



## INTRODUCTION

- Interprofessional teamwork and collaborative practice are becoming increasingly important in delivering safe, quality and cost effective healthcare to patients.<sup>1</sup>
- One of the leading root causes of sentinel events is deficiency in communication and teamwork among healthcare team members.<sup>2</sup>
- Team simulation is an effective tool in improving communication and teamwork skills.<sup>3</sup>
- TeamSTEPPS is an evidenced based teamwork approach to developing communication and teamwork skills among team members.<sup>4</sup>
- There is insufficient evidence demonstrating that interprofessional educational activities – such as team simulations – are effective in improving patient safety.<sup>1,3</sup>
- Major barriers to establishing a causal relationship include:
  - Cost
  - Logistical concerns (e.g. training schedule)<sup>1,3</sup>
- More information on factors that affect development and maintenance of interprofessional communication and teamwork skills via team simulations is needed.

## METHODS

### Cohort Demographics

- 3 cohorts of the TeamSTEPPS based interprofessional course (Fall 2011, Fall 2012 and Fall 2013) were analyzed
- Students included
  - 2<sup>nd</sup> year medical students
  - 3<sup>rd</sup> and 4<sup>th</sup> year nursing students
  - 3<sup>rd</sup> year pharmacy students
- Each cohort contained 2-3 teams of 3-6 students that completed 3-4 graded team-based simulations together

### Data Collection

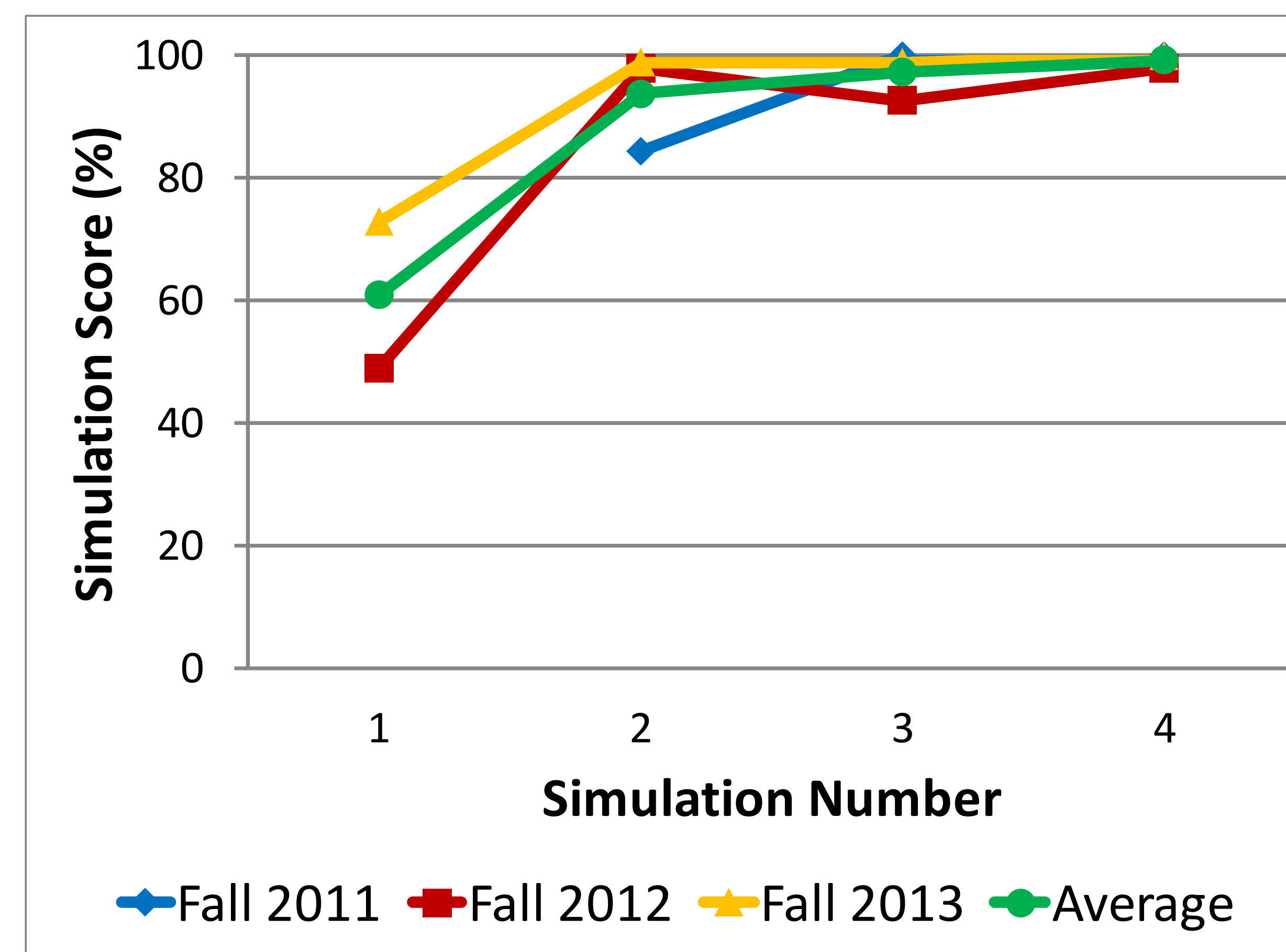
- Interprofessional communication and teamwork skills in graded simulations were evaluated using a 16-question tool based on the Mayo High Performance Teamwork Scale<sup>5</sup>
- Each question was worth a maximum of 2 points:
  - “No action was taken” = 0 points
  - “Unacceptable/Borderline performance” = 1 point
  - “Acceptable performance” or above = 2 points

