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BARBARA: Good morning, everybody. I want to thank you all very much for joining us this morning for the first annual Babyatsky Lectureship. I want to thank-- this is in honor of our friend and colleague Dr. Mark Babyatsky.

I want to thank his family, in particular, his wife Liz and his two sons, Grant and Josh, for joining us along with other family members, his previous colleagues from his fellowship, and his colleagues from this from GI, many of his past chief residents, who are here today. I want to thank you all very much for joining us.

Mark was an incredibly charismatic man, a talented educator. He served as a mentor and a role model to thousands within the Department of Medicine. He acted as a mentor to residents, fellows, and faculty in this role as program director and chair.

So out of respect to Mark and in honor of his tremendous legacy going forward, the first Grand Rounds for the Department of Medicine and the first Grand Rounds in the academic year will be the Babyatsky Lectureship.

And today, I'm honored to introduce Bruce, a friend and colleague of Mark's, to say a few words about Mark and to introduce today's speaker. So thank you very much.

[APPLAUSE]

BRUCE: Thank you, Barbara. Thank you very much, to you and to the Department of Medicine for supporting this really wonderful and enduring event and supporting this occasion. It really is a bittersweet occasion to welcome all of you here to this first annual Mark Babyatsky, MD Memorial Lecture. It's really gratifying to see so many people from all ends of his life, including his family members, trainees, friends, colleagues for many years.

For those of you who knew Mark, you knew what a huge loss his passing was to this community. But if you didn't know him, I just want to spend a few minutes giving a glimpse of the kind of person he was and what he really meant to us here.

Some of the facts of his life. Mark grew up in what is said to have been a really tough neighborhood in the Bronx, but he rose to the top of everything that he did in life. He attended the Bronx High School of Science and then he went on to get his degree from Columbia and then his MD from Einstein.

He graduated as a member of AOA. So rose to the top there. And then after that, he became an internal medicine resident and was chief resident at Mount Sinai School of Medicine here. His impressive performance was really noticed by Dr. [INAUDIBLE] and Daniel Podolsky, who recruited Mark to the GI Fellowship Program at Mass General.

And he continued at MGH as a junior faculty member and had trained in the gastrin lab with Dr. Steve Brennan at the Harvard Medical School. And as a laboratory investigator, Mark really elucidated some very basic cellular and molecular pathogenesis underlying epithelial restitution and wound healing of peptic ulcers, antral G cells, specific gene expression, very esoteric things like trefoil factors and mucosal protection from injury and so on.

And much of this work was published in those years with Dr. Brennan and Dr. Podolsky in*Gastroenterology* the premier journal in our field.

In 1994, Mark returned to the Division of Gastroenterology at Mount Sinai, and he continued his studies on mechanisms of mucosal repair and also IBD. And his academic promise was immediately recognized. He won numerous awards, including work from the [INAUDIBLE] Foundation, Lucille Markey Foundation Scholarship, and an NCI funding award.

And he played a key leadership role as co-director of the Molecular Medicine Seminar Series, the Dean's Lecture Series, the Steering Committee for Medical Scientist Training Program, and was Director of Gastrointestinal Research in the GI Division from '99 to 2004.

But at the same time, Mark was developing his really remarkable gift for teaching. And it became Mount Sinai's really most cherished and distinguished educator, winning numerous teaching awards at every level of the medical school. And he was known for mentoring medical students and residents and fellows and postdoctoral scientists.

In 2002, Mark became the director of the Internal Medicine Residency Program. And he was the co-program director of the Internal Medicine and Pediatrics Residency and then vice chair for education. And then for the next eight years, Babs, as he was affectionately known, nurtured and promoted the careers of over 400 residents and fellows. I think that number is way too conservative. I think it was many hundreds more than that. Many of these people really attribute their success to Mark's personal touch on their lives.

His teaching rounds, which were known as Babyatsky Rounds, of course, were the highlight of the week for interns and residents who knew they would always walk away with a clinical pearl and new-found insights on all sorts of diseases, certainly not just GI diseases.

So it's really not surprising that on numerous occasions Mark was selected to be the Grand Marshal at the Mount Sinai School of Medicine Commencement ceremonies, a really distinct honor for the faculty-- for a single faculty member.

In 2010, mark became chair of the Bronfman Department of Medicine and professor of medicine at Mount Sinai. And in that role, he had an impact on education and research missions within the department as well as patient safety and quality improvement and in many different areas of community and multicultural affairs and faculty practice.

