

Platform Trials: Towards More Efficient Clinical Trial Designs

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Disclosures



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A good problem to have...

Many promising therapies in multiple domains of traumatic hemorrhage care:

- Transfusion strategies
- Novel blood products (e.g. preserved platelets, plasma)
- Novel hemostatic agents and more...

What is a Platform Trial?

- An experimental infrastructure designed to evaluate multiple treatments for a disease or group of related diseases
- Intended to function continually beyond the evaluation of any individual treatment

Platform Trials are Efficient

Statistical Efficiency:

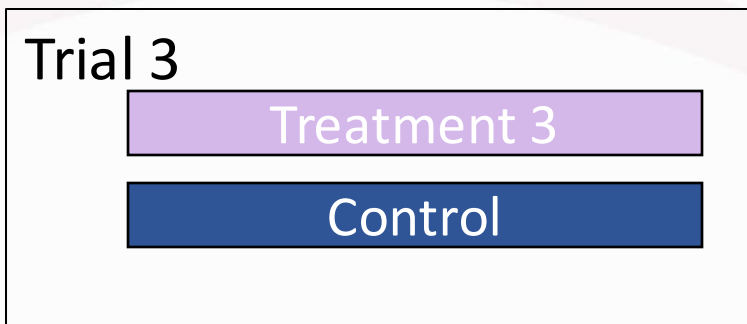
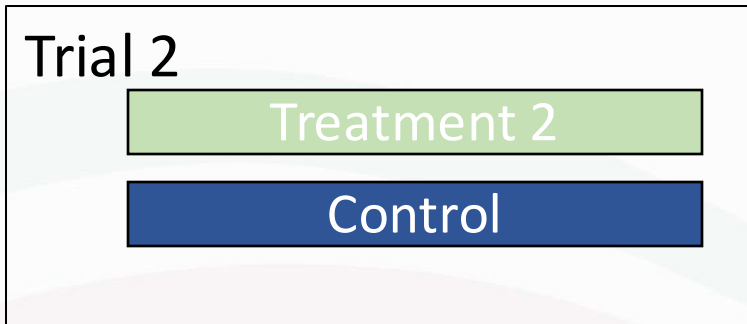
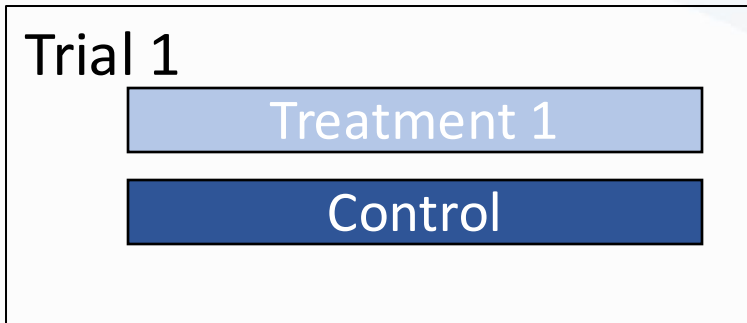
Answering more clinical questions with fewer patients

Operational Efficiency:

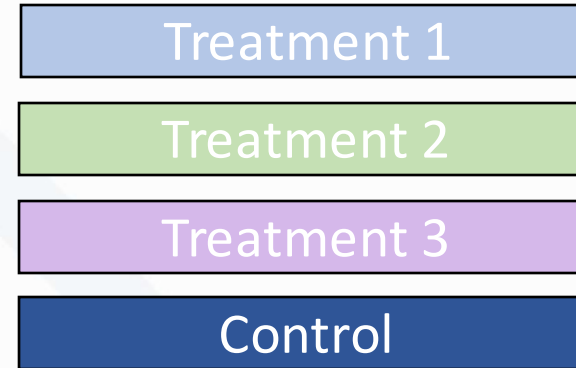
Sharing infrastructure so that time-consuming operational processes (master protocol development, initial trial start-up) only have to be done once