### Data Analysis

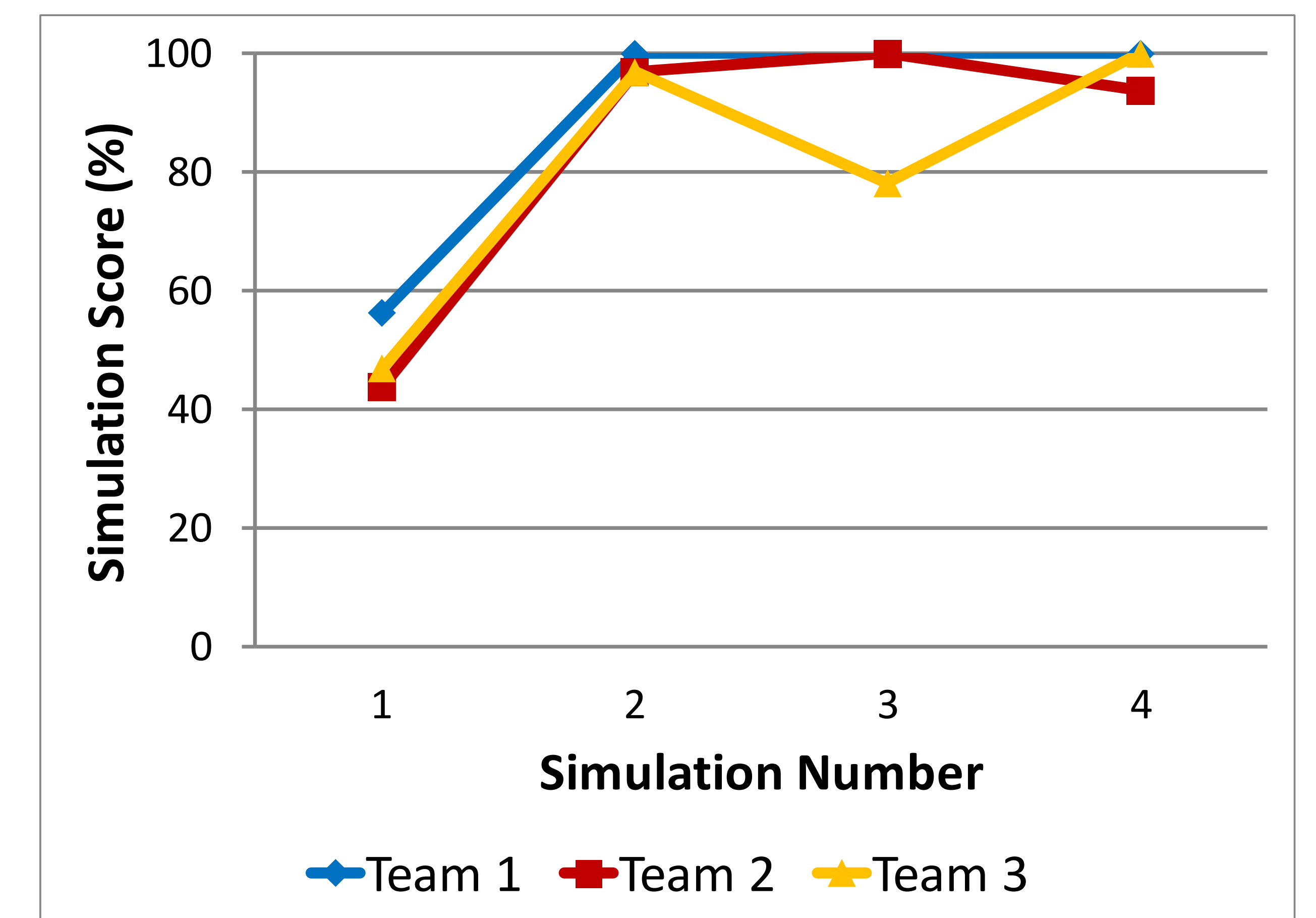
- Team scores were analyzed using descriptive statistics to determine existing trends in team performance
- Anomalies in identified trends were qualitatively compared to:
  - Course schedules and activities
  - Familiarity of team members based on number of “connections” (incidences where 2 people within a team have previously worked together in graded team simulations)