And in 2014, he assumed new challenges as chair of medicine at Monmouth Medical Center and St. Barnabas Medical Group South Region to develop systems for providing high-quality and cost-effective care.

But on a personal level, Mark was really such a distinct person in character. He had a photographic memory and had an encyclopedic knowledge of everything it seemed-- medicine, arts, especially theater, certainly science, and also politics.

And if you ask him about a particular movie, he not only had seen the movie, he could recount everything about the director, the producer, the actors, and by the way, he already had read the book that it was based on.

So it wasn't surprising to me to learn that just after college Mark actually pursued an acting career briefly, fortunately, for the world of medicine.

[LAUGHTER]

He embodied the keenest doctoring skills and really an innate ability to mentor and guide trainees, an effortless talent for teaching, and really an enviable and incredibly successful body of knowledge for medicine and life.

What distinguished Mark from so many other gifted scholars here and educators in medicine was his caring and his compassionate personality, his genuine interest in every person he met, whether they were a student resident, fellow, patient, family, or friend. Everyone who knew Mark felt as though they had a unique and close personal connection to him.

He made everyone feel valued and important. And whenever you met him, inevitably his first words to you were, and how are you? And I'm sure you can hear that in your mind's ear in that slightly hoarse voice he said that in. This was never less than a heartfelt expression of his concern. His patients knew they were among the most privileged few to have such a wise, insightful, and compassionate doctor who respected and listened to each one.

Mark really exuded optimism, warm humor, and a friendliness to people of all walks of life. In this way, he affected the lives of people in so many different ways that he perhaps never fully knew his impact. I myself experienced this for the first time when I visited Mass General as a fellowship candidate. And Mark was assigned to take me on a tour and to lunch.

And within the hour, we were fast friends, I felt. And I have a distinct memory of him looking me in the eye and saying, you're going to end up here. And I thought it was crazy, but he was exactly right. Just as he was many years later when he called me, and he told me that he thought there was a job as a division chief for me here at Mount Sinai. And again, I thought he was crazy. But here I am.

But that was Mark. That was the Mark that we all knew, someone who connected so quickly, so deeply, and endurably with nearly everyone he met. And it is just a matter of circumstance that I'm the one standing here extolling him. I think any one of 100 people in this room could do the same thing and maybe probably do it better. We're all better for having known him.

And so we remember our friend and colleague and honor him in this way. And so now it is really my distinct pleasure to introduce my good friend and colleague, Dr. Stephen Itzkowitz, the first Mark Babyatsky, MD lecturer. In his typical humility, Steve provided me with one very short paragraph about himself. But I'll embellish it with the truth. Refreshing in this day and age.

The basics are, he received his undergraduate degree from Columbia, just like Mark, and then his MD from Mount Sinai, and then residency at Bellevue and GI fellowship at UCSF, where he was faculty member for a short while and then returned to Mount Sinai, where fortunately for us, he's been ever since.

Steve is a professor of medicine in oncological sciences and long-time director of our GI Fellowship Program here at Mount Sinai. He's a past chair of the GI Oncology Section of the AGA and immediate past co-chair of the New York Citywide Colon Cancer Control Coalition or, as it's known, C5.

And he serves on the steering committee of the National Colorectal Cancer Roundtable and is the founder and medical director of the Mount Sinai Co-care Registry for patients and their relatives who are at high risk of colon cancer.

His research has focused on importantly reducing disparities in colon cancer screening in the general population as well as devising innovative methods for colon cancer screening and detection and prevention. Not only was Steve a dear friend and Mark Babyatsky's, but he was very much cast from the same mold, I have to say.

He is a consummate clinician, who is beloved by his patients and dedicated to their health and well-being, an investigator of important ways to address illness, a cherished teacher to students at all levels of training, and a wonderful friend to all of his colleagues. It is entirely fitting that Steve be chosen as the first Mark Babyatsky, MD Memorial Lecturer. So please join me in welcoming Dr. Itzkowitz.

[APPLAUSE]

STEVEN ITZKOWITZ: Wow. Standing room only. Please come and have a seat. Don't be shy. It's a distinct honor to be here. It's hard to believe three years has gone by. And it's tough. We all miss Mark and just you look around at everybody in this room, and everybody has either directly been touched by Mark or is, I would venture to say, no more than one degree of separation away from Mark.

So what I'd like to accomplish with you this morning is to go over some of the work that I've done here at Mount Sinai. And of course, Mount Sinai was really Mark's love and his home. And I tried to extract things from my research that really relate to concepts and principles that I think Mark really embodied.