Statistical Efficiencies: Shared Controls

A Series of 2-Arm Trials



Multi-arm Trial with Shared Control



Time

Statistical Efficiencies: “Factorial” Randomization

Transfusion Domain

Antifibrinolytic
Domain

	Transfusion Strategy A	Transfusion Strategy B
Antifibrinolytic 1	1 + A	1 + B
Antifibrinolytic 2	2 + A	2 + B
Antifibrinolytic 3	3 + A	3 + B

Statistical Efficiencies

Other Potential Sources of Efficiency

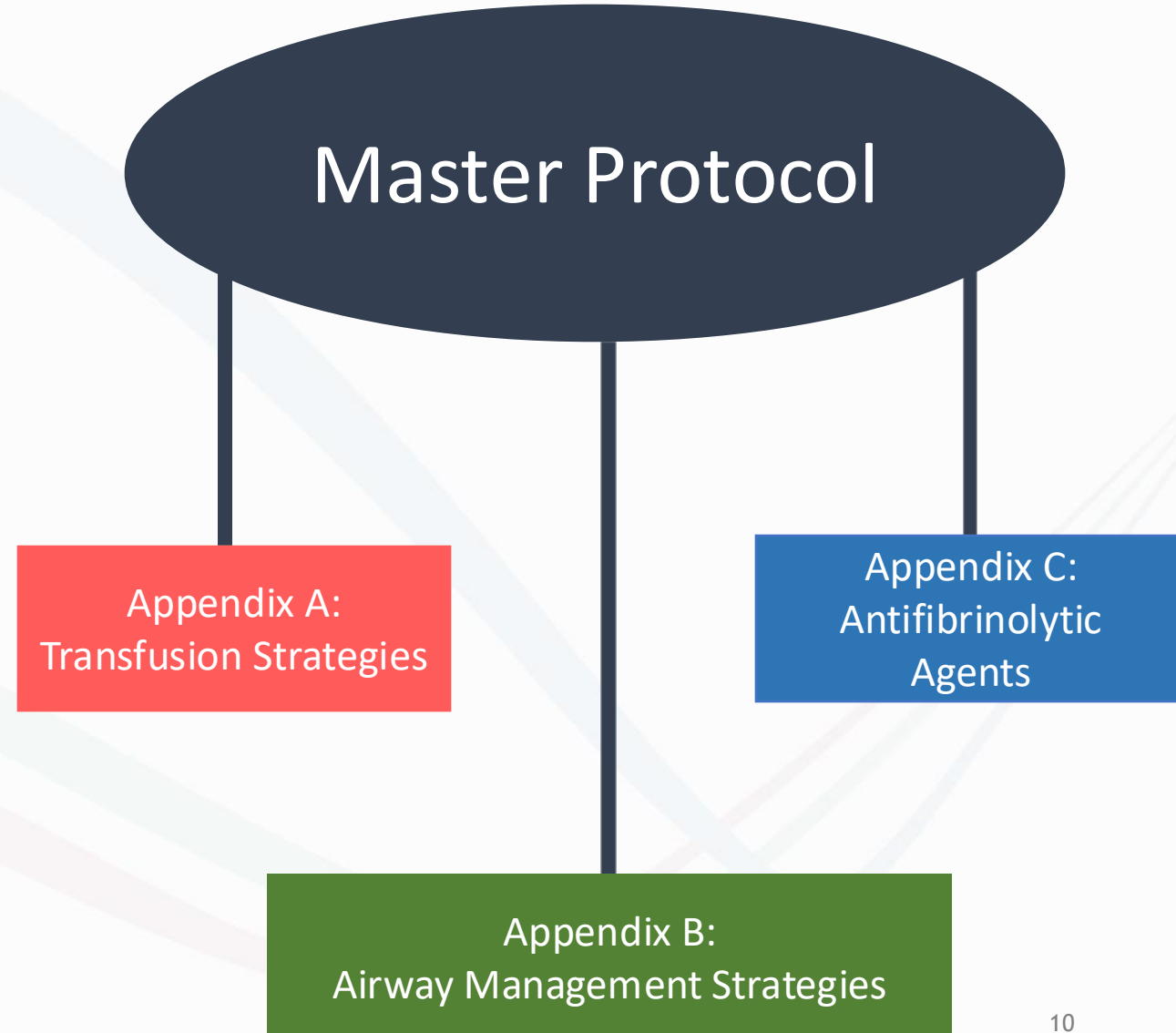
- Response-adaptive randomization
- Early arm dropping for futility
- Early arm graduation for success
- Hierarchical modeling

