

What is Surgical Residency?



Surgical Residency Programs

- 3-5 years, depending on specialization
- Rotate through services (typically monthly)
- Certification requirements include **minimum case numbers** determined by the ACGME
- Residents are assumed to be competent in a procedure if they have met the minimum case numbers.

Limitations of this Training System

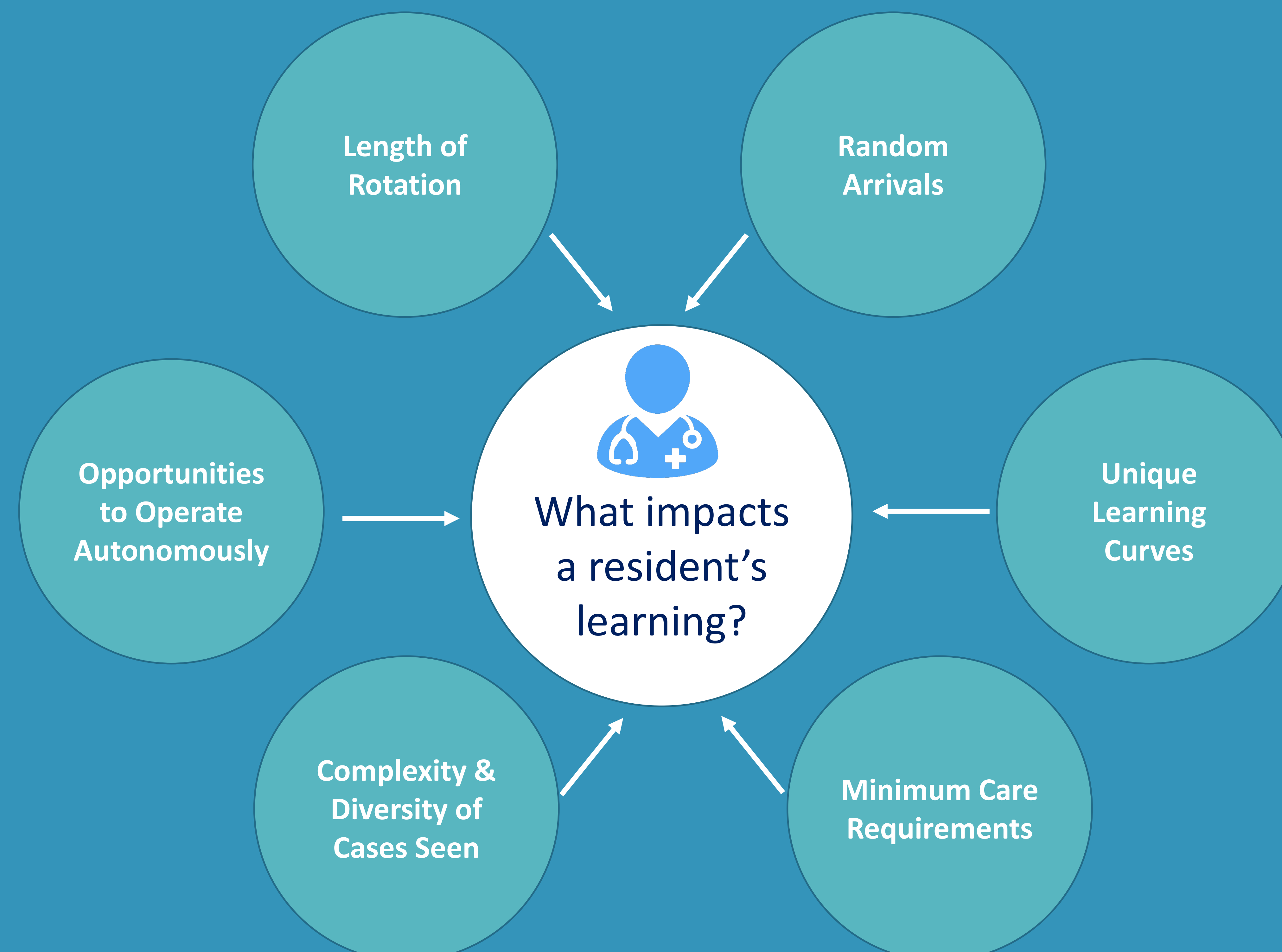
This System Assumes...	But in Reality...
Every resident achieves competency after the same number of procedure cases	Residents become competent in different procedures at different rates
Each time period provides the same number of procedure cases	Surgical cases arrive in random patterns
Competency is all or nothing	There are degrees of competency

Why is this important?