The blue star that you see here on the bottom right is the international symbol for colon cancer awareness, just so that you know what that's all about.

And so I've been doing a lot of work on colorectal cancer screening, and I'd like to briefly talk a little bit about the molecular genetics and how that ties into a new screening test that we have that's actually being used clinically and then also touch upon health equity issues.

I have no disclosures to report. So Bruce did a beautiful job of summarizing all about Mark. I briefly in one slide put what I also thought Mark's many facets were. He was a brilliant physician scientist, incredible educator. I don't think anybody comes close to Mark.

As a program director, when you think about 150 residents at any given time, and I think he was program director for 15 years or something like that, that's 15 times 150. And that's just residents. All the fellows, the faculty, the staff, the nurses, it's ridiculous the number of people that he educated.

He was also an amazing humanist. He was very concerned about health equity and really in a quiet way being the son of Holocaust survivors, he promoted Holocaust education. And I'll touch upon that a little bit towards the end.

And he was a voracious reader, as Bruce said. Every movie he saw, he read the book. And before you saw the movie, he had seen the movie and read the book, and he was an amazing theater buff. He almost went into theater. He actually spent a year trying to make it as an actor before going into medicine.

So what I'm going to touch upon really are the clinical genomics side. And you can see the cover of the textbook that Mark edited, one of the last things on his CV. And this was a book that was meant to take the complicated topics of genomics and genetics and make it approachable to the clinician so that even somebody in general practice, who may have been out of medical school for 10 years, could still understand genetics and genomics. And that was really one of Mark's passions, and also health equity.

So we'll talk about the pathogenesis of colon cancer briefly and how we can apply molecular genetics to developing new colon cancer screening tests. We'll talk briefly about colon cancer screening test performance and then get into some of the issues related to disparities in colorectal cancer incidence mortality screening and what we've done here at Mount Sinai and in New York City at large.

So since this is Medicine Grand Rounds and not GI Grand Rounds, I'll just remind everybody that colon cancer is a very preventable disease, because there's a precancerous phase called a polyp. Most polyps are adenomatous polyps, and they usually arise as well-defined easy to identify lesions that stick into the lumen.

And if an adenoma is not removed, it will eventually turn into cancer. And this is a sizable adenoma. So you can see it bleeds a little bit. But most smaller adenomas, which are the most commonly encountered ones, don't typically bleed. Yet, one of the more beneficial screening tests that have been around for decades have been occult blood tests in the stool. And we'll talk about that.

It's thought that it takes about 5 or 10 years for adenomas to develop and become cancer. So we have an opportunity to get in there and really remove polyps and prevent cancers. But even if we miss the opportunity to remove a polyp, and the cancer develops, you can see here for stage I and II cancers, the five-year survival is excellent. It's anywhere from 80-- over 82%.

And this is without the need for chemotherapy or anything other than surgery. So even catching early stage cancers is an important target for colon cancer screening. And you can see here that it takes several years, we believe, to go from a stage I to a stage IV cancer. So again, opportunities to get in and prevent a very common disease.

Until about 15 years ago, we thought the only polyp in the colon of any precancerous consequence was the adenomatous polyp. However, it then became clear that there were these cancers that seemed to be arising quickly from almost like nowhere.

And we soon began to notice a type of polyp called a sessile serrated polyp, which are very easy to miss, because they're often flat, they're pale. They are usually located on the right side of the colon, the proximal colon. And if the bowel isn't really well cleaned out, you can easily overlook them.

And in hindsight, it turns out that we probably as a profession were overlooking these lesions, not knowing it. Part of it was that our optics were not as good back then as they are now, but it's also we didn't recognize that these were important lesions. We now know that they're very important, and in fact, we're paying more attention to them and preventing even more cancers than we were before.

And certainly, these don't bleed either. They're flat, they're pale, there's not a lot of vascularity. So these are not going to be detected if you only look for occult blood in the stool. And that's where colonoscopy becomes important.

I'm not going to go into the-- don't get scared. This is the molecular genetics. So colon cancers arise through three molecular pathways. There's chromosomal instability, which accounts for the vast majority of colon cancers every year. Those cancers are also called microsatellite stable in contradistinction to the other kinds of colon cancer that have microsatellite instability.

Those that go through the MSI pathway are involving DNA mismatch repair genes that we see in Lynch syndrome. But there is another pathway that only became elucidated around the time that we started to identify sessile serrated polyps. And that's the CPG island methylater pathway. And we now know that this is a very important pathway. And we believe that that's the pathway by which says sessile serrated polyps turn into carcinoma.