Operational Efficiencies of Platform Trials



Operational Efficiencies: Master Protocols

- The platform trial has a **Master Protocol** common to all interventions in the trial
 - **disease-focused:** not specific to an intervention or a class of interventions
 - **describes the patient experience** e.g., common schedule of activities, data collection
 - Classes of interventions are added to the platform in **domain-specific appendices**

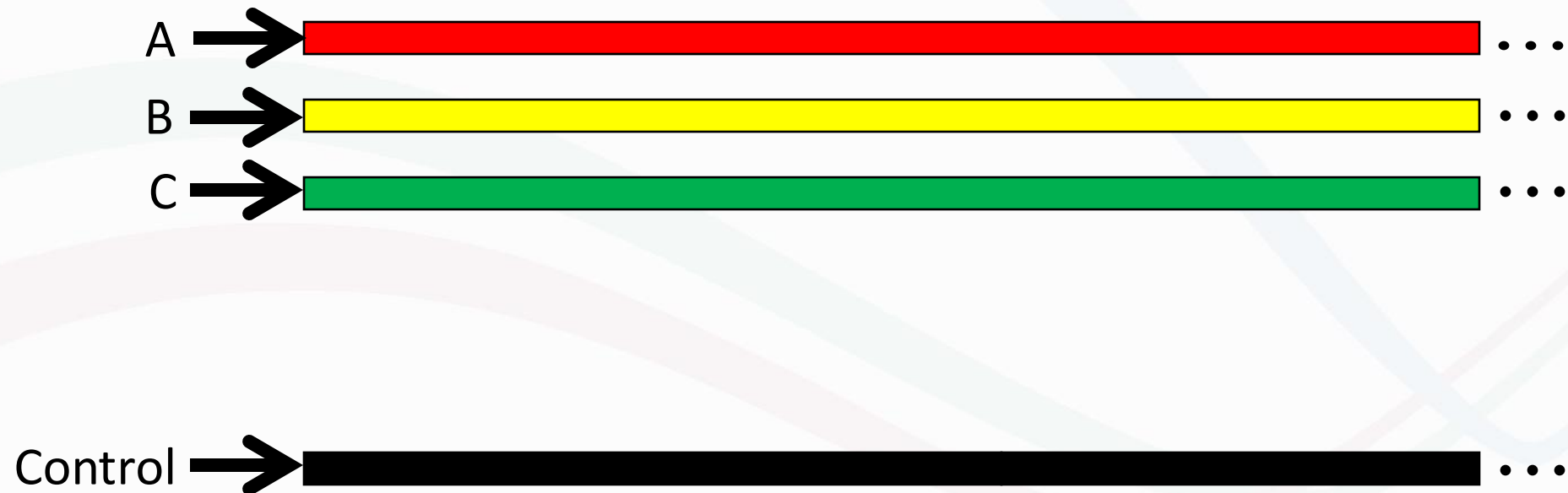


Operational Efficiencies: Master Protocols

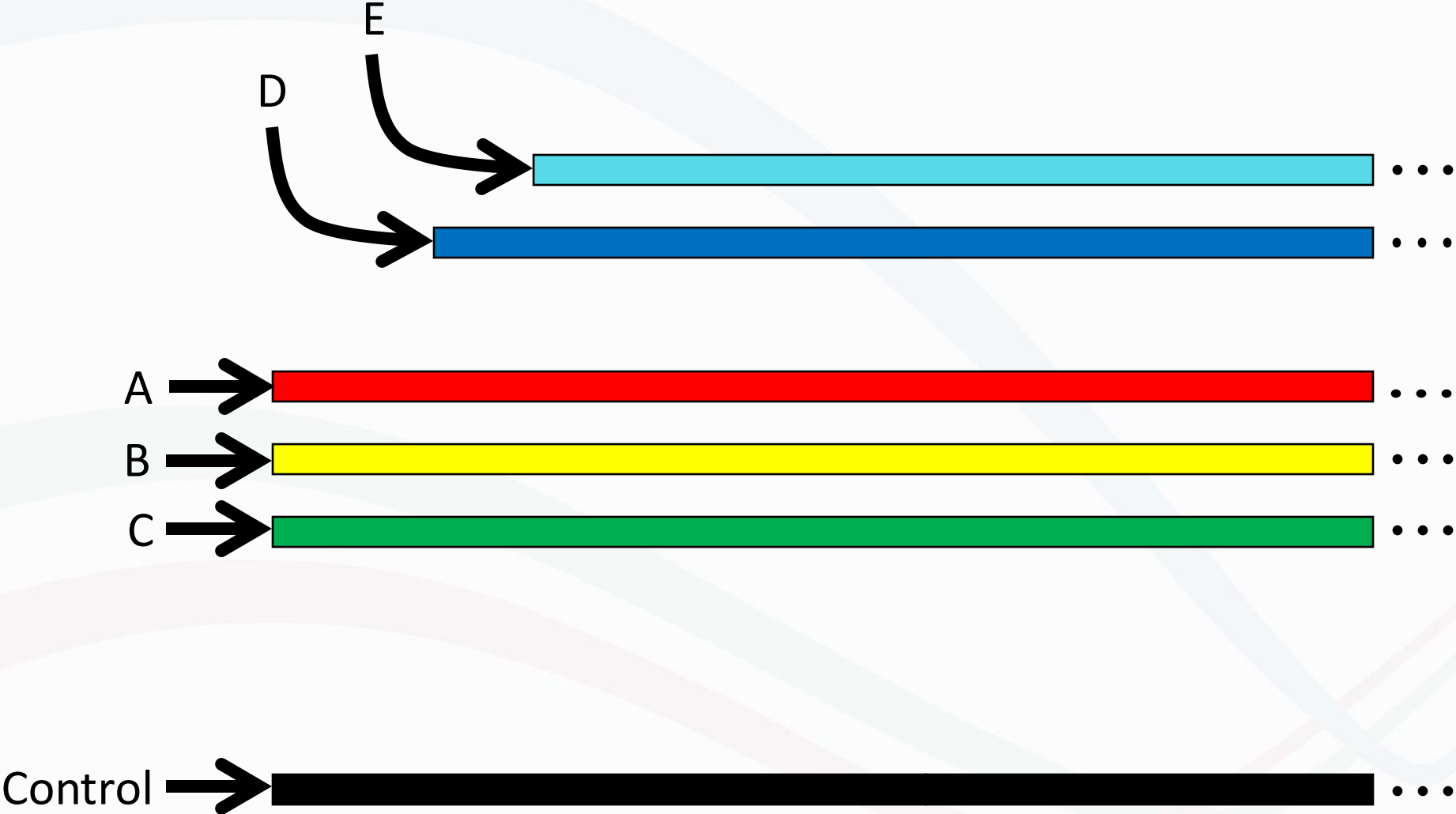
Domain-specific appendices – flexibility and detail

- Domain-specific inclusion criteria
- Additional domain-specific endpoints to be collected
- Tailored
 - Domain-specific sample size
 - Intervention details
 - Randomization details
 - Analyses
 - Statistical triggers

