

Dispensing Advice on the Line

by Laura Flanagan, Jacque Henson, & Lorraine Zank

Tales from the Field, a monthly column, consists of reports of evidence-based performance improvement practice and advice, presented by graduate students, alumni, and faculty of Boise State University's Instructional and Performance Technology department.

Organizational Setting and Performance Problem

Biotech+ (a pseudonym) is a global biotech company that manufactures reagents for life sciences research. It has grown from a small and specialized operation to an international company that produces a wide variety of products. While this expansion has rendered the company very profitable, rapid growth has also exposed deficiencies that have led to performance problems.

Our client is a group of experienced, mid-level employees at Biotech+ who have complained of inconsistencies in the dispensing of reagents into bottles on a particular line. These employees include a production scientist, an equipment engineer, and a technician who liaises between the three shifts.

The client is concerned with production problems such as low production rates and missed or improperly filled bottles and broken and over-torqued caps. These are special problems because the company is committing to certification following Good Manufacturing Practices (cGMP) and lines will face regular audits.

Needs Assessment Approach

We began with open-ended interviews with individuals having experience in varying areas of the dispensing department. Analysis of these data identified factors, which we explored further through additional semi-structured interviews.

Comparing our findings with available frameworks associated with HPT practice, we decided to apply Chevalier's (2003) updated BEM and Langdon's (2000) Language of Work (LOW) as frameworks to guide subsequent steps in the needs assessment. We chose Chevalier's version of the BEM (2003) over Gilbert's original because it appeared to be more aligned with our findings. In particular, it prioritizes influencing of motives over delivery of training as an intervention for effecting change in organizations. Similarly, inconsistencies and gaps in communication between individuals match one of the principal elements in Langdon's LOW (2000).

Findings

Through analysis of interview data, combined with scrutiny of historical production data, we determined that quality of outputs of the department is actually very high, but that other problems create misconceptions and contribute to process inefficiencies. In particular, while we identified no substantive gap in knowledge or skill related to performance of production work, we did identify misalignment of

incentives and worker motives, as well as inconsistent collection and communication of available production data to personnel who could use it to manage performance of the department and its members, in response to upstream and downstream changes. These problems were associated with hiring; inadequate or absent incentives; aging equipment; and inadequate staffing resulting from cuts following high performance.

We also identified the existence of factors outside the dispensing department, including a lack of understanding of input requirements for the dispensing department, which possibly contributes to misconceptions and prejudices and affects morale in the dispensing department. However, due to time and resource limitations, we were unable to verify this latter set of issues.

While these things did not currently appear to produce unacceptable gaps in the measurable performance of the dispensing department, with a turn to cGMP in the near future it may be the case that the organization is unable to sustain the level of quality required unless it addresses these issues. Table 1 summarizes our initial findings using the categories of the Chevalier’s modified BEM (2003).

Table 1. Identified factors inserted into Chevalier's (2003) BEM framework.

1. Data	2. Resources	3. Incentives
<ul style="list-style-type: none"> • A general lack of communication within and between departments means employees lack sufficient information about roles, responsibilities and limitations on workers • Scientists, supervisors, and planners do not communicate regarding changing production factors • Production data are not made available in a way that is easily accessible or usable • There are no firm performance criteria for workers on the dispensing lines 	<ul style="list-style-type: none"> • Equipment is 10-12 years old and there are more frequent breakdowns • There are only 3 workers per shift; if one technician is absent for a shift and one remaining technician is temporarily unavailable, the line has to stop 	<ul style="list-style-type: none"> • Wages are below industry average and insufficient to attract exemplary or experienced personnel • As a consequence of exceeding production expectations, the number of technicians per shift has been reduced from 4 to 3 – good performance is being punished • There is a hiring freeze, so good temps are not being made permanent employees • There are no bonuses to reward exemplary performance
6. Knowledge/Skills	5. Capacity	4. Motives
<ul style="list-style-type: none"> • Temps have less experience and job related knowledge and cause more spills and 	<ul style="list-style-type: none"> • Technicians have so many tasks to perform that they often lack the time to report 	<ul style="list-style-type: none"> • Experienced technicians are not motivated to teach temps more than the basics because temps are unlikely to stay on

<p>slow-downs</p>	<p>problems in production logs</p>	<p>the job</p> <ul style="list-style-type: none"> • Technicians are not motivated to show up for their shifts every day – low pay means missing a few hours does not have a large effect on wages • Workers leave undesirable tasks for the next shift
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Data also indicated that there was no consistent metric for measuring performance and no information from the organization with which to establish a firm definition of competent performance. This represented a gap made worse by the observation that there was no way for critical production and performance information to travel up, down, or across the organization economically. We applied Langdon's LOW model (2000) to aspects of the organization that impeded communication that could in turn affect internal business alignment.

Based on our work, we made recommendations that will help achieve alignment across three levels of business in the LOW model: core processes, individual jobs, and workgroups. We aligned work group performance on the dispensing line with individual jobs on the dispensing line and core processes associated with producing the products. We used Langdon's Proforma Job Aid (2000, p. 14) to define and align layers of performance: behavior, standards, support, and human, consonance. Figure 1 depicts our attempts to align the business levels, layers of performance, and the performance elements: input, conditions, process elements, output, and feedback. We did not include 'consequences' (one of Langdon's performance elements), because we had no way of determining those from data available to us.

