

Dr. Edward Snyder and Paul Sullivan, Donating Blood to Help Cancer Patients August 17, 2008 Welcome to Yale Cancer Center Answers with Dr. Ed Chu and Dr. Ken Miller. I am Bruce Barber. Dr. Chu is Deputy Director and Chief of Medical Oncology at Yale Cancer Center and Dr. Miller is a medical oncologist specializing in pain and palliative care and he also serves as the Director of the Connecticut Challenge Survivorship Clinic. If you would like to join the discussion, you can contact the doctors directly. The address is canceranswers@yale.edu and the phone number is 1-888-234-4YCC. This evening, Ken Miller is joined by Paul Sullivan, CEO of the Connecticut Chapter of the Red Cross, and Dr. Edward Snyder, Director of the Yale Blood Bank and Transfusion Service.

Miller I want to start out with a fairly basic question. Why should people give blood?

Sullivan We need people to give blood because, candidly, it saves or sustains lives. There are patients across the country who count on volunteer blood donors, people like you and I, to come out and do what is a fundamentally altruistic act and support other people. It is really almost a "pay it forward" so that people today can be saved by the excellent hospitals and physicians we have in Connecticut. It really is a basic and vital part of our healthcare system.

Miller How many blood transfusions are given in Connecticut every year?

Snyder Every year in Connecticut we send out about 165,000 red cells, another 25,000 of what we call platelet dosages, and then probably another 50,000 plasma units. Over the course of the year, through our donors' good acts, we are helping well over 300,000 people.

Miller This is a huge number, far more than that I might have guessed, personally.

Snyder Quite frankly, I think a lot of people do not appreciate what an important and substantial operation blood banking is. I say that from the standpoint that in order to collect those units and to get them out to patients across the state, obviously there need to be a lot of dedicated volunteers and staff as well as donors. There is a pretty significant operation, again partnering with the hospitals, to make sure that the blood is ready when it is needed because the other thing about our business that is challenging is that it is unpredictable by nature.

Miller Yeah.

Sullivan From Yale-New Haven Hospital we use approximately 70,000 blood products a year. We transfuse somewhere between 7000 and 7500 people a year. We require about 70 to 80 units of red cells a day, 40 doses of 2:30 into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3) platelets a day, and somewhere around 30 or 40 units of plasma a day. This is every day because obviously the sick do not take a holiday. During weekends, holidays and summertime, people are having surgery, there are accidents, larger amounts of blood are needed and we rely very heavily on the Red Cross and the altruism of people in the State of Connecticut to donate blood to keep those supplies coming to save patients.

Miller I will share a personal story. My wife had acute leukemia about 9 years ago and thankfully she is well, but I think about all those donors whom we will never meet who gave blood products; some of whom donated multiple times, platelets, and what a wonderful thing it is to give blood.

Sullivan We constantly try to figure out ways to share information back and forth between patients and donors, while obviously protecting privacy, but you know the reason we want to share it is because the stories are incredible.

