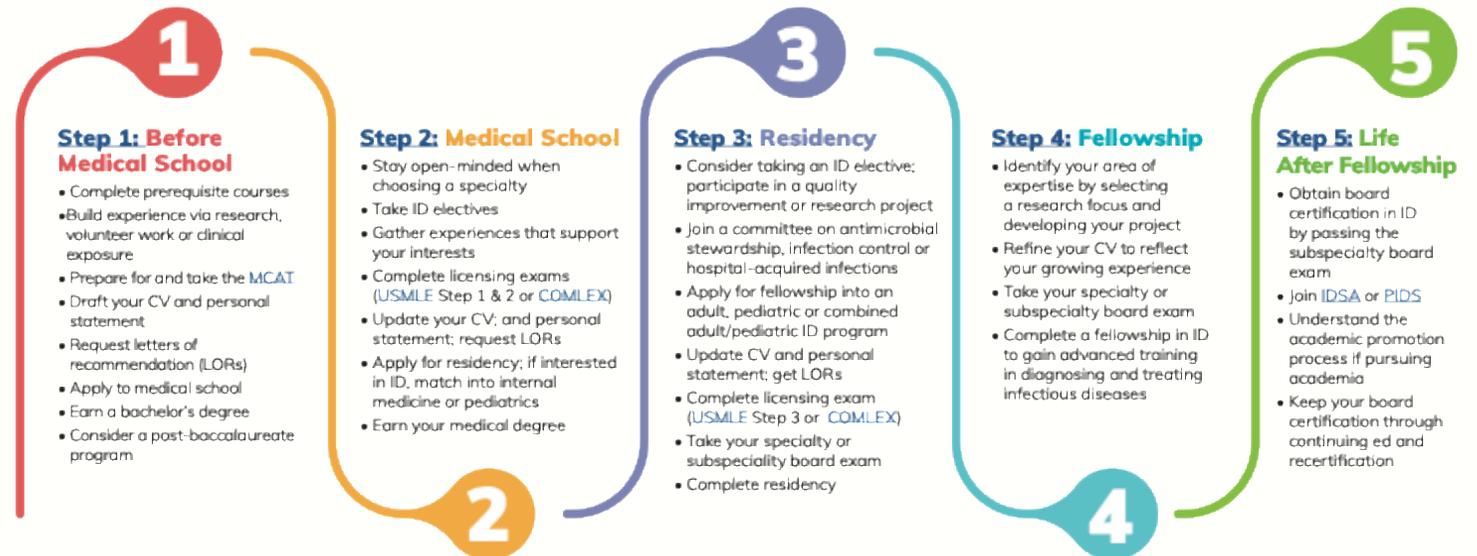
Includes detailed step-by-step guidance for becoming an ID physician and linked resources to support you along the process from undergraduate study to life after fellowship.



QR code for IDSA ID career resources including the roadmap

Career Road Map to Becoming an Infectious Disease Physician

Click on each step or road marker to navigate to resources





How to become an HIV medicine specialist



Must be licensed to practice as a physician, NP, PA or pharmacist in your jurisdiction

Meet at least one of the following:

- Provide direct or consultative HIV care to at least 25 persons living with HIV within the 36 months preceding the date of application
- Participate in the Academy Mentoring Program
- Provide direct involvement or leadership in HIV care through a non-clinical work environment (HIV expert only)



Infectious diseases research



Infectious diseases researchers study the mechanisms, spread, prevention and treatment of infectious diseases. Their work is critical in improving public health, developing new treatments and vaccines, and understanding the complex interactions between humans and infectious agents.

Meet at least one of the following:

- Basic research in immunology, on pathogens, etc.
- Clinical research
- Vaccines
- Antimicrobial resistance



How to become an ID researcher



Image Texas Tech University Health Center

- ❑ **Master's degree (2 years):** MS in microbiology, immunology or infectious diseases or MPH in ID or epidemiology
- ❑ **Doctoral degree (4-6 years):** PhD in microbiology, immunology, epidemiology or a related field
 - ❑ **MD or MD/PhD (and PharmD or PharmD/PhD)** are options for those interested in combining clinical practice with research
- ❑ **Postdoctoral fellowship (2-4 years):** Many researchers complete postdoctoral training in a specific area of ID research
- ❑ **Work as a researcher** in academia, government, public health or industry



Infectious diseases academia

An infectious diseases academic primarily focuses on research, teaching and service within a university or academic medical center. Their work contributes to advancing the understanding of ID, training the next generation of health care professionals and scientists, and supporting public health efforts. Their work can include:

- Research and publication
- Teaching
- Service and administration (departmental, peer review, advocacy)
- Clinical practice (for MDs)
- Public engagement and outreach



NYU Langone Health ID Specialist Mark J. Mulligan, MD, on working in ID at an academic institution

Source: NYU Langone Health



ID pharmacy (Pharm D)



Learn why Emily Heil, PharmD, MS, BCIDP, BCPS, AAHIVP, professor in the UMD Department of Practice, Sciences and Health Outcomes Research, chose to become an ID pharmacist.