So we have an opportunity to develop molecular tests now, and the test we'll talk about is a stool-based test to look for abnormal DNA in the stool. And so the DNA stool test that I'll be referring to looks at seven mutations of the KRAS gene. And it also includes two methylated genes. So we're picking up all of the molecular pathways in an attempt to identify precancerous and cancerous lesions.

You're all probably aware that the colon cancer screening guidelines were just recently updated this past year. They had not been updated. The last time they were updated was 2008. These are the latest guidelines from the US Preventive Services Task Force. For anybody taking the boards, you probably need to know about this.

You can do colonoscopy every 10 years. You can do sigmoidoscopy every five years or you can do it every 10 years if you include an annual FIT test. CT colonography every five years, and the stool-based tests, the guaiac FOBT, the immunochemical FIT test or what's been referred to as the FIT DNA test, which is a combination of an FIT and a stool DNA. Commercially, that's known as Cologuard to many people who are using that test. And you can do any one of these tests now.

They are not prioritized, according to the US Preventive Services Task Force. Most people will do colonoscopy or FIT testing and increasingly the FIT DNA test is being used. So I'd like to spend a couple of minutes just talking a little bit about the newer test.

So why stool DNA? This picture shows it. My colleague, David Ahlquist lent me this slide. And you can see that over the normal colon, there's normally the cells that rise up to the top-- to the surface of the crypts, they undergo apoptosis.

The DNA gets degraded, and the cells die or they slough off. But if you look at the mucus layer above the normal colon, there's not a whole lot of DNA. There's not a whole lot of cells, whereas what's typical of an adenoma or a cancer is that the cells do not undergo normal cell death.

That's the hallmark of a neoplastic cell. So you would get chunks of cells, even whole cells, but certainly a lot of DNA is being shed into the lumen, a lot coming from even a very small lesion. And that, if you use very sophisticated and sensitive PCR techniques, you can pick up even small polyps or certainly cancers. And that's the basis for the stool DNA test. And you can see these are the markers that are in there.

So I was privileged to be part of the multi-center study that actually showed that this FIT stool DNA combination was very successful. This was called the Deep C study. And this study, it was a multi-center study. 10,000 average-risk people over the age of 50, who were due for this screening colonoscopies, they submitted a stool specimen before the colonoscopy. The specimen was tested for the most commonly used commercial FIT test and compared to this multi-target stool DNA or the FIT DNA Cologuard test.

And so everybody got colonoscopy and everybody got the two stool tests. And these were the results. If you look at the sensitivity for cancer, the FIT DNA test picked up 92% of the cancers. That's almost as good as colonoscopy. The FIT test alone detected about 74% of cancers.

These tests are not great yet for picking up oral adenomas, but if you look at advanced adenomas, the FIT DNA did better than the FIT test alone. And from this category, if you were to look at adenomas that were particularly large, like over 2 centimeters, or had high-grade dysplasia, those are the most pre-malignant features, the sensitivity was about 67%.

There are some more false positives with the FIT DNA test that you have to take into consideration. If you look at some of the subset analyses, if you look at colon cancer according to stage, you can see here that-- the light, bar by the way, is the FIT DNA or the Cologuard and the dark blue is the FIT test-- the FIT DNA test was better for detecting early stage cancers than the FIT alone.

At later stages, they were comparable. If you look at proximal versus distal, the FIT DNA test was better at picking up proximal lesions, whether they be cancers or adenomas. If you look at high-grade dysplasia, again the FIT DNA was better than the fit alone.

And if you look at sessile serrated polyps, because they don't bleed, FIT practically-- this is like background 5% positivity-- the fit DNA picked up about half of the sessile serrated polyps, because they have methylated DNA in them. And the test picked them up. And of course, greater adenoma size also as correlated with positive FIT testing.

So if we sort of look at the performance of all of the screening tests available now, of course we think colonoscopy is the best, because it has very good sensitivity and specificity. We're really not doing much in the way of sigmoidoscopy or CT colonography.

But if you look at noninvasive tests, which many patients prefer, we find that Cologuard is sort of leading the way here compared to FIT testing. But we still believe that FIT testing is still a very important part of our armamentarium. And in fact, I'm leading a task force here at Mount Sinai to really try to get our implementation of all screening tests at the institution in a more programmatic way.

Let's turn now to the colon cancer statistics. I'm showing you incidence and mortality. Colon cancer does affect men more than women, and therefore the mortality rates are higher amongst men than amongst women. If you look by race and ethnicity, the blue bar here are whites, the red bar are blacks, and the yellow bar are Hispanics.

And you can see, if we just look at men for example, in terms of incidence, blacks have more incidence of colorectal cancer than whites. And Hispanics actually have less colorectal cancer than whites. And we believe that that's because many of the Hispanic people in this country are relatively recent immigrants from areas of the world where colorectal cancer is not as common as it is here.

So they are bringing with them, if you will, a lower risk of colon cancer. But oral epidemiology studies and studies from migrants from one area of the world to another show that within a generation, people from the lowest part of the world will assume the higher risk of the country that they're living in. So we all expect that the rates of colorectal cancer amongst the Latino population is only going to go up.

This is a sobering slide that just came out. And I know it's a little bit small. But this is just telling us that colorectal cancer mortality is improving more in whites than in blacks. And if you sort of look at this slide, the black line here is sort of the ratio of blacks to whites. And if you look at oral cancers overall in men and women, in general they seem to either be going down, simultaneously blacks and whites, or sort of equal.

And a lot of that is driven by lung cancer. But if we look at colorectal cancer per se, we find that amongst both men and women, there's a better improvement in mortality over time amongst whites than amongst blacks.

And some of this is related to the fact that blacks are diagnosed at a later stage of colorectal cancer. If you just look at this box here, the whites are shown here in blue, and the black population is shown here in red. And blacks are more likely to have later-stage colorectal cancer. And that's one component of their contribution to a higher mortality rate.

So compared to whites, blacks have higher incidence rates, higher mortality rates. There's data to suggest that they get colon cancer at a younger age. They present with later-stage disease. There's also data showing that they have more proximal adenomas, which means that they would benefit from colonoscopy and not, for example, sigmoidoscopy.

And they have lower screening rates. And of course, low SES is a major factor for that. Many more blacks than whites live below poverty level. Many more are uninsured. There's also some data to suggest that cigarette smoking and physical inactivity is higher.

So an interesting study was published in 2012. And it was trying to grapple with what accounts for the white-black disparity in colon cancer mortality. You have to realize that when it comes to mortality, mortality is the end of the line. There's screening, there's treatment, and then there's mortality.

So what if blacks and whites were first screened at the same rate? Well, if they were screened at the same rate, then the colon cancer incidence would be reduced by about 42%. And that would translate into a reduction in mortality of about 19%. What if blacks and whites had equal cancer treatment? How would that impact mortality?

Well, if they had equal cancer treatment, that would lower mortality by 36%. Well, what if we did both? What if blacks and whites had both, the same screening and the same treatment, how would that impact mortality?

Well, mortality would only be reduced by about 50%. So how can we improve the remaining 50% difference in the black and white cancer mortality? These authors suggested that enabling blacks to achieve equal access to care, equal as whites, could substantially reduce the difference.

In the early 2000s, these were the numbers for screening for colorectal cancer. And you can see that whites were getting screened more than blacks and more than Hispanics. And I'll draw your attention to 2003, because that's the starting point for some of the other things I will talk about in a few minutes.

But I'm also going to talk about the Institute of Medicine's report, which came out in 2002, 15 years ago. That report, which many of us remember, and I think it's worth rereading in this day and age, was entitled *Unequal Treatment, Confronting Racial and Ethnic Disparities in Health Care.*

In that report, they said that blacks and Hispanics are less likely than whites to have private health insurance. Even with insurance, minorities are more likely to have a plan that limits the types of service. Even with the same types of health insurance as whites, minority patients tend to receive a lower quality of care.

And even after controlling for access, which is insurance status, patient income, type of medical facility, public versus private, even controlling for disease severity, so the stage of the disease, the comorbid illnesses, age, gender, when you control for all of that, disparities still remain for many diseases, not just cancer, but cardiac disease, diabetes, HIV, et cetera.

So why is that, the report asked. Well, I would offer this. Health care is just one microcosm of our society. There are huge societal barriers that minorities face in every aspect of life. Health care is just one of them. Jobs, education, housing, criminal justice. We all know that there is unequal treatment in these areas.

We have to start really confronting racism. We need to name it. We need to name racism and confront it. And Shirley Chisholm, in 1970 said, racism is so universal in this country, so widespread and so deep seated that it's invisible because it's so normal. It's almost like living in a city full of smog. You don't notice it, but you're breathing the bad air, and it affects everybody. And eventually, it will catch up with us.

Mary Bassett, our Commissioner of Health for New York City, published a very important paper in*Lancet* just a few months ago, really trying to make this into a science and bring it to the medical profession's attention. She said, how can we reduce health disparities? And she highlighted that the health care system is just one component of structural or institutional racism that pervades all systems in society, as I mentioned.

Residential segregation, housing projects for example, systematically shape how health care is accessed. Socioeconomic disadvantage makes it difficult to attract doctors to predominantly black neighborhoods. Black neighborhoods have fewer clinicians, and most of them have lower clinical and educational qualifications.

And health-promoting resources are inadequately invested in these neighborhoods. And medical schools-- that's us-- we often discuss race, but we rarely discuss racism. And I would like to suggest that we think about this more. In her paper, she has a table that I lifted showing the disparities, the inequities, between whites, Asians, Hispanics, and blacks.

So if you look at the median household assets, you can see a line that just drops down as you go from left to right. If you look at living below poverty level, the line goes up in this direction. If you look at unemployment rate, the line goes up in this direction. And especially if you look at male incarceration rates, the line goes up in that direction.

If any of you would like to learn more about structural racism, I would recommend that you take the Undoing Racism Workshop that's offered by the People's Institute for Survival and Beyond. I have no financial connection to this organization. I've done this workshop three times. Its armed me, I think, with the concepts, the language, the vocabulary, and the awareness for much of my work. We've had it here at Mount Sinai several times. You can also take the training in other locations if you're interested.

So let's get back to what we did at Mount Sinai. We know that there's many barriers to colon cancer screening. It's not a simple thing to screen. There are barriers at the institutional level. You have to have enough endoscopy rooms. You have to have enough staffing. There's insurance barriers. There's just getting people referred in for the colonoscopy. A lot of this is really related to colonoscopy per se, not so much the FIT testing.

Doc providers have to be aware of the importance of colon cancer screening. There has to be easy referrals for doctors to send their patients in for colonoscopy. And at the patient level, we know that there are issues with patients' beliefs, cultural beliefs, health literacy, language, logistics, taking time off of work, lots of barriers.

How do we tackle all of that? Well, it was easy for me, because I recruited Lina Jandorf to work at Mount Sinai in 2003. Lina is in the audience. Lena, can you raise your hand? So Lina who is the head of Cancer Prevention and Control, along with several other people here, we did the following-- in 2003, when our screening rates were really low, we got buy-in from the hospital administration to improve the endoscopy suite and staffing.

We particularly looked at our patients who had Medicare and Medicaid. We even had uninsured patients who could get colonoscopies through a grant from the Department of Health. We opened up an open-access process, where patients did not have to see the GI doctor before coming in for a procedure.

They can go directly in for the procedure. We held grand rounds and faculty meetings with the IMA faculty and the Ease of Referrals was the open-access process. And the important intervention here was we implemented patient navigation.

Patient navigation was a new concept in screening at that time. It was really only developed to try to get women who had an abnormal mammogram in for care. And we were among the first to really try to use patient navigators to get people in for screening in the first place.

So at that time, in 2003, we looked at our East Harlem population, which the demographic hasn't really changed. It's still about 60% Hispanic, 30% black. Most are on public health insurance. And the individuals that we were referred into our program were mostly the IMA doctors, some of the FPA, and also some patients from GYN.

And the patient population in our studies had an annual income less than-- 60% of them had an annual income less than 20%, and 71% had less than a high school education. So sort of on the lower SES area.

Our first patient navigator was Annabella Castillo. I'm not sure if Annabella is in the audience this morning. If you are-- OK. Annabella, she was in college at the time. She became a health educator, went on to nursing school, and is now a nurse with us in the IBD center.

But Annabella was the person responsible for getting our patients in for screening colonoscopy. And she would contact the patients, go over the prep, make sure that they had an escort. And she would even meet them in the lobby if they didn't have an escort. She was amazing.

And the patients would get a postcard saying, your colonoscopy is on such and such a date. And any one of these doctors may do your colonoscopy. And I have to say, I was pretty proud. We had a pretty diverse group of gastroenterologists, all of whom really-- in many cases, we donated our time to do colonoscopies, especially on the uninsured patients at that time. Even Lloyd Mayer, who was the chief of the division at the time, was doing free screening colonoscopies. I have to say, every single person on this picture was a close friend of Mark Babyatsky.

So how did we do? Before our patient navigator program, maybe 40% of people who needed to get colonoscopy were getting it. That's pretty low-- pretty low screening rate. When Annabella hit the scene, we went up to 67% of people who were referred in for colonoscopy, completing their colonoscopy.

And then we went further with a couple of NIH grants that Lina really spearheaded. We got all sorts of different takes on patient navigation. We got more than Annabella. We got people from the community. We got black navigators, Hispanic navigators, a whole program of patient navigation. And we even increased our rates to where they are now, which is close to about an 80% completion rate for colonoscopy. And that's what patient navigation can do, because it's a complex test.

And what does it offer? Well, your poor prep rates go from 12% to about 5%. And your no-show rates also reduce dramatically. And those two interventions, just better bowel preps and better show rates, translates into a profit for the hospital. The program pays for itself. We published this a few years ago.

Before patient navigators, if you assume that there's 50% adherence, with our 2008 data, we were getting 65% adherence. And in '12 we were getting 80% adherence. And if you just do the math on 1,000 theoretical patients, the hospital turns a profit of about $45,000. If you compare an 80% adherence to the 50% and even if you compare the 65% to the 50%, the hospital profits about $35,000 for every 1,000 patients. So it's a worthwhile, and it's a cost-effective intervention.

While we were doing our work at Mount Sinai in patient navigation, the New York City Coalition was formed. In 2003, Mayor Bloomberg asked Michael Friedman, who at the time was the commissioner of health, what would be the most important health care interventions during the Bloomberg administration. And Thomas Frieden said, well, three things he said-- flu vaccination, smoking cessation, and colonoscopy.

But before he could say colonoscopy, he brought together representatives from every hospital in the five boroughs. So the private hospitals, the VA, the city hospitals, of course, the HHC. And he asked all of us, he said, if I'm going to go out and say that everybody should be getting colonoscopy, can we do it? Do we have the capacity?

We all went back, we did our homework. We talked to our administrators, and we learned that indeed we can do it. So then the commissioner said, OK, I'm going to say-- I'm going to step out on a limb, and I'm going to say that every New Yorker over the age of 50 should get colonoscopy. Remember, in those days and even today, there's a menu of options-- colonoscopy, FIT testing, yada, yada, yada.

He said, single message, colonoscopy. So everybody went back, and they did whatever they could in their institutions to increase rates of colonoscopy. And this is where we stood in 2003. If you look over here, this is colon cancer screening.

By comparison, this is mammography, and this is pap smears. Mammographies and pap smears always are around the 75%, 80% range. So we think that that's really a bar that we ought to be able to achieve for colon cancer screening.

In '03, New York City overall had colon cancer screening rates, and this is colonoscopy specific, of about 47%. It's less in East Harlem and higher in Manhattan. And we were hoping to get to about 60% by 2008 with our coalition.

So this is what the coalition wanted to do. We wanted to screen all New Yorkers over the age of 50 with colonoscopy particularly, and we wanted to achieve a 60% screening rate by 2008. How did we do? Well, here's where we were in '03. We were at about 42% citywide.

We wanted to get to 60% by 2008. We got to 60% by 2006. And it kept on going up. In fact, to this day, we're at about in the high 60s. Unfortunately, it seems to be plateauing a little bit. It's a little bit of another story.

And over this time period, this translates into about 872,000 people getting screened. We live in a little town here. We're only 8 million people. But to me, this was a very important public health intervention, where we really saw screening rates go up due to a concerted effort of all hospitals in the five boroughs.

What's more impressive and what we're mostly proud of is that we've eliminated the disparities during the same time. So if you look at 2003, whites were being screened more than blacks. Hispanics are here in the green, and Asians were down here. And it really only took a few years.

The Asians lagged behind a little bit in the beginning. But still, by 2006, in three short years we eliminated the disparities. And it tells you, if you make an effort to provide access and you have programs to get people in, you can offer equal access to care and equal results.

So how did New York City do it? First of all, we had a champion. We had a commissioner of health in Thomas Frieden, who was really behind it. He subsequently went on to become the head of the CDC, you'll recall. He sent a clear message, colonoscopy, and get it done. We set up direct referral systems throughout the city. And every all of the HAC hospitals implemented patient navigators that are still existing.

The important role-- the other thought about New York City is that in New York State, if we find a cancer, a patient is eligible to get emergency Medicaid. And I'm sorry to say, but in many states in the country, they don't want to increase their screening rates, because if you find a cancer, it's too expensive to treat it.

We don't want to hospitalize the patient and spend the money on treating a cancer. Luckily, in our state, if you find a cancer, the patient can qualify for emergency Medicaid. And that cancer can be treated.

We also did personalized outreach for the black community. We put posters up on the subways, on the buses. We had public service announcements on radio. This was our outreach to the African-American community. We took some famous-- and even Chita Rivera. This was Hispanic and black.

We reached out to the Chinese community. We reached out to the Russian community. In Russia, generally speaking, the Russian community the concept of prevention of health is really not embraced. There's not a lot of thought given to preventing disease.

And it took time to explain to people that you can really benefit enormously from cancer prevention. And now you can see all of the places where there are patient navigators all throughout the five boroughs, in the HHC hospitals and many, many voluntary hospitals.

So where we stand now, that was about a year ago, you can see the screening rates in Manhattan still are amongst the highest. But we're doing pretty well. We're in sort of the high 60s, even into the 70s. And now the nagging thing and the real disparity now is insurance. And you can see here that we're not doing very well with the uninsured. And that's an ongoing problem and a disparity that also has to be addressed.

And to show the impact of insurance on survival, this is colon cancer survival rates by stage and insurance status. And the solid bars are people who have insurance, and the dotted bars are people who don't have insurance. So for stage I colon cancer, if you don't have insurance, it's as if you have stage II colon cancer with insurance.

And if you look at the blue lines in particular, if you do not have insurance, but you have stage II cancer, stage II means you do not have positive lymph nodes, but if you don't have insurance and you have stage II cancer, it's as if you have stage III cancer with positive lymph nodes. Your survival follows that of somebody who has more aggressive disease. And that's another reason why we have to really think carefully about that.

So I'll finish with acknowledging all the people that helped get the work done. I shouted out Lina. Cristina Villagra is also in the audience. She's been really the glue that held our Patient Navigator Program together. I can't call out everybody by name. You can see that there were a lot of-- there were other Sinai faculty, many fellows and residents of Mark's, medical students.

This is just a partial list of all the publications. And I highlighted in different colors the students, the fellows, the residents that helped us with this work. It's really been wonderful.

And so there now is a national campaign to try to reach colon cancer screening rates of 80% by 2018. There's the whole national campaign. There's a website. Dave Greenwald and I are on the National Colon Cancer Roundtable to make this happen. And we hope to try to get there.

So I thought it was an interesting-- as I was putting my slides together and thinking, well, this is great. This is the blue star. And it reminded me of something that was very important to Mark. The Blue Card. I'm not sure how many of you are familiar with the Blue Card organization.

The Blue Card organization was founded in 1934. Mark was on the board, and Mark's sister Linda, who is here, is now on the board. And the Blue Card is an organization that was founded to make sure that no Holocaust survivor who is destitute can't afford their own funeral. And Mark was very passionate about that, making sure that anybody who survived the Holocaust at least had the funds to be buried in honor.

This is Irene Hisney, who was a patient of Mark's. She's on the web page for the organization. We had hoped she would be here today, but she couldn't make it. She was really a beloved patient of Mark and held him in high esteem. She survived the Holocaust only by virtue of the fact that she was a twin. And she was experimented on by Mengele. And that's how she survived the Holocaust.

And she went for 50-some-odd years never seeing a doctor, because she was petrified of white coats and the medical profession. And she came to Mount Sinai, finally seeking the care of David Thomas for a new onset of MS.

And soon thereafter developed a rather massive upper GI bleed. And she came to the emergency room, and I don't think she was in shock, but she had lost probably half of her blood volume. And she would not let anybody scope her.

Fortunately, one of our fellows at the time remembered that Mark's parents were Holocaust survivors, called up Mark, who was not on service. He was just in his office. And Mark came down and immediately gained her trust. He did the endoscopy, found a bleeding vessel, clipped it, saved her life. And this is 10 years now. I forget. And so it was really a wonderful story.

I want to thank the family for coming. Liz, the boy's, cousin Sheldon, Linda. It's so great to see you guys. It's hard to believe that three years has gone by. But I think it's taken that kind of time for us to all kind of let things settle.

It's just a delight to see everybody here from all walks of life. For those of you who flew in and came from far away, we really want to thank you. And I want to thank you for allowing me to be the first Mark Babyatsky lecturer.

[APPLAUSE]

BARBARA: I want to thank Steve for doing a tremendous talk. I could think of no more fitting individual to give the first Babyatsky Lectureship. I want to thank you all for joining us. You remember, it's the first lecture of the academic year. Feel free to join us every year. We want to see you here to celebrate Mark's life. Thank you again and congratulations, Steve.

STEVEN ITZKOWITZ: Thank you. Thank you.

[APPLAUSE]