The way it hits home to people is obviously very profound when they think about the fact that someone took a couple of hours out of their day, and that really makes a difference in someone who is getting the care they need. What I am always trying to convey is just as Dr. Snyder said, we need it 7 days a week and some of our products literally have a 5-day shelf life; our platelets have a 5-day shelf life. It is not something that we can let ourselves as a community, and as individuals say, "I am going to do that next week, or next month." It is the summertime and understandably people want to be with their family and want to do other things, and God bless them, obviously they should be doing that, but we need them to squeeze in a little bit of time to do this, because places like Yale and other hospitals all across the state are giving great care to people and people do not know when they are going to need it. Snyder After the horrible events of 9/11 occurred, hundreds and thousands of people donated blood in an attempt to do something for the victims, and it turned out that if 100,000 people donated blood on a given day, 5 days later all of those platelets would have to be thrown out if they were not transfused, because the shelf life is 5 days. So rather than people coming in motivated by a tragic and horrific event, it would be better for someone to come in 2 or 3 times, or at least once or twice a year, and spread out the donation so that we have enough blood all the time. Miller What are the things that concern people who are thinking about being a donor? What are some of the things that they tell you? Sullivan It is a range of issues, and all of them are very understandable. Blood donation is simple. It is easy, and it is important, and it should not be. 5:23 into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3) taken lightly. If people get nervous about needles, the good news is that we take the unit of blood from essentially your inner elbow, which is an area where it has very few veins so while it may be a little bit intimidating, it is merely a pinprick in terms of what you feel. People obviously are concerned about the mini physical we do and that is one of those interesting things. Those mini physicals, aside from making sure the blood is safe for a patient, are a great public help for the State of Connecticut and for the country. It is important to regularly know your blood pressure, your pulse, your temperature, and your hemoglobin and hematocrit, because those are indicators of wellness. People get nervous about going through a mini physical, just like they get nervous going to the doctor, but just like going to the doctor, there is a benefit, aside from just making sure that you know the blood is going to be available for a patient. Snyder There is the aspect too that people now realize that the world is a much smaller place, everyone is in essence responsible for their fellow human and donating blood is something that will be nice to do if you have nothing else to do. It is almost a responsibility. It takes a village really is true, and yes, putting a needle in your arm may be a little uncomfortable, but compared to some other things that people feel the need to do, donating blood is something that is such an altruistic act and you never know when you are going to need blood as well. A lot of people sign up for blood drives for someone that they know, because it personalizes it. They say, "I knew this young man who developed leukemia and I wanted to donate for him", but there are lots and

lots of people everyday that come through the portals at Yale who do not have people to set blood drives for them and they rely on us having blood for them. That is why the simple act of donating blood is critical, and as Paul mentioned, the blood is divided. There are basically 4 parts of the blood. There are the red blood cells, which carry oxygen, there are the platelets which are little tiny fragments of cells that are important in blood clotting, and there is plasma, which is the part of the blood that contains various chemicals and proteins that you need for good blood clotting and other types of functions. There are also white cells, which are not so much needed for a regular transfusion, but are useful for people who may need white cells for other reasons related to transplants and so forth. Miller If someone says, "I do not want to give blood because I could get hepatitis from giving blood or I could get HIV," is that truth or myth? Snyder That was a problem during the AIDS scare years ago and I think to some degree it is going to be with us for the rest of our professional careers. People thought that you could get AIDS by donating blood or hepatitis by donating blood, and that is an absolute myth. Every blood bag is 8:30 into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3) completely sterile. It is one use and is thrown out if it is not successful. We do not reuse bags, we do not reuse needles. People are much more sophisticated today, and personally, I think it is not the fear of getting AIDS or hepatitis from donating blood, I think it is the fear of needles that keeps most people away. You can come up with a million excuses. If it was something like having dinner or eating ice cream, you would find the time. The idea that the needle is something to get through, personally, I think is there is something people need to realize, it is relatively minimal. It is a little more than just a mosquito bite or a pinprick, but it is certainly a lot less difficult than going to the dentist. Some people do not like to go to the dentist, but you need to do what you need to do. Sullivan We need to demystify the blood drive for those who have not given. There are a number of folks who come regularly. They know how to do it, and it is awfully easy. They also know at the end of it they will feel great. They will feel great because of the psychic reward of knowing that they have contributed to their community; they will have likely either sustained or saved the lives of 1, 2, maybe 3 people. The part that people just need to get over is that it is a straightforward easy process and the Red Cross is waiting to take you, we are eager to have you come and we want to make it a friendly positive environment. In the end the most important thing is when you have that moment of self-actualization where you know you have made a difference. In the case of your wife, or other folks who receive blood, they do not know who that person was, but a few days later or a couple of weeks later depending on the product, there are people sitting there, or their family is sitting there saying, thank you so much, and that is a pretty powerful thought. Snyder On the radio and television you see advertisements of various hospitals talking about bloodless surgery, and most of the surgeries that are done at Yale are bloodless, but there are some surgeries where blood is required. Those are often at the major hospitals, so called tertiary care hospitals, where people can be flown in by helicopter or brought in by ambulance where they have either had a major

