

NOVEMBER 2024 | ISSUE 1

NexBioHealth

Shaping Futures

MEDICAL REPORT

Hypothyroidism
Smart Surgery
Teledermatology
Korea's Healthcare Crisis

CAREER DEVELOPMENT


Dr. Mun K. Hong's
Reflection
Bridging Worlds: Korea
to US Medicine
Beyond the White Coat

DIVERSITY EQUITY AND INCLUSION

Global Surgery
Stomach Cancer
Disparities

STUDENT HUB

Dr. Andrew Nam,
KNI President
Dear Mentor
KAMSA



Game-changer in Healthcare
JUNGJIN SEO
CEO OF CELLTRION

NEXBIOHEALTH: WHAT MAKES IT TRULY UNIQUE

NexBioHealth is a global magazine dedicated to empowering and connecting medical students, residents, and budding physicians worldwide. The magazine is a dynamic platform designed to foster global networking, knowledge sharing, research collaboration, and professional growth for young healthcare professionals.



Vision

NexBioHealth aims to foster an international community where future leaders in medicine can learn, collaborate, and grow together. Building on the 10-year legacy of the World Asian Medical Journal (WAMJ), NexBioHealth expands its scope to engage a broader, global audience, creating a platform for medical professionals worldwide.

Key Features

01. CAREER DEVELOPMENT & MENTORSHIP:

This section offers guidance and mentoring to help young medical professionals navigate their career paths. It includes contributions from experienced physicians and focuses on professional growth, education, and research opportunities.

Diversity, Equity, and Inclusion (DEI): Focused on addressing health equity and global health, this section highlights innovations in public health, healthcare delivery, and international healthcare innovations. Through in-depth articles and interviews with global health leaders, we aim to promote discussions around equitable healthcare access and inclusion worldwide.

02. GLOBAL NETWORKING FOR YOUNG GENERATION:

NexBioHealth connects medical students, residents, and physicians worldwide by featuring networking opportunities and facilitating international collaborations.

Conferences: This section highlights important medical conferences and events around the world, providing readers with opportunities for learning and professional development.

03. MEDICAL NEWS & HEALTHCARE UPDATES:

A comprehensive section delivering the latest news in medicine and healthcare, covering advancements, policy changes, and industry trends.

04. STUDENT AND RESIDENT ENGAGEMENT:

NexBioHealth is committed to representing the interests of medical students and residents through the formation of the Student Advisory Committee (SAC). These committees help shape the magazine's content, organize events, and promote mentorship opportunities.

NexBioHealth is more than just a publication—it's a vibrant community and resource hub for the next generation of medical professionals. By bringing together students, residents, and physicians from across the globe, NexBioHealth is dedicated to supporting the growth and development of future leaders in the medical field.

Our Editorial Board

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NexBioHealth Magazine is published quarterly by NexusHealth Media, Inc., 161 Tweed Blvd., Nyack, NY 10960. Tel: (845) 661-1477, Email: info@NexBioHealth.org, Website: www.nexbiohealth.org. Please send inquiries, subscription requests, and address changes to the above address. The entire contents of this magazine are protected by copyright © 2024 by NexusHealth Media, Inc. and may not be reproduced in whole or in part without express written consent. All rights reserved.

The NexBioHealth Editorial Board comprises a diverse group of physicians and healthcare professionals from various specialties who are recognized as thought leaders with innovative ideas and notable accomplishments. This distinguished group is united by a shared mission: to make NexBioHealth a unique platform for addressing the most pressing issues in medicine and healthcare today and into the future. Their goal is to nurture, motivate, and inspire the next generation of healthcare professionals.

Diverse Expertise

Unlike the typical editorial boards of academic journals, the NexBioHealth Editorial Board is intentionally diverse. It includes physicians from major university settings, private practices, and community health centers, not only in the United States but also globally. This diversity ensures that the magazine reflects a wide range of perspectives and experiences, making it relevant and impactful for a global audience.

Interdisciplinary Approach

In addition to physicians, the board includes prominent individuals from the scientific, legal, health industry, and public health fields. This interdisciplinary approach is crucial for interpreting and providing insights into medicine and healthcare from unbiased and diverse viewpoints. By integrating expertise from these various fields, NexBioHealth is positioned to offer comprehensive and balanced coverage of the issues that matter most to healthcare professionals and the communities they serve.

Supporting Young Minds:

To further enrich the content and ensure it resonates with the emerging generation of medical professionals, NexBioHealth has established two additional boards:

Student Advisory Committee (SAC)

- The SAC is designed to represent the interests and perspectives of medical students. Members provide feedback on articles, suggest relevant topics, and help tailor the content to meet their peers' needs. They also liaise between NexBioHealth and medical schools, assisting with student outreach and event coordination. Their involvement ensures that NexBioHealth remains a vital resource for students, providing content that is both educational and inspiring.

Resident Physicians Advisory Committee (RPAC)

- The RPAC represents residents across all specialties, offering valuable insights into the challenges and opportunities faced by physicians in training. The RPAC helps guide the magazine's content by contributing articles, organizing networking opportunities, and supporting mentorship programs. Their participation ensures that the magazine addresses the specific needs of residents, helping them navigate their careers with confidence.

A Growing and Evolving Board:

Our editorial board is in the beginning phase and continues to grow, inviting more great minds to join us in our mission. As we expand, we are committed to bringing together a broader range of expertise and perspectives to enhance the magazine's quality and impact. We seek thought leaders and innovators who share our vision to join us in making NexBioHealth a powerful voice in medicine and healthcare.

A Truly Unique Platform:

NexBioHealth's combination of a diverse, interdisciplinary editorial board and the inclusion of the SAC and RPAC makes it a truly unique platform. It is a magazine that not only raises important issues in medicine and healthcare but also fosters a collaborative environment where young minds are nurtured, motivated, and inspired.

NexBioHealth is committed to being more than just a publication—it is a community and a resource for those who aspire to lead and innovate in the healthcare field. Through the collective efforts of its editorial board, students, and residents, NexBioHealth aims to be the best platform for shaping the future of medicine and healthcare.



In This Issue

Game Changer in Healthcare: Jungjin Seo, CEO of Celltrion

A look into Celltrion's rapid rise in the biopharmaceutical industry, its groundbreaking innovations in monoclonal antibody therapies, and its plans for future success. CEO Jungjin Seo shares insights into the company's achievements, leadership challenges, and long-term vision, while offering advice to young healthcare professionals.



KNI (Korean Physicians of NY & NJ of International Medical Alumni)

KNI's Primary Goals and Evolution: KNI (Korean Physicians of NY & NJ of ...



Teledermatology

The world is still adjusting to the aftermath of the truly unprecedented pandemic caused by the coronavirus SARS-CoV-2 ...



Beyond the White Coat

Dr. Joe McMenamin, our Editor-in-Chief for NexBioHealth, has had a remarkable career that bridges the fields of medicine and law. Starting as an ER doctor ...



The Internet of Things

We turn on the lights in our house from a desk in an office miles away. Our refrigerator alerts us to buy milk on the way home ...



South Korea's Healthcare Crisis: Beyond the Numbers

The South Korean healthcare system has recently plunged into a significant crisis ...



Fuel Your Passion: The Secret to Longevity in Medicine and the Cure for Burnout



KAMSA (Korean American Medical Student Association)

Founded in 2012 under the leadership of Dr. Chul S. Hyun, then-president of the Korean American Medical Association ...

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Chul S. Hyun,
MD, PhD, MPH
Publisher

Div. of Digestive Dis.,
Yale School of Medicine

From the Publisher

NexBioHealth: A Platform for Tomorrow's Healthcare

Dear Readers,

Welcome to the inaugural issue of NexBioHealth, a magazine that builds upon the 10-year legacy of the World Asian Medical Journal (WAMJ). As we transition from WAMJ, we bring with us a renewed sense of purpose, expanding our scope to cater specifically to the younger generation of medical professionals—students, residents, and young physicians—who represent the future of healthcare. NexBioHealth is designed to be a dynamic platform for global networking, knowledge sharing, and professional growth, with various sections addressing the multifaceted interests of the medical community.

In our Medical News section, we cover the latest developments and breakthroughs in medicine and healthcare, ensuring our readers stay informed about the ever-evolving landscape. Our Career Development section is particularly crucial, serving as a platform to nurture and inspire the next generation of healthcare leaders by featuring stories of exemplary individuals who have carved unique paths in their medical careers. These narratives are not just inspiring but also provide valuable insights and guidance for those embarking on similar journeys.

The Diversity, Equity, and Inclusion (DEI) section addresses global health issues, health disparities, and other critical topics fundamental to the wellbeing of communities in the U.S. and around the world. By highlighting these subjects, we aim to foster a deeper understanding and drive meaningful discussions that contribute to positive change. Last but not least, the Student Hub offers a dedicated space for medical students to share their experiences and perspectives, providing an interactive forum to connect, learn, and build a sense of community.

In this issue, we are honored to feature an exclusive interview with Mr. Seo, Jungjin, CEO of Celltrion Pharmaceuticals, a global leader in biologics. His insights on the future of biopharma and healthcare provide a unique perspective that we believe will be valuable to our readers.

NexBioHealth envisions a global community where young doctors and medical students can learn, collaborate, and grow together. We are committed to supporting our readers and contributors in their professional journeys and are excited to see what we can achieve together. We look forward to your guidance, contributions, and feedback as we continue to evolve and serve as a platform for the future of healthcare.

Sincerely,



Joseph P. McMenamin,
MD, JD, FCLM

Editor in Chief

EVP, W Medical Strategy Group
Partner, Christian & Barton, LLP

From the Editor-in-Chief

Welcome to the inaugural issue of NexBioHealth, a periodical uniquely focused on the interests, problems, and opportunities of medical students and young physicians.

NexBioHealth aims to become the platform of choice for international dialogue between and among young medical professionals on matters professional, scientific, and personal.

This issue offers a smorgasbord of offerings, and may perhaps give an idea of the variety and scope of our plans. Our cover story features Jungjin Seo, CEO and founder of Celltrion, a biopharmaceutical company headquartered in Incheon, South Korea. Celltrion was the first company in Asia to operate US FDA cGMP certified animal cell culture facilities, and has achieved impressive milestones in monoclonal antibody therapy. Operating in more than 100 countries around the world, Celltrion offers affordable biosimilars used in management of a wide array of illnesses, including, among other disease entities, malignancies (non-Hodgkin's lymphoma, chronic lymphocytic leukemia, metastatic breast cancer, metastatic gastric cancer, metastatic colorectal cancer), collagen vascular diseases (rheumatoid arthritis), GI disorders (inflammatory bowel disease), ophthalmic problems (macular degeneration), and dermatologic disease (psoriasis). We hope you will enjoy reading about Celltrion's story, and about how Seo nurtured it from a small start-up more than twenty years ago to the global enterprise it is today.

This first issue also offers insight and reports on clinical medicine (teledermatology, laparoscopic robotic surgery, hypothyroidism), the economics of medicine (global surgery, which aims to make surgery more accessible and affordable in low and middle-income countries), physicians' professional problems (burnout, the challenges in moving from one country to another, how a med student can begin to consider specialty options, the career goals of an MD/MPH student, and others) continuing education (a list of upcoming conferences), and more. Our publisher, Chul Hyun, MD, PhD, offers a thoughtful piece on disparities in the care of those with gastric carcinoma and how to cope with them. Our Managing Editor, Dr. Cho, has authored a piece on the value to foreign bio and pharma companies of maintaining an American presence, and I am humbled and honored to have been given a chance to offer some reflections on my own career choices.

We encourage you to explore this first issue, and to take advantage of the opportunities it affords for networking, collaborating, growing, and learning. As you do, consider how we can strengthen and enlarge our offerings to better meet your needs. After all, NexBioHealth is itself very young—a newborn, in fact—and doubtless has much to learn. We envision an evolution in content and format as we learn from experience, and from you.

Enjoy.

Congratulatory Message



August 26, 2024

Dear Dr. Chul Hyun

Congratulations on launching NexBioHealth Publication!!

As Medicine and its endeavors keeps on changing ,the publication which started as World Korean Medical Journal over 10 years ago and then evolved to World Asian Medical Journal continues its ascent as NexBioHealth. Nexus meaning connection and linking is an appropriate new name for the publication linking medicine to industry, politics, trends and most importantly people.

The people featured are an interesting cross section of medicine which feature not just the triple threat physician of clinician, researcher and educators but also entrepreneurship, leadership, mavericks and innovators. These successful people in modern parlance are „influencers“. Recently, I gave a talk on AI in medicine. While AI possesses incredible processing power and can „think“ in terms of data and analysis, it lacks the uniquely human qualities of behavior, creativity, dreams, aspiration, and innovation. These traits are essential to what drives human progress and medical breakthroughs. As the former President of both the Korean American Medical Association and the World Korean Medical Organization, I had the opportunity to travel to distant places, including North Korea, and meet exceptionally bright, energetic individuals who are pushing boundaries in their fields. NexBioHealth serves as a platform that connects leaders, allowing them to inspire others and foster innovation in ways that break new ground.

As the proliferation of information continues, NexBioHealth will fill a crucial gap, providing content that is not only interesting and informative but also naturally intelligent. I'm excited about the upcoming launch and look forward to expanding our horizons together.

David Ko, MD
Chief of Neurology
Loma Linda VA Medical Center



KAMA President 2014-2015
WKMO President 2018-2023

Congratulatory Message

Dear Dr. Chul Hyun,

Congratulations on the launch of NexBioHealth. The digital revolution has arrived, and it is fundamentally reshaping medicine and healthcare. Artificial intelligence (AI), robotics, connected devices, smart watches, smartphone apps and new ways to use data have introduced remarkable opportunities for both medical practitioners and patients. I'm positive that NexBioHealth will serve as a leading platform for information and trends in the healthcare space. I wish you and your team the best of luck with your new and exciting endeavor!

Best regards,

Samuel Greengard
Author of THE INTERNET OF THINGS (MIT Press)
Technology Journalist



Congratulatory Message



Dear Dr. Chul S.Hyun,

I want to extend my heartfelt congratulations on the launch of NexBioHealth, the new evolution of the World Asian Medical Journal (WAMJ). Expanding your reach from Asia to a global audience of healthcare professionals will be an exciting new chapter for your community. I am confident that NexBioHealth will quickly become a vital resource and platform for the next generation of healthcare leaders worldwide.

I would also like to commend Dr. Dohyun Cho and his team for the dedication and vision they brought to WAMJ which has laid a strong foundation for this important next step. As we move forward, The leadership of Dr. Chul S. Hyun will undoubtedly guide the NexBioHealth magazine to new heights, fostering an environment where young medical professionals can network, share knowledge, and collaborate on shaping the future of healthcare.

I look forward to seeing how NexBioHealth will inspire and empower young healthcare professionals around the world.

Congratulations once again on this significant achievement, and best wishes for a successful launch and future.

With warm regards,

Jamie Metzl, JD, PhD
Founder and Chair
OneShared.World

Author of Superconvergence



Connect with Future Medical Leaders Worldwide!



www.NexBioHealth.org

We invite you to become part of a vibrant community of medical professionals, where experienced leaders and emerging physicians from around the world collaborate, share knowledge, and drive the future of healthcare. This global network fosters mentorship, research collaboration, and leadership development across generations, ensuring that the next wave of medical leaders is well-equipped to tackle the challenges of tomorrow.

For more information or questions email: info@nexbiohealth.org

Medical Report

Teledermatology

The world is still adjusting to the aftermath of the truly unprecedented pandemic caused by the coronavirus SARS-CoV-2. Time stood still during the height of the pandemic, and the world, including the field of medicine, is now forever changed. There are a few silver linings to the pandemic, including a welcome focus on healthcare access and outcomes disparity that was cruelly highlighted by the pandemic. Telemedicine, yet another positive development that was quickly embraced directly because of the pandemic, has revolutionized the practice of medicine, and my field of dermatology is no exception. Our department saw an explosion in video visits almost overnight, from essentially zero visits in 2019 to a height of over 9,000 visits in 2021, and has now settled to a stable 5,000-plus visits in 2023, accounting for approximately 7% of all visits. This trend reflects a broader shift, as telehealth usage in dermatology across the United States surged by 210 fold among Medicare Part B beneficiaries from 2019 to 2020 (Gronbeck et al., 2022).



Dr. Henry Lee conducting a telemedicine consultation

Advantages of Teledermatology

One of the primary advantages of telemedicine in dermatology is the convenience and access it offers patients. Through video visits, patients can access their dermatologists without the need to travel long distances or take time off of work. This is particularly beneficial in cases where patients need quick consultations or medication refills. A recent review examined 15 studies on patient and provider satisfaction with teledermatology and found overall satisfaction with the experience, quality of care and level of increased access (Miller et al., 2022). Additionally, in an era where appointment wait times can be lengthy, telemedicine provides a more immediate option for triaging patients, allowing dermatologists to prioritize those who need urgent in-person care.

For patients with established chronic diagnoses, telemedicine simplifies routine follow-up appointments. For example, individuals with acne who are on isotretinoin are required to have monthly medical visits, potentially with blood tests. Video visits coupled with laboratory visits from third-party laboratory facilities have eliminated the need for cumbersome monthly in-person visits, thereby reducing the burden on the healthcare system. In fact, the majority of my patients with chronic conditions—such as autoimmune blistering conditions, psoriasis, and atopic dermatitis—that require systemic medications like immunosuppressants can be managed primarily via video visits. Studies have shown that telemedicine can reduce no-show rates. One such study of a center in New York City revealed that the combination of both in-person and video visits led to nearly a 40% reduction in no-shows compared to providing solely in-person visits (Cline et al., 2021).



Another possible advantage of telemedicine is the potential cost savings it may provide to our already taxed health care system. Video visits clearly save patient lost work time and increase worker productivity. Several studies have set out to examine the potential cost-effectiveness of teledermatology versus face-to-face visits. An analysis of 8 such studies found that all eight studies demonstrated lower costs with teledermatology (Lopez-Liria et al., 2023).

Limitations of Teledermatology

However, telemedicine in dermatology is not without its challenges. The quality of the video resolution can be a limiting factor, especially when evaluating skin conditions that require detailed visualization. To address this, many dermatology departments, including ours, request that patients submit high-resolution close-up and general photographs prior to their video visit. This augments the video consultation, providing the dermatologist with a clearer view of the patient's skin condition.

