

IE 1.4: Modeling the Total Cost of Employee Departures

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Problem Statement

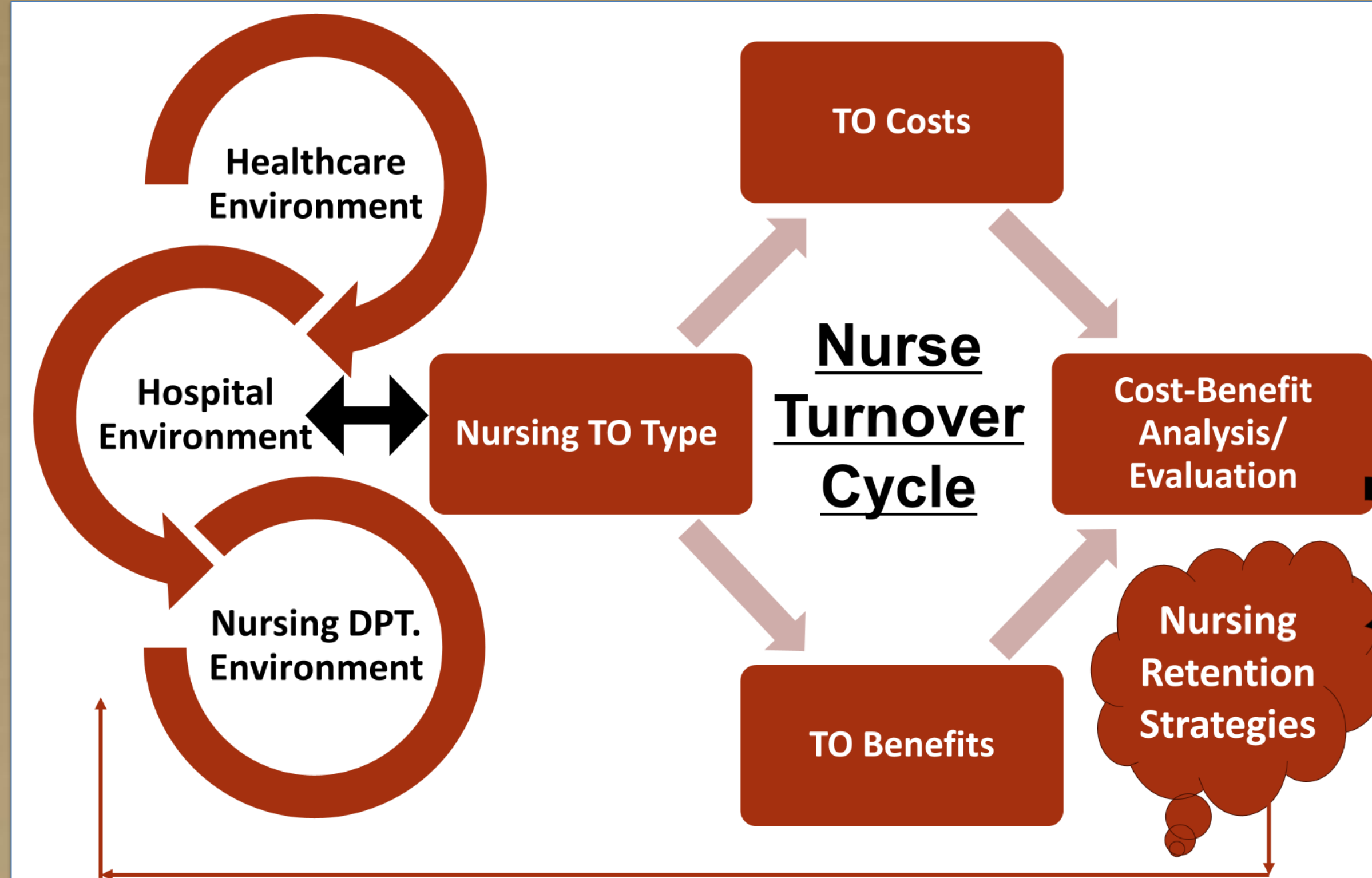
- Turnover for nurses is higher than other professions.
- Children's Health (CH) hospitals, like others, struggle to retain their employees and distribute investments towards employment.
- There is no current method for estimating how much a departure of an employee impacts the hospital financially.