accident or some problem where blood is required. We use the least amount of blood possible and the indications for transfusion of all types of products, plasma, platelets or red cells are always being redefined. There still is a great need despite our desire to use the least blood possible as more and more people are having more and more complicated surgeries. Thanks to major advances in medical care people who could not be saved years ago are now being saved routinely because of major advances in trauma surgery and resuscitation and the ability to handle people at an accident site and bring them into the hospital where they can be saved. To see those families reunited and know that 11:36 into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3) blood transfusion played a role in the salvage of that family member, the father, child, mother, the sister, brother or daughter, is an excellent feeling. There is no other feeling like helping someone else when you donate blood. Miller I am going to refer to the care as TLC (tender loving care). What is the process, after the donor comes and puts his or her arm out and the unit is drawn, what happens then? Sullivan Essentially, when you come to a blood drive there are a couple of different stages that I mentioned earlier in terms going through a physical and making sure that it is safe for you to give and safe for the person to receive it. There is the phlebotomy, which takes 10 to 15 minutes, and is the drawing of the unit. Then we do ask people to stay for TLC time, if you want to call it that, and it's just sitting and we give them juice to make sure they are feeling hydrated and well. There are many instances where people can just sit and talk to neighbors or other community members. It is kind of fun at a blood drive. When people are done they usually feel very strongly that they need to hurry through the process to give blood, and we understand that we are all rushed and we are hurried and time is precious, but it is interesting. We will see people sit for quite a while in our canteen talking about what they have just done or getting to know their neighbor because it is almost by definition only good people that congregate in a blood drive. Once you are there you have joined the ranks of people who are interesting and caring. We do ask people to stay for another 15 minutes, and some stay longer, at the end of a blood drive. Miller After the donor has gone home, that unit of blood then travels somewhere. What is the process for that unit of blood? Snyder The unit of blood is processed at the blood center and as was mentioned, it is divided into different components; the red blood cells and the platelets, the red blood cells for carrying oxygen, the platelets for helping with blood clotting, and plasma, which also helps with blood clotting. Each one has different storage requirements. The red blood cells need to be stored in a refrigerator at a specific temperature of 1 to 6 degrees centigrade. Platelets need to be stored at room temperature on a little shaker at 20 to 24 degrees, and plasma needs to be frozen at -30 degrees. You just cannot take 1 unit of blood and expect to put it on the shelf and have it serve all the purposes, because we are much more sophisticated knowing what each component is needed for. If a person has a low platelet count because they have cancer and they have been given chemotherapy and the platelets, which help blood clot, have dropped, but the red blood count is normal, they do not need a

unit of whole blood just to get the platelets. You would14:24into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3) rather take the platelets out of that unit of whole blood. Then you have the red cells left over and the plasma that can go to other people that may need those specific components and that concept is called component therapy. So that is done at the blood center and then we make a request to the Red Cross each day of how much blood we need to put on the shelf at Yale-New Haven Hospital and that is provided by the Red Cross by courier. Miller Terrific, we would like to remind you to e-mail your questions to [canceranswers@yale.edu](mailto:canceranswers@yale.edu). We are going to take a short break for a medical minute. Please stay tuned to learn more about blood donation with Paul Sullivan and Dr. Edward Snyder. Miller Welcome back to Yale Cancer Center Answers. This is Dr. Ken Miller and I am here with Paul Sullivan from the Connecticut Chapter of the American Red Cross and Dr. Edward Snyder from the Yale Cancer Center. I want to talk about a related, but different topic. For people that need a blood transfusion, one of the things they think to themselves is, is it safe and what is going to happen? Is the blood supply safe and how do you make sure of that? Sullivan We work very hard to ensure that it is safe, and it is actually very safe. As Dr. Snyder mentioned, we bring the blood back from the blood drives all across the State of Connecticut up to Farmington. We then take those test tubes and we send them to Philadelphia. We have people running those down twice a day, every day, and then we get those tested for a number of viruses and other markers that might indicate that the blood is not safe for transfusion. As we learn more about potential risks, we identify them and16:55into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3) work hard to identify tests to protect against them. We have recently added West Nile testing, Chagres testing, and we obviously have HIV and HCV. As Dr. Snyder said, it is never a trivial event to be transfused. We have done everything that we can to make sure that blood product is safe. When someone needs it, they need it, and now there is a very little, almost infinitely small risk of getting transfused with a known virus. Obviously people take it very seriously to be transfused and so they only get it when they absolutely need it because there are other risks; someone who is receiving the transfusion, whether it be bacteria in the blood or other issues that we can't identify, obviously, that is avoided when possible. There are two sides of it, one is the issue of blood safety and the other is the fact that we are often short of blood products and it is used only sparingly, but yet we still see demand grow, which again to me reinforces just how vital that product is to the patient who receives it. Snyder And we see the concept that someone else will donate so they do not need to. The blood that is needed is needed constantly and the blood is tested for 8 or 9 different things to ensure that it is as safe as possible. We are still making research efforts to try to come up with a blood that could be grown in a laboratory. People are probably saying that with all the medical marvels, and we can put a satellite on Mars, why can't we come up with blood that they make in a factory? We are trying to do that, but the biology of it is quite complex and the more sophisticated we become,