Certain anatomical sites, such as the scalp, can be particularly difficult to assess via telemedicine. Hair loss, for instance, often requires a detailed examination that cannot often be adequately addressed via video visits. Through experience, our department has now developed a policy requiring that initial visits for hair loss be conducted in person. Similarly, the examination of

sensitive areas like the genitals creates, at best, an awkward interaction and poses privacy-related challenges, which leads me to triage these visits to in-person visits.

Clearly, an obvious deficit of video visits is the inability to perform procedures. For example, an inflammatory rash requiring a simple skin biopsy would require a follow-up in-person procedure visit to perform the biopsy. I, however, have found this to not be a critical issue, as the expedited video visit and ensuing in-person biopsy lead ultimately to much more timely biopsy and medical care.

Technical difficulties, including issues with user interface navigation and internet connectivity, can also hinder the effectiveness of telemedicine. Additionally, current geographic restrictions require that patients be physically located in a state where the physician is licensed to practice—a regulation that complicates care delivery. During the height of the COVID-19 pandemic, these restrictions were temporarily lifted, allowing physicians to treat patients regardless of their location. However, the reimplementation of these geographic boundaries seems counterintuitive to our mission to treat and help our patients. The absurdity of these restrictions is highlighted by a recent visit in which my patient was travelling on a private jet and was unsure of her current state airspace, raising logistical concerns about whether the consultation could proceed.

Conclusion

Despite these limitations, telemedicine is an incredibly powerful tool for medicine and particularly dermatology. It has become an integral part of our department's practice. When used for appropriate cases, it is an invaluable tool that enhances patient care and extends the reach of our dermatology services. Studies have shown that teledermatology can achieve diagnostic accuracy rates comparable to in-person visits, with one review, which examined 44 studies, reporting an 71% concordance rate between video visits and in-person visits for dermatologists (Bourkas et al., 2023). Looking forward, there is always the potential for further advancements, such as the development of photograph centers in primary care offices or pharmacies. These centers could provide high-resolution, in-focus images, and even dermoscopic images, which allow for a more detailed evaluation of the lesion and microstructures of the superficial skin that is not possible with the naked eye. Such innovations would further enhance the accuracy of teledermatology. Another technology platform is asynchronous photo-based visits, in which a photo is submitted and the dermatologist at a later time examines the photo and provides an assessment and plan. In our institution, such photo based visits are limited to consultations from other physicians. Ultimately, I would like to see patient initiated asynchronous photo-based visits covered by

insurances and thus more aggressively utilized, thereby creating essentially a correspondence-based asynchronous “televisit.” The emergence of artificial intelligence (AI) coupled with incredible image databases also suggests the possibility of AI mediated image based diagnoses, potentially drastically reducing unnecessary dermatology consultations. In all of its iterations, technology-based non-in-person visits have extended the reach of dermatologists and have led to shortened wait times. We need to ensure that teledermatology, in its current and its future forms, is readily available and easily accessible to all of our patient populations, regardless of socioeconomic, education or racial background. As we continue to refine telehealth and its accuracy and safety, society and insurances need to more aggressively embrace telemedicine in all of its forms, thereby increasing access to quality medical care and improving health-care equity.



Henry J. Lee, M.D., Ph.D.

New York Presbyterian Hospital

Dr. Henry Lee is Associate Attending Physician at New York Presbyterian Hospital and Associate Professor of Dermatology at Weill Cornell Medical College.

Dr. Lee’s practice focuses on medical, surgical, and cosmetic dermatology. He has a broad interest in medical dermatology but pursues a particular interest in autoimmune cutaneous disorders and collagen vascular disorders. He also maintains an active interest in aesthetic dermatology, including lasers and Botox. Dr. Lee provides laser therapy for the treatment of broken blood vessels (telangiectasias), age/sun spots and hair removal.

Dr. Henry Lee received his Bachelor of Science in Biology with a concentration in Anthropology from the Massachusetts Institute of Technology. He pursued his medical studies at Tufts University School of Medicine, where he received an MD-PhD degree. Dr. Lee’s PhD research concentrated on cell cycle programming and survival pathways of quiescent lymphocytes.

Dr. Lee completed his internship in Internal Medicine at the UCLA - VA Greater Los Angeles program. He completed his residency in Dermatology at New York-Presbyterian Hospital/Weill Cornell Medical Center, where he was awarded the Distinguished House Staff Award. During his residency he published papers and a book chapter on autoimmune cutaneous disorders.

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Better Tomorrow



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Medical Report

Evolution for Smarter Surgery

It's Friday at 2 o'clock in the afternoon, and I am about to begin my second sigmoid colon resection of the day, this time for Mr. A, a 49-year-old male accountant. A former smoker and father of two, Mr. A lives in Manhattan and was diagnosed with colon cancer two weeks ago after undergoing a colonoscopy prompted by ten days of rectal bleeding. Understandably, he has many questions about the surgery he is about to undergo. I explained to him that there would be four small incisions in his abdominal wall, each about half a centimeter in size, which would be covered with bandages postoperatively. The resected portion of his colon would be removed through the anus, and the connection between the proximal and distal sections of the intestine would be made using robotic instruments to suture internally. I informed him that he would be encouraged to walk the same evening and would likely be discharged either one or two days after his surgery.

Once my anesthesia colleagues put Mr. A to sleep, my resident assists me in inserting metal trocars—resembling bubble tea straws—into his abdomen. These trocars are then connected to the robotic arms, to which I attach the surgical instruments. Following this, I walk about 10 meters away from the patient and sit at a console where my hands control the robotic arms and my feet operate the pedals, allowing me to manipulate the instruments inside the patient's abdomen. For the next three hours, I will navigate through Mr. A's abdominal cavity, observing a 3D view of his internal organs on the console as I proceed to excise the malignant portion of his colon.



Since the time of Galen, the field of surgery has gradually and progressively evolved. There have been pivotal moments when the introduction of certain chemicals and advancements in understanding propelled surgical progress. However, throughout the history of surgery, significant advancements have often relied not on surgical technology itself, but on developments in related fields.

Lister's understanding of microbiology contributed to the adoption of sterile techniques, significantly reducing infections in surgical patients. The development of antibiotics has allowed us to prevent postoperative infections, and the discovery of anesthetic drugs has made surgery far safer.

However, in recent years, the advent of laparoscopic surgery has dramatically improved the quality of care and patient safety, while also shortening recovery times from major operations. As a surgeon who has witnessed this technological evolution over the last 25 years, I feel as though I am standing at a precipice. It is truly remarkable to see the same procedures now being performed with far greater accuracy, safety, and, therefore, increased patient satisfaction.

I speak specifically from the perspective of a colorectal surgeon, as this is my area of practice. When I began medical school in the 1990s, after reading **The House of God**, I perceived surgery as

a laborious and bloody occupation, imbued with a certain masculine allure. Indeed, my residency training in a major trauma center reinforced this view, with 90% of my operations being open procedures and only 10% involving the nascent laparoscopic techniques. However, during my fellowship, this ratio was reversed. I performed 90% of my surgeries laparoscopically and only 10% as open procedures.

In my practice following my fellowship, I continued to focus primarily on laparoscopic surgery. Within five years, I further advanced my technique by incorporating single-incision laparoscopic surgery (SILS). SILS pushes the boundaries of laparoscopic surgery, as it involves performing the surgery through a single incision at the umbilicus, with all the instruments inserted through that one opening. This technique allowed for better cosmetic outcomes but also presented new challenges, particularly because the surgeon must often contort their body to achieve the necessary angles for the operation.

My motivation for advancing surgical techniques was not merely professional but also personal. I began experiencing debilitating spine herniation, which forced me to seek alternative ways to perform surgery. In 2014, I transitioned to robotic colon resections, and by 2017, I had fully adopted robotic techniques for all my procedures. As I continuously review my performance data, it has become clear that, while the success rates of my operations have remained consistent since 2004, there has been a marked improvement in patient outcomes, particularly in terms of length of stay, infection rate, postoperative hernia rates, and patient satisfaction. The average length of stay decreased from 6.5 days in 2017 to

4.2 days in 2020, and further down to 2.2 days in 2023. This is a significant change. I recall as a surgical resident rounding on patients who had undergone colon resection more than two weeks prior, with extended hospital stays required for wound care, pain management, and the return of bowel function. While such cases still occur, they have become far less frequent.

Mr. A was discharged two days after his surgery, though he complained of a bruise at his IV site on his left arm. Today, he is cured of his colon cancer.

Sanghyun Alexander Kim, MD

Dr. Sanghyun Alexander Kim completed his fellowship training in Colorectal Surgery at Mount Sinai Medical Center in 2005 and became an integral part of the Mount Sinai Faculty surgery practice. In addition to his clinical practice, he has trained numerous fellows and residents in Colon and Rectal surgery/General surgery for nearly 20 years.

Dr. Kim's clinical and academic interests include Colon/Rectal Cancer, Fecal Incontinence, and IBD. His treatment interests include Robotic Colon Surgery, Painless Hemorrhoidectomy (THD), and Treatment of Perianal Diseases. He has recognized expertise in TEMS (Transanal Endoscopic Micro Surgery) and Robotic TAMIS (Trans Anal Minimal Invasive Surgery) for early rectal malignancies as well as difficult low rectal lesions.

Dr. Kim teaches and performs 80 to 100 robotic colon and rectal resections per year.

Dr. Kim directs satellite offices in Morningside (NY), Ridgefield (NJ), and Flushing (NY) in addition to the main Union Square location (NY) that serve the community at large, including the Korean and Hispanic populations. Dr. Kim is multilingual.

Outside of his practice, Dr. Kim, in partnership with other community organizations, consults and treats the uninsured and underserved communities of New York and New Jersey.



Medical Report

Hypothyroidism. A Common Condition with Unmet Needs

By Se-Min Kim, MD

ABSTRACT

Hypothyroidism is a common condition, often mediated by autoimmune processes, characterized by a deficiency in thyroid hormone. Untreated hypothyroidism can lead to significant clinical consequences, as thyroid hormones play a critical role in various physiological processes. For instance, hypothyroidism is closely associated with metabolic dysfunction-associated steatotic liver disease (MASLD) and hypercholesterolemia.

The current standard treatment, primarily based on levothyroxine (T4) supplementation, is effective in most patients. However, a subset of patients continues to experience persistent residual symptoms despite achieving biochemical euthyroidism. This lack of response may be due to reduced activity of the enzyme deiodinase (DIO), which is essential for converting T4 into the active hormone T3.

Although still debated, the combination of T3 and T4 has shown favorable results in a small group of patients. In the near future, a personalized approach based on individual DIO activity may help identify those who would benefit from T3 supplementation. Ultimately, the use of thyroid organoids in treatment may offer a definitive cure for hypothyroidism.

This mini review will summarize thyroid hormone physiology, the metabolic consequences of hypothyroidism, and the limitations of current treatment, as well as emerging developments on the horizon.

Thyroid hormone: The Key Hormone in Metabolism

Thyroid hormone is critical for bodily functions. Thyroid glands, in response to thyroid stimulating hormone (TSH) from pituitary glands, synthesize and secrete thyroid hormones. Tetraiodothyronine (T4) with four iodine residues serves as a pro-hormone, which is converted to potent and active hormone triiodothyronine (T3) in the peripheral tissue by de-iodinase (DIO). In humans, T4 and T3 are secreted at a ratio of approximately 12:1 to 16:1, therefore the concentration of T3 in systemic circulation is kept stable and readily available for the use. Thyroid hormone receptors are located in the nucleus, and present in two different types: thyroid hormone receptor α and β (TR α and TR β). For example, brain, bone and heart express TR α while pituitary glands and liver expresses TR β . This tissue specificity was utilized for treating fatty liver by thyroid hormone action (See below). There are three types of DIO in human (type 1, 2 and 3). DIO1 and DIO2 mainly convert T4 into an active T3, whereas DIO3 converts T4 into inactive reverse T3 (rT3). Interestingly, these enzymes have distinct tissue expression profiles, with DIO1 predominantly expressed in the liver and kidney, and DIO2 in the periphery tissues such as muscles, and in the pituitary gland and hypothalamus. (Fig1)

Hypothyroidism: Metabolic Consequence

Hypothyroidism, characterized by underactive thyroid function, is a common condition. In the United States, approximately 0.3% of the population is affected by overt hypothyroidism, and around 4.3% have subclinical hypothyroidism, which can progress to overt hypothyroidism (1). Similarly, in Korea, 0.7% of the population has overt hypothyroidism, and over 3% have subclinical hypothyroidism. (2, 3) About 90% of non-iatrogenic hypothyroidism in iodine-sufficient areas are caused by autoimmune-mediated inflammation, so-called Hashimoto disease (4).

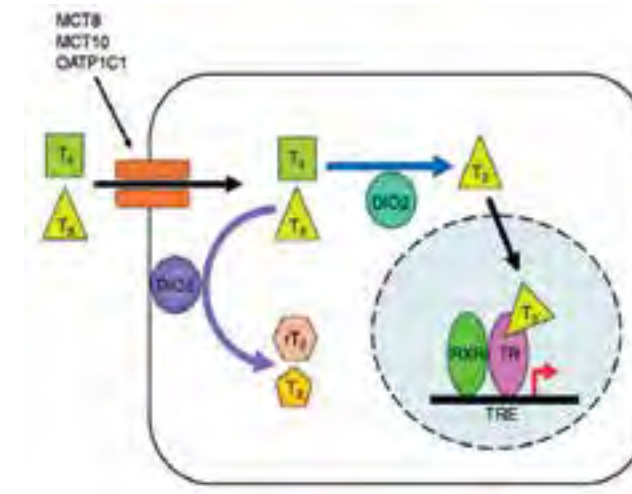


Fig1. T4 and T3 are transported via MCT8, MCT10 and OATP1C1. T4 is activated to T3 by DIO2 and enters into nucleus. T3 interacts with TR bound as heterodimer with RXR to TRE, up or downregulates T3 responsive genes.

MCT: monocarboxylate transporter, OATP:organic anion transporting polypeptide, TR: thyroid hormone receptor, RXR: retinoid X receptor, TRE: thyroid hormone response element

Hypothyroidism can affect all organ systems, and these manifestations depend on the degree of hormone deficiency, although severe hypothyroidism is rarely seen nowadays. Among the broad spectrum of clinical consequence of hypothyroidism, the metabolic complications will be focused here.

Overt and subclinical hypothyroidism is associated with increased levels of low-density lipoprotein (LDL), although predominantly less atherogenic large LDL particles (5). A subset of young male patients with hypothyroidism showed elevated serum triglyceride and C-reactive protein as well (5). Thyroid hormone plays a key role in lipid synthesis and degradation, the latter is significantly reduced in hypothyroidism (6). Therefore, plasma free fatty acid levels are decreased and mobilization of free fatty acids in response to fasting, catecholamines, and growth hormone is impaired greatly (7). However, the hypothyroidism as a risk factor for cardiovascular disease is not well understood because of inconsistent findings from the studies (8-10).

Recent interest in fatty liver, now officially named metabolic dysfunction-associated steatotic liver disease (MASLD) is closely related to the action of thyroid hormone. This condition is commonly seen in patients with diabetes and obesity, but also hypothyroidism. The prevalence of MASLD is 1.6 times higher in individuals with hypothyroidism, almost 40% higher compared with normal thyroid function (11, 12). Subclinical hypothyroidism has been identified as an independent risk factor for MASLD (12), and elevated TSH levels have been associated with a 1.8 to 2.3-fold increased risk of liver fibrosis (13). It is known that T3 action in hepatocytes regulates lipogenesis, β -oxidation of fatty acids, mitophagy, and cholesterol synthesis (14). Thus, lower T3 levels are linked to decreased lipolysis and reduced cholesterol clearance. Moreover, this regulatory system appears to be disrupted in damaged liver tissue. The recent development of the first FDA-approved thyroid receptor β (TR β) agonist, Resimetron, for MASLD highlights the critical role of thyroid hormone effect in hepatic lipid metabolism (15, 16).

Hypothyroidism: Current Management

Treatment of hypothyroidism is generally straightforward, as patients typically respond well and show improvement with thyroid hormone supplements. For example, elevated LDL associated with hypothyroidism often decreases by about 5-10% of baseline levels after starting treatment. The mainstay of treatment is levothyroxine (T4), which takes advantage of the body's ability to convert T4 into the active T3 required by tissues, a process that is physiologically regulated.(17)

Before synthetic thyroid hormone was available, desiccated animal thyroid tissue extracts including T4 and T3 was the only feasible option. Once Synthroid, the first synthetic thyroid hormone, came to the market, it quickly became the standard of care, followed by many other brand names and generics (levothyroxine) after single-dose bioequivalence studies. The saga involving the comparative trial of Synthroid between investigators and sponsor is worth reading for a better understanding of the current landscape of hypothyroidism treatment (18).

Levothyroxine, the mainstay treatment, has a 7 day half-life, and about 80% of the hormone is absorbed relatively slowly over hours and it equilibrates rapidly in its extracellular distribution volume, therefore avoiding large postabsorptive fluctuation in free thyroxine (T4) levels (19).

The monitoring of response to the treatment of assessment of proper thyroid hormone supplementation is predominantly based on laboratory tests in addition to clinical assessment. Thyroid stimulating hormone (TSH) which is a tropic hormone from pituitary glands has reciprocal relationship with thyroid hormones (T4 and T3) and is believed to be the most reliable

marker. As a matter of fact, TSH levels were used as a clinical endpoint for pharmacodynamic studies of the thyroid hormones. By and large, most of the patients with hypothyroidism respond well to levothyroxine and improve their symptoms.

The limitation of T4-based Treatment

In humans, approximately 20% of T3 is secreted directly by the thyroid gland, helping to maintain stable plasma T3 levels. Therefore, T4-based supplementation is a compromise, relying on the peripheral conversion of the remaining 80% of T3 from T4 (17).