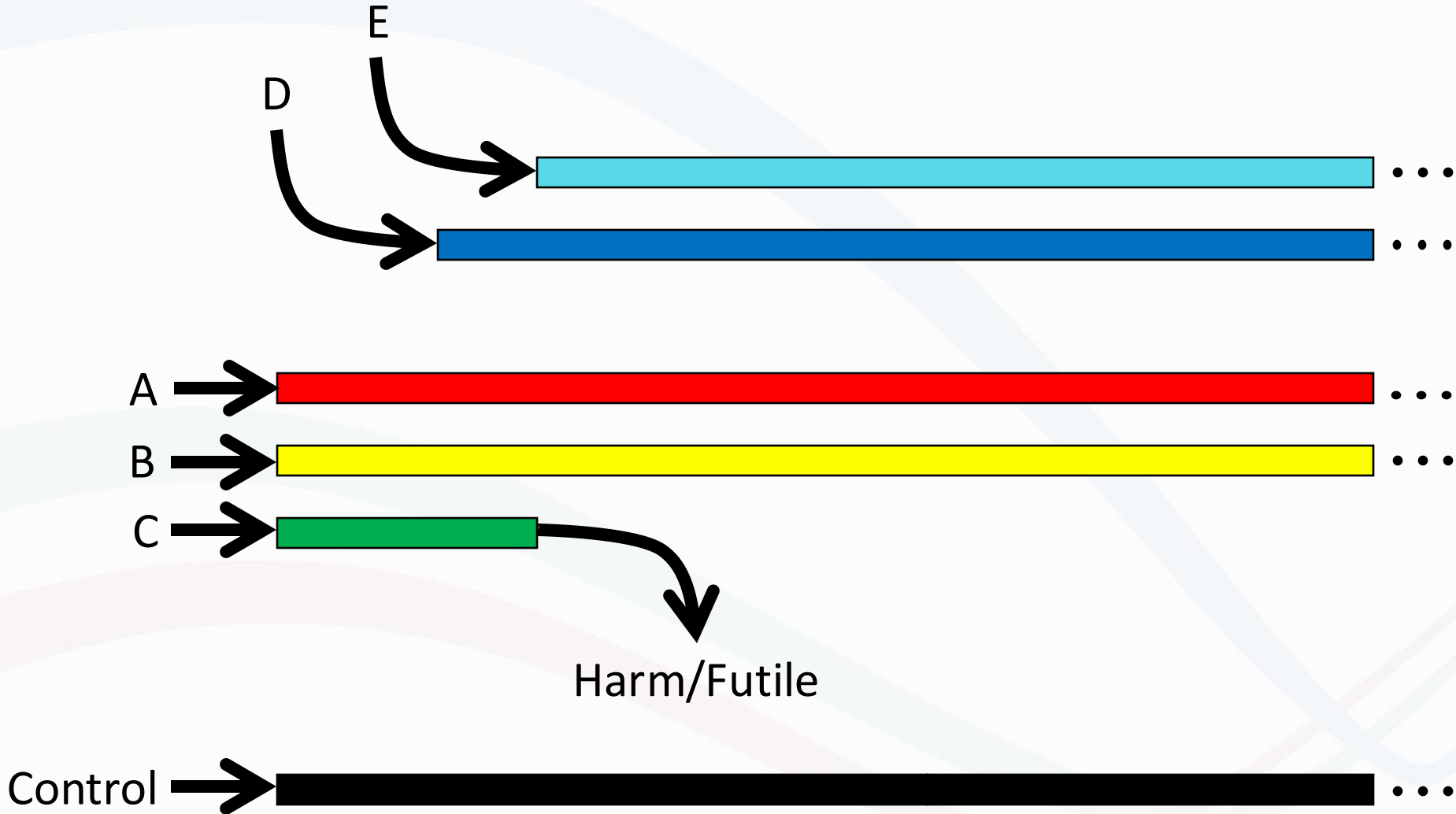
Operational Efficiency in a Changing Clinical Landscape