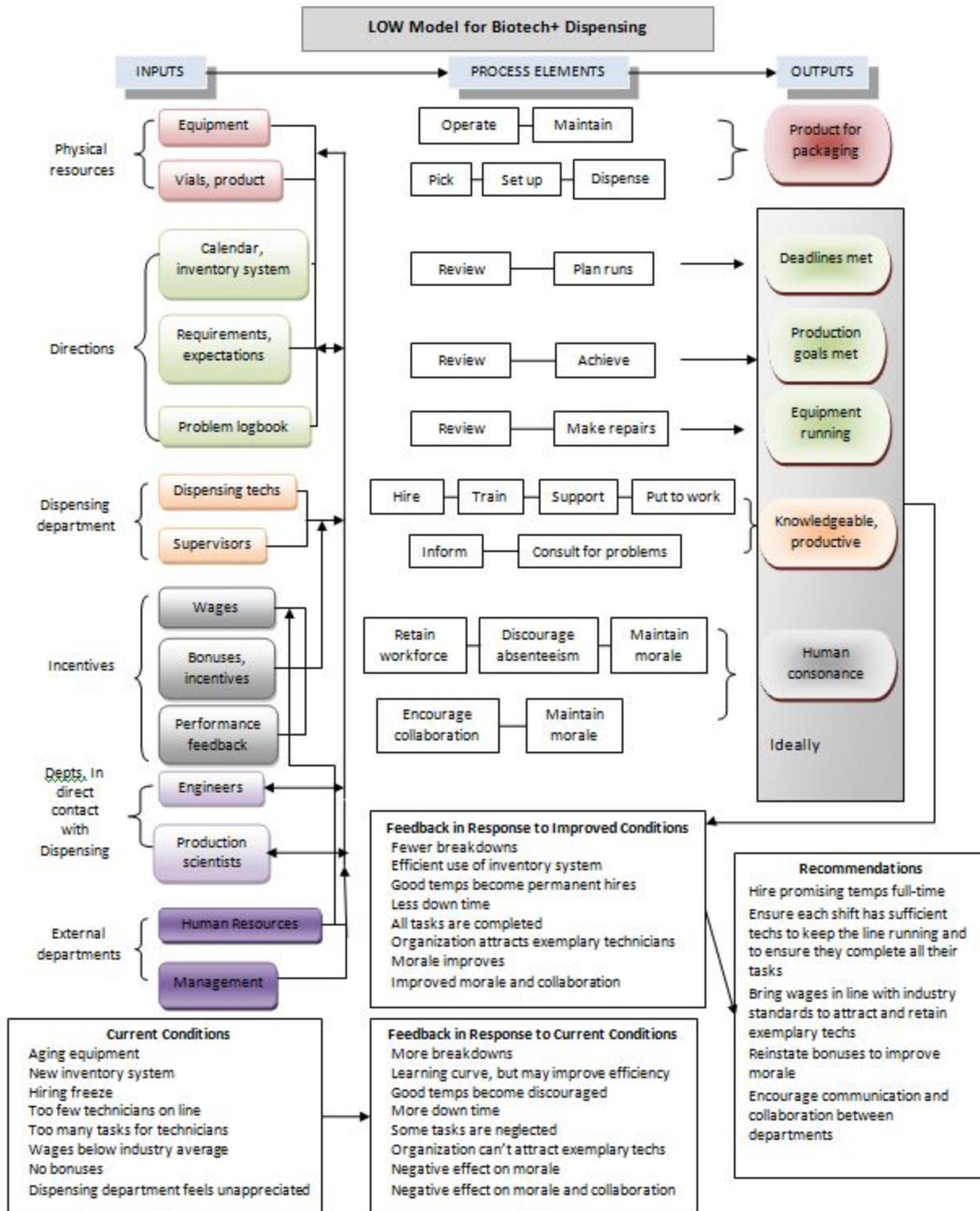


Figure 1. Dispensing line issues sorted according to the LOW (format adapted from Davis, 2011, p. 9).

Recommendations

It was apparent that the organization lacked data or did not use existing data adequately to set performance goals. In addition, there were no means in place for the organization to disseminate information effectively or to facilitate the movement of information upward, and upstream and downstream in the production process to address changing conditions and there was no official feedback system from the dispensing department to management. Use of Langdon's LOW (2000) led us to several recommendations for improvements in and around dispensing in order to better prepare the organization for its turn to cGMP:

- Establish measurable performance standards
- Bring wages in line with industry standards to attract and retain exemplary technicians
- Hire promising temps permanently to improve the organization's capacity and eliminate wasted investment of resources on temps who leave
- Reinstate bonuses to reward exemplary performance and improve morale
- Establish mechanisms to encourage communication and collaboration between departments, dispel misconceptions and facilitate understanding of roles within the organization (This would help management understand procedures in the dispensing department and provide the organization with information to facilitate performance improvement.)
- Ensure each shift has sufficient technicians to keep lines running and avoid overburdening technicians so they can accomplish all of their tasks on the shift (This would sustain production at a profitable rate and help maintain the company's reputation.)

References

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