T4 has an independent mechanism for TSH suppression independently of T3, due to intracellular conversion to T3 in the pituitary gland. Thus, TSH levels might not correctly indicate T3 availability in the tissue. For example, the ratio of T3 to T4 in the serum of a patient receiving levothyroxine as the only source of T3 is about 20% lower than that in normal individuals. Also, the quantity of levothyroxine required to normalize TSH in an athyreotic patient (i.e., patients after thyroidectomy) results in a slightly higher serum T4 concentration (20, 21). In animal study, it was not possible to normalize T3 in all tissues by intravenous T4 infusion, which may not be directly applicable to humans.(22)

More importantly, there is a subset of Patients who persistently have symptoms of hypothyroidism even after achieving biochemical euthyroid (23). Up to 15% of patients report residual symptoms impairing quality of life and psychological well-being (i.e., mental foginess, weight gain, lack of focus, memory loss, or fatigue) (24, 25). For both clinicians and patients, it is difficult to reconcile these symptoms when thyroid function appears to be in the normal range. The addition of thyroid supplements containing T3 remains a topic of debate for patients, as there is no clear evidence of long-term symptom relief (23). The lack of superiority of combination therapy over T4-only treatment may be due to the characteristics of study participants. These studies should have focused specifically on patients with persistent symptoms despite T4 treatment, rather than including all patients with hypothyroidism.

Hypothyroidism: Future Direction

Recent evidence from GWAS studies provides



plausible explanations for why some individuals do not respond well to T4-only treatment. In Dutch population, as to DIO1 gene, carriers of D1a-T allele (rs11206244) had higher T4 and lower T3 while D1b-G allele (rs12095080) was associated with higher T3 levels (26). An analysis using data from the Weston Area T3/T4 Study (WATTS), the Exeter Family Study of Childhood Health (EFSOCH), and the Invecchiare in Chianti (InCHIANTI) study showed that subjects with the C-allele (rs2235544) in the DIO1 gene were associated with increased DIO1 function. This led to elevated T3 levels, decreased T4 levels, and a higher T3/T4 ratio (27). Additionally, a polymorphism in the 5'-UTR of the DIO2 gene was found to be associated with variations in serum T3 and T4 levels (28). These findings suggest that genetic variations in deiodinase (DIO), the enzyme crucial for converting T4 to T3, may impair its function, potentially limiting the ability of some patients to efficiently convert T4 to T3.

The association does not necessarily imply causality, and these findings need to be validated through functional assays. However, measuring DIO activity is challenging, and a reliable assay is not yet available. Despite this, several commercial genetic testing platforms already offer testing for DIO SNP variants.

Finally, there has been an effort to develop thyroid organoids, which could potentially provide a definitive cure for hypothyroidism. Dr. Terry Davies' lab at Mount Sinai has used hypoimmune stem cells to differentiate them into functional thyroid follicles (29, 30). Although this is a promising development, many challenges remain. Further work is needed to characterize the homogeneity of cell composition and to assess the feasibility and safety of this approach in hypothyroid and immunodeficient mouse models first.

Conclusion

Hypothyroidism is often managed effectively, with good clinical outcomes in most cases. However, non-responders who continue to experience persistent residual symptoms may be at risk of untreated metabolic consequences. It is not physiologically ideal for athyreotic patients to be treated solely with T4 supplementation, and the debate over the best approach for these patients is still ongoing. With advancements in technology, we will soon be able to treat patients using a personalized approach based on their genotypes and the functionality of their DIO enzymes. Although still in its infancy, thyroid organoid transplantation could eventually offer a cure for hypothyroidism.



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For a more detailed bio, please refer to the book review section on page 60

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Foundation, Echosens, Genfit, Gilead, GSK, Hepion, Hepta Bio, Hightide, HistoIndex, Intercept, Madrigal, Medpace, NGM Bio, Northsea, Novartis, Novo Nordisk, Perspectum, Poxel, Sagimet, Sonic Incytes, Terns and Viking; and is the owner of Pinnacle Clinical Research. R.T. is an employee and stockholder at Madrigal Pharmaceuticals. G.W.N. reports advisory/consulting fees from Boehringer Ingelheim; grant/research support from Madrigal Pharmaceuticals; and speaker's fees from Intercept Pharmaceuticals. K.J.L. reports grant/research support from Madrigal Pharmaceuticals. D.L. is an employee at Madrigal Pharmaceuticals. S.E.M. reports grant/research support from Madrigal Pharmaceuticals; owns stock in Madrigal Pharmaceuticals. N.A. reports grant/research support from 89Bio, AbbVie/Allergan, Akero, Better Therapeutics, Boehringer Ingelheim, Bristol-Myers Squibb, Corcept, DSM, Galectin, Genentech, Genfit, Gilead, Hepagene, Healio, Intercept, Inventiva, Ionis, Madrigal, Merck, NGM, Noom, NorthSea, Novo Nordisk, Perspectum, Pfizer, Poxel, Viking and Zydus; speaker's fees from AbbVie/Allergan, Alexion, Echosens, Eisai, Exelixis, Gilead, Intercept, Perspectum, Salix and Theratechnologies; Consultant for AbbVie/Allergan, Echosens, Fibronostics, Gilead, Intercept, Madrigal, Novo Nordisk, Perspectum, Pfizer and Zydus. M.R.B. reports grant/research support from Carmot Therapeutics, Corcept Therapeutics, Madrigal Pharmaceuticals, Metacrine, NGM Biopharmaceuticals, Pinnacle Clinical Research, ProSciento and Siemens Healthineers; and advisory/consulting fees from Medpace.

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Medical Report

South Korea's Healthcare Crisis: Beyond the Numbers

By Dongju Shin and Dong-Jin Shin

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Introduction

The South Korean healthcare system has recently plunged into a significant crisis following a February 2024 announcement by the government to increase medical school admissions by 67%, equating to 2,000 additional students. This decision, intended to address national physician shortages and regional disparities, faced fierce opposition from the medical community. The backlash resulted in over 95% of medical students taking a leave of absence and more than 90% of resident physicians resigning, signaling widespread dissatisfaction [1].

Building on our previous publication about South Korea's healthcare crisis [2], this article explores the longstanding systemic challenges in the nation's healthcare system. We examine how these issues have contributed to the current crisis and critically evaluate the government's rationale for increasing medical school enrollment as a proposed solution.

We suggest that expanding admissions is unlikely to effectively address these healthcare problems; therefore, we present alternative approaches that could offer a more sustainable and equitable path to reform.

Long-standing Healthcare Challenges

South Korea's healthcare system, known for its quality and efficiency, faces deep-rooted struggles. Persistent issues such as low reimbursement rates, specialty imbalances, regional disparities, and high legal risks for doctors have strained the system. These structural problems have created significant obstacles for healthcare providers and patients, affecting the system's ability to adapt to growing demands. The sections below outline these key challenges and their impact on the healthcare landscape in Korea.

Inadequate Reimbursement System

Since its launch in the 1970s, South Korea's national health insurance system has faced ongoing challenges with low reimbursement rates. Initially, medical costs were 55% below existing rates [3, 4]. Despite government promises to raise fees with the gradual increase in enrollment, significant changes did not occur after universal health insurance was fully implemented in 1989. As a result, healthcare providers sought alternative revenue by boosting patient numbers, prescribing more medications, and providing services not covered by insurance to offset the insufficient reimbursements [4].

University hospitals have responded to financial constraints by prioritizing high-revenue medical services, such as advanced imaging tests, over less profitable ones. This approach has resulted in a workforce heavily reliant on resident physicians: 46.2% of Seoul National University Hospital physicians and 40.2% of Yonsei Severance Hospital are residents [5]. This staffing model has led to significant challenges, including low pay and heavy workloads for residents, which can affect both the quality of training and the overall standard of patient care.

Specialty Imbalances

The distorted reimbursement system has created significant disparities across medical specialties. Fields like plastic surgery, psychiatry, and dermatology have become highly attractive

because they offer opportunities for higher revenue from noninsured services, coupled with a lower likelihood of dealing with critically ill patients. These specialties also provide better prospects for establishing private practices after completing training [6].

On the other hand, less popular specialties face significant challenges, including frequent surgical procedures, higher risks, lower compensation despite the workload, and uncertain career paths. For instance, the thoracic surgery residency program has encountered these difficulties, with recruitment rates fluctuating significantly—47.4% in 2010, 36.8% in 2011, 41.7% in 2012, and 46.7% in 2013. Despite government intervention through increased reimbursement rates for these fields, the improvement to 60.8% in 2014 was temporary, falling back to 39.6% in 2015 [3].



Geographic Disparities

When the universal health insurance system was first implemented in 1989, a healthcare zoning system was introduced as an effort to prevent the concentration of patients in big cities. Patients were required to seek treatment within designated zones, with the exception of delivery, emergency, or other inevitable occasions. However, the system was abolished in 1998 due to the inconvenience it caused to patients, who often faced restrictions in accessing preferred medical facilities outside their designated zones [7]. The launch of the KTX high-speed rail in 2004 further centralized

healthcare access, driving more patients to the capital and worsening the uneven distribution of services.

With these factors at play, patients remain heavily concentrated in metropolitan areas. Data from the National Health Insurance Service shows that from 2016 to 2022, approximately 30% of cancer patients outside Seoul traveled to the capital for care, while only 53.9% received treatment in their local cities [8]. The asymmetry between the demands for urban medical services and the demands for rural medical services is one of the reasons fueling the regional disparity in the provision of medical services.

Government efforts to address these disparities have largely fallen short. Public medical centers established by the government are not running efficiently due to a lack of sustainable funding. Few physicians are willing to work in public medical centers due to inadequate equipment, which forces them to provide care below their desired standards. Moreover, excessive workloads and frequent overnight shifts are common, as hospitals operate with minimal staff to reduce costs. This strain on doctors further discourages them from taking positions in these facilities.

As a result of the complex interplay between the aforementioned elements, healthcare services in South Korea remain heavily concentrated in metropolitan areas, leaving many regions significantly underserved. As of August 2024, around 14.8% of cities and counties (34 out of 229) lack an emergency medical facility [9].

Medical Litigation Concerns

South Korean physicians face extraordinarily high litigation risks compared to their international counterparts. From 2013 to 2018, Korean doctors were 15 times more likely to face criminal charges than their Japanese counterparts and 566 times more likely than UK physicians [10]. A notable case in 2017 involved the deaths of four newborns at a university hospital, leading to the arrest of three medical staff members. Though ultimately acquitted, the case demonstrated that even the possibility of unclear medical negligence could result in a criminal charge [11].

In obstetrics, severe compensation rulings have exacerbated the problem. A May 2023 ruling ordered an obstetrician to pay \$900,000 in damages in a cerebral palsy case, highlighting the excessive penalties imposed in cases involving medical uncertainty [12]. Consequently, most obstetrics residents now choose to specialize in gynecology instead, leaving some major university hospitals without obstetricians for the past two years [13].

Why Simply Adding More Doctors Is Not The Solution

The government's proposal to increase medical school enrollment by 2,000 students fails to address these fundamental issues. The justification for this increase relies on selective data from scenarios that predict a physician shortage while disregarding other scenarios that do not indicate a deficit. Even the authors of the cited studies have stated that their findings do not support the government's claims [14].

South Korea already exceeds OECD averages in the number of physicians committed to certain specialties, such as pediatrics; yet many specialists choose not to practice in their trained fields [15]. This indicates that the issue is not with the total number of physicians, but rather with their distribution and the systemic obstacles mentioned earlier, such as low reimbursement rates and a significant risk of medical lawsuits. These factors ultimately hinder board-certified specialists from practicing their specialties in a sustainable way. Furthermore, the current medical education infrastructure is not equipped to accommodate a significant increase in student intake, raising serious concerns about potentially compromising the quality of training and future physician competency [16].

Expanding medical school admissions is unlikely to resolve the healthcare system's core issues, as it overlooks the deeper problems of workforce distribution and systemic barriers. A more effective approach would involve a targeted plan to guide new doctors into underserved specialties and regions. Such a strategy should focus on reforms that improve workforce distribution, ensure equitable healthcare access, and establish a sustainable, high-quality training environment for future physicians.

A Path Forward

Resident physicians and the healthcare community have proposed key reforms to effectively tackle these challenges, as discussed below [5].

Evidence-Based Workforce Planning

Creating an objective scientific organization to forecast South Korea's medical workforce is crucial. This effort has significant and lasting impacts on the healthcare system and goes beyond mere political decisions. It is vital to integrate robust scientific data and insights from the medical community to formulate comprehensive, informed policies that tackle the fundamental issues affecting the workforce.

Legal Framework Reform

Protective measures for unavoidable medical accidents are urgently needed. The current system's high risk of litigation has deferred interest in specialties associated with higher patient mortality rates, leading to imbalances in the medical workforce. A robust legal framework is essential for allowing healthcare professionals to prioritize patient care without the constant threat of legal action. Such legal support can help create a healthcare environment that is not only more effective but also genuinely patient-centered.

Training Environment Improvements

Resident working conditions must be improved. The current financial constraints at university hospitals have led to a reliance on resident physicians over higher-cost, board-certified doctors, burdening residents with excessive workloads and limiting their training opportunities. University hospitals should prioritize hiring more board-certified doctors to enhance resident training conditions and overall patient care. This reform would help balance workloads, allowing residents to gain comprehensive training experiences. It would also encourage board-certified doctors to return to practicing their specialties rather than opting for more lucrative cosmetic procedures.

Conclusion

South Korea's ongoing healthcare crisis, marked by student strikes and resident protests, underscores the urgent need for systemic reforms. The government's plan to increase medical school admissions falls short of addressing core issues like low reimbursement rates, uneven specialty distribution, regional disparities, and high litigation risks, all of which undermine the healthcare system and impact training and patient care. Meaningful change requires a comprehensive, evidence-based approach that includes establishing an impartial medical workforce planning body, reducing litigation pressures through legal reforms, and improving residents' working conditions. Collaboration between the government and the medical community is vital to building a resilient, equitable, and patient-centered healthcare system for the future.

Acknowledgement

We would like to thank Dr. Chul S. Hyun for his guidance, editorial input, and invaluable feedback in preparing this article.

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Dongju Shin



Dong-jin Shin

Dongju Shin and Dong-jin Shin, fourth-year students at Seoul National University College of Medicine, co-authored the article "6 Months On: South Korean Medical Students Still on Leave," which appeared in The Lancet's correspondence section in September 2024. Their work highlights significant concern regarding the ongoing healthcare crisis in South Korea.



Game-changer in Healthcare

JUNGJIN SEO

CEO OF CELLTRION

Celltrion and Recent Achievements

Celltrion has experienced rapid growth over the past ten years. What is the company's most significant recent accomplishment, and what factors contributed to this success?

Celltrion is a global leader in biopharmaceuticals, specializing in advanced monoclonal antibody therapies. Its success stems from a fully integrated approach to drug development, clinical trials, manufacturing, and sales, supported by an innovative product portfolio, direct sales model, and strategic partnerships.

Currently, Celltrion offers 'Zymfentra,' FDA-approved in the U.S., and six biosimilars like Remsima, with plans to expand to ten biosimilars soon. The direct sales model and global distribution network have been crucial to its market growth, particularly in the U.S., Europe, and Central and South America. The launch of Zymfentra, the first subcutaneous infliximab, has secured key contracts with U.S. Pharmacy Benefit Managers, paving the way for future success.

With a focus on innovation, Celltrion is developing new drugs, including antibody-drug conjugates and multi-specific antibodies, targeting commercialization by 2029. By maintaining a balanced portfolio of 60% biosimilars and 40% original drugs, Celltrion aims to solidify its position as a global biopharmaceutical leader.

What motivated you to enter the pharmaceutical industry, and what key factors have driven Celltrion's rapid growth over the past decade?

My motivation to enter the pharmaceutical industry stemmed from a desire to improve global healthcare accessibility and enhance patients' quality of life. Over the past decade, Celltrion has grown into a leading biotechnology company representing South Korea, guided by this founding spirit and corporate philosophy.

Our rapid growth has been driven by our leadership in monoclonal antibody therapies and our fully integrated, end-to-end capabilities. From R&D and production to regulatory approval and global sales, we manage every stage of the process efficiently while maintaining cost-effectiveness. This approach has allowed us to establish a strong competitive edge in the global market.

Additionally, Celltrion has built extensive sales expertise and experience by directly marketing its products worldwide. We continue to expand our business by developing new drugs, such as antibody-drug conjugates (ADCs) and multi-specific antibodies, further solidifying our position as a major player in the monoclonal antibody sector.

Leadership and Vision

As a leader, what has been your most challenging decision at Celltrion, and how did it influence your leadership approach?

Developing the first antibody biosimilar was a significant challenge, but the real test came in 2019 when Celltrion introduced subcutaneous infliximab in Europe, shifting from indirect to direct sales. This marked a pivotal step for a Korean biotech company. The subsequent decision to implement a direct sales strategy in the U.S. market in 2022 was equally bold.

The U.S. pharmaceutical and biotech market is challenging due to its complex insurance landscape and conservative medical environment, demanding significant investment in local sales and marketing infrastructure. Despite these obstacles, Celltrion launched Zymfentra in the U.S. this year, which is dedicated to enhancing patient access to high-cost biologics and substantially impacting the U.S. healthcare system.



What is your long-term vision for Celltrion, and how do you plan to ensure the company's contributions to global health remain sustainable?

Celltrion's long-term vision is to provide high-quality biologic medicines at affordable prices, improving patient access and alleviating the burden of chronic diseases. We are committed to being a trusted partner by ensuring a stable supply of effective monoclonal antibody therapies and engaging with healthcare professionals and patients to address their unmet needs.

We are developing various platform technologies to support these efforts and expanding beyond existing therapies to include diverse pharmaceutical modalities. As a pioneer in monoclonal antibody treatments, we prioritize patient convenience and strive to lead in meeting healthcare challenges, contributing to global health and well-being.

Industry, Innovation, and Collaboration

How do you balance innovation with global healthcare needs, and what role do you see Celltrion playing in shaping the future of healthcare?

Celltrion is advancing its research and development of biological therapies to drive innovation and meet the needs of both patients and the medical community. Biosimilars offer the same benefits as original biologics while reducing costs and supporting a more sustainable healthcare system. These savings can be reinvested into developing new treatments that address unmet patient needs, creating a virtuous cycle.

Beyond biosimilars, Celltrion is committed to developing new drugs to advance global healthcare further. We aim to build an industry that benefits patients and healthcare providers by offering a more comprehensive range of biologic therapies. Through these efforts, we aim to fulfill our role as a leading biopharmaceutical company, contributing to pharmaceutical innovation and establishing a sustainable healthcare ecosystem that shapes the future of healthcare.

We often talk about the importance of collaboration between pharmaceutical companies and physicians. How do you think this collaboration can be most effectively accomplished?