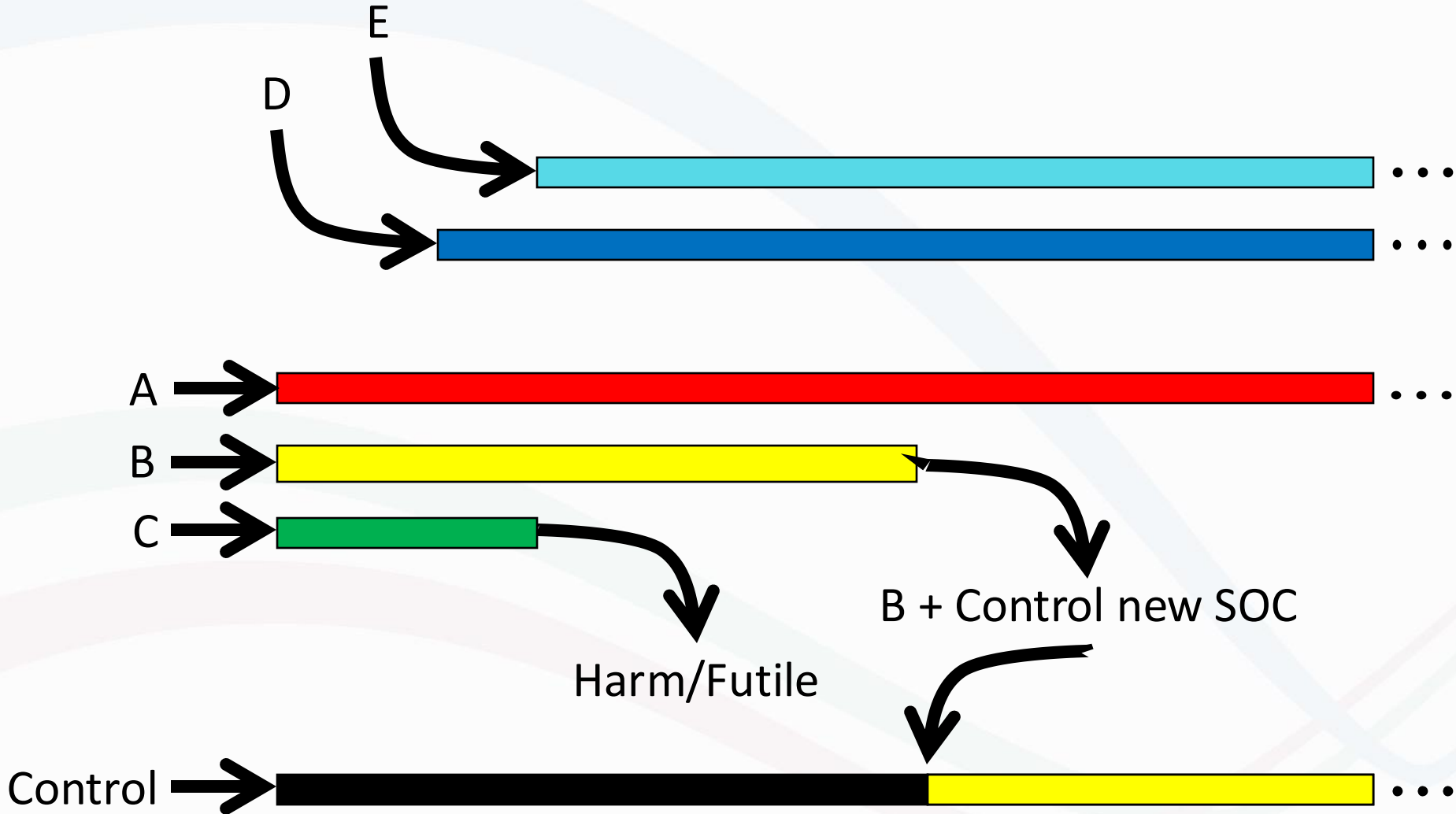
Operational Efficiency in a Changing Clinical Landscape