the more we realize how much more we have to do. It still comes down to a person who is concerned and cares about their fellow man woman and child to come into a blood drive and roll up their sleeve and donate the gift of life. As hackneyed as that may sound, it comes down to that and anyone who has needed a unit of blood expects that it will be there, but the only way it happens is if one person decides to take responsibility for another. With all the science and all the technologies notwithstanding, we still need people to donate for other people. Sullivan Yes, it is true. The other thing I am just going to mention in terms of blood safety is that there are the tests that we have, which are exceptional in their sophistication and accuracy, but we also rely on the questions I mentioned earlier and some of those are personal, but they are important. The reason we ask people where they have traveled and so on, is because we are looking for correlations to diseases. We can test for malaria for example. There is a very low incidence rate for the average traveler even to a place endemic for malaria, but we still ask the question and we still ask people not to donate when they have been in those areas simply because if we do not have a good test for something, we want to try to avoid there being any chance that it gets in the blood supply.19:58into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3) Miller A question for you about aphaeresis, which is a term that we use. What does that mean and what would that donation be like? Snyder Aphaeresis is a Greek term, meaning to remove. Basically, the concept is instead of taking 1 unit of blood from a person with a needle in the arm and a blood bag, you have a person go on a machine, which is somewhat like a cream separator, although I will admit I say this all the time and I have never seen a cream separator, but I am sure it must look like this. It is basically a centrifuge. It is a device that spins. So blood comes into the machine and the machine spins the blood into red cells, platelets and plasma the way the Red Cross would process this as a single unit of blood, but the machine is able to remove only the part of the blood that is specifically needed. So if someone is donating platelets, they donate whole blood in one arm. The machine processes the blood while the patient is sitting there. It then returns to the patient, a normal volunteer donor not a patient, the plasma and the red cells that are not needed. If someone is donating red blood cells, then the machine would keep the red blood cells and donate back to the normal volunteer the platelets and the plasma and the various permutations and combinations. A unit of red cells and a unit of platelets can be taken as well, because quite frankly, since about 3% or 4% of the population donate blood for everybody, we are always in need of blood. If you can safely, and that has been a very big issue, donate 2 units of red blood cells at one time, or a unit of red cells and platelets, the machines can do that. They are monitored. They are all licensed by the FDA and we do research on that at Yale as well. This is a way of extending the ability of one person to donate more than just one unit of blood, which has been quite helpful. There is a certain part of blood banking where you have to have inventory management and that is where we work closely with the Red Cross to make sure that every unit of blood that is given by a person is used in the