Physicians gather clinical data on patient care and keep patients informed about the latest developments, present various treatment options, and clearly explain why each treatment is necessary. To support this, pharmaceutical companies should provide educational sessions and guidance to help physicians effectively utilize these treatments in practice.

Collaboration between pharmaceutical companies and healthcare institutions is crucial for fostering a transparent decision-making process. This partnership strengthens trust between physicians and patients, allowing healthcare professionals to better prioritize patient health and well-being.

Preparing Future Leaders

What advice would you give to young medical professionals interested in the intersection of medicine and business?

For young healthcare professionals pursuing careers at the crossroads of medicine and business, I advise embracing challenges and becoming catalysts for change in healthcare. Don't let societal expectations or stereotypes hold you back. Define your goals and take proactive steps to achieve them. When I started my business, I traveled to over 40 countries, learning from industry experts, which ultimately helped me become a leader in biopharmaceuticals.

Remember, if you have a vision, focus on your journey, and don't fear setbacks. True success lies not in avoiding failure but rising each time you face it.

As the cover feature of NexBioHealth's inaugural issue, what are your wishes and suggestions for this magazine aimed at students and young healthcare professionals?

I hope that NexBioHealth's inaugural issue serves as a source of inspiration for young professionals passionate about science, medicine, and healthcare. I look forward to seeing the magazine expand its readership beyond Asia and Korea, reaching a diverse audience across the U.S. through collaborations with key opinion leaders, companies, and universities.

As Celltrion continues to grow its presence in the U.S. market, we remain committed to becoming a global leader in monoclonal antibody therapies. I also hope NexBioHealth evolves into a trusted and respected publication for healthcare professionals worldwide, supporting the next generation of medical innovators and leaders.



Jungjin Seo

Founder and Chairman, Celltrion Group

Jungjin Seo is the founder and Honorary Chairman of Celltrion, a globally recognized South Korean biopharmaceutical company known for its groundbreaking work in biosimilars and biologics. His journey with Celltrion began in 2002, when he founded the company with a bold vision: to reduce healthcare costs by providing high-quality biosimilar drugs, making critical biologic treatments more affordable and accessible to patients worldwide.

Under his leadership, Celltrion made history by becoming the first company in the world to receive regulatory approval for a biosimilar monoclonal antibody. In 2013, the European Medicines Agency (EMA) approved Remsima®, a biosimilar to Remicade®, used in the treatment of autoimmune diseases such as rheumatoid arthritis and Crohn's disease. This landmark approval placed Celltrion on the global map and paved the way for the company's expansion into international markets, including the United States, Europe, and Asia.

Celltrion's portfolio quickly expanded to include a range of biosimilars targeting critical therapeutic areas such as oncology and autoimmune diseases. The company's innovative pipeline includes biosimilars for some of the most widely prescribed biologics, further strengthening its market position.

Seo's vision for Celltrion extended beyond just creating biosimilars. He emphasized innovation in biopharmaceuticals, driving Celltrion to develop its own novel biologics alongside its biosimilar products. This dual approach diversified the company's offerings and positioned it as a leader in both biosimilar and biologic drug development.

A Fully Integrated Biopharmaceutical Company

We provide a one-stop solution across the entire biopharmaceutical business, from R&D to manufacturing and commercialization, giving Celltrion end-to-end control of quality.



R&D



MANUFACTURING



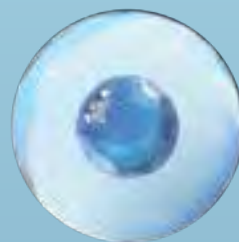
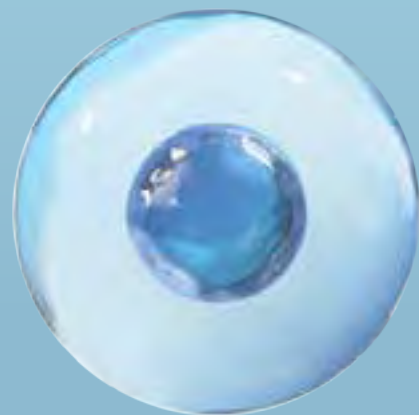
COMMERCIALIZATION

Leading-edge R&D capabilities with specialized teams offer a complete biopharmaceutical development package⁶

Current production capacity of 252,000L in our facilities enable manufacturing of everything from drug substances to drug products.⁶ Completion of capacity scale up to 450,200L is expected by 2030⁷

- All facilities comply with FDA cGMP and EMA GMP regulations⁶

Dedicated in-house personnel and programs help ensure patients in over 100 countries can access our products^{4,8,9}



Full Spectrum of R&D Capabilities

The cornerstone of our biotechnology leadership is its Global R&D Center, where advanced biosimilars and novel drug modalities are brought to life.

Pharmaceutical Research • Process Development • Analytical Method Development
Clinical Trials • Regulatory Approval

R&D by the numbers:



[27%]
R&D personnel to total employees⁷



[>\$300M]
R&D investment to date¹⁰



[20%]
R&D investment percentage to total revenue¹⁰



Regulatory approvals for multiple antibody products in **[>100 countries⁴]**

Biologic product development at a game-changing pace

[6]

FDA-approved products^{7*}

[6]

products currently in FDA review^{7*}

[11]

products in development^{7*}

Aiming for **[22]**

approved biosimilars by 2030



Diversity Equity and Inclusion

The Global OR - An Introduction to Global Surgery

By Dawn Poh and Kee Park

INTRODUCTION

An estimated 5 billion people worldwide lack access to timely, affordable, and safe surgical care, including anesthesia and obstetrics, as highlighted by the Lancet Commission on Global Surgery (LCOGS) in 2015. The commission reported that 143 million additional surgeries are needed annually to meet global demand. Up to 81 million people experience financial catastrophe due to the direct and ancillary costs associated with surgical care which is exacerbated by the lack of financial risk protection. The lack of access disproportionately affects low- and middle-income countries (LMICs) and is responsible for approximately 18 million preventable deaths annually, which is over four times the mortality due to HIV, tuberculosis, and malaria combined.[1] This article will explore the concept of global surgery, its key achievements, ongoing challenges, and future directions.

BACKGROUND

Surgery has historically been marginalized as the ‘neglected stepchild of global health’, as global health efforts traditionally have primarily focused on combating high-burden communicable diseases such as HIV, tuberculosis, and malaria.[1-2] However, there has been a growing recognition in recent years of the need to strengthen health systems as recent epidemiological transitions have highlighted the need for surgical interventions to address non-communicable diseases, maternal health, and trauma. In 2015, the World Health Assembly adopted resolution 68.15 titled ‘Strengthening Emergency and Essential Surgical



Care and Anesthesia as a Component of Universal Health Coverage.’[3] This resolution marked a significant step in integrating surgical care into the global health agenda and emphasized the importance of strengthening surgical services in achieving Universal Health Coverage (UHC). It called for Member States to develop and implement National Surgical, Obstetric, and Anesthesia Plans (NSOAPs) as a strategy aimed at scaling up surgical systems to improve the health of some of the world’s most impoverished populations.

Key achievements in global surgery

Global surgery and the United Nations Sustainable Development Goals (SDG) 2030

The evolution of global surgery has been marked by numerous innovations aimed at making surgical care accessible, safe, and affordable for all. The Bellagio Essential Surgery Group was formed with support from the Rockefeller Foundation, which held conferences between 2007 and 2009.[4] The group brought together diverse experts to strategize on improving surgical care in LMIC. The Disease Control Priorities third edition identified 44 priority surgical procedures that could prevent 1.5 million deaths annually if universally accessible.[8] Since the Lancet Commission on Global Surgery in 2015, surgical care has been recognized as an essential component to achieve universal health coverage and within the United Nations Sustainable Development Goals (SDG) 2030. This recognition supports various SDGs, including the elimination of poverty (SDG 1), promoting good health and well-being (SDG 3), promoting economic growth (SDG 8), and reducing

inequalities (SDGs 5 and 10).[5]

Surgical champions in the national implementation of surgical, obstetric, and anesthesia plans

Countries like Ecuador in Latin America, and Ethiopia and Zambia in Sub-Saharan Africa have been at the forefront of developing and implementing NSOAPs. Launched in November 2023, Ecuador’s ‘National Surgical System Strengthening Plan’ is the first of its kind in Latin America, aiming to enhance surgical care within Ecuador and throughout the Americas, reflecting the country’s commitment to advancing its surgical care agenda.[6] In 2015, the Ethiopian Federal Ministry of Health developed the Saving Lives through Safe Surgery initiative to improve national surgical care, with the development and implementation of 15 surgical key performance indicators to standardize surgical data collection practices. They set exemplary models for other nations to integrate policies by incorporating these plans into national health policies to address systemic health gaps in surgical care.

Global initiatives in the expansion of surgical care services

These efforts are complemented by various global surgery initiatives, including the Blood D.E.S.E.R.T Coalition, which has successfully implemented innovative blood transfusion strategies to combat critical shortages in global ‘blood deserts’.[7] The World Health Organization (WHO) Global Initiative for Emergency and Essential Surgical Care works to enhance surgical access and improve service quality worldwide, while the Global Initiative for Children Surgery focuses on improving surgical care for children in low-resource settings. Additionally, the COVIDSurg initiative, led by the NIHR Global Health Research Unit on Global Surgery, has also made significant contributions by shaping global surgical guidelines during the pandemic. Educational platforms like SURGHub, the United Nations Global Surgery Learning Hub, in partnership with the United Nations Institute for Training and Research (UNITAR) facilitate knowledge distribution and collaboration, further advancing the field. Global Surgery fellowship programs, such as the Harvard Program in Global Surgery and Social Change and the Operation Smile Global Surgery Fellowship, have provided rigorous training and mentorship opportunities for young professionals. Grassroots advocacy and student-led initiatives from organizations such as International Student Surgical Network (InciSioN) and Gender Equity in Global Surgery (GEIGS) have mobilized young professionals and students to champion surgical equity through research, policy, and advocacy work.

The funding landscape in surgical systems

Funding plays a crucial role in the establishment of effective surgical systems; for instance, Harvard Medical School received a generous \$50 million donation from the Cummings Foundation to honor the legacy of Paul E. Farmer, which will enhance global partnerships, such as the Harvard Medical School-University of Global Health Equity in Rwanda.[9] This funding includes exchange programs and clinical training opportunities with an initial focus on building surgical capacity and surgical health

innovation in low-resource settings. Furthermore, the NIHR Global Health Research Unit on Global Surgery awarded £7 million in 2022 to support research centered on building surgical infrastructure in LMIC.[10]

Challenges in the provision of surgical care

One of the most significant challenges in global surgery is the lack of adequate funding and effective mechanisms to mobilize investments leading to impoverishment and further economic instability. Cost-effectiveness of surgical care is comparable to well-funded public health interventions, a clear reason for expanding surgical care access.[11] Despite the high burden of surgical conditions, investments in surgical systems remain low. Traditional funding streams are underinvested, and innovative financing strategies are needed to address the unmet needs for surgical care.

Enhanced collaboration among organizations and integration of surgical care into broader health system strengthening efforts are essential for evaluation to inform policy. The global surgery community tends to operate in silos, resulting in duplication of efforts and inefficient use of resources. Enhanced collaboration among organizations and integration of surgical care into broader health system strengthening efforts are essential for sustainable progress. Political contexts and policy windows are critical for influencing decision-makers, hence, need to be opportunistic in financing support for both research and service delivery.

Access to quality surgical care in many LMICs are limited by a significant workforce shortage of trained surgical providers and inadequate infrastructure and equipment. Many health-care facilities lack essential resources, such as electronic health records for databases and registries, which hinders the ability to monitor progress in driving evidence-based health policies.[12]

Future directions

The Lancet Commission on Global Surgery in 2015 has identified core indicators together with the World Bank's World Development to provide economic data and analysis that supports the assessment of financial aspects of surgical care. These indicators include quantitative measures of surgical preparedness, delivery, and financial impact, and are intended for national data collection and global reporting. They are crucial for monitoring progress, shaping evidence-based policies, and evaluating surgical interventions worldwide. However, the adoption of these indicators has been slow, partly due to the need for a consistent standard denominator in reporting to enable evaluation of improvements in surgical care delivery on a large scale.

In addition, innovative financing mechanisms are crucial for building resilient and sustainable surgical systems. Traditional funding sources often fall short in addressing the comprehensive needs of global surgery. Therefore, new financial models, including public-private partnerships, global health funds, and innovative insurance schemes, are being explored. These mechanisms aim to secure long-term investments in surgical infrastructure, workforce training, and essential medical supplies.

To achieve the global health agenda, there is a pressing need to upscale surgical systems through health systems strengthening. This involves integrating surgical care into broader health policies and frameworks, ensuring that surgical services are in lieu of achieving UHC in the global health agenda 2030. Strengthening surgical systems also requires robust training programs for surgeons, anesthesiologists, and other healthcare professionals. Ministries of health, national and state-level policymakers, academic institutions and international partnerships play an important role in collaboration to provide the necessary education and training to build local capacity and ensure the consistent delivery of high-quality surgical care.



Conclusion

Surgical and anesthesia care are critical to achieving UHC by 2030, with the potential to significantly improve health outcomes and reduce global inequalities. Despite progress since the 2015 Lancet Commission on Global Surgery report, challenges remain in providing universal access to safe, affordable surgical, anesthesia, obstetrics, and gynecology care in LMIC. Collaborative partnerships and efforts in research, policy, and innovation are essential for advancing global surgery and achieving health equity and well-being for all.

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After completing his medical school and neurosurgical residency in the US, Dr. Park spent 10 years teaching neurosurgery in Nepal, Ethiopia, North Korea, and Cambodia. He returned to the US for a global surgery fellowship with Professor John Meara and earned a Master's in Public Health degree from the Harvard Chan School of Public Health. His areas of interest include the unmet need for neurosurgical care, global surgery financing, policy and advocacy, and geopolitical effects of health in North Korea.

Diversity Equity and Inclusion

Overcoming Disparities in Gastric Cancer Care

Chul S. Hyun, MD, PhD, MPH

Gastric Cancer Prevention Screening Program, Yale School of Medicine, New Haven, CT

Gastric cancer is the fifth most common cancer worldwide, with around 1.1 million new cases in 2020 and is one of the leading causes of cancer-related deaths (1). A significant portion of gastric cancer cases arises in Asia, followed by regions such as Latin America, Europe, and other areas. Despite the high incidence, the five-year survival rate remains low, only about 20%, which signals an urgent global health concern (2,3,4). Projections suggest a sharp increase in both incidence and mortality by 2040, making screening and prevention critical components of cancer control efforts (5).

Gastric Cancer In the US

The incidence of gastric cancer in the US varies significantly between different ethnicities and races. For instance, the incidence is substantially higher in specific minority populations than in Non-Hispanic Whites (NHW)

The highest number of cases of gastric cancer in the US occurs among Asian and Hispanic Americans (6,7). Looking at the subjects aged 50 and older, the incidence of NCGC (Non-Cardia GC—the predominant form of GC) was at least 1.8-fold to 7.3-fold higher in non-white groups than in NHW. Compared to NHW, the incidence of NCGC was as much as 14.5-fold higher in Korean American men and women (8).

Based on the Surveillance, Epidemiology, and End Results (SEER) data from 2012 to 2018, the five-year survival rate for gastric cancer in the U.S. is a low 33% (9). Mortality rates vary across ethnic groups, with specific Asian and Black populations experiencing the highest death rates, while NHW have the lowest (6). Significant disparities remain, emphasizing the uneven burden of gastric cancer among racial and ethnic groups in the U.S. (10,11).

Despite concerning statistics, there is no established system in the U.S. to screen high-risk populations for gastric cancer. The mechanisms that make these minority populations so vulnerable must be understood to overcome the barriers responsible for these disparities. (6,11).

Cancer Funding Disparity

A significant factor in the disparity is the lack of federal funding for gastric cancer research. While gastric cancer claims many lives, it receives significantly less funding compared to other cancers. A study revealed that gastric cancer only receives \$13.2 million annually, compared to breast cancer's \$542.2 million. This funding gap is reflected in the Funding-to-Lethality (FTL) score, which quantifies funding in relation to a cancer's mortality rate. Gastric cancer's FTL score is just 1.78, compared to

breast cancer's 179.65, highlighting a 100-fold difference. This funding disparity leaves cancers that predominantly affect minority populations, such as gastric cancer, uterine, and liver cancers, underfunded and under-researched (12,13).

Overcoming the Barriers: Lessons from Hepatitis B

Gastric cancer disparities mirror other health issues among minority populations, like chronic hepatitis B (CHB), a significant cause of liver cancer and cirrhosis. The prevalence of CHB varies across ethnic groups: 5–10% of Asian Americans are affected, compared to only 0.2% of NHW (14,15). CHB has been both underdiagnosed and undertreated (16). Barriers to care include a lack of awareness, language and cultural differences, and financial constraints (17,18). U.S. public health systems are often unprepared to serve diverse populations (19,20). Despite extensive documentation of CHB in immigrant populations, the U.S. Preventive Services Task Force (USPSTF) did not issue a grade B

recommendation for screening high-risk individuals until 2014 (21).

Stomach Cancer Task Force (SCTF)

Addressing health disparities in minority populations requires a multifaceted approach. Socioeconomic, cultural, and linguistic barriers complicate access to care, making it essential to understand these obstacles before offering solutions. Beyond education and raising awareness among the public and healthcare professionals, other strategies are needed to tackle these disparities.

The Stomach Cancer Task Force (SCTF) exemplifies this grassroots approach, concentrating on high-risk populations. By working at the intersection of community outreach, healthcare education, and policy advocacy, SCTF is uniquely positioned to address these disparities. A recent milestone, the introduction of the „Stomach Cancer Prevention and Early Detection Act” in collaboration with Congresswoman Caraveo, exemplifies the power of advocacy in influ-



Dr. Chul S. Hyun with Congresswoman Yadira Caraveo, MD.

encing healthcare policies.