## RESULTS

**FIGURE 1** Comparison of average team scores between cohorts.



**FIGURE 3** Comparison of individual team scores in Fall 2012 cohort.



**FIGURE 2** Comparison of course schedules and types of course activities between cohorts.

Class #	Fall 2011 Cohort	Fall 2012 Cohort	Fall 2013 Cohort
1	Group activity	Group activity	Group Activity
2	Team simulation (ungraded)	Team simulation 1	Team simulation 1
3	Team simulation 2	Individual clinical activity	Individual clinical activity
4	Individual clinical activity	Team simulation 2	Team simulation 2
5	Lecture	Lecture	Lecture
6	Video	Video	Video
Break	(3 weeks)	(3 weeks)	(3 weeks)
7	Lecture	Lecture	Team simulation 3
8	Team simulation (ungraded)	Team simulation 3	Lecture
9	Team simulation 3	Team simulation (ungraded)	Team simulation (ungraded)
10	Team simulation (ungraded)	Team simulation (ungraded)	Team simulation (ungraded)
11	Team simulation 4	Team simulation 4	Team simulation 4
12	Individual clinical activity	Individual clinical activity	Individual clinical activity
13	Group activity	Group activity	Group activity
14	Exam	Exam	Exam

- Largest gap between team simulations is 6 weeks in Fall 2012 separating 2<sup>nd</sup> team simulation and 3<sup>rd</sup> team simulation
  - 6 week gap matched with decreased average team score
  - 4 week gap in Fall 2013 not matched with decreased average team score

**FIGURE 4** Number of connections among Fall 2012 cohort teams for 3<sup>rd</sup> and 4<sup>th</sup> simulations.

Simulation #	Team 1	Team 2	Team 3
3	5	4	8
4	10	9	15

- For the 3<sup>rd</sup> simulation, the lowest scoring team (Team 3) had the most number of connections
- For the 4<sup>th</sup> simulation, the lowest scoring team (Team 2) had the least number of connections

## CONCLUSION

- Interprofessional teams of health professional students acquired a high level of competency in teamwork and communication skills after completing at least 2 simulations together (Figure 1).
- Interprofessional teams should consider doing simulations at least once every 4 weeks to maintain teamwork and communication skills (Figure 2), especially among teams that contain team members who are familiar with working together (Figure 4).

## REFERENCES

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4. Haynes J, Strickler J. TeamSTEPPS makes strides for better communication. *Nursing*. 2014;44(1):62-3.
5. Malec JF, Torsher LB, Dunn WF, et al. The mayo high performance teamwork scale: reliability and validity for evaluating key crew resource management skills. *Simul Healthc*. 2007; 2(1):4-10.