**BACKGROUND**

- Urology providers have competing roles and responsibilities that present scheduling challenges that impact clinic volume, as well as patient waiting time and satisfaction.
- Schedule optimization incorporating provider constraints seeks to minimize waste.
- We describe and demonstrate a novel, optimized method for assigning clinic days to academic urology providers given the following constraints:

1. Surgery and outreach responsibilities
2. Supervision of Resident Clinic
3. Maximum number of rooms can be assigned
4. Rooms can only be assigned to one provider
5. Each scheduled provider must have at least one room

**METHODS**

- An integer programming model was used to schedule providers for clinic shifts to maximize patient access to appointments.
- The impact of this model was evaluated by comparing total variability in clinic throughput, and comparison of the mean number of monthly encounters and work relative value units (wRVUs) 11 months prior to and following implementation.

**RESULTS**

- The integer programming model produced a feasible schedule for 14 providers that was implemented after pairwise and three-way switches among attending providers to account for preferences.
- The optimized schedule had reduced variability in the number of providers scheduled per shift (standard deviation 1.41 vs. 0.99, p = 0.01).
- The mean number of encounters was significantly higher after the change (1196 vs. 1370 encounters, p = 0.011).
- There was a trend towards an increase in the mean wRVUs (1463 vs. 1332, p = 0.069).

**CONCLUSIONS**

- Optimization models offer an efficient way of generating a clinic template for providers that considers other responsibilities and decreases day-to-day clinic variability.
- Optimization models be readily implemented in community and academic urology practice settings.
- The model increased the number of patient encounters within our system.

**REFERENCES**