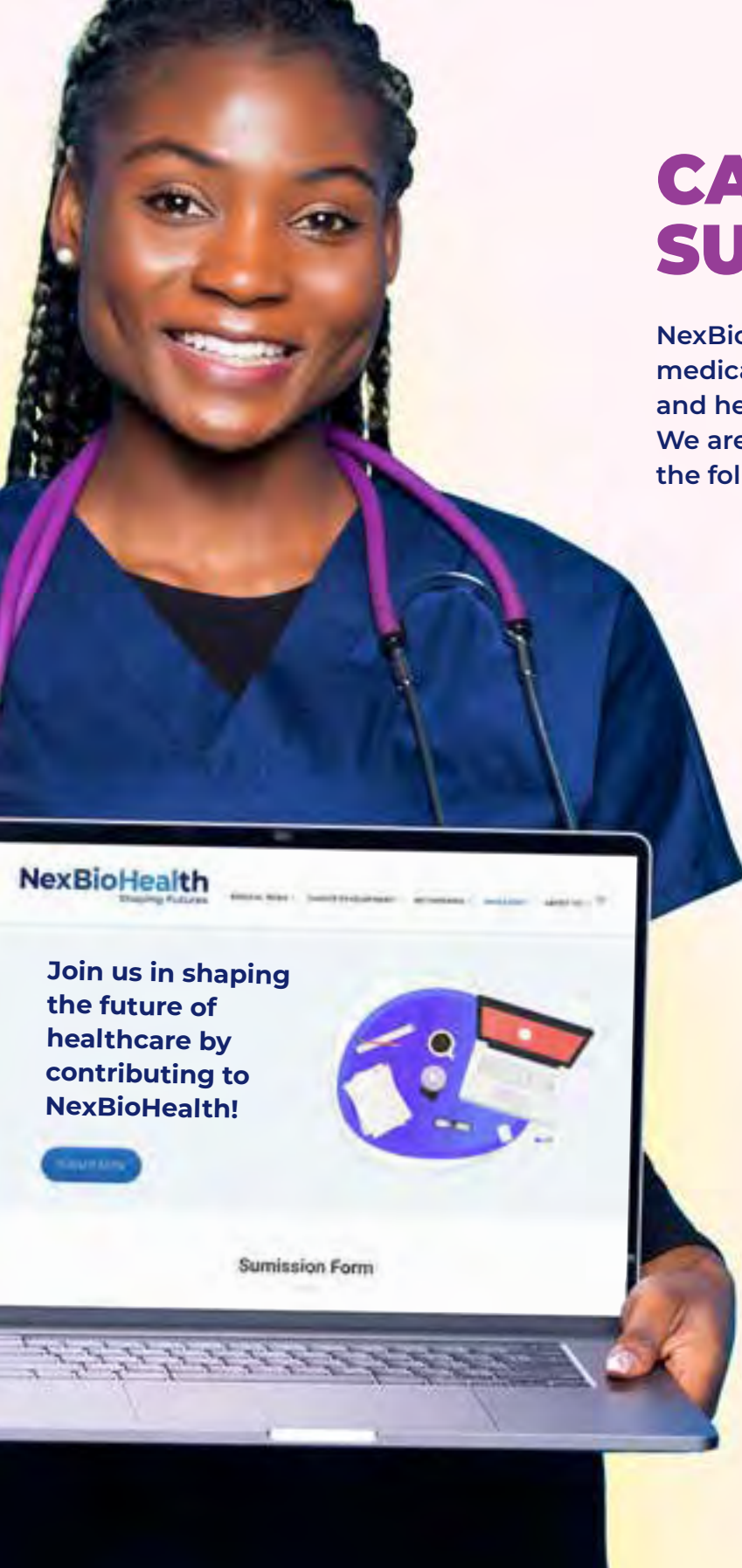
To further its mission, SCTF collaborates with communities, academic institutions, and organizations like Yale's Gastric Cancer Prevention and Screening Program, Hope for Stomach Cancer, and Debbie's Dream Foundation. These partnerships amplify SCTF's impact through research, policy advocacy, and community outreach. By pushing for policy changes, expanding outreach, and engaging with healthcare professionals, SCTF is building a future where gastric cancer prevention and early detection are accessible to at-risk populations, particularly the most vulnerable.



Dr. Mu Hong, a gastroenterologist from Fairfax, VA, speaking at the SCTF's first Congressional Forum on May 7, 2024.

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SCTF
Stomach Cancer Task Force

Addressing Stomach Cancer Disparities

Uniting communities, physicians, and policymakers to create innovative approaches for gastric cancer awareness, prevention, screening, and early detection. SCTF seeks to empower the medical community and governments to ensure equitable access to essential services for high-risk populations.

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BioHealth Industry Watch

The Strategic Importance of Location in the U.S. for Foreign Bio and Pharma Companies

By DoHyun Cho, PhD

The U.S. Market: A Cornerstone of Global Expansion

For pharmaceutical and biotech companies, global expansion is not just an opportunity—it's a necessity for long-term survival and growth. As they scale their operations and develop new products, companies must look beyond their domestic markets to establish a truly global footprint. For many, the U.S. is not only the largest and most lucrative market but also a critical launchpad for international success. The country provides the infrastructure, resources, and ecosystem that companies need to grow and evolve from regional players to global industry leaders.

The U.S. market offers unique strategic advantages: a large patient population, cutting-edge research institutions, and a regulatory framework that sets the gold standard worldwide. Establishing a foothold in the U.S. gives foreign pharmaceutical and biotech firms access to these critical resources, often marking a significant turning point in their development. Several prominent examples illustrate just how vital the U.S. market is in facilitating this growth:

- **Takeda**, Japan's largest pharmaceutical company, began its transformation into a global powerhouse in 1985 when it secured FDA approval for Lupron, a groundbreaking treatment for prostate cancer. This marked Takeda's first major breakthrough in the tightly regulated U.S. market. The success of Lupron not only allowed the company to build a solid foundation in North America but also enhanced its global reputation, leading to further innovations and partnerships. Over time, this initial success helped propel Takeda to become one of the top pharmaceutical companies in the world.
- **Sanofi**, the French pharmaceutical giant, solidified its global presence through the U.S. market by acquiring Genzyme, a Massachusetts-based biotechnology firm specializing in rare diseases, in 2011. The acquisition gave Sanofi access to the U.S. biotech ecosystem, as well as a significant foothold in the U.S. orphan drug market. This acquisition marked a pivotal step in Sanofi's evolution from a traditional pharmaceutical company into a global leader in biotechnology. Genzyme's expertise in rare diseases and Sanofi's global reach created a powerful synergy that would shape Sanofi's future.
- **Roche**, the Swiss multinational, expanded its global influence by heavily investing in U.S. operations. In 2009, Roche completed its acquisition of Genentech, a pioneering biotech company based in California. Genentech's cutting-edge research in oncology and molecular biology allowed Roche to enhance its portfolio of biologics, particularly in cancer treatment. The acquisition gave Roche a commanding position in the U.S. market and was instrumental in the company's transformation into one of the world's leading biotechnology companies. This move helped Roche shift from being seen primarily as a pharmaceutical firm to one at the forefront of biotech innovation.

While each company's strategy differed, the U.S. market was central to their global ambitions. As the world's largest and most lucrative healthcare market, the U.S. accounts for nearly 50% of global pharmaceutical sales. In 2022 alone, the U.S. pharmaceutical market generated over \$560 billion in revenue, underscoring its importance as a target for global expansion. But beyond sheer size, the U.S. regulatory environment plays a unique role. The U.S. Food and Drug Administration (FDA) is widely regarded as the gold standard for drug and medical device regulatory procedure. Securing FDA approval not only provides access to the vast U.S. market but also opens doors to international markets that recognize and often adopt FDA standards.

Additionally, the U.S. is a global leader in research and development (R&D), with biotech and pharmaceutical companies collectively spending more than \$120 billion annually on R&D initiatives. This intense focus on innovation creates a dynamic ecosystem for clinical trials, product development, and commercialization, making the U.S. an indispensable part of any company's global strategy.



Choosing the Right U.S. Hub for Market Entry

For any company, entering a foreign market involves significant investment and risk. Establishing operations in the U.S. can be particularly challenging due to its regulatory complexity and competitive landscape. However, one of the most critical—and often overlooked—factors in this process is the choice of location. The U.S. is a large and diverse country, and not all regions offer the same opportunities or support for foreign bio and pharma companies.

When deciding on a location for U.S. operations, companies must consider a variety of factors, including access to talent, proximity to research institutions, and the availability of investment capital. Companies also need to think long-term, selecting locations that will continue to offer growth opportunities as the industry evolves.

A key aspect of modern business strategy is the concept of the “industrial ecosystem.” Unlike in the past, when companies would simply expand by relocating to larger facilities in suburban areas, today's enterprises are increasingly opting to base themselves within well-established ecosystems that foster industrial growth. These ecosystems, found in major cities and regional hubs, offer the infrastructure needed to support sustainable business development and helping companies stay at the forefront of industry trends.

One of the most well-known and successful industrial ecosystems in the life sciences sector is Boston, which has become the world's largest biocluster. Boston has attracted more than 1,000 pharmaceutical and biotech companies, along with hospitals and research institutions, creating an economic impact exceeding \$2 trillion. The Cambridge Innovation Center (CIC) serves as the hub of this ecosystem, and the region's robust academic and research institutions,



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such as Harvard and MIT, provide a steady stream of talent and innovation. The presence of major players in the industry, combined with a favorable research environment, has made Boston a magnet for companies looking to establish a U.S. presence. Even the Korean government has recognized Boston's strategic importance, with the Korea Health Industry Development Institute (KHIDI) establishing an office in the city to support Korean biopharma companies entering the U.S. market.

Another key region for foreign companies is the New York-New Jersey corridor. For Korean biotech and pharma companies, this area is even more favorable. Many of Korea's leading conglomerates, such as Samsung, LG, and SK, have set up their U.S. headquarters in this area. The Korean Chamber of Commerce and Industry in the U.S. (KOCHAM), based in Manhattan, connects over 100 Korean companies, fostering cooperation and advocating for their interests with the U.S. government. Many Korean pharmaceutical and biotech companies have also chosen to establish operations in this region, attracted by the large Korean communities, the availability of scientific talent, and partnerships with local research institutions. SK Life Sciences and Celltrion, both of which have their U.S. headquarters in New Jersey, are already making significant progress in the U.S. market, with many other Korean companies following their lead.

Securing the Right Partners for Success

While choosing the right location is crucial, it is only one part of the equation. Successfully entering and expanding in the U.S. market requires companies to form deep, trust-based relationships with experienced U.S. partners. These partners can provide invaluable guidance on navigating the complex U.S. regulatory environment, building strong networks, and tapping into local industrial ecosystems.

In today's rapidly changing global healthcare landscape, organizations that can anticipate and adapt to these shifts are better positioned for long-term success. Companies need partners who can help them navigate these complexities, providing the strategic insights and connections necessary to thrive in a highly competitive market.

Securing the right partnerships, selecting the ideal location, and forming meaningful connections in the U.S. are not just operational considerations—they are essential components of any company's strategy for global growth. With the right approach, companies can unlock sustainable growth, establish themselves as leaders in the global biotech and pharmaceutical sectors, and make a lasting impact on human health.



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DoHyun is currently the CEO of a consulting company W Medical Strategy Group based in NY and NJ. W Medical Strategy Group provides judicious analysis, in-depth research and customized real-time advice for optimal business decisions to health industry entities including pharmaceuticals, medical devices, cosmetics and hospitals. Prior to his current position, he was the head of Korea Health Industry Development Institute's USA operation in New York. Throughout his career, he had actively involved in a lot of activities including serving as the Advisory Member for the Asia-Pacific Economic Cooperation (APEC) Harmonization Center, Korean government delegate for APEC LSIF, Healthcare division representative for Korea-US Business Council, Steering Committee member for Korean American Chamber of Commerce, and etc.



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Mun K. Hong's Reflection

Fuel Your Passion: The Secret to Longevity in Medicine and the Cure for Burnout



I vividly recall the young dentist with a brain tumor, whom I admitted as a sub-intern during my medicine rotation in my fourth year of medical school. His unfortunate clinical course profoundly influenced my initial decision to pursue neuro-oncology as my specialty. He was a gentle giant with the physique of a football player but the most soothing voice. Diagnosed with a malignant, inoperable brain tumor, he was hospitalized due to an impending brain herniation. His wife was by his side throughout his hospitalization, and one evening, when I was going off-duty, he asked her to stay with him through the night as he feared he wouldn't survive until morning.

It broke my heart to hear him express that fear, and to witness his wife trying to reassure him while leaving the room. The next morning, I found out that he had passed away overnight. In a way, I was relieved not to have seen his wife that day. This tragic death of a young person solidified my decision to pursue a research career in neuro-oncology, hoping to find better treatments for brain tumors. I joined a neuro-oncology group, consisting of neurosurgeons, oncologists, and basic scientists, and perfected a mouse model for the slow local release of medications from an Omayya reservoir.

The following year, on the first day of my internal medicine internship, I admitted my first patient, who was suffering from severe chest pain due to unstable angina. He was taken to the cardiac catheterization lab immediately after admission and returned completely asymptomatic in about an hour. I was so impressed by the swift and successful intervention that I inquired about the field and immediately decided to pursue interventional cardiology. I spent all my elective time during residency to perform animal studies in cardiology, and searched and found my mentor in interventional cardiology, who was one of the founders of interventional cardiology in America and who had the individual interventional volume of a sizeable

academic program. He taught me not just the skills but the passion for helping those with coronary artery disease. Some may say that I strayed from my initial vow to contribute to the better treatment of brain cancer, but my desire to help patients in need did not change and my passion for interventional cardiology grew steadily with more treatment options and evidence-based approaches.

Although the interventional cardiology fellowship was grueling, with many sleepless nights, I was also able to continue my animal research, with contributions to the concept of drug-coated stents, the current standard of care and to perform data-base driven clinical research, with findings resulting in distal embolization protection during saphenous vein graft intervention. I have also enjoyed multiple leadership roles, where my main goal was to improve patient care and to provide as many treatment options as possible. Now I am back to my original role as a busy clinical interventional cardiologist, and still enjoy my work, probably more than when I began my career 31 years ago, with my experience, skills, and judgment as well as the genuine approach to above all reassure my patients even if there are limited interventional treatment options. I still have emergencies at all hours of the day, but I find immense satisfaction in helping patients with acute coronary syndromes at any time of the day. At a time when physician burnout and early retirement are not uncommon, I am grateful that my passion for interventional cardiology, sparked on the first day of my internship, has sustained me throughout my career. I still look forward to helping my patients in the cath lab every morning and even when I go in overnight to help those with STEMI, I have just as much anticipation in being able to relieve their symptoms and hopefully improve their survival as when I finished my fellowship decades ago. I just became a senior citizen this year, but I am not thinking about retirement soon as I still feel I can help patients with my decades of experience and skills, and I don't feel the burnout as I get so much emotional reward from my work.

There are countless specialties and subspecialties in medicine, and as my journey illustrates, choosing a specialty driven by passion is paramount. By doing so, we can enjoy long, fulfilling careers and stave off burnout.

Mun K. Hong, MD, MHCM, FACC



Mun K. Hong, MD, MHCM, FACC was born in Seoul, Korea and immigrated to America with his family at age 15. He completed his medical studies at the Johns Hopkins University School of Medicine in a combined BA-MD program in 1986. He did residency in internal medicine at the Johns Hopkins Hospital till 1989. He finished general cardiology fellowship at the Georgetown University Hospital and interventional cardiology fellowship at the Washington Hospital Center in 1993. Following his formal training, he joined his mentors and devoted equal time to interventional cardiology practice, and preclinical and clinical research, with over 100 peer-reviewed publications. Then, he moved to Weill Cornell Medical College as a full-time faculty member, and director of cardiovascular intervention and research. He is most proud of having sponsored over 10 interventional cardiologists from Korea during their sabbatical years, who all published peer-reviewed manuscripts and who since then have become cardiology directors and hospital directors. He moved to St. Luke's-Roosevelt Hospital as the director of the cardiac catheterization laboratory in 2005 and then, became the inaugural chairman of the cardiology department at the Medstar Southern Maryland Hospital in 2015. In 2018, he became the inaugural chief of the department of cardiovascular services at Bassett Hospital Center, where he still practices interventional cardiology. During the peak of the pandemic, he completed master's program in healthcare management (MHCM) at the Harvard Chan School of Public Health, with the distinction of being the oldest classmate. In his spare time Dr. Hong enjoys spending time with his lovely wife of 37 years, and his three children in New York City.

Journey In Medicine

Beyond the White Coat

Dr. Joe McMenamin, our Editor-in-Chief for NexBioHealth, has had a remarkable career that bridges the fields of medicine and law. Starting as an ER doctor, Dr. McMenamin later transitioned to a successful career in law. His unique experiences offer valuable insights, particularly for those in medicine who have an interest in law. In this interview, we delve into his career transitions, the intersection of medicine and law, and the advice he has for young professionals.

1. Career Beginnings

What initially drew you to a career in medicine, and how was your experience working as an ER doctor?

Physicians have always been my heroes. Human life is my highest value, and in no other profession is that value so well and directly served. Medicine is a noble calling, an opportunity to make a real difference in people's lives, and a chance to combine scientific rigor with humanitarian ideals. I am proud to have been permitted to become a physician.

When I was in training, emergency medicine was a brand-new specialty. Very few doctors had been formally trained in it. That made it possible for me to provide emergency care even though I was an internal medicine resident. I continued in emergency medicine as a law student, enabling me to maintain some level of clinical proficiency while bearing the costs of a protracted education. The work was invaluable as a way to develop a clearer understanding of the private practice setting and of the ways patients utilize and understand available services. It was a source of continuing astonishment, for example, to observe patients who had absolutely no need of emergent care gravitate toward the ED anyway, while some others, in dire straits, refused to come in despite grave risk to their health and even survival.

Working in the ED also taught a life lesson I continue to benefit from today: Know what you know. When what's needed exceeds that, get help.

2. Transition to Law

What inspired your shift from medicine to law? Did you always consider becoming a lawyer, or did this interest develop later in your career?

I am an avid, lifelong reader. In 7th grade, or thereabouts, I read a science fiction novel about a Martian who came to earth, where his host was a physician-attorney. I do not generally gravitate towards sci-fi, then or now, and I forget most of the book. What I remember, however, is how astonished and intrigued I was by the concept of a doctor who was also a lawyer. I thought about that possibility on-and-off for years, all through college, med school, and residency. It took a long time to make the decision. In fact, as I entered my third and final year of residency, I began applying, simultaneously, to nephrology fellowship and to law schools.



