

We All Fall Down

Goldratt's Theory of Constraints for Healthcare Systems

by Julie Wright and Russ King

When I first tried to read Eliyahu Goldratt's book, *The Goal*, I couldn't get through it. It was about improving throughput in a manufacturing plant. Since I'd never worked in manufacturing, I just couldn't translate it into a service business. It made no sense to me.

In *We All Fall Down*, the authors attempt to bridge that gap between manufacturing and healthcare. It's a novel about Beth, a bed manager, attempting to increase throughput in a 500-bed British hospital. Because of the National Health System, British hospitals run near full capacity. U.S. hospitals census ebbs and flows. Both peak in the winter flu season.

Because the hospital runs at 98% of capacity, there's always a shortage of beds causing cancelled surgeries and other issues. The constraint appears to be beds, but upon further analysis, Beth finds that policies are forcing her to put patients in any available bed instead of a nursing unit suited to their needs. Surgical patients end up in medical units and vice versa. This causes doctors to commute all over the hospital to do their rounds. In a 500-bed hospital, commuting can devour a doctor's time. This causes delays in discharge which further reduces the number of available beds.

From a Lean perspective, this is unnecessary motion. Lean and Theory of Constraints (TOC) offer two slightly different ways of looking at improvement. I think of them as different maps to the same territory.

Hospitals are Complex, but Problems are Simple

Goldratt's premise about TOC is that systems are complex, but problems are simple. They congregate at bottlenecks. Fix the bottleneck; fix the system. Goldratt also believes that people want to do a good job, but the system prevents them from doing so.

What is the Goal? Maximize *throughput* while minimizing inventory and operating expense.

While Beth is struggling to find the root cause of throughput problems, she has to wrestle other managers, doctors and knee-jerk improvement projects. See if you recognize any of Beth's findings:

- Too many improvement projects fail to deliver
- Potential negatives and objections are overlooked
- Staff have seen it all before

Meanwhile, Beth has to figure out how to present her findings in a way that can't be dismissed. See if you recognize any of the Six Layers of Resistance Beth faces:

- I don't accept your agenda
- I don't agree about the problem
- I don't agree about the solution
- I don't accept the benefits you claim
- I don't think you've identified all of the negative side effects
- I don't think you can overcome the obstacles to implementation
- I'll agree, but I won't play

One of the most interesting parts of this book is how Beth structures her presentations to various stakeholders to gain their agreement. Beth argues that doctors and nurses spend years learning how to link symptoms back to causes, but have not done this in the management of healthcare. Her presentations build a cause-effect chain that brings participants to the same conclusions she has reached.

If you want a taste of TOC as it applies to healthcare and can overcome the slight differences in language and application, this book will help you grasp the essence of TOC as it applies to healthcare.

Emergency Department Example

Every Emergency Department I visit has a waiting room and one triage nurse. As the waiting room starts to fill up, the triage nurse becomes the bottleneck. The exam rooms can be ready and waiting, but patients only arrive at the speed of the bottleneck—the triage nurse. What if the nurses waiting behind the doors of the ED stepped in to pull more patients in from the waiting room? (Invest in the constraint.)

The Theory of Constraints consists of five steps:

1. **Identify the constraint.** All businesses, including hospitals, are chains of systems. The constraint is the poorest performing link in the chain.
2. **Exploit the constraint.** (Optimize its performance.) Break "dummy" and "policy" constraints.
3. **Pace every other process to the speed of the constraint.** (Reduce overproduction, work in process (e.g., patients waiting), inventory, etc.)
4. **Invest in the constraint.** If production is still too low, invest in reducing the constraint (e.g., double the number of people or machines performing the constraint process).
5. **Repeat** until you get the desired performance. (There may be a new constraint.)

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