



# Improving Physician Wellness Using AI

Suvas Vajracharya, Ph.D.



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# The Physician Burnout Crisis

More than **half of all physicians** (54 percent) now show at least one symptom of burnout, up 10 percent over three years. ([Mayo Clinic](#))

“More than 7 percent of nearly 7,000 doctors had **considered suicide** within the prior 12 months, compared with 4 percent of other workers. About 400 a year go through with it.” ([Reuters](#))

America loses a doctor a day to suicide

# Burnout Definition

Burnout is a syndrome of:

- Emotional depletion
- Depersonalization and cynicism
- Low personal achievement

More likely to occur when job **stress is high** and personal **autonomy is low** .



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Northern Michigan's iNDIGO Health Partners is one of the country's largest private hospitalist groups. Before teaming with Lightning Bolt in 2008:

- 37 providers across two programs
- FTE physician scheduler working 1,000 hours a year manually setting schedules
- Inflexible 7 -on, 7-off block scheduling

*Located in rural northern Michigan with some of the coldest winters in the country, iNDIGO has access to only 35-40% of the physicians available per capita in southern Michigan and cannot replace physicians easily.*



# iNDIGO + Lightning Bolt

iNDIGO saw dramatic results from scheduling optimization in the first five years of working with Lightning Bolt:

- Flexible scheduling — no rigid 7 -on, 7-off shift pattern for all providers
- Expanded to 118 providers scheduled across seven programs and six hospitals
- Balanced the needs of providers, medical groups, and hospitals with a scheduling administrator
- Provider retention rate went up to 97.6% (SHM average at the time was 89.4%)
- An estimated \$38 million return on investment

*Flexible scheduling improved iNDIGO's ability to meet provider needs and increase retention while ensuring quality care for hospital patients.*

# Balancing Scheduling Stakeholders



PROVIDERS

Evolving and varying definitions of work-life balance. Varying specialties and FTEs. Scheduled and unexpected time-off. Access to up-to-date schedules anytime, anywhere.



INDIGO

Consideration for provider, patient and hospital needs. Retain valuable resources to ensure partnering hospitals' access to the right providers. Scalable scheduling solution to accommodate growth.

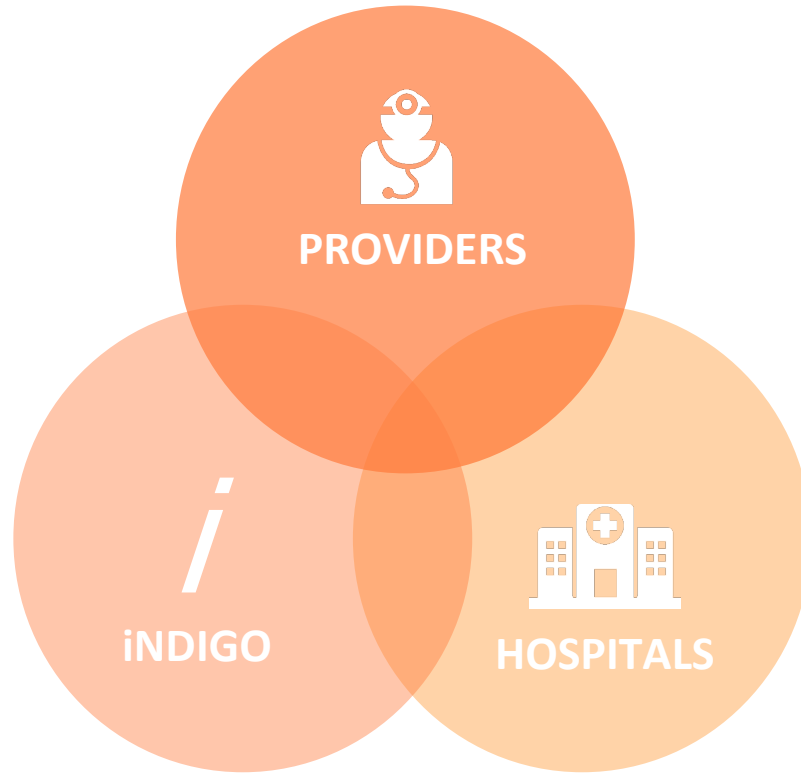


HOSPITALS

Adequate coverage to meet patient demand and ensure continuity. Access to valuable resources in order to maintain quality care. Reliable scheduling solution with proven value.



# Balancing Scheduling Stakeholders





# Scheduling Rule Examples

- Group 1 Doctors work Day Shifts in a block of at least 3 days in a row, followed by at least 3 days off.
- Doctors work weekend shifts at least 4 times and at most 6 times per scheduling period.
- If mid-levels are scheduled for two weekends in a row, do not schedule third weekend following.
- H. Patel prefers to work day shift 7 -on, 7-off and cannot take weekend night shifts.
- G. Hawkins cannot work more than 50 hours per month.
- Do not schedule Drs. A. Jones and B. Jones on night shifts on the same day.



# AI for Optimizing Schedules

## A Scheduling System That Constantly Learns, Predicts, and Adapts

- **Optimize** : AI quickly tests millions of possible variations to automatically deliver the best possible schedule option for your care team.
- **Manage** : Flexible, transparent, and real -time tools give your schedule the ability to easily adapt to changes. Provide your organization with mobile apps, instant on -call management, and automated approvals for time -off and shift swap requests.
- **Measure** : Advanced analytics help you evaluate schedule performance and test new optimizations. Export data or use our tools. Tally shifts, customize reports, explore ties to handoff continuity and physician burnout trends.

# Scheduling Science in Other Industries



- Professional sports (NFL, MLB, NHL, NBA) all use operations research to optimize schedules.
  - Ensures adequate rest for athletes
  - Increases bottom line
- The airline industry relies on scheduling science to make sure overly tired pilots are not flying.

What level of physician burnout will motivate hospitals and health systems to optimize the most valuable resources in the country?

# Next Steps

1. Measure physician retention, if you're not already.
1. Ask physicians about their schedule preferences — everyone is different.
2. Build as much flexibility into your schedules as possible. Technology can help.
3. Keep optimizing.
4. Measure the impact on your organization.





Questions?



Thank you!

[suvas@lightning-bolt.com](mailto:suvas@lightning-bolt.com)