Background- Children's Health

- Children's Health is pediatric hospital in Dallas, TX.
- In 1913, Nurse May Smith founded Children's Health Hospital with only three nurses.
- Their mission statement is "Making Life Better for Children".

Project Purpose

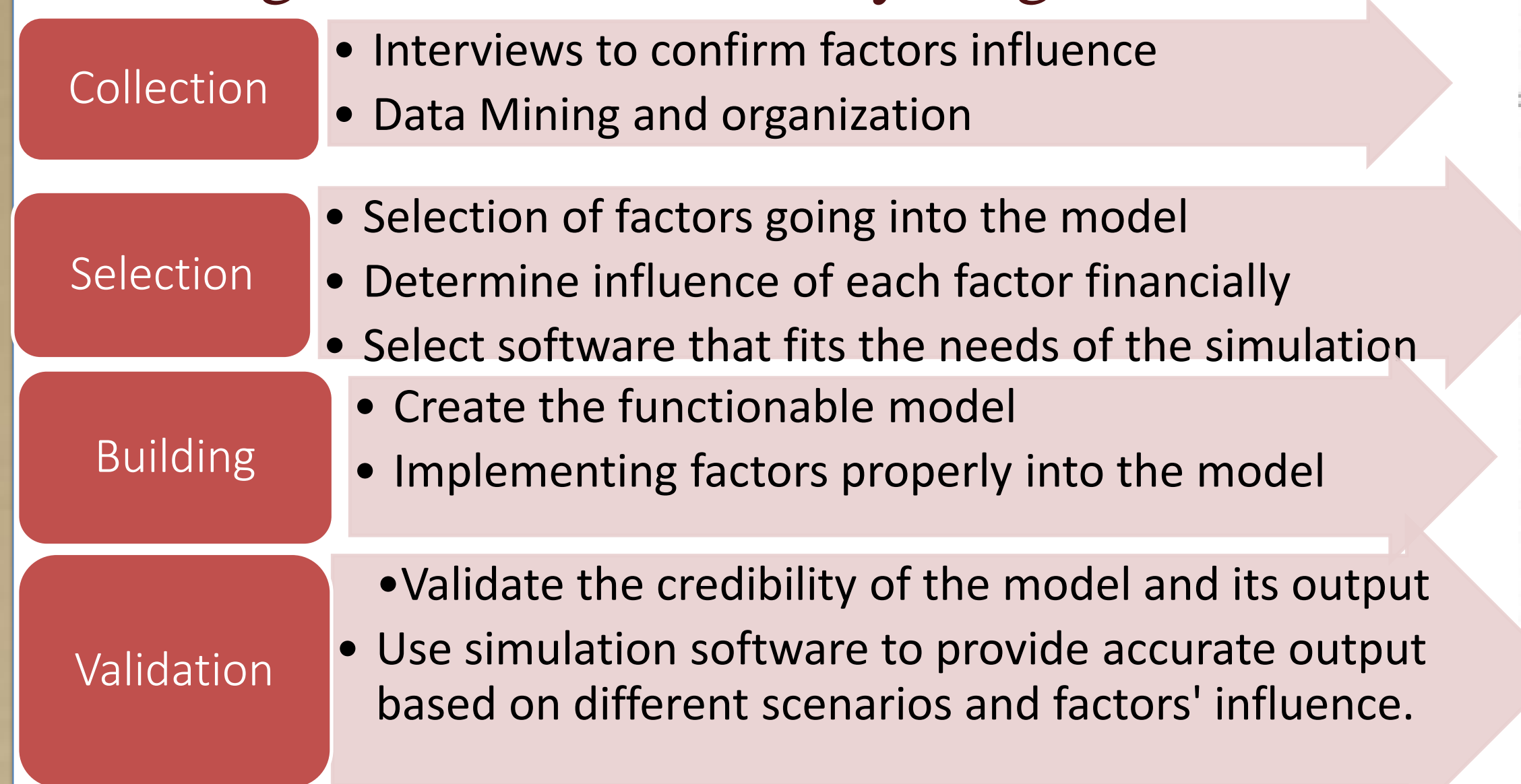
- The purpose of this project is to create a credible model using real data provided by CH Dallas Hospital.
- The model will be inputted with functions considering all the financial data-based factors that provide the average cost of an employee departure.



