Modeling Caregiver Burnout and Resiliency to Optimize Prevention and Mitigation Intervention
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Opportunity and Impact
Literature has shown that there is significant correlation between healthcare staff burnout and patient safety. It is a major problem for more than 80% of healthcare organizations.

Literature Review Findings

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Approach

1. **Inverse Markov Chains (MC) – Aims I and II**
   - Modeling propagation of burnout without interventions
     - All States completely observable
     - No Control over state transitions
2. **Markov Decision Processes (MDP) – Aim III**
   - Modeling propagation of burnout with interventions
     - All states completely observable
     - Interventions that will control state transitions
3. **Preliminary Results for Inverse Markov Chains**
   - MBI results tell us what our intervention should tackle:
     - Workload
     - Control
     - Reward
     - Community (e.g. social networks)
     - Fairness
     - Values
4. **Inverse Markov Chains (MC) Transition Matrix**
   - Distribute MBI surveys to same population at month 1 and month X.
   - Map results to 8-phase model
   - Work backwards from initial state (P0), power (P+) or steady state (P∞) to get the transition matrix
5. **Investigate with experts on adding constraints to the optimization problem**
   - From the transition matrix, insight on when to intervene and whom to focus on will be gained.

Next Steps:
- Data collection
- Refining MC model
- Develop guidelines from MC output
- Create MDP model