Anita Tucker -
Failing Well: Small and Large Lessons for
Individual Survival and Organizational
Quality

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Individual Survival and Organizational
Quality

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Nurse Irene’s day in the Intensive
Care Unit

Patient on ventilator, vent setting turned down as an
experiment
- 9:10 Missing container for sputum sample
- 9:25 Try to give bath, but no towels
- 9:30 Prepare for triple lumen insertion, but doesn’t know
what kind of supplies the surgeon will want
- 2:10 P.M. Lab lost sputum sample, need to redo

Other Examples

- (Pharmacy) Physician order sheets come to pharmacy
with no patient identifiers on them. Pharmacist takes
sheet to nurses station and asks ward clerk to verify who
the order is for
- (Physician) Resident tried to contact Attending – patient
bleeding – Urology Attending not responsive

Definition

OPERATIONAL FAILURE
An employee
1) cannot effectively complete a task because
a necessary element is unavailable
- or -
2) completes a task that is unnecessary or
incorrect

Examples of Operational Failures on
Nursing Units

Papers that this talk draws upon

exceptions: A model of nurse problem solving behavior.” Advances in
Learn from Failures: Organizational and Psychological Dynamics
Hospital Nurses and Their Patients.” Journal of Operations Management
22(2):151-69.
Frontline Employees in Hospital Units.” Manufacturing and Service
Operations Management 9(4) 492-505.
Line Staff Perspectives on Opportunities for Improving the Safety
and Efficiency of Hospital Work Systems.” Health Services Research
forthcoming
Need for Hospitals to Learn from Failures

- Most hospitals face financial difficulties
- Operational failures waste caregiver time and resources
- Poor working conditions cited as cause for nursing shortage – 126K vacancies in the US
- Medical accidents 44,000-98,000 deaths/yr†
- Most medical errors are systems related, not due to individual negligence or misconduct
- Improving operating systems can reduce errors


The Importance of Learning from Operational Failures

- Many minor incidents lining up in bad way
- Attention to operational failures can increase reliability Weick, Sutcliffe and Obstfeld 1999, Roberts 1990
- Organizations’ vary in perception of—and ability to respond to—failures Edmondson 1996, MacDuffie 1997

Methods to Understand Failures and Responses

- Observe operational failures and employee response
- 239 hours of 26 nurses at 9 hospitals
- Detailed transcripts of events & context
- In-depth interviews with 12 nurses
- Code transcripts for failures, response
- Interrater reliability and match with interview data
- Also, survey data from 48 nursing units, including manager ratings of the unit’s level of “front line systems improvement”

Results: Details on Failures -

<table>
<thead>
<tr>
<th>Problems</th>
<th>Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>80% surface during preparation for patient care</td>
<td>Nurse – 39%</td>
</tr>
<tr>
<td>91% from breakdown in information or materials to nurse</td>
<td>Other people – 18%</td>
</tr>
<tr>
<td>5/12 nurses interviewed – “The daily problems we face are from outside our own unit – It is a system problem.”</td>
<td>Faulty process flows – 43%</td>
</tr>
<tr>
<td>Front line employees well-positioned to learn from failures</td>
<td>Harder to recognize at the time</td>
</tr>
<tr>
<td>Takes an average of 33 minutes/shift of nurse’s time</td>
<td>Can be more risky to verbalize</td>
</tr>
</tbody>
</table>

Triangulation of Data on Failures

<table>
<thead>
<tr>
<th>Category of failure</th>
<th>Nurse Survey Mean (st dev)</th>
<th>Manager Survey Mean (st dev)</th>
<th>Observer Mean (st dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Medication</td>
<td>1.2 (0.97)</td>
<td>1.5 (2.3)</td>
<td>1.0 (1.2)</td>
</tr>
<tr>
<td>2) Supply items (including food)</td>
<td>1.2 (1.01)</td>
<td>1.4 (1.7)</td>
<td>0.9 (1.3)</td>
</tr>
<tr>
<td>3) Medical Orders</td>
<td>.58 (.55)</td>
<td>1.2 (1.0)</td>
<td>1.2 (1.3)</td>
</tr>
<tr>
<td>4) Equipment</td>
<td>0.98 (1.87)</td>
<td>0.80 (1.0)</td>
<td>0.80 (1.1)</td>
</tr>
<tr>
<td>5) Insufficient staffing</td>
<td>0.59 (0.50)</td>
<td>0.80 (1.1)</td>
<td>0.60 (1.1)</td>
</tr>
<tr>
<td>Total in an average 8-hour shift</td>
<td>4.51</td>
<td>5.7</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Typical response: First-Order Problem Solving

93% of the responses to failures
Characterized by:
- Focus on patching failure so immediate task at hand can be finished
- Fix it on his or her own whenever possible.
- If help is needed, ask friend first, then colleague, only when unavoidable, manager or doctor
Unintended consequences of first-order problem solving

- Contributes to problem occurrence
  - Similar situations may occur in the future
  - Can cause another failure

- Hinders organizational learning
  - Person who contributed to the failure does not know about it - not given the opportunity to learn
  - Lose information about
    - Frequency of failures
    - Cost of failures
    - Root causes

Quote illustrating lack of learning from FOPS

“We never told the pharmacy when we got a dose of medicine that was more than we requested. We just squirted out the extra anyway. It was sad really because we weren’t letting them have the information so they could fix their own problems.” – Nurse Hosp #8

Why was first-order problem solving so dominant?

- Not because of…
  - Ill-defined or challenging problems
  - Lazy, uncommitted workforce
  - But rather…
    - Emphasis on individual vigilance (no system)
    - Unit efficiency concerns (lack of time)
    - Empowerment (lack of help)

Illusory Equilibrium

- Fix that fails
- Reduces likelihood that SOPS will occur – which is real change
  1. FOPS takes time – an average of 33 min per shift (compared to 45 min unpaid overtime)
  2. Gratification
  3. Burnout

Gratification from FOPS

“Working around problems is just part of my job. By being able to get IV bags or whatever else I need, it enables me to do my job and have a positive impact on a person’s life – like being able to get them clean linen. And I am the kind of person who does not just get one set of linen, I will bring back several for the other nurses.”
- Oncology floor nurse

Burnout from FOPS

“I put my heart and soul into my role as a nurse and my reward is patent satisfaction. Therefore I would never quit my job. I do feel that sometimes I am working with one hand tied behind my back. Tied by lack of equipment, supplies and auxiliary help. My job is physically demanding, so much so I don’t know how I will be able to continue until retirement.”
- Hospital 4
Alternative response: Second-Order Problem Solving

Characterized only 7% of the problems
Do what it takes to continue task AND expend effort to remove underlying cause
- Communicating problem occurrence
- Suggesting countermeasures
- Experimenting with countermeasures

ICU Bed example
“I don’t want to get anyone in trouble, but I want you to know what happened so you can talk to the nurse so that it does not happen again.”

Facilitating a learning response
- Manager availability and supportiveness
- Physical presence increased communication about failures
- Relieve time pressure – designated resource for problem solving
- Role model – What do we need to do so it doesn’t happen again?
- Psychological safety – no fear of punishment
- Problem solving efficacy
- Confidence that organization will respond to communication or efforts

Summary
- Two kinds of response to operational failures
- First-order problem solving dominates
- Managers can help reduce barriers to learning
  - Psychological safety
  - Creating systems for resolving failures
  - Increase employee’s confidence that problem solving efforts will be fruitful
- Requires a reframing of what employee behaviors are valuable