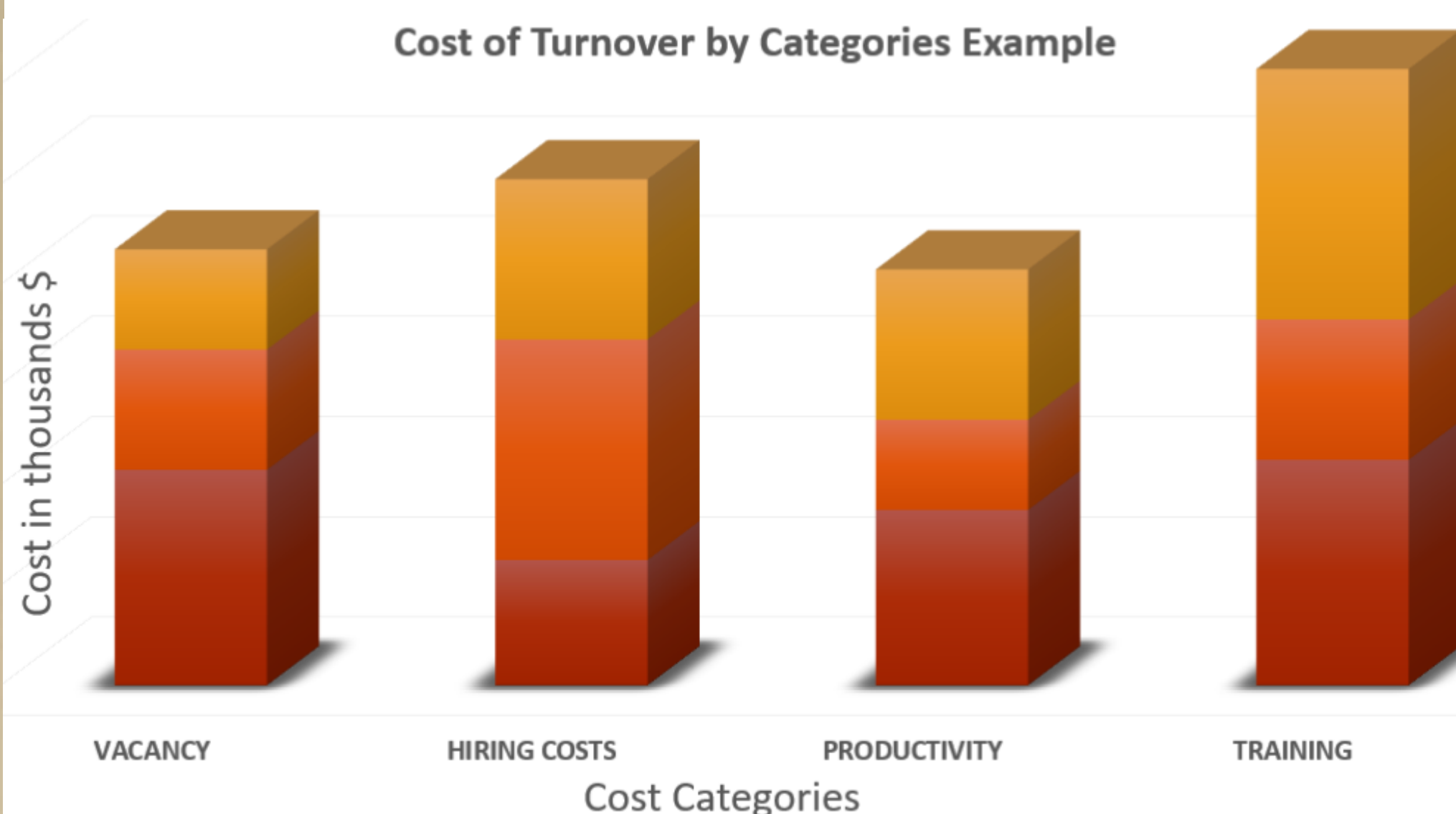
Research in Turnover

- The action of backfilling an employee can be very costly, and there are many factors involved that come with the departure of one employee.
- In hospitals, a variety of effects come when one employee leaves their position, influencing many other parts of the organization that directly or indirectly have a financial cost.
- Healthcare organizations struggle with employee retention and are constantly looking for methods to improve this at a low cost.

Building a Credible Model by Stages



Category	Mean Cost (\$)	Range (\$)
Advertising/Recruiting	1,887	1,181 - 2,688
Unfilled Positions	4,101	1,358 - 7,794
Hiring	655	488 - 1,006
Subtotal, Direct	6,643	3,002 - 11,488
Orientation/Training	2,117	1,518 - 3,316
Decreased New RN Productivity	1,276	915 - 1,543
Termination	163	118 - 193
Subtotal, Indirect	3,556	2,862 - 4,349
Total	10,198	6,886 - 15,152

