Provider Scheduling to Maximize Patient Access

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Schedule Optimization

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

Constraints:

Providers to schedule:
- Attending Physicians, Trainees, and other LIPs
- Resident Clinic: Must be supervised by Attending Physician
- Attending Physician: Must adhere to other clinical and academic responsibilities
- Other LIP Clinic: Supervising attending must be present (if applicable)

Clinic Constraints:
- Maximum number of rooms
- Rooms are not shared
- Total number of rooms
- Each assigned provider has a room

Mathematical Formulation:

\[ \sum_{i,j,k} x_{i,j,k} \leq R_{v,i} \forall i, k \]
\[ \sum_{i,j,k} y_{i,j,k} \leq 1 \forall j, k \]
\[ \sum_{i,j,k} z_{i,j,k} \leq 7 \forall k \]
\[ \sum_{i,j} x_{i,j,k} \geq y_{i,k} \forall i, k \]
Increased Patient Throughput