In my youthful idealism, I thought: Someone ought to fight this sort of thing. That's when I finally decided on law, and not renal medicine. For much of my career, particularly at the beginning, I defended doctors, nurses, hospitals, and other health care practitioners and institutions in malpractice claims.

Can you describe the key moments or factors that led you to pursue law, and what challenges did you encounter during this transition?

I had three main reasons to become a lawyer. First, I decided that, given my set of strengths and weaknesses, I had a better chance of making a real difference as a lawyer than I did as a doctor. Second, I have always found the areas of overlap between these professions to be intellectually fascinating. Third, the practice of medicine in the United States, as opposed to medicine itself, was changing in ways that made the field less attractive to me, and I feared that the trend would continue. Unfortunately, that prediction seems to have been borne out by subsequent events.

What finally "sealed the deal," however, was observing what happened to a friend one academic year ahead of me, a resident who'd completed his medicine training and who had gone on to do a cardiology fellowship. I admired this young man, and consciously tried to model myself after him as a nearly ideal resident. Like me, he was a part-time moonlighting emergency physician. One night, in one of his ERs, he was called to see a chest pain patient. After a thorough, cardiac fellow-quality work-up, my friend decided that his patient had benign disease, and discharged him home. A few hours later, after a massive MI, the patient was brought in DOA. My friend was sued, and for a very long time was simply not the same as he had been. He suffered; I suspect his patients may have suffered also. In my youthful idealism, I thought: Someone ought to fight this sort of thing. That's when I finally decided on law, and not renal medicine. For much of my career, particularly at the beginning, I defended doc-

tors, nurses, hospitals, and other health care practitioners and institutions in malpractice claims. I seldom go to court anymore, but I am grateful for the experience. Trial work is far more exacting than Hollywood portrays it, with much less flash and much more behind-the-scenes preparation, but very few professional activities bring more satisfaction than winning a jury trial on behalf of a doctor.

As to the transition, I suppose the most difficult problem was learning an entire new way to study. In all my education before law school, it was helpful to be able to memorize. While this was especially true in anatomy, it also came in handy in, for example, learning the qual scheme in college or how to do an anemia work-up in med school. Having honed this skill for decades, I applied it, consistently and confidently, in law school. For the first time in my educational career, though, it didn't work. It took me the entire first year of law school to figure that out, to reluctantly replace it, and to learn issue-spotting. Once I realized that knowing the name of the judge who had handed down a particular case was unimportant, and that the reasoning behind the court's holding was key, things went much more smoothly.

In taking on a new field, I had the great good fortune to be married to a tolerant spouse. My wife of 45 years and I have agreed to disagree on when we first discussed law school. We married near the end of internship. I distinctly recall discussing the law school option before that. My wife denies that this ever happened, and avers that I sprang the law school idea on her only after she had said "I do." Whatever the truth of it, she has supported my various academic and professional peregrinations throughout our marriage, and I am grateful, for that and for innumerable other gifts.

3. Intersection of Medicine and Law

How has your medical background influenced your legal work? Are there specific instances where your medical expertise was particularly beneficial in your legal career?

What are some important legal issues in healthcare today that young professionals should be aware of?

In malpractice defense work, understanding the medicine is invaluable, especially in the cross-examination of adverse medical witnesses, such as experts. For similar reasons, and to a similar extent, I found this to be true in defending health professionals before disciplinary boards. I do not wish to overstate this advantage. If a case involves urology, for example, I obviously will not know the medicine as well as a urologist, and I don't pretend to. As one who speaks the language, however, and who understands clinical reasoning, I can become sufficiently well-versed in whatever specific, narrow aspect of urology is implicated in the case at hand to be able to spot weaknesses in my opponent's case and in the testimony of his expert. That often paves the way to aggressive, effective, and deeply satisfying cross-examination. Malpractice cases often live or die on the testimony of experts: individuals who by virtue of their knowledge, skill, training and experience can help lay juries understand the concept of the standard of care, and whether, on a given occasion, the defendant--the person or entity being sued--complied with it or not. Hence, the examination and cross-examination of these witnesses is crucial to the outcome of the case.

Clinical experience has also been helpful in my later work in digital health, where a grasp of what's entailed in taking a history and performing an exam, for example, inform my analyses of distance care arrangements. Having wrestled with tough diagnoses has improved my ability to discern the advantages and disadvantages of applying artificial intelligence in healthcare. Even in contract work, understanding the clinician's workflow helps in shaping an agreement so as to make it more practical and usable than would be the case had my education been purely "legal."

Finally, and perhaps most importantly, in whatever legal capacity I am serving, it is far easier for me to relate to and empathize with my healthcare clients than I ever could have done had I not stood in shoes similar to theirs and tackled problems like those they wrestle with. I would like to think most clients understand that and appreciate it.



4. Advice for Young Professionals

What advice would you give to those in medicine considering a career change, or those interested in the intersection of medicine and law?

Looking back, is there anything you would have done differently in your career? What key lessons have you learned?

Career change: Think long and hard about it. As you know better than anyone else, you have invested substantial time, effort, and other resources—blood, sweat, and tears-- in acquiring an education that few others have. Recognize that, at least if you are anything like me, you will miss some aspects of patient care. For me, a good example is DKA: By making the right decisions, I could help an acutely ill patient recover rapidly, a source of real gratification. I don't get to do that anymore. On the other hand, it is entirely possible to walk away from practice and yet still utilize one's clinical training every day, and enjoy it. I have done that for almost 40 years, albeit in a fashion different from what my professors anticipated. And while no occupation is perfect, I have managed to avoid many of the tribulations of physicians practicing in 21st C. America.

For legal medicine specifically, think about what most engages your mind. It could be that puzzling through a complex case to arrive at a diagnosis is so satisfying that putting up with a prior authorization requirement, for example, is worth it. If you are more intrigued by whether and to what extent we ought to permit, or encourage, development of organoids mimicking the function of the CNS, medical law might be a good fit for you. And while the educational pathway is long, it's not appreciably longer than the clinical path I was considering back when I was on the fence, near the end of residen-

cy: 3 years of law school v. 2 years of a nephrology fellowship. (Admittedly, in law school the flow of funds is in the wrong direction.) Moreover, I soon discovered that law school was rather like college, at least with respect to scheduling. One might have two or three lectures in the course of a day, but seldom more, and one could use the rest of the time as one saw fit. This was of course wildly different from the schedule of a med student, and certainly that of a house officer. Usually, I could get all my reading done during the course of a regular day, leaving me free for moonlighting activities in the evenings.

Mistakes: In broad outline, the path I took has worked out well. Generally speaking, the schools I attended were good choices; I had the benefit of instruction from some wonderful teachers. In retrospect, I might have paid less attention to the assurances of my med school faculty about the relative unimportance of grades; as a student, it took me longer to realize than it should have that residency programs, especially at major centers, do use grades (or the equivalent) in evaluating candidates. As it turned out, I did well in the Match, but that was more because of a clerkship I'd done at Grady Hospital in my last year of med school than because of my stellar performance as a medical undergraduate.

At law school, I was very surprised that my professors sometimes had little or no practice experience in the profession. In medicine, it would be inconceivable that a professor of, say, ob/gyn had not delivered babies or performed surgery.

In law school, there was no requirement that a professor of civil procedure, for example, had ever faced a jury. That does not mean the law school faculty members were incapable of teaching; nearly all were very bright, most had served judicial clerkships, and substantially all had written weighty, scholarly pieces on subjects they taught and related topics. Another change I might have made, nevertheless, would be to seek out a program where more practical, hands-on experience was available. I understand that, in recent years, more law schools are more heavily emphasizing hands-on experience. If so, that's a positive development. Law schools could benefit by creating the equivalent of med schools' clinical rotations.

5. The Future of Medicine and Law

How do you see the relationship between medicine and law evolving? What future challenges or changes do you anticipate in the next 10 to 20 years?

I imagine that the role of law in medical decision-making will increase, not decrease, over time. In most respects that is un-

fortunate, but I do not see a way to avoid it. Especially with increased government involvement, I expect we will see more rationing, more expense, more inefficiency, and less innovation than we have historically enjoyed here in the US. I hope I am wrong; if not, burnout may become a bigger problem in the future than it is now. I also anticipate the rise of new, challenging medicolegal problems, such as the many triggered by the growth of artificial intelligence in healthcare. As another example, and reflecting something I just saw recently, Congress is presently considering a proposal to fund a study of compensating kidney donors to address the chronic imbalance between supply and demand. Since as mentioned I enjoy wrestling with such issues, that development, if it comes to pass, will for me be a positive, in the sense that it will provide grist for my mill.

Are there emerging legal issues in healthcare that young professionals should be prepared for?

I have alluded to some already. AI implicates privacy, security, reimbursement, professional and product liability, informed consent, unemployment, bias, data ownership, corporate practice, and regulatory and intellectual property issues, among many others. The remarkable advances we

It is entirely possible to walk away from practice and yet still utilize one's clinical training every day, and enjoy it.

are seeing in laboratory growth and development of organoids is at once exciting and frightening. Recent spectacular advances in genetics could pave the way to extraordinary new treatments for disorders that we have been helpless to manage heretofore,

yet simultaneously raise the specter of eugenics and selection of human embryos on morally suspect grounds. Organ transplantation is another example of a technology that has improved enormously in a relatively short time, but access to and sourcing of organs could give rise to formidable ethical and legal problems. The potential for remarkable strides using 3D printing is exciting, but one wonders about "youth extension" and "technological immortality." I am optimistic that we will eventually solve these problems, but it will take protracted and arduous effort. Clinically trained lawyers might be able to contribute.

6. Personal Background

Can you share how your upbringing influenced your career choices? Were there specific experiences during your childhood or education that shaped your interest in both medicine and law?

I am the son of one doctor and the nephew of another. My father was a true GP: he completed a rotating internship, and then hung out his shingle. He saw newborn babies and frail

seniors and everybody in between. Some of his patients were well off, but many were not. It was not unusual for him to be paid with a bushel of York (Pa.) County peaches, or venison from a deer that a patient had shot while hunting. But the patients got the care they needed, while keeping their dignity by paying the doc, and we ate well. More powerful, for me, was Dad's decision, when I was a freshman in college, to give up the practice he had built over the previous twenty years to do a fellowship in cardiology. He managed to persuade whoever decides such things that a couple of decades as a GP in a small town was equivalent to a medicine residency, and off he went to learn the subspecialty. It occurred to me that a profession that could induce a man to make such a switch at such a stage in life was one I should delve into more deeply.

I had no such close ties to the legal profession. What I did have was some capacity for using words effectively, a passion for debate, a love of reading and learning, and, as noted, a desire to excel. I am not sure it qualifies as part of my "upbringing," my childhood reading played a role. I vividly recall my intense admiration for John Adams, after reading, in second grade, a biography recounting how in the face of massive public condemnation he had defended the British soldiers after the Boston Massacre. In another example, seeing Robert Bolt's A Man for All Seasons a few years later triggered the start of my reverence for the rule of law and my profound respect for courageous lawyers who, even at peril of their very lives, have stood up for their beliefs.

In college, I was a science major, but not because of my scientific gifts. On the contrary: the decision was wholly pragmatic. When I arrived, I asked which department had the best batting average for med school applicants. The answer: chemistry. My reply: "OK, then, I am a chemistry major." But English, or history, or the liberal arts more generally would have been a better fit for my natural inclinations, and I saw law as a way to pursue them, however indirectly.

7. Reflections and Legacy

What has been the most rewarding aspect of your career, and how do you hope to be remembered in both fields?

I have much to be thankful for; this is not an easy question to answer. Certainly one source of satisfaction is the variety of services I have been able to provide—from delivering babies to trying cases to verdict; from minor surgery to crafting agreements that allow a start-up company to grow and flourish. Then too, I have had ample opportunity to work with language. I have always loved words, and the very idea of words; it's not an exaggeration to say I am in the word business. The

most rewarding aspect of my career, however, has probably been the opportunity to grow and learn throughout. It is beyond the capacity of any human, certainly this one, to master all the nooks and crannies of either profession, never mind both. But the effort is the reward.

If you could pass on one piece of advice to the next generation of doctors and lawyers, what would it be?

I would quote Robert E. Lee, without whom my college would not have survived the Civil War: "Duty is the sublimest word in the language; you can never do more than your duty; you shall never wish to do less."

8. Future Plans

What are your current plans or goals, both professionally and personally? Are there new challenges or areas you're looking to explore?

I hope to continue to practice law as long as my health and capabilities permit me to help clients effectively. It is a source of intriguing problems for intellectual exercise, an opportunity to use and hone my communication skills, and a way to pursue the goal of lifelong learning. They even pay me for it. But yes, there is another avenue I am pursuing. Along with my friend Joel Embry, a Florida real estate developer, I am trying to build a business we call Civic Telehealth. Civic's mission is to enable seniors to remain in their homes, where they nearly always prefer to live, as long as possible. We are trying to combine new urban and universal design principles with telehealth. New Urbanism is a theory of development emphasizing walkable, mixed-use communities; universal design is a way to build structures mindful of the chance that those using them might, over time, become less stable or more visually limited or otherwise less robust than they were at closing. It's fun for this old dog to learn some new tricks, by pursuing an activity unlike any I have previously tried.

9. Direction for NexBioHealth

As the Editor-in-Chief of NexBioHealth, what is your vision for the magazine? What direction do you hope to take it in, and what impact do you hope it will have on its readers?

I hope that NexBioHealth will provide lively, engaging articles for young physicians and med students, to help them identify and pursue the goals best for them. It is a great gift to be able to earn a living while engaging in activities that are intellectually invigorating and personally fulfilling, and I hope NexBioHealth can help doctors-in-the-making identify ways to do so.



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Journey In Medicine

Bridging Worlds: From Korea to U.S. Medicine

By Jihae Shin, MD

Motivation and Decision-Making

What inspired you to pursue a medical career in the U.S., and how did you decide to leave Korea?

I've been traveling to the United States frequently with my family since I was 12. My father's side immigrated to the U.S. in the 1970s, and we've been in the process of obtaining a visa through a family invitation. This gave me an explorer's mindset from an early age.

By the time I graduated from medical school, I found myself uncertain about the future within the Korean medical system. Neither opening my own practice in Korea nor pursuing a career as an academic professor in a tertiary hospital felt personally fulfilling, and both paths seemed to offer limited opportunities.

Were there specific challenges or motivations that fueled your decision to practice medicine in the U.S. instead of staying in Korea?

It was the USMLE that really caught my attention. I liked the exam format because it required a deep understanding of the underlying principles of disease and treatment plans. The exam was challenging, but it sparked a genuine desire in me to learn the material it covered. I felt that I performed relatively well compared to the exams I had during medical school in Korea, which mainly required rote memorization. That style of exam never suited me, and as a result, I didn't have a strong GPA in medical school.

Preparation and Transition

How did you prepare yourself academically and emotionally for the transition from medical school in Korea to the U.S. medical system?

It took me about 3-4 years to obtain ECFMG certification and secure a residency position. Academically, there weren't many resources available beyond question banks and the book *First Aid*. I was fortunate to meet friends going through the same process at Kaplan in Manhattan. Despite the challenges, the experience was tough but also fun and, in a way, romantic—filled with the uncertainty of the future. I stayed around New York and connected with many Korean professionals in the medical community.

What steps did you take to ensure success in navigating the internship and residency process in the U.S.?

Honestly, I've never really felt like anything was guaranteed. But I've heard stories from others about trying multiple times and eventually securing a residency. I always had a backup plan in place for what to do each year if I didn't match into a program.

Overcoming Challenges

What were the most significant challenges you faced during your transition to the U.S., both professionally and personally?

Personally, everything was different—finances, language, culture—everything. Professionally, the biggest challenge was language. Even though my English wasn't bad, it wasn't enough to keep up in the fast-paced medical environment where everyone speaks quickly and efficiently.

Can you share specific instances of hardships you encountered and how you managed to overcome them?

I want to share two key experiences. First, I failed the USMLE Clinical Skills (CS) exam while applying for residency, which traditionally lowers your chances of matching. However, I strengthened my resume by passing Step 3 and securing

a better letter of recommendation, which led to three interviews and ultimately matching with one of the programs.

The second challenge came during my residency in Missouri, where cultural differences and language barriers made it tough. Despite improving over time, I decided to swap programs and was lucky to find a spot in New York at Lincoln Medical Center. I'm grateful for that experience, as they later recruited me as a hospitalist after graduation, which was a great honor, along with board certification. I also had the privilege of meeting my mentor, Dr. Kasubhai.

Were there moments of doubt, and how did you cope with those feelings?

First, I was fortunate to have supportive people around me. Hearing their stories of overcoming challenges reassured me that everyone faces obstacles, and they can be overcome. These friends also made the process more enjoyable and helped keep me going.

Second, I always had a backup plan in case things didn't go as expected. For instance, after applying for residency in 2016, I secured a better letter of recommendation for my 2017 application.

Third, I have a special spot for "walking through my thoughts"—a couple of walkable places in Manhattan where I'd go when overwhelmed. Walking and observing the scenery helped clear my mind and organize my thoughts. I still do this today.

The Residency Experience and Adaptation

How did you navigate the residency application process in the U.S., and what advice would you give to those in Korea who are just starting this journey?

You'll need to figure out this process on your own—there won't be a set curriculum to follow. If you can enjoy and endure this journey, things will improve over time. I strongly recommend finding good companions to go through it with. In my



Dr. Jihye Shin pushing boundaries

case, I still keep in touch with the friends I met 11 years ago when I first started this journey.

What were the biggest cultural and systemic differences you encountered during your residency, and how did you adapt to them?

Honestly, I'm not very familiar with the residency system in South Korea, as I didn't go through it. But if I imagine how it would have been, I likely would have followed the instructions of my seniors and overworked to complete tasks. In the U.S., however, I was expected to interpret data and develop treatment plans for my patients from the PGY1 level. There was also an annual test to ensure academic progression. As for how I adapted, I just showed up every day and did my best.



Support Systems and Resources

What role did mentorship, peer support, or other resources play in your success in the U.S.?

Meeting senior doctors practicing in the U.S. gave me a clearer picture of my future. They were encouraging—many shared stories of their own setbacks and how they overcame them, which was truly motivating. Some even treated me to meals when I had no income, which was a huge help. However, I learned that to earn their support, you need to consistently show your passion and commitment. As for friends, just like in life, having them along the way makes the journey more joyful.