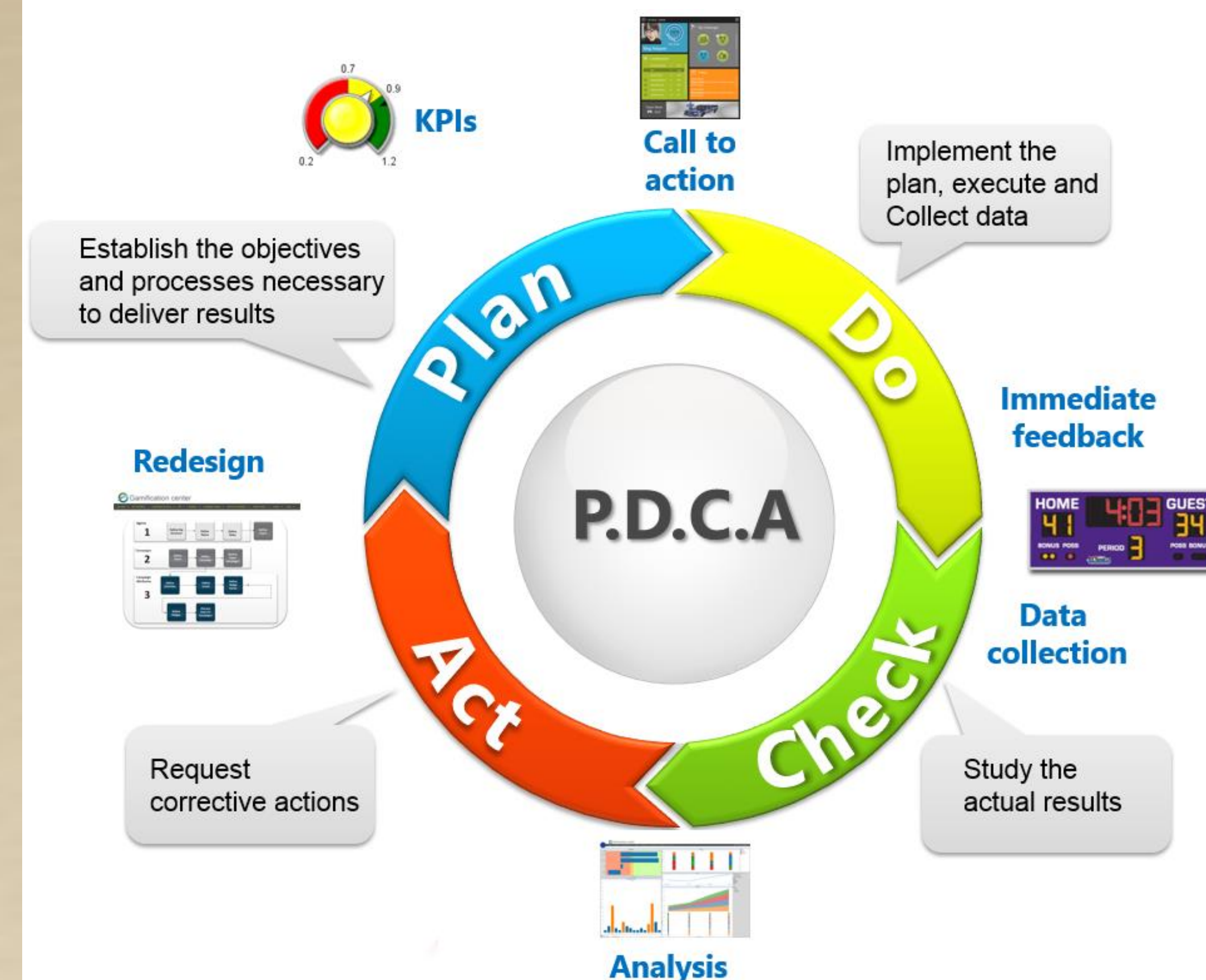


Objectives

- Do a literature review about turnover factors influencing our measured output. This will be the base for obtaining precise data exclusively for the chosen topics and factors.
- Determine the main specific factors and their weight influencing the overall turnover cost. This will be done with research, interviews, and CH data mining.
- Build a model assuring the correct inputs into the model. This involves specific ranges probabilities in cost \$ within each factor.
- Final objective is to simulate the model with different scenarios that are credible and possible based on all material and correct.

Problem-Solving Approach

The PDCA Cycle will be our problem-solving method. This will support the process of building the model and validating it with simulations.