An ID pharmacist is part of a multidisciplinary team caring for patients with infections. Their main focus is ensuring that medications (antimicrobials) prescribed are optimized for the best possible outcome.

- **Inpatient clinical ID pharmacists:** Specialize in antimicrobial drugs used in the hospital setting. They are skilled at optimizing IV antimicrobial use.
- **Outpatient clinical ID pharmacists:** Specialize in drugs used for conditions such as hepatitis C or HIV, or on IV antibiotics at home. They are skilled at patient counseling and managing chronic disease states.
- **Antimicrobial stewardship pharmacists:** Involved in program management, quality management, informatics, education, implementation science, administration, etc. Many also provide clinical ID pharmacist services.
- **Academic ID pharmacists:** Have patient care-responsibilities as well as more research and education responsibilities.



How to become an ID pharmacist



Source: Johns Hopkins School of Pharmacy

- ❑ Complete 4-year undergraduate degree
- ❑ Complete doctor of pharmacy (PharmD) program
- ❑ Complete postgraduate year 1 (PGY1) residency training
- ❑ Complete specialized ID postgraduate year 2 (PGY2) residency training
- ❑ Complete specialized ID postgraduate research fellowship training (1-2 years)



Clinical or medical microbiology



Learn more about Clinical Microbiology in Infectious Disease Management

A clinical microbiologist plays a critical role in the field of infectious diseases by identifying, diagnosing and helping to manage infections. Their expertise in microbiology is essential for guiding the appropriate treatment and prevention of infectious diseases.

Identification of pathogens

- **Antimicrobial susceptibility testing:** Determine which antibiotics or antiviral drugs are effective against pathogens.
- **Clinical consultation:** Work with ID physicians to interpret lab results, review complex cases and recommend further testing or treatment plans.
- **Surveillance and epidemiology:** Track the occurrence of infections, emerging pathogens and antibiotic resistance.
- **Research and development:** Develop new diagnostic tests, study antimicrobial resistance and explore new approaches to treating infections.
- **Education and training:** Educate health care professionals about infectious diseases, diagnostic techniques and infection prevention strategies.



How to become a clinical or medical microbiologist



Source: [Evolve LTD](#); American Society for Microbiology

Complete 4-year undergraduate degree in a relevant field such as biology, microbiology, biochemistry or a related life science

PhD pathway

- ❑ Complete a PhD in microbiology or a related discipline
- ❑ Complete a clinical microbiology fellowship (1-2 years)
- ❑ Certification through the American Board of Medical Microbiology

M.D. pathway

- ❑ Complete an MD
- ❑ Complete a residency in pathology, internal medicine, pediatrics or ID (2-4 years)
- ❑ Complete a fellowship in medical microbiology (1-2 years)
- ❑ Certification through the American Board of Pathology



ID careers in industry

ID professionals working in industry play critical roles in the development, testing and commercialization of products related to the prevention, diagnosis and treatment of infectious diseases. They can work in pharmaceutical and biotech companies, diagnostic laboratories, global health organizations and more.

Their work can focus on areas such as:

- Antimicrobial stewardship
- Epidemiology
- Diagnostics and devices
- Clinical research
- Medical education
- Management
- Marketing/access
- Pharmacoeconomics
- Research and development

Typical pathways are as a researcher, physician or PharmD



“The work that we do is very meaningful, because it’s making a difference in the management of patients...And that’s very gratifying for me.”

- Clarence Young, MD, ID physician working in the pharmaceutical industry

Source: [Evolve LTD](#); American Society for Microbiology



Epidemiology

Epidemiologists study the patterns, causes and effects of health and disease conditions in defined populations. Their work is vital in public health, as they help identify risk factors for disease, targets for preventive health care, and methods to control and prevent health problems. Their work can include:

- Data collection and analysis
- Monitoring public health
- Research and reporting
- Public health policy and program development
- Community education and outreach
- Emergency response
- Teaching and mentorship



Learn about a career in epidemiology from Wade Ivy, PhD, from CDC.



