

## A Special Specialty

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Here we are in 2020. The New Year is zooming by. The Super Bowl, the Oscars, the Sapporo Snow Festival, NBA All Star Game, the Rio Carnival, Mardi Gras, and soon March Madness. Each of these events are "one of a kind," unique, special.

In several other President's Pages, I've discussed how different or unique Aerospace Medicine (AM) is amongst the medical disciplines.<sup>3,5</sup> In my estimation, Preventive Medicine is a "special" discipline. And among the primary specialties of Preventive Medicine, AM is a "special specialty." Dictionary.com defines 'special' as "of a distinct or particular kind or character or having a specific or particular function, purpose, etc." Webster's says "distinguished by some unusual quality" or "being other than the usual." A specialty is something that someone "specializes in" that is, "to concentrate their efforts in a special activity, field, or practice."

You may not believe that AM is anything special. After all, it isn't treated that way by our "more clinical" brethren. For my entire career, AM and flight surgeons have been thought of as "not real doctors." But I hope I've convinced you that the approach outlined in earlier President's Pages is not the normal, everyday medical methodology, that clinical medicine is necessary but not sufficient to be good in AM. And by inference then, AM is not your everyday, run of the mill specialty. It is a "special specialty" in so many ways. Let's start by looking at AM's place in the world of U.S. medicine.

The American Medical Association (AMA) was founded in 1847 by Nathan Smith Davis to promote the art and science of medicine and the betterment of public health. With the elucidation of the germ theory, medical knowledge began growing by leaps and bounds. Many credit this explosion in knowledge as a prime driver of medical specialization. Scholars also attribute specialization to increasing urbanization, concentrating patients and creating market differentiation.<sup>7</sup> In 1917, the first U.S. specialty board was founded, the American Board of Ophthalmology. You might recall that this was in the middle of the "Great War," World War I. That same year, U.S. Army physicians were laying the foundations of Aviation Medicine in the U.S. Dr. Theodore Lyster became the Chief Surgeon of the Aviation Section of the U.S. Army Signal Corps, and Dr. William Wilmer, an ophthalmologist, was appointed the Commander, Air Service Medical Research Laboratory at Mineola, NY. Aviation Medicine has its roots in the birth of ophthalmology, the first recognized, distinct medical specialty in the U.S. In 1919, Dr. Louis Bauer took command from Dr. Wilmer of the Medical Research Laboratory and School for Flight Surgeons. This organization later became the USAF School of Aviation Medicine, then the School of Aerospace Medicine.<sup>2</sup>

Back to the specialties. Otolaryngology formalized certification in 1924. 1930 saw Obstetrics and Gynecology form specialty

boards, as well as Dermatology in 1932. The Advisory Board for Medical Specialties (precursor to the American Board of Medical Specialties, or ABMS) began operations in 1934 as did the American Board of Pediatrics. The American Board of Preventive Medicine (ABPM) was officially approved in 1949. The Aero Medical Association petitioned the ABMS for specialty status in 1951 but was denied. Later that year, the Association and the Interim Board of Aviation Medicine chaired by the USAF School of Aviation Medicine Commander, Dr. Otis Benson, approached the ABPM and ABMS for specialty consideration. Due to only having two training programs the application was denied a second time. Work ensued to establish two more training programs, and in 1953, Aviation Medicine was accepted as a specialty of Preventive Medicine. Ten years later, at the behest of AsMA, the name was updated to Aerospace Medicine.<sup>6</sup>

So that is how the specialty came to be within the milieu of American Medicine. And I know what you are saying... People, even physicians still ask "what is a flight surgeon? Do you do surgery on airplanes?" Many do not comprehend or respect the breadth of knowledge that a good AM practitioner must have. "This doesn't seem very 'special,' Bugs!" Stick with me. Now, since I have an M.P.H., let's talk denominators.

There are various estimates of the current U.S. physician population that range from 800,000 to about 1 million. If you'll indulge me, I'll use 1 million just to make the public math easier. About ¼ of these physicians (25%) have some sort of Internal Medicine certificate. About 10% are Pediatricians. Family Medicine is about 90,000 strong (9%). There are just over 2000 colorectal surgeons (~0.2%). The ABPM has issued a total of just over 10,000 certificates. About 6,391 are certified in the primary specialties; the remainder are subspecialties. So primary preventive specialists make up about 0.64% of all physicians. Welcome to the 1%!! That designation should make you feel just a little unique. Now granted, some of these diplomates are dual or even triple boarded. So, the percentages may be a bit high.

The ABPM currently has 714 AM diplomates. This means that in the entire population of U.S. physicians (recall that is about a million), only 714 know our specialty. That puts the AM specialists in a group of 0.07% of all physicians. Pretty elite company, no?



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Rare knowledge, indeed. Some of these are now practicing in other specialties. Add a few U.S. military flight surgeons and that makes about 800 or 0.08% who are in this group. According to AsMA's membership database, there are 695 U.S. physician members of AsMA. Clearly some of these are military flight surgeons, not AM specialists, but part of our AsMA family. The American Society of Aerospace Medicine Specialists or ASAMS, a constituent organization of AsMA, has about 300ish members. That's down to 0.03% of physicians, rare indeed. This qualifies as "being other than the usual." Some might even say... "special."

If you don't feel special enough yet, let's do one more. The World Health Organization estimates that there are between 10 and 15 million medical doctors worldwide.<sup>1</sup> AsMA has 317 international physicians or about 31% of AsMA physicians, which increases the overall physician number by 1.5 times. But the denominator has gone up 10-fold. So high end estimates of AM knowledgeable physicians worldwide as measured by AsMA membership is just over 1000. Given the low end WHO estimate of 10 million, this is a 0.01% chance of a physician in the world understanding anything of what you AM practice every day. 1 in 10,000 physicians!

And I can't even hazard a guess at the denominator of health care workers that encompass the whole of Team Aerospace (Public Health officers, industrial hygiene experts, physiologists, medical technicians, nurses, corpsmen, biomedical engineers, pharmacists, nutritionists, bioenvironmental engineers, safety experts, medical examiners, forensics experts, aerospace and mechanical

engineers, life support technicians, researchers)<sup>4</sup> that our 2200ish membership would be divided by. 10-fold again? 100-fold? This means that that <0.002% of health care workers know anything about what you people do day in and day out. With professionalism! This tiny investment in our "special specialty" keeps the world's global air and space human ecosystem going. As a member of Team Aerospace, you should feel very special.

And I know you'll continue to... keep 'em flying.

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