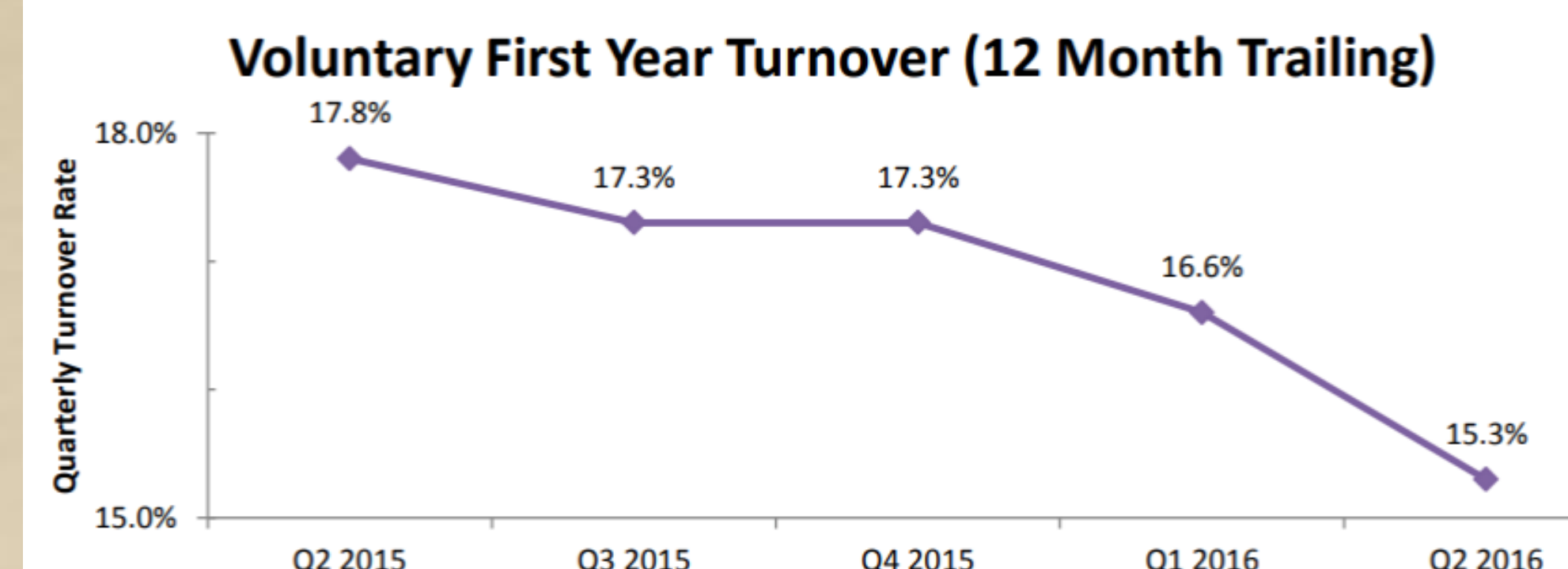


Progress

- Interviewed CH personnel.
- Research cost of turnover in different healthcare facilities and countries.
- Generate a literature review to better understand variables and factors in cost of turnover.

Future Plans

- Continue to interview hospital personnel and precise data going into the model.
- Create simulation methods based on model.
- Run different scenarios to provide insight into CH investments.
- Evaluate the influence of each factor in \$ and its contribution to employee retention.



Human Factors

- Modeling this cost will help CH to determine areas of focus to improve nursing retention at lower costs.
- Will help to improve efficiency of employee investments and reduce flaws in productivity.

Model Prototype

VACANCY COSTS	COST	NOTES
Daily Cost of Covering for the Position	\$204.68	assumed, at 37% of Daily Cost
# of Days Position Vacant	90.00	
Total Cost to "Cover" Position	\$18,421.28	

HIRING COSTS	COST	NOTES
HR or Hiring Manager Salary	\$75,000.00	
HR or Hiring Manager Hourly Rate	\$42.55	Based on 235 working days
Departing Employee - Exit Interview Cost	\$127.66	assumed, 3hrs of HR manager
Departing Employee - Other Separation Costs	\$500.00	
New Hire - Resume Screening (Hours)	20.00	