Operational Efficiency in a Changing Clinical Landscape



Operational Efficiency in a Changing Clinical Landscape



Heterogenous Patient Populations and Subgroups

E.g. Adults and children

Trial One

- Traumatic hemorrhage in adults

OR

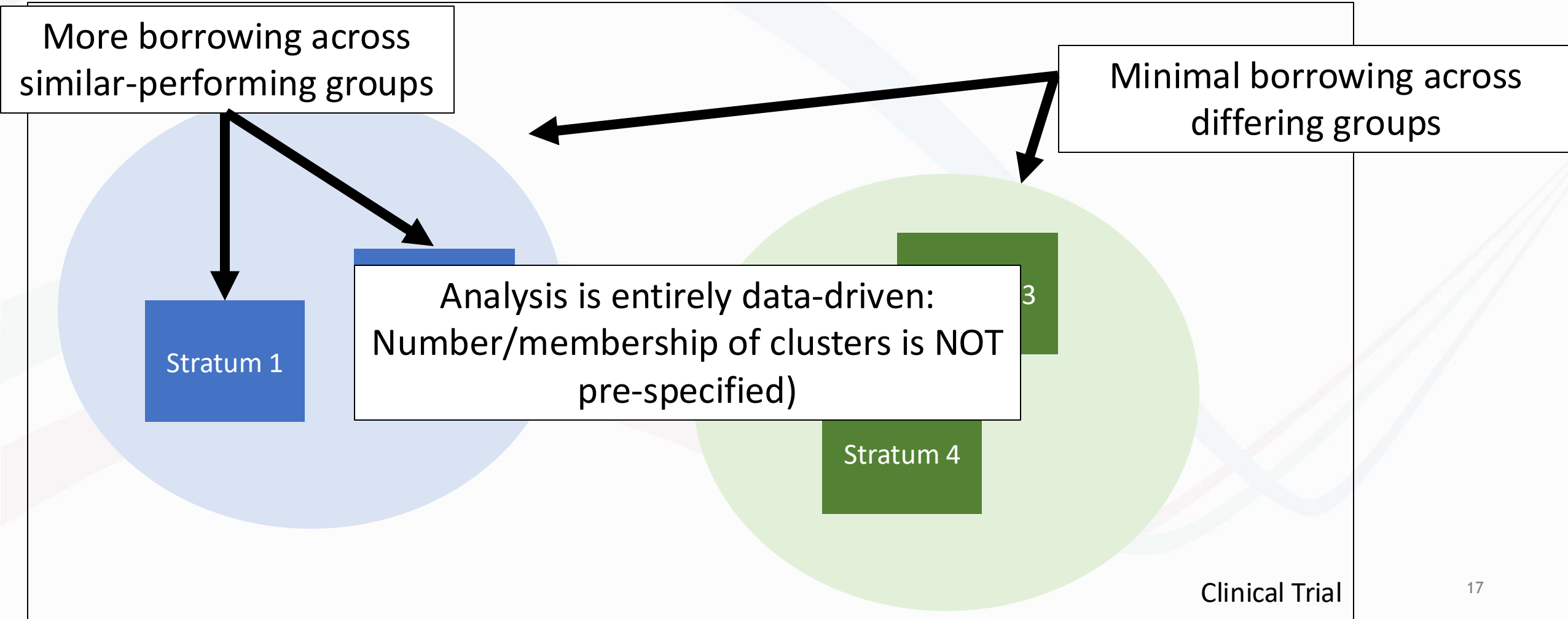
Trial includes all patients with traumatic hemorrhage
- Underpowered analysis in pediatric subgroup

Trial Two

- Traumatic hemorrhage in children

Heterogenous Patient Populations and Subgroups:

Hierarchical Model Approach with Dynamic “Borrowing” to Estimate a Treatment Effect





Thank you!

For more information on Platform Trials:

- [Youtube.com/berryconsultants](https://www.youtube.com/berryconsultants)
- [Berryconsultants.com](https://www.berryconsultants.com)