Epidemiology MPH/PhD pathways



- ❑ A master's degree is required for most entry-level epidemiology careers.
- ❑ Typically, graduate students pursue a master of science or master of public health with a concentration in epidemiology.
- ❑ Additional education such as a doctorate in epidemiology (PhD or DrPH) may be required for those interested in academic, research or leadership positions.



ID careers in public health



Learn about a public health career in disease intervention from Victoria Mobley, MD, a disease intervention specialist with the North Carolina Department of Public Health.

ID public health professionals monitor disease trends, develop and implement prevention programs, engage with communities and shape policies. They make a significant impact on health outcomes, contribute to global health improvements, and engage in diverse and dynamic work.

- Areas of focus can include:
- Epidemiology
- Research
- Programmatic work
- International public health
- Roles at CDC or health departments
- Positions at universities, corporations and nonprofits

Typical pathways are as a researcher, MPH or physician.



ID advanced practice providers



An ID advanced practice provider, such as a nurse practitioner or physician assistant, plays a critical role in managing and treating patients with infectious diseases. Their role involves a combination of direct patient care, collaboration with multidisciplinary teams, education, and leadership in infection control and antimicrobial stewardship.

How to become an ID APP



Nurse practitioner

- ❑ Complete 4-year degree in nursing (BSN)
- ❑ Pass the National Council Licensure Examination; receive RN license
- ❑ Complete a master's (MSN) or doctoral degree (DNP) in nursing
- ❑ Complete clinical training rotations that include infectious diseases, primary care and other relevant areas
- ❑ Obtain board certification in your specialty area through the American Academy of Nurse Practitioners

Physician's assistant

- ❑ Complete 4-year undergraduate degree + required prerequisites
- ❑ Accrue health care experience and patient care experience hours
- ❑ Graduate PA program: Complete a master's degree in physician assistant studies (2-3 years)
- ❑ Pass the Physician Assistant National Certifying Exam to become a certified PA
- ❑ Pursue additional clinical experience or fellowships in infectious diseases, if available



Opportunities for impact in infectious diseases

Opportunities for impact in ID



Have an impact on broad public health outcomes ...



... and on individual patients and communities.

"Working with Dr. Krishnan was a sigh of relief finally after dealing with all of these issues for so long. She spoke to me as a human being and a woman instead of a patient and on to the next. I am beyond thankful she was assigned to me!"

"Wondering whether health practitioners in the area don't know of your Long COVID Clinic or just don't care about COVID patients enough, because I told all the doctors, nurses, etc. I was in contact with over the past year that I thought my symptoms could be long COVID-related; however, it took a year and several appointments with several health care professionals before one made me aware that your Long COVID Clinic exists."

Opportunities for impact in ID



1

Shape health policy & advocate for change

- Influence public health policy
- Advocate for vulnerable populations
- Engage in global health initiatives

2

Implement infection control

- Design infection control protocols
- Identify, contain and manage infectious disease outbreaks
- Train health care teams on best practices for infection prevention

3

Drive antimicrobial resistance stewardship

- Lead stewardship programs
- Research new treatments
- Raise awareness, educate and empower

Opportunities for impact in ID



Join, serve and lead in IDSA, the ID professional membership organization.



The screenshot shows the IDSA website homepage. At the top, there is a dark green navigation bar with links for IDSA, Foundation, IDWeek, and HIVMA on the left, and About, Journals, Events, Multimedia, News, and a yellow Login button on the right. Below this is a white header with the IDSA logo and a search icon, followed by a horizontal menu with dropdown arrows for ID Topics, Practice Resources, Education & Training, Policy & Advocacy, and Membership & Community. The main content area features a large banner for IDWeek 2025. On the left of the banner are three circular images: the top one shows three women smiling, the middle one shows a group of people clapping, and the bottom one shows a man smiling. To the right of these images, the text reads 'IDWeek 2025' with a green dot, followed by the headline 'Come home to your community at IDWeek 2025' in a large green font. Below the headline is a paragraph: 'Shape the future of the field of alongside thousands of your colleagues and secure your registration for this year's conference, Oct. 19-22 in Atlanta, Georgia.'

idsociety.org



QUESTIONS?

Want to learn more?



IDSA INTEREST FORM



IDSA MEMBERSHIP PAGE