Were there specific people or networks that were instrumental in your journey, and how did you connect with them?

Initially, I searched Facebook to find Korean doctors working in Manhattan and connected with Dr. Yong Jung Kim, who frequently posts about visiting students from Korea. I introduced myself, and he invited me to dinner with Korean medical students. He also connected me to the KNI group, led by Dr. Sung Bae Kim, a fellow graduate of my university. My involvement with the Korean community grew, including the Yonsei Alumni group. I made sure to leave a strong impression, even singing in front of an audience despite my fear of public speaking.

Balancing Professional and Personal Life

How did you manage the balance between your professional responsibilities and personal life, especially being far from home?

Initially, I struggled with maintaining a work-life balance. In Korea, it was uncommon to see people separating work from personal life—even my parents would talk about their business after coming home. It wasn't until after the COVID-19 pandemic, which prompted deep reflection, that I began to understand its importance. Now, I limit how much my job intrudes on my personal life, make an effort to travel often, and have developed a strong passion outside of work.

What strategies did you use to maintain your mental and emotional well-being during this challenging period?

Distraction and physical activity help me think outside the box. When I get too focused on one subject, I find it hard to generate fresh ideas. Physical activity provides a way to vent, refresh, and spark new thoughts. Having another passion is also beneficial, as each serves as a break from the other.

Reflections and Advice

What are the key pieces of advice you would give to young medical students and residents in Korea who are considering coming to the U.S. to study and work?

What truly matters is whether this aligns with your personal values. Everyone I've met in the U.S. from Korea has a unique story, and the process of coming here is often complex. It may not be worth it if it's just a casual attempt to explore your options.



It gets easier every day. Every day, it gets a little easier. But you have to do it every day. That's the hard part. But it does get easier.

— Dr. Ji hae Shin

If you could go back, is there anything you would have done differently?

No. Even though there are things that I could do better, I do not see how I could have learned how to do better. I think every choice I made throughout the way was the best I could do each time in given circumstances. I took the time to think about it, but I did not find it.

Success and Encouragement

Looking back, what are the most rewarding aspects of your journey from Korea to becoming a board-certified internist in the U.S.?

I could finally prove to myself that I could be a good physician. I always doubted myself because of my bad GPA in medical school and poor evaluation in part of my residency.

How has this experience shaped your views on perseverance and success in the medical field?

I would use a quote from social media, and I believe it. And actually, it is interesting and fun to witness this in almost everything.

"It gets easier every day. Every day, it gets a little easier. But you have to do it every day. That's the hard part. But it does get easier."

What words of encouragement would you offer to those facing similar challenges, and do you have a personal mantra that kept you going?

In addition to that quote above, I want to add that if perseverance is not working, you might just be in the wrong place. Moving and changing your environment can also be the answer to achieving your goal. I felt this deeply during two major moves: from Korea to the U.S., and later from Missouri to New York.



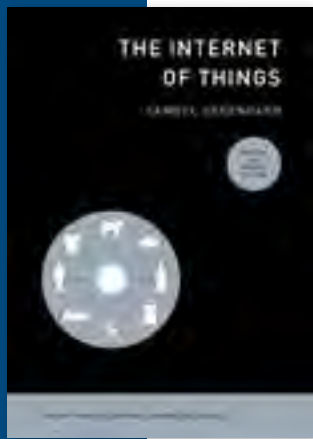
Ji hae Shin, MD

Dr. Ji Hae Shin is an Internal Medicine Specialist and Academic Hospitalist at Mount Sinai Morningside & West, where she has worked since 2022. She graduated with honors from Yonsei University School of Medicine in 2013 and completed her internal medicine residency at Lincoln Medical and Mental Health Center in the Bronx in 2020. With over nine years of experience in clinical practice and medical education, Dr. Shin is passionate about expanding her horizons, particularly in the area of trainee education.

Her journey is deeply influenced by her family's history. Dr. Shin's grandparents fled from Pyeongsan, North Korea, to South Korea during World War II, a legacy that has imbued her with a spirit of exploration and resilience. Raised as a 'Sky Castle kid' in South Korea, she rediscovered her adventurous nature upon moving to the U.S., where she completed two residency programs and lived through the height of the COVID-19 pandemic in New York City.

Outside of her medical career, Dr. Shin finds solace and strength in rock climbing. She believes in the profound connection between physical exercise, nature, and the human spirit. Climbing helps her achieve peace of mind, cut through anxiety, and make clearer decisions. Despite all the hardships and risks, she is continuously inspired by the beauty and challenge of a mesmerizing rock wall, which fuels her passion for both personal and professional growth.

Book Review



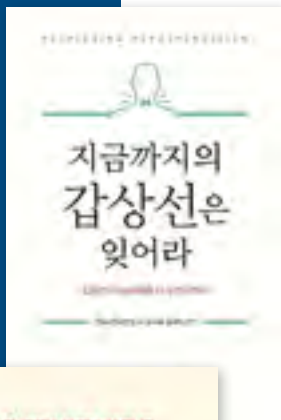
The Internet of Things (Revision 2021)

Author: Sam Greengard

We turn on the lights in our house from a desk in an office miles away. Our refrigerator alerts us to buy milk on the way home. A package of cookies on the supermarket shelf suggests that we buy it, based on past purchases. The cookies themselves are on the shelf because of a “smart” supply chain. When we get home, the thermostat has already adjusted the temperature so that it’s toasty or bracing, whichever we prefer. This is the Internet of Things—a networked world of connected devices, objects, and people.

In this book, Greengard highlights that the Internet of Things (IoT) is in its early stages, enabled by the convergence of smartphones, cloud computing, RFID technology, sensors, and miniaturization. He traces IoT’s roots from early personal computers and the Internet, exploring its role in creating a connected world. Greengard delves into the industrial Internet, smart manufacturing, and consumer devices like fitness trackers and mobile banking apps, while addressing the challenges and risks, including privacy, security, and the digital divide. He also envisions the long-term societal impact of IoT, illustrating a typical “Day in the Life” in 2025.

— Sam Greengard is a West Linn, Oregon-based writer and author of *The Internet of Things* (MIT Press, 2021), *Virtual Reality* (MIT Press, 2019), and *The AARP Crash Course in Finding the Work You Love* (Sterling, 2008). He contributes regularly to leading publications like *Communications of the ACM*, *Channel Pro*, and *Dark Reading*, and has written for outlets such as *Wired*, *Discover*, and *Entrepreneur*. Sam has worked on corporate content for companies like Adobe, Microsoft, and IBM, and his work has earned numerous awards, including a Maggie Award. He is a past president of the American Society of Journalists and Authors (ASJA) and has lectured at the University of Wisconsin’s Writer’s Program.



Rethinking Hypothyroidism

Why Treatment Must Change and What Patients Can Do

Author: Antonio C. Bianco, MD

Translated by: Semin Kim, MD & Sihoon Lee, MD

The limitations of current treatments and the lack of consensus regarding the use of T4-only therapy versus combination T4 and T3 therapy have left many clinicians and patients confused and frustrated. Dr. Antonio Bianco, a prominent thyroid specialist, is among those navigating this debate. In his new book, *Rethinking Hypothyroidism*, he summarizes the evidence supporting both perspectives and advocates for patients with residual symptoms. I was fortunate to collaborate with Dr. Sihoon Lee, a renowned endocrinologist from Gachon University in Korea known for his research on PTH mutations, in translating this book into Korean.

— Dr. Semin Kim

Superconvergence

Author: Jamie Metzl

In *Superconvergence*, leading futurist and OneShared World founder Jamie Metzl explores how artificial intelligence, genome sequencing, gene editing, and other revolutionary technologies are transforming our lives, world, and future. These accelerating and increasingly interconnected technologies have the potential to improve our health, feed billions of people, supercharge our economies, store essential information for millions of years, and save our planet, but they can also—if we are not careful—do immeasurable harm.

The challenge we face is that while our technological capabilities are advancing at an exponential pace, our ability to understand and responsibly manage these profound changes lags far behind. Fortunately, Jamie Metzl offers a unique perspective that bridges science, technology, history, politics, and international affairs, allowing him to envision a future that most specialists can’t. In this bold and inspiring exploration of transformative human knowledge, Metzl provides a definitive account of the technological precipice we stand on and a roadmap for navigating the path ahead.

— Jamie Metzl is a technology futurist, geopolitical expert, and healthcare innovator. He is the founder of OneShared.World and serves as a Senior Fellow at the Atlantic Council. Metzl has a diverse background in government, having worked on the U.S. National Security Council, the Senate Foreign Relations Committee, and as a UN Human Rights Officer in Cambodia. He is a prolific writer and speaker on topics such as genetics, biotechnology, and global affairs, and is the author of several books, including *Hacking Darwin: Genetic Engineering and the Future of Humanity*.

Metzl holds a Ph.D. from Oxford and a JD from Harvard Law School. He regularly contributes to international media and serves on the Editorial Board of *NexBioHealth* and various advisory boards (Jamie Metzl)(World Economic Forum).



Se-Min Kim MD

Se-Min Kim, MD, is an Assistant Professor at Icahn School of Medicine at Mount Sinai.

He graduated from the College of Medicine, Catholic Univ. of Korea in Seoul and received internal medicine training at Albert Einstein Medical Center. After residency, he participated in basic research on metabolic bone disease at Mount Sinai Medical Center. He then completed clinical endocrinology fellowship at Cedars Sinai Medical Center. Dr. Kim’s clinical focus includes thyroid and bone-related conditions. As Associate Clinical Director at the Center for Translational Medicine and Pharmacology, he is actively involved in research projects covering a range of endocrinology condition.



get to know us.

PREVENT. TREAT. LIVE.

OUR MISSION: Hope for Stomach Cancer is dedicated to providing education, resources, and support to patients, caregivers, and families affected by stomach cancer. Our mission is to empower the stomach cancer community through advocacy, research, and patient support programs. Our vision is to bridge the gaps between research and patient care.



OUR CORE PROGRAMS

PATIENT EMPOWERMENT SUMMIT

An annual event designed to bring together patients, caregivers, healthcare professionals, and advocates to share knowledge and inspire action. The summit features educational sessions on the latest treatments, survivorship strategies, and advocacy training. **The next summit will be held from Feb. 8-11, 2025, in Washington, D.C., with the theme "Amplify Your Voice, Shape the Future."**

GASTRIC CANCER ADVOCACY DAY ON CAPITOL HILL

This event empowers advocates to engage with policymakers to push for better care, early detection, and prevention of stomach cancer. The focus is on addressing health disparities, especially among underserved communities.

The next advocacy day is Feb. 11, 2025, with efforts tied directly into our support for the *Stomach Cancer Prevention and Early Detection Act (H.R. 9304)*. The bill aims to improve early screening guidelines and access to care, addresses disparities in gastric cancer detection with a focus on racial, ethnic, and socioeconomic inequities.

RESEARCH ADVOCACY

HOPE bridges the gap between research and patient care by supporting clinical trials, biomarker research, and treatment advancements. Our initiatives emphasize collaboration with research institutions, pharmaceutical companies, and advocacy groups to bring forward innovative solutions for stomach cancer patients. We nominate patient advocates to serve as advisors on SU2C Dream Teams, PRCRP DoD Grants, and other opportunities that require patient advocacy. Additionally, we are included in pre-clinical design thought advisory boards.

PATIENT SUPPORT AND RESOURCES

HOPE offers a variety of support programs, including patient navigation, peer-to-peer support groups, and educational materials. We help patients and families understand their treatment options, access clinical trials, and manage the emotional and financial burden of cancer care. We host monthly Zoom support groups featuring expert surgeons and oncologists, we created the resource platform stomachcancerbiomarkers.org and regularly host educational webinars.

there is always hope!



LOOKING AHEAD:

HOPE continues to expand its advocacy efforts and deepen its impact within the stomach cancer community. In 2025, we will focus on increasing access to care, addressing disparities, fighting for health equity, and empowering the voices of those affected by this disease.

STOCAN.ORG



Welcome

to NexBioHealth Student Hub: Your Resource for Growth and Connection

We're excited to introduce the NexBioHealth Student Hub, a vibrant platform curated by our Student Advisory Committee (SAC). This space is designed to be a go-to resource for students in the healthcare field, offering a wealth of insightful content, mentorship opportunities, and a place to connect with peers and professionals.

In this inaugural issue, we are proud to formally introduce the SAC and share our vision for the Student Hub. Our goal is to create a dynamic space where aspiring healthcare professionals can engage with meaningful resources, explore student forums, read interviews with current healthcare leaders, and access tips and tools to support their growth.

Bringing together students from across the nation and globally, our mission is to provide relevant, engaging content that inspires the next generation of young physicians and healthcare leaders. The SAC focuses on representing student voices and also organizing student-focused events and mentorship programs.

Joining our committee allows students to shape a global publication, gain valuable experience, and connect with peers and professionals. We look forward to expanding our committee and inviting contributions from individuals who would like to share their ideas on various healthcare topics, research innovations, and career development.

We are here to build a meaningful student network and provide wide-ranging support across different healthcare fields, and we would love your contribution! If interested in joining the team or writing an exclusive article, please reach out to me or our Executive Director, June Baik.

Sincerely,

Grace Ham
Student Advisory Committee Coordinator
NexBioHealth
info@NexBioHealth.org



Grace received her Master of Science in Media, Medicine, and Health (SM-MMH) at the Harvard Medical School, specializing in multidisciplinary storytelling focused on health interventions. She created a short film that showcased the barriers to national screening for *H. pylori* and the health disparity of stomach cancer among Asian Americans in the United States. She joined the NexBioHealth team in 2024 to continue her work in bridging the gap in health disparities for ethnic minorities and increasing access to healthcare globally.

Finding Joy in Patient Care: James Kunwoo Park on His Medical Journey and Aspirations



What are your current career goals, and how do you see yourself contributing to the healthcare field in the long term?

My career goals have always been to strive to be the warmest person my patients meet that day whether it is a check-up visit or one of the worst days of their lives. Clinical care has always been at the center of my vision as a physician. Of course, along the way I've found that I like teaching and research which have been little presents for me. Medicine is interesting because there are so many ways to contribute to healthcare that evolve as you evolve as a person and clinician.

Can you share a particularly challenging moment during medical school and how you overcame it? What would you do or tell yourself during times of stress like this?

There was one particular moment on the medicine rotation where I had come off of a black weekend and finished a really hard admitting day with difficult feedback. I came home and cried. So much of that day was outside of my control and frustrating to me. I think this actually became a really important stimulus for me as I began to try and divide things that are inside

my control and outside my control. If it was inside my control, it got 100% of my attention. If it was outside of my control, I tried my best (and am still working on) reducing the energy I spend. Journaling every day to reflect on my emotions and thoughts was also critical in this context.

When did you realize medicine was your passion? When are you reminded that medicine is your passion?

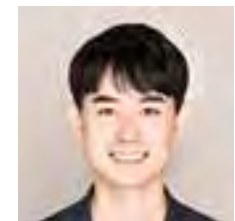
I think oddly enough the first time I realized this career was a good fit for me was when I was volunteering in the radiology department as a college student. It was such a simple task to check patients into the waiting room but brought me so much joy. I thought if I could enjoy something as simple as this, I would love patient care. The moments that I loved the most in medical school were the ones where I spent time face to face with patients: comforting a stroke patient who lost their speech, seeing a patient regain their vision after cataract surgery, or celebrating a pediatric cardiac transplant patient's discharge after a long stay at the hospital. Having the chance to share these moments with our patients is such a privilege.

What is one thing you would do differently if you could restart your career?

I think I would have tried to embrace the challenges and obstacles a little bit more. This journey has been one with anxiety provoking high-stakes moments and some very long nights for me. However, I believe that because of this I grew so much throughout the process to the point where I can

almost no longer recognize myself. For example, instead of seeing a frustrating circumstance, I have been trying more and more to see it as an opportunity to practice patience. The 18-year-old pre-med James would be very proud to see how far we have come since then.

INTERVIEWED BY:



Soonmyung Andrew Hwang
MD/MPH Candidate, Class of 2026
Icahn School of Medicine at Mount Sinai

Andrew Hwang is an MD/MPH candidate at the Icahn School of Medicine at Mount Sinai in New York City and a graduate of Johns Hopkins University. His academic and research interests lie at the intersection of neurology, public health and digital health innovation. Andrew has previously worked with organizations such as the World Neurology Foundation, Korean-American Medical Student Association, and RubiconMD, to contribute to projects and initiatives aiming to expand healthcare access and improve patient outcomes. He joined NexBioHealth as an inaugural member of the Student Advisory Committee to be a part of a creative effort in engaging the voices of students in the healthcare space.

Research Involvement: What if You Love Every Specialty?

Dear Mentor:

My name is Kaity Kim, and I am currently a first-year medical student at Hackensack Meridian School of Medicine. Now that I've settled into the semester, established a solid study routine, and completed my first summative exam, I've started thinking more seriously about how to get involved in research.

I personally am someone who loves a little bit of everything, so I can imagine how indecisive I will be when I have to choose a specialty. While I've heard that clinical rotations will eventually help clarify my direction, the uncertainty makes it difficult to know where to start with research. I initially entered medical school drawn to family medicine because of the patient interaction and the opportunity to care for individuals across different life stages. To my surprise though, I found this week's first anatomy lab incredibly exciting. After making the first incision in my lab group, I considered that perhaps surgery could be a fit for me! Currently, my interests include family medicine, physical medicine and rehabilitation, dermatology, pediatrics, plastic surgery, and endocrinology.

Given that the research expectations for these specialties range from minimal to highly competitive, I am uncertain about how to approach research at this early stage. Some specialties I'm considering don't require extensive research for residency, while others have much higher expectations, making me feel like I should start sooner rather than later.

I would be incredibly grateful for any advice you could offer on how to navigate this process. Specifically:

- Should I pursue research projects with broader applications that could be relevant to multiple specialties?
- Or would it be wiser to focus on a project related to the most competitive and research-intensive specialty I'm considering, even though I'm still undecided?
- I would also love to hear about your own experience - how you decided on your specialty and the role research played in your decision.

Thank you for your time and guidance!



Kaity Kim

Hackensack Meridian School of Medicine, MS1

Kaity is a first-year medical student at Hackensack Meridian School of Medicine in New Jersey, where she was raised. She earned her BS in Neuroscience and Human Computer Interaction (HCI) from Carnegie Mellon University. Her background in this interdisciplinary field has taught her to appreciate humans at the center of any design system. As a new member of KAMSA and NexBioHealth, she is excited to collaborate with people of various backgrounds and expertise to drive medical progress and advocate for our patients.

