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Minimizing Errors and Saving Time in Drug Receipt Processes

Overview

The speed-accuracy tradeoff is a well-known phenomenon in psychology for processes requiring human input: The faster you go, the more likely it is that errors will be introduced into the system. This presents a major challenge for complex supply chains that demand both efficiency and accuracy. For example, when handling and distributing sensitive clinical materials, it is essential that the workflow proceed as quickly as possible while minimizing errors.

New drug receipt process improves speed and accuracy

One way to optimize performance is to conduct a global supply chain analysis to identify weaknesses and inefficiencies in a current system. Once a problem is identified and remedied, the overall workflow can be re-evaluated to ensure that each of its components are streamlined and accuracy improves.

In this edition of InsideAccess we'll explore the complexities of the drug receipt process and illustrate our efforts to improve efficiency and accuracy in the supply chain. Our team's new drug receipt process not only slashed processing time, but it also decreased our error rate. A win-win for both speed and accuracy.

100 minutes reflected hands-on time from the drug receiving team.

Challenge

The materials received by Fisher BioServices include clinical supplies and important investigational drugs used to support clinical trials. Therefore, efficient processing and data entry are paramount.

After analyzing our drug receipt process, we found that it took an average of 100 minutes of hands-on time from the moment we acknowledged the drug receipt to the final email notification being sent to the stakeholders. Any time unloading and moving the drug product or troubleshooting problems with the stakeholders was not included in the time estimate, meaning that the entire 100 minutes reflected hands-on time from the drug receiving team.

This lengthy receiving process resulted in outgoing orders being processed short-handed, receipts being entered into the monitoring system in a time outside of preferred guidelines, and errors being caught by secondary operational checks rather than on the first pass. Furthermore, relying on handwritten forms made the entire process less efficient and more error prone.

Our challenge was to improve our drug receiving process by achieving the following objectives:
- Reduce active preparation time by 10–15 percent, corresponding to 85 to 90 minutes of hands-on time
- Establish a metric for recording errors in the drug receipt process
- Improve first pass yield (i.e., number of errors caught in the first pass) from 70 percent to 85 percent

Rethinking the Drug Receipt Process

The Former Process
Our original drug receipt process was complex. After receipt of the drug, it involved copying a label, finding a location for the drug, filling out an inspection form, assessment and revision of the form by a manager (with revisions sometimes occurring two or three times), checking readiness for data entry, actual data entry, double-checking data entry, scanning (and often re-scanning) documentation, and, finally, sending an email to the stakeholders.

This drug receipt process had several levels of redundancy built in to reduce potential errors. However, the redundancy made the process less efficient and potentially contributed to early errors not being caught until later in the process. Analysis of the process found an error rate of 30 percent. Although the most common error was inaccurate entry of the date, other errors included inaccuracies about agent cost, shelf life, visual description, location and drug concentration — all potentially harmful errors.

Form after

Form before

Identifying Areas for Improvement

The team tasked with improving the drug receipt process immediately identified several areas for improvement:

1. Revising the -Drug Receipt form to make it user friendly and, importantly, form fillable. A lot of work went into creating a new PDF form, which includes the following features:

- The form is "fillable," meaning that handwritten forms are a thing of the past
- It permits pre-population of common answers
- Drug names are standardized to facilitate down stream processing
- Text masks ensure proper data formatting
- Use of Javascripts maintains the flexibility of the form while reducing the likelihood of common errors
- Fields were rearranged to allow for sequential data entry
- Unnecessary fields were eliminated, and redundant fields were consolidated

2. Installation of a mailbox in the drug receipt area. A simple fix, the mailbox calls attention to drug receipts that are ready to be entered into the inventory system.

3. Email alterations. Rather than including unnecessary and redundant text, the notification email to the stakeholders now includes only vital information.

4. Eliminating requirements for an available safety data sheet (SDS). The original drug receipt method required a SDS to be available before proceeding. If one was not available, team members had to get approval from a manager. The new system allows users to proceed without asking if a SDS is available, improving processing time.

New drug receipt form: Data entry time dropped from 100 minutes to 45 minutes

Form after

old form

new form

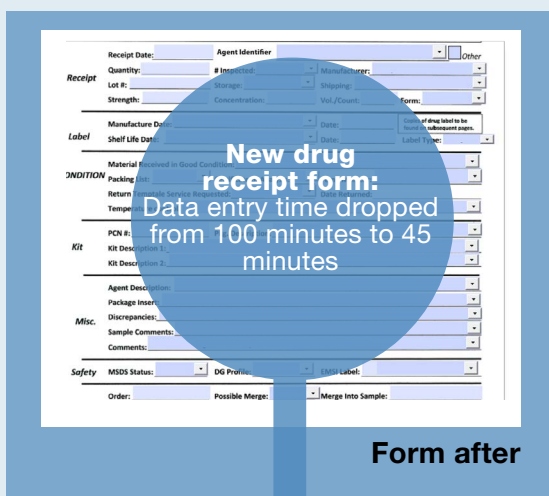New drug receipt form saves 9 hours per months

66%   reduction in errors

Assessing the Impact

The team tracked processing time and error rates after implementation of the new drug receipt form. The results were extremely encouraging and speak to the importance of analyzing component processes and streamlining complex workflows.

After implementation of the new drug receipt form, data entry time dropped from 100 minutes to 45 minutes, resulting in a savings of nine hours per month. The overall speed of processing also improved, with stakeholders experiencing a 38 percent reduction in processing time. Quality also improved, with a 66 percent reduction in errors. Overall, the new process is expected to save 144 hours/year, result in 48 fewer errors annually, and improved employee productivity.

In addition to an improvement in these hard numbers, implementation of the new drug receipt form has other great