PACIFIC NORTHWEST
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Making Sense of Blood Cancer Test Results

Presented August 22, 2026

For PNW MM Fighters members use only.

Audience questions and answers

Q. Not to sound greedy, but MRD testing today goes down to a sensitivity of 10 to the minus 6. Are we heading toward 10 to the minus 7?

A. I'm not directly aware of an assay validated to that level, but I wouldn't be surprised if one will ultimately be found. The technology keeps improving. Within our own lab, we run MRD testing for B lymphoblastic leukemia, but not for myeloma. We send myeloma MRD testing out, I think to Johns Hopkins. I'm fairly certain the people working with these technologies are aware of the sensitivity question, and that can only be a good thing.

Q. The lab made an error with the sample from my original ClonoSEQ test, so there is no valid baseline from that draw. I was diagnosed in March 2024 with 65 to 75 percent bone marrow involvement, 40 percent of which were abnormal plasma cells, along with a 1q gain and a 1p deletion. Is there any way to recover or establish a baseline now?

A. I'm sorry that happened with your ClonoSEQ sample. If there is any specimen, from before or after that draw, in which residual abnormal plasma cells were still present, ClonoSEQ can work with that material to build a baseline. The problem comes if the disease has since gone away almost completely, because then there are no abnormal cells left to sequence and what ClonoSEQ needs is a baseline built from abnormal cells. Even without a clone-specific baseline, ClonoSEQ can still continue to monitor generically for abnormal cells going forward. It just would not be specific to whatever your particular clone was.

Q. How much of the lab work done on blood samples is by machine versus by a person, and what happens to blood that's left over after testing?

A. A portion of the hematology lab, including CBCs and various serum studies, is done by machines. Those machines are calibrated and validated daily and reviewed by medical laboratory professionals, with a pathologist signing off on every report. If a larger sample was drawn than the tests required, there can be blood left over. That blood has a limited shelf life, so all needed tests are run before that window closes, usually very quickly after the sample reaches the lab. After the shelf life passes, the leftover blood is discarded.

Q. For a patient not yet MRD negative, with an IGH clone that rose from the low 200s to about 2,700 over four months, what does it mean when a new dominant sequence shows up on a ClonoSEQ result, and what should be done about it?

A. That depends in part on what the bone marrow biopsy done around the same time shows, so I'd want to look at the ClonoSEQ result in that context rather than on its own. Broadly speaking, sometimes there are two clones of disease present, and one clone responds to therapy better than the other. As the treated clone shrinks, the less responsive clone can then show up as the new dominant sequence. Even at a low absolute number, ClonoSEQ is sensitive enough to pick up that a second abnormal clone may be present. If this dominant clone persists and continues to grow, that pattern can suggest a more therapy resistant clone, and monitoring it becomes important. A new dominant sequence doesn't necessarily mean the clone is abnormal, but labs don't tend to flag something like this unless it is atypical, so staying in close contact with your hematologist and tracking it against your routine labs matters. If those labs stay stable, retesting can often be spaced out further. If they start to move, earlier retesting makes sense.

Q. What does it mean to have two faint bands in the gamma zone on serum protein electrophoresis, both not quantifiable?

A. The gamma zone on electrophoresis is where light chains typically show up. A single dark band there is evidence of a clonal process. Two faint bands means exactly what it sounds like: the gamma zone isn't empty, but whatever is there is so low it can't be quantified. It has to be reported because it's present, but it needs to be read together with the rest of your labs and, if you've had one, your bone marrow biopsy.

Q. On the same kind of result, what does it mean when an IFE gel shows a faint band of kappa that can't be further quantified?

A. Every test has a limit to how far it can take you. If the lab sees something on the IFE but can't quantify it, they'll note it that way rather than either overstating it or leaving it out. It's simply a description of the fact that a very faint kappa band is there.

Q. What is anaplastic myeloma?

A. Anaplastic myeloma is the name given to an aggressive type of myeloma. Anaplastic lymphomas and myelomas both exist as categories, and they tend to have a more aggressive biology and appearance. Practically, that usually means it's tougher to treat.

Q. It seems like most blood tests are looking at the downstream effects or collateral damage of myeloma rather than the myeloma cells themselves, while ClonoSEQ is looking at the disease directly. Is that right?

A. That's right. Most blood tests are measuring the damage: things like the amount of protein being produced. ClonoSEQ, flow cytometry, FISH, and the bone marrow biopsy are the ones looking directly at the abnormal plasma cell itself. ClonoSEQ does it genetically, flow and FISH do it by other means, but all three are looking at the cell, not just its effects