First off, congratulations on beginning your medical journey! Thank you for sharing your questions and concerns as you navigate the early stages of your medical education. It is great to hear how much enthusiasm you have for a variety of specialties as this curiosity will serve you well as you explore different areas of medicine. Rest assured, you are definitely not alone in feeling uncertain and this is an exciting time to be open to different possibilities.

At this point in your journey, it can be very beneficial to pursue research projects that have broader applications. This will allow you to explore different fields without committing prematurely to a specific subspecialty. Topics such as patient outcomes, healthcare delivery, medical education, etc. can intersect with multiple specialties and will ultimately provide you with valuable experience that is transferable across multiple domains. Acquiring skill sets such as data analysis, critical thinking, and collaboration through research is beneficial as these are qualities that all residency programs value. If one specialty does seem to pique your interest more than others, you might consider delving into research more heavily within that field. For example, if surgery fascinates you after your anatomy experience, you could seek out a surgical research opportunity to gain more insight into that world. However, it is important to note that there is no rush to limit yourself early on as it is completely normal for interests to shift during the preclinical years.

For more competitive specialties like dermatology, plastic surgery, or endocrinology, starting research early can be helpful, but it's not the only deciding factor. Quality matters more than quantity. You don't need to have multiple research projects lined up right now — one or two meaningful, well-executed projects are often enough to demonstrate your ability to contribute to scholarly work. The key is to ensure that whatever research you engage in, you are genuinely interested and invested in the topic. You also don't need to dedicate all of your research to just one specialty. There are many instances where students match into a specialty even if not all of their research aligns perfectly with it. The key is to show that you're engaged in scholarly work, that you can contribute to the academic side of medicine,

and that you're curious and capable of pursuing answers to challenging questions. Research, regardless of the specific topic, demonstrates critical thinking, dedication, and an ability to work through complex problems—skills that are valuable in any specialty.

In my own experience, I was fortunate enough to know early on that I wanted to pursue a surgical specialty. This was largely due to my previous clinical and research exposures before medical school in thoracic and craniofacial surgery. These early experiences gave me a clear sense of what I was passionate about and helped shape my path moving forward. Despite this, I tried to remain open minded throughout medical school and throughout my clinical rotations. Clinical rotations eventually guided my decisions, and research played a supplementary role rather than a defining one. If anything, my story is a reminder that early exposure, even if it's in a wide range of specialties, can provide you with the clarity you seek. Whether you choose surgery, family medicine, or something entirely different, each experience you have along the way will help inform your decision and refine your interests. Of note, what you will notice more commonly now is that many students dedicate an extra year during medical school to pursue a research fellowship. This is a valuable option, especially for those interested in more competitive specialties. Ultimately, this is what I decided to do as a medical student interested in plastic surgery. Taking that extra time allowed me to delve deeper into research, strengthen my application, gain a clearer understanding of my long-term career goals, and most importantly gain mentors who have been instrumental in shaping not only my professional trajectory but also my personal growth.

For now, focus on maintaining your curiosity, building a solid foundation in your studies, and seeking out research opportunities that genuinely interest you. Research is a tool for growth and discovery, not just a checkbox for residency. As you progress through medical school, the right path will become clearer, and your research efforts will enhance, rather than dictate, your choices.

—Joshua Choe

New York Medical College, MS4

Joshua is a native New Yorker and a fourth-year medical student at New York Medical College. He earned his Bachelor of Arts from Colby College and went on to obtain his Master's Degree at Drexel University College of Medicine. Driven by his passion for education, research, service, and mentorship, Joshua is excited to be applying for residency in Plastic and Reconstructive Surgery in the upcoming cycle.





JOIN THE MOVEMENT



Advocacy Day 2025

REGISTRATION NOW OPEN!

Pioneering the fight against stomach cancer worldwide!

OUR MILESTONES

- **2011:** Hosted the first Stomach Cancer Patient Education Symposium, now an annual event with global reach featuring expert lectures. Available online at our website.
- **2013:** Initiated the first stomach cancer Capitol Hill Briefing in Washington, DC, leading to the Annual Stomach Cancer Capitol Hill Advocacy Day. Efforts have significantly increased federal research funding.
- **2014:** Partnered with the American Association of Cancer Research, funding over \$2 million in stomach cancer research and fostering opportunities for young researchers
- **2024:** Formed an international partnership with KIBOUNOKAI in Japan to enhance stomach cancer education and support in the Japanese and Asian communities.
- **2024:** Established a groundbreaking \$551,880 fellowship at Memorial Sloan Kettering Cancer Center for early career researchers in esophageal and gastric cancers.



www.DebbiesDream.org

Raising Awareness.
Funding Research.
Supporting Patients.
Achieving the *DREAM!*

Organization

Korean Physicians of NY & NJ of International Medical Alumni

Interview with Dr. Andrew Nam, KNI President

Organizational Vision and Membership

KNI's Primary Goals and Evolution: KNI (Korean Physicians of NY & NJ of International Medical Alumni) was established to foster socialization, networking, and professional support among physicians who graduated from medical schools in Korea and are now practicing in New York and New Jersey. Over the years, KNI has evolved to include doctors who graduated from American medical schools but are comfortable with the Korean language, thereby broadening its membership and enhancing its diversity. My journey with KNI began during my third year of residency at Montefiore Einstein, where I was initially apprehensive about joining due to concerns about hierarchical relationships. However, I quickly realized that KNI was a community of equals, where ideas were exchanged openly and mentorship was readily available. This experience inspired me to become actively involved and, ultimately, to serve as KNI's President. My primary goal as President is to continue expanding KNI's reach, particularly by engaging younger members and supporting their professional development. I also aim to strengthen our ties with medical communities in Korea, allowing us to better support Korean physicians considering careers in the U.S.

Challenges and Opportunities

Key Challenges and Opportunities for Korean American Physicians: As a Korean American physician, I have experienced firsthand the challenges of navigating the U.S. healthcare system, overcoming language barriers, and balancing cultural expectations. These challenges are common among our members, but they also present unique opportunities. For example, our bicultural background enables us to serve as cultural bridges, fostering better communication and understanding between Korean and American healthcare practices. KNI supports its members by providing mentorship, professional development resources, and a strong sense of community. Personally, I have benefited greatly from the mentorship and support I received from KNI, and I am committed to ensuring that our organization continues to provide these opportunities to all our members.

Collaboration with NexBioHealth

Vision for Collaboration with NexBioHealth: KNI's collaboration with NexBioHealth is an exciting opportunity to expand our educational and networking offerings. As someone deeply involved in both the medical and educational as-

pects of our community, I see great potential in this partnership. NexBioHealth's global platform aligns well with KNI's mission of fostering professional growth and knowledge sharing. Together, we can create joint webinars, conferences, and mentorship programs that connect medical professionals across continents. My intention is to leverage this collaboration to provide our members with access to a broader range of resources and opportunities, ultimately helping them advance their careers and contribute to global healthcare.

Support for Korean Medical Students and Residents

Anticipation of the Flow of Korean Physicians to the U.S.: Given the ongoing conflicts between doctors and the government in Korea, I anticipate an increase in the number of Korean

physicians seeking opportunities in the U.S. This trend resonates with my own experiences and the reasons many of our members have chosen to practice in the U.S. KNI is well-positioned to support this influx by offering guidance on the U.S. medical licensing process, providing mentorship from experienced Korean American physicians, and facilitating networking opportunities. My goal is to ensure that KNI remains a supportive and welcoming community for these new arrivals, helping them navigate the complexities of the U.S. healthcare system and successfully integrate into their new professional environments.

Facilitating Careers for Medical Students and Residents from Korea: I understand the challenges that Korean medical students and residents face when considering advancing their careers here. KNI plays a crucial role in supporting these individuals by offering

resources, mentorship, and networking opportunities. My intention is to expand these efforts by organizing workshops and events specifically designed to address the needs of incoming physicians. By leveraging our strong connections with both Korean and American medical communities, KNI can provide the guidance and support necessary for these young professionals to succeed in the U.S.

Future Outlook and Personal Insights

Long-Term Goals and Advice for Young Korean American Medical Professionals: Looking ahead, KNI's long-term goals include expanding our membership, particularly among younger members like residents and medical students. My personal experience has taught me the value of mentorship, and I am committed to ensuring that KNI continues to offer robust mentorship programs that help young professionals navigate their careers. Additionally, I aim to strengthen our educational and networking offerings, both through collaborations like the one with NexBioHealth and by organizing more events tailored to the needs of our younger members. To young Korean American medical professionals starting their careers in the U.S., I offer this advice: Embrace the unique challenges and opportunities that come with your bicultural background. Seek out mentorship and stay connected with organizations like KNI, which can provide the support and guidance you need to succeed. Your journey may be challenging, but it is also filled with potential, and KNI is here to help you realize that potential.

Dr. Andrew Nam, MD, MBA, is a board-certified anesthesiologist and pain management specialist with extensive training and a commitment to advancing healthcare. He began his medical journey at the Sophie Davis School of Biomedical Education, earning a B.S. before receiving his medical degree from the State University of New York (SUNY) Downstate College of Medicine. He completed his anesthesiology residency at Albert Einstein College of Medicine/Montefiore Medical Center. Dr. Nam further honed his expertise through a Pain Medicine Fellowship at Cook County Health and Hospitals System.



In addition to his medical training, Dr. Nam recently completed his MBA at Boston University Questrom School of Business.

Currently, Dr. Nam is a practicing anesthesiologist at Hackensack University Medical Center and Englewood Health. He also serves as President and CEO of Korean Physicians in NY/NJ of International Medical Alumni, Inc. (KNI), a non-profit organization dedicated to fostering collaboration among Korean physicians in the U.S.

Throughout his career, Dr. Nam has actively contributed to the medical field through numerous research publications, leadership roles, and community involvement. His work with KNI reflects his commitment to supporting medical professionals and improving patient care.

Organization

Korean American Medical Student Association (KAMSA)

By Ji Hyun (Celine) Kim



2012 KAMA Convention



First officers of KAMSA, 2012. St. Regis Monarch Beach, California



Medical Students participating in the NYC Asian Heritage parade, May 2022



History and Mission

Founded in 2012 under the leadership of Dr. Chul S. Hyun, then-president of the Korean American Medical Association (KAMA), along with a group of dedicated student leaders, the Korean American Medical Student Association (KAMSA) is a national organization dedicated to supporting the academic, professional, and personal development of American medical students of Korean descent. KAMSA provides a strong foundation through mentorship, research opportunities, and community outreach.

The organization's mission is to foster fellowship and professional connections through active participation in forums, symposia, and meetings, while advancing medical and scientific research. KAMSA also promotes mentorship, offers scholarships and educational support, and engages in outreach to improve healthcare in underserved areas, all while striving to elevate healthcare standards and medical training nationwide.

Growing Influence, Collaborations, and Initiatives

KAMSA has rapidly become a significant force in the medical community, with 12 chapters nationwide, including a military chapter. Welcoming anyone who identifies as Korean or supports its mission, the organization offers numerous opportunities for networking, education, and meaningful community service.

Affiliated with KAMA and regional organizations such as the Korean American Medical Practitioners Association of New York (KAMPANY), Korean Physicians of International Medical Alumni (KNI), the Association of Korean American Medical Graduates (AKAM), and KAMA-Southern California (KAMASC), KAMSA collaborates on initiatives that provide free healthcare services. One of its hallmark efforts includes organizing free health fairs where students and uninsured patients receive complimentary screenings and consultations.

Global Outreach and Local Impact

Internationally, KAMSA has conducted overseas medical service trips to assist underserved communities. Domestically, the association partners with Be The Match, a bone marrow donor registry for minority children, raising awareness and hosting donor registration events that have significantly increased the number of minority donors, offering hope to children battling leukemia.

In response to the conflict in Ukraine, KAMSA partnered with the Ukraine Medical Student Association to support Ukrainian medical students by raising awareness, collecting donations, and providing essential supplies. Members also volunteered with Zarom, an NYC-based humanitarian organization, to package and deliver medical supplies and blankets to displaced individuals. Through these initiatives, KAMSA not only enriches the medical education of its members but also makes a tangible impact on communities both locally and globally, embodying a deep commitment to service and global citizenship within the medical field.

Ji Hyun (Celine) Kim is a second year medical student at New York Medical College. Celine currently serves as the Co-President of the Korean American Medical Students Association (KAMSA) New York/New Jersey Chapter and as the Conference Chair on the KAMSA national board. As a conference chair, Celine has been working with medical students from around the world through World Korean Medical Students Organization (WKMSO) and with physicians from Korean American Medical Association (KAMA) for the upcoming KAMA Convention that will be held in Seoul, South Korea in late October.

Organization

Korean American Medical Student Association (KAMSA) in Alabama: Empowering Korean Americans in Alabama Healthcare

By Kendrick Yu and Changbyeong Chae
UAB Heersink School of Medicine | MS2, Co-President of KAMSA Alabama

Throughout the 16 years of living in Alabama, I frequently drove my mother for three hours to Atlanta just to see a Korean physician who spoke her language and understood her concerns. The long journey wasn't just about comfort—it was about trust, something she found lacking in our local healthcare system. As a Korean American medical student, this reality is both disheartening and motivating. My mother's experience highlights larger issues faced by many Korean Americans in the South: language barriers, cultural misunderstandings, and merely the substantial lack of Korean healthcare providers despite the growing Korean population. The norm of many Korean Americans in Alabama to take a five to six hour round trip for a primary care visit should be upsetting yet inspiring, especially when it is our own mothers and fathers. How can we, as future Korean American physicians, bridge this gap and create a more inclusive, trustworthy, and accessible healthcare environment for our community? This is the challenge we must confront head-on.

Compared to states like New York (~140k), California (~560k), or even Georgia (~73k), Alabama's Korean population (~16.7k) is significantly smaller. Despite this, there are strong Korean communities in Auburn, Alabama and continuously expanding communities in Huntsville and Montgomery. The smaller Alabama Korean population reflects the limited number of Korean physicians which contributes to the aversive attitudes towards visiting clinics and general unwillingness to trust the healthcare system that continues to be harbored in these communities. Research suggests that the race/ethnic concordance leads to a higher rate of clinic returns and clinic visits for new conditions. Although ethnicity/race is not the deciding factor for a physician's medical skills or capabilities, a similar Korean background is a strong influence for Korean patients in their willingness to utilize the Alabama healthcare system. There is a growing need for Korean physicians for the expanding Korean population in Alabama, especially for patients with a language barrier.

The Korean American Medical Student Association (KAMSA) in Alabama aims to create an interconnected, supportive community of current and future Korean [American] physicians. We understand that Koreans are not the majority of the medical school population, especially in states like Alabama. However, our Korean background gives an essential insight into certain aspects of the healthcare system that may be overlooked by our non-Korean peers. Understanding and realizing challenges such as language barriers that lead to frustration, fear, and confusion are valuable in our journeys as physicians. We have seen and experienced challenges in healthcare as a Korean. But what are we willing to do to change it? Through this community, we hope to empower students and integrate their Korean identity into their practice instead of viewing it as separate from the professional environment or something to hide. Whether it be through sharing experiences, advice, and knowledge, we want to show medical students that there is a community that shares and understands their cultural background and we aim to foster their growth as a Korean physician. We also aim to encourage and support the aspiring Korean American healthcare professionals in Alabama, and we hope to serve the upcoming generations through mentorship, statewide events, and resources to fuel their curiosity and passion for the medical field.



Kendrick Yu



Changbyeong Chae

Upcoming

Conference Alert

RSNA Annual Meeting

December 1 - 5, 2024
 McCormick Place, Chicago, Illinois
<https://www.rsna.org/annual-meeting>

The Radiological Society of North America (RSNA) Annual Meeting is a premier event for the medical imaging community. It attracts over 50,000 professionals from around the world to share and discover the latest advancements in radiology. The event features extensive educational programming, technical exhibitions, and networking opportunities.

CES Conference

Jan. 7-10, 2025
 Las Vegas, NV
<https://www.ces.tech/>

CES 2025 will take place from January 7-10 in Las Vegas, showcasing the latest innovations across multiple sectors, including Artificial Intelligence, Digital Health, Vehicle Technology, and more. Known as the world's most powerful technology event, CES brings together global brands, innovators, and thought leaders to explore cutting-edge breakthroughs that will shape the future.

J.P. Morgan Healthcare Conference

January 13-15, 2025
 The Westin St. Francis Hotel
 San Francisco, California
<https://www.jpmorgan.com/about-us/events-conferences/health-care-conference>

The J.P. Morgan HealthCare Conference is an annual event that brings together industry leaders, emerging fast-growth companies, innovative technology creators, and members of the investment community. This conference provides a platform for healthcare organizations to present their developments, strategies, and plans for the future. It serves as a key networking opportunity for professionals in biotechnology, pharmaceuticals, medical devices, and healthcare services.

Stomach Cancer Task Force (SCTF) Conference

Second Annual Congressional Forum
 Feb 11, 2025, Washington, D.C.

The Stomach Cancer Task Force (SCTF) Second Annual Congressional Forum will take place on February 11, 2025, in Washington, D.C. This event is part of a broader effort to increase awareness and advocacy for stomach cancer, a disease that is underrepresented in research funding and public health discussions. The forum will gather patients, caregivers, advocates, and medical professionals to meet with lawmakers and push for increased funding and research efforts related to gastric cancer. This forum follows the momentum built by previous SCTF events.

ViVE 2025

Feb 16-19, 2025
<https://www.viveevent.com>

ViVE is the premier, curated event experience for digital health decision makers focusing on the business of healthcare.

American College of Surgery Cancer Conference

March 12-14, 2025
<https://www.facs.org/for-medical-professionals/conferences-and-meetings/2025-ac-s-cancer-conference/>

Save the date for the 2025 ACS Cancer Conference scheduled for March 12-14 at the Hyatt Regency Phoenix, 122 North Second Street, Phoenix AZ 85004.

American College of Cardiology (ACC) 2025

March 29 - 31, 2025
<https://accscientificsession.acc.org/>

The cardiology world will come together for an unforgettable educational experience at ACC.25 at the McCormick Place Convention Center in Chicago, IL



Our Innovation is about People

Striving for a healthy future for all

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