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The authors reported no conflicts of interest.

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References

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Discussion
Presenter: Bill Walsh

Dr Tara Karamlou (Cleveland, Ohio).

The authors studied a change in the protocol after the induction of a PCC and fibrinogen concentrate on 3 outcomes: mortality, adverse postoperative events, and transfusion burden. They studied 2 periods, one preceding 2016 before the institution of these changes and the 3 years after 2016 over 1000 patients. Congratulations on terrific outcomes with your complex patients. Their mortality rate decreased commensurately to approximately 1.1% from 4.3%, and this was also not just a short-term mortality improvement but one that went all the way to 1 year after surgery. I have 3 questions for the authors. The Society of Thoracic Surgeons ACHD working
group, an effort that’s been led by Dr Nelson, has been working to develop a risk model to improve the ascertaining of patients with ACHD and to appropriately risk adjust those patients whose risk previously has been extrapolated from pediatrics or adult-acquired patients’ data. How did you risk adjust these patients? You showed a commensurate increase in more complex anatomy, but did you actually use any validated risk adjustment tool?

**Dr Bill Walsh** *(Dublin, Ireland)*. Our institution has a risk predictor model that has been presented, and it’s based on MELD-XI scores, BMI, presence of cognitive impairment, and the number of previous incisions and anatomy. These would be the factors we would use to attempt to predict postoperative course in our patients.

**Dr Karamlou**. Okay. The impact of dedicated teams has been studied by Mike Gaies and colleagues in the PHN trial with PC4. In that study, the authors demonstrated something tangible, important to our community, and that is the engagement of a multidisciplinary group, as well as traction with your center and follow-up, will result in a sustainable improvement after a change in protocol. Gaies and colleagues demonstrated that in early extubation protocols after the end of the trial, centers that adopted it and embraced it widely actually had a sustained improvement. Although you didn’t present it, is how did you develop sustainability of these changes in protocols and how did you disseminate this throughout your heart center?

**Dr Walsh**. From January 2016, every patient who presented for ACHD surgery was managed by a small group of 3 of the staff cardiac anesthetists, and they would be seen in the preoperative assessment clinic only managed by those patients intraoperatively and managed by those in the postoperative intensive care unit also. That program has been sustained since inception.

**Dr Karamlou**. You mentioned an interrupted time series model. Did you use a washout period to avoid contamination of data from one period to the next?

**Dr Walsh**. Not that I’m aware of.

**Unidentified Speaker 1**. This risk stratification has as one of the objectives that of averting the occurrence of nonsurgical bleeding postoperatively. You’re just ready with more blood products and you stratify the patient. So, I haven’t seen your incidence of reexploration from bleeding. Was it higher? Was it lower? Higher because of the higher complexity or did you notice a change?

**Dr Walsh**. That wasn’t a variable we recorded, but anecdotally, with the increased complexity and blood product use, there possibly was a slight increased reexploration, but I don’t know that for certain. We didn’t collect those data.

**Unidentified Speaker 1**. What is your takeaway from this?

**Dr Walsh**. My takeaway is that narrowing the team and being responsible for looking after these complex patients with higher throughput and better individual skill sets will hopefully lead to reduced mortality and the ability to better risk stratify and deal with more complex patients.