**Question 1:** How well does the predictive analytics tool match the needs of DCFS? Is it the right tool for the job, or is there a mismatch in some way?

Occurrences such as child neglect and abuse can come in many forms. It doesn’t happen only if a child is likely to be killed. That said, the tool only slightly matches the needs of DCFS. The software is only focusing on child death whereas highlighted earlier, DCFS focuses on more than just that. There isn’t a mismatch however there is a need for a tool that can predict abuse or neglect even when death isn’t a possible outcome.

**Question 2:** What about DCFS' organizational structure and staffing lends itself to success (or failure) with a predictive analytics tool? Where is there alignment/misalignment? For instance, what if DCFS had regular and significant turnover in the case workers who use the predictive tool – would that make success with the tool more or less likely? What if DCFS had very little turnover?

ERSF deployed these models to child care agencies. All the agencies saw was the predicted probability that a child was going to die. They saw this and were very concerned. The tool could not be used effectively here as the people who could use the information it was giving did not understand the meaning behind it. If agencies had high turnover this would make the problem worse, as agencies’ staff would not have enough time with the tool to learn how to use it and interpret the outcome. If there was very little turnover, the staff would be able to slowly learn how the tool could be useful to them and incorporate it into their case information.

**Question 3:** What are the different ways that the predictive model might be right or wrong? Specifically, what do (true/false) (positives/negatives) look like here? How do false positives and false negatives affect deployment of resources, for instance, and what are the implications of being wrong?

The model could predict a child death when it actually won’t happen (false positive). On the other worse hand, will not predict a child will die (false negative). In this case, a false negative has much greater implications as it will cause the agency to wrongly look the other way because they think a child is going to be ok. The implications of having a false positive are the agency wastes some resources investigating and helping a child who doesn’t need it. The implication of a false negative are that a child dies when it could’ve been prevented if the model was correct.

**Question 4:** Consider this: if you were using a predictive model to prevent customer churn for your company, then a predictive tool might tell you that customer A is 90% likely to churn, whereas customer B is 30% likely to churn. If you wanted to use your resources optimally, you would intervene with the person whose likelihood of churn is most reducible. That is, if you could reduce A from 90% to 80%, but you could reduce B from 30% to 10%, then - ceteris paribus - intervening with customer B would be the better profit-maximizing choice. Does the same logic hold for DCFS regarding identifying and preventing child abuse? What are the differences between preventing a bad outcome like customer churn versus a bad outcome like human suffering? How do those differences affect decisions around resource deployment? What do you think is the objective function that DCFS was trying (or should try) to maximize? How does (or should) that objective function relate to their actions?

DCFS should try to reduce the average / max percent chance of children suffering. If a child has a 90% chance to suffer versus another child having 30%, we should deploy resources to help the child with a 90% chance.

**Question 5:** Do you think Beverly Walker was correct in getting rid of the predictive tool? What would you have done/counseled her to do?

No, I think they should’ve kept the model as it could be a valuable tool to help the agency run more efficiently. Especially if the objective function is to lower the max probability of children suffering. I would have told Beverly to keep the model but educate the child care agencies on how they can use that to run more efficiently.