New Hire - Interviews (Hours)	10.00	
Total Hours to Fill Position	30.00	
New Hire - Advertising Costs	\$500.00	
New Hire - Other Admin Costs	\$200.00	
Separation Cost & Cost to Hire Replacement	\$2,104.26	

TRAINING COSTS	COST	NOTES
Mentor or Manager Salary	\$150,000.00	
Mentor or Manager Onboarding Daily Rate	\$638.30	Based on 235 working days
Total Training Days Consumed	10.00	
Other Training Costs	\$500.00	
Total New Hire Training Cost	\$6,882.98	

Productivity Loss Cost	COST	NOTES
Daily Employee Cost	\$553.19	Daily Cost of new hire at same
Days to 100% Productivity	90.00	
Productivity Loss Cost	\$24,893.62	Prior to reaching 100%, assumed

Advertising	COST	NOTES
Daily Employee Cost	\$250.00	Daily Cost of new hire at same
Online fees and promoting costs	90.00	
Total Advertising Costs	\$11,250.00	Prior to reaching 100%, assumed

TOTAL COST OF TURNOVER	\$150,010.00
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Model Simulation and Design of Experiments

- Operations Research and DOE concepts will be used to experiment with the influence of factors and different scenarios. Analyzing how it affects the average cost.
- Cost categories will be further analyzed to ensure they are effective to the model with confidence validations.

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