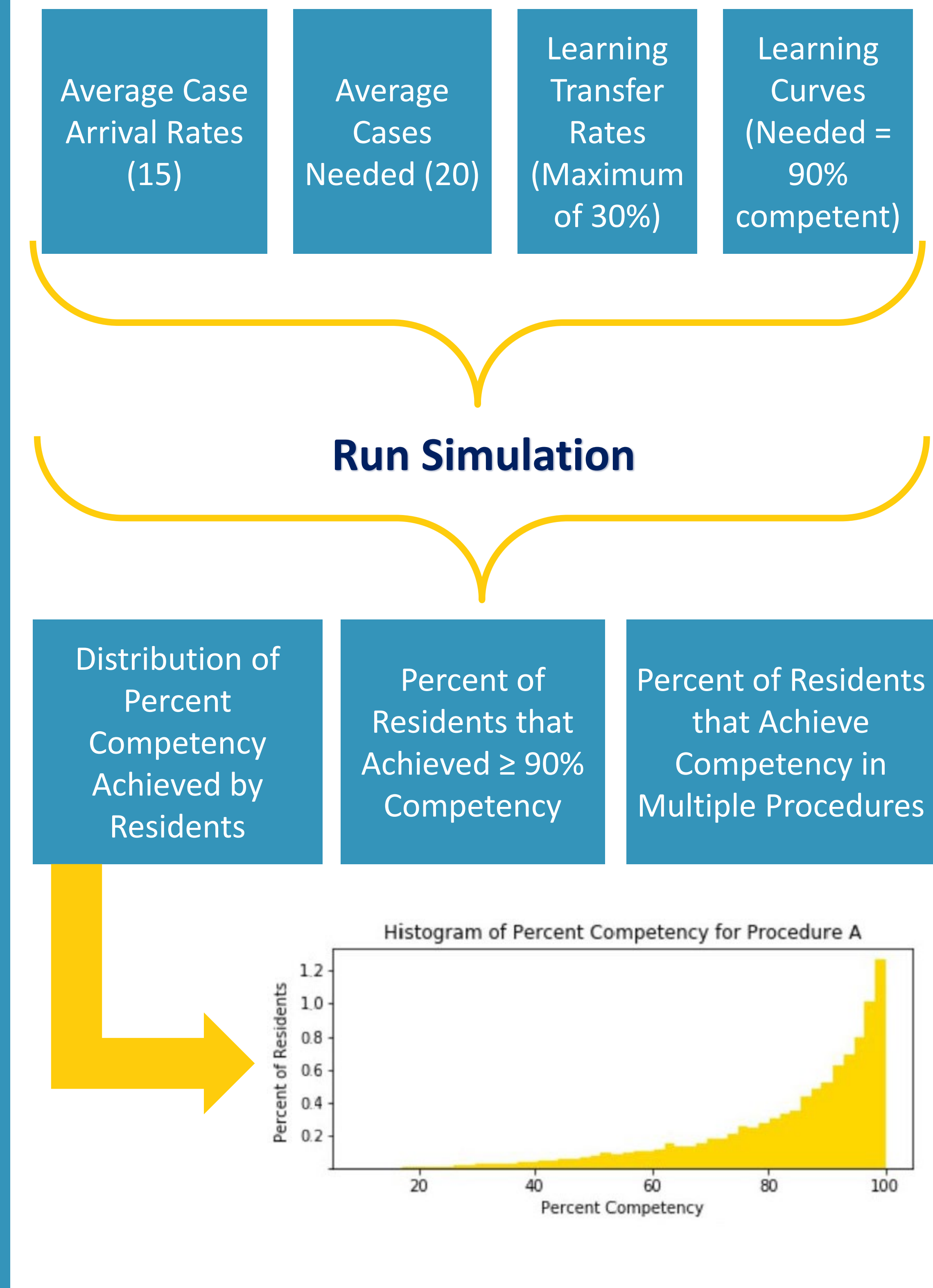
- We want to ensure that the best training systems are in place to train our future surgeons.
- Making a simulation model can help us understand how the complexities above affect surgical residents in training.
- Our work aims to explore the opportunities to improve surgical training programs by focusing on the uniqueness of each resident.

One size does NOT fit all: How do we design surgical training programs to recognize that different residents achieve competency at different rates?

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Using Simulation for Sophisticated Analysis of Training: An Example:



Where do we go from here?

We want to:

- study how optimization can apply to the structure of surgical residency programs
- create a time-based model to assess the time required for all residents to achieve competency
- further refine the model structure and inputs based off our collaborators' ongoing work

Acknowledgements