best possible way to help save lives. Sullivan It is one of the things that we have been very focused on at the Red Cross for the last few years. We do have very concerned hospital partners in terms of how we store those products, and it is remarkable quite frankly, if you think about the fact that we have random presentations of donors pretty much every day. We do not know exactly who is coming, what their blood type is, etc., and we have random presentations of patients. We work very hard literally day and night. We have team members driving blood back and forth, bringing it to hospitals, calling the hospitals, asking what they have on their shelves, what they do not have, what they need, what they can share with other hospitals. We are constantly, both on a local and national basis, reallocating those blood products to make sure that we have it where it is needed, when it is needed. I sometimes get the 22:56 into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3) question; will my blood stay in Connecticut? Well the answer in Connecticut is your blood is almost certainly going to stay in Connecticut. The reason that is, and why I am so certain of that, is because we are a net importer of blood and what that means is Connecticut does not supply enough blood products to support its own hospitals right now. As I mentioned earlier, we ship out to hospitals of 165,000, and it is growing red cells each year, but we only collect about 155,000 red cells each year and so if you think about it, we have a gap to close. The only way is, as we keep talking about, to have people call 1-800-GIVELIFE and make an appointment. Come in, because quite frankly, we are being supported by the good people of the mid west and the good people of upstate New York whom regularly send us blood products. Snyder People should realize that the donor base is very heavily dependent on large industry because we used to be able to go to Pratt and Whitney, for example, in North Haven, and have a blood drive there daily for a week. Then Pratt and Whitney closed in North Haven and IBM shut down. When this industry changes or leaves the state, a large numbers of donors leave as well. So the economic downturn that many states in the North East are suffering has a direct impact on the unavailability of blood. You cannot get as much blood. It is not as efficient from the banking aspect to go to churches or schools and have 5, 6 or 8 people donate blood when that same effort could have been used at a large factory to get large numbers. It is critical that people realize that any donation, even at small drives, is critical. It is all added together and the Red Cross has had to change many of their tactics in order to take advantage of that. Sullivan We still want people to come to the churches and we jokingly say, "In everyone's face, every place," and it really does take that kind of gorilla marketing mentality some days to get enough donors to come out. It was, to a degree, an easier process when they had large manufacturing operations in Connecticut, but those days are gone. We still have some and they are great supporters of us, but what we really need is for people to get into the habit of coming in and giving blood. I would encourage anyone out there who owns a factory or any kind of small light industry to please contact the Red Cross. Call 1-800-GIVELIFE. We need more sponsors as well. Miller After listening today I have to say I am feeling pumped about

it; I've donated before, but to donate again. You have made it really clear to everyone just how important it is and I do not think we want to be an importer anymore. I think we want to be self-sustaining.25:49 into mp3 file [http://www.yalecancercenter.org/podcasts/Answers\\_Aug-17-08.mp3](http://www.yalecancercenter.org/podcasts/Answers_Aug-17-08.mp3)Snyder

The Red Cross has undergone a variety of changes at the national level and one of the concerns was whether the Red Cross in Connecticut was going to be here because they consolidate the same way industry does. To Paul Sullivan's credit and the national Red Cross, we were able to make a case to keep the Red Cross in Connecticut. We wanted the blood to stay in the state, because of a certain degree of pride or chauvinism. The Red Cross understood that the Connecticut area is a small community and we wanted the community blood to stay here. We are doing whatever we can to ensure that this was a good move, both economically and financially. Many of the listeners out there understand that a downturn of the economy, or the needs to consolidate, have an impact on blood donation. It is not just rolling up your sleeves and throwing rose petals at everyone, it is an obligation and it takes a lot of work behind the scenes. Paul has been at the Red Cross about three years and has done a superb job in increasing the safety of the blood supply and the availability of the blood supply, which has a direct effect on saving children's lives and the people who need blood whenever they need it.Miller Who right now in the hospital may need a blood transfusion at Yale?Snyder As we speak we have about 40% of the 70,000 units we use a year go to cancer patients. People come to the clinic, and the Yale-New Haven Smilow Cancer Hospital is being built. It will make available the opportunity for people not to have to go to New York or to Boston to get treated for cancer. It expands the ability for people to have treatment right here and the partnership with the Red Cross is critical. Cancer patients are receiving about 40% of the blood, the other 30% to 40% are people having vascular surgery for heart disease and other types of vascular problems. Then there are acute emergencies and people that get transfused for automobile accidents.Miller I have to say this has been a wonderful session. I want to thank Paul Sullivan and Dr. Ed Snyder for joining me and teaching me and everyone else quite a bit about being a blood donor. Until next week, this is Dr. Ken Miller from the Yale Cancer Center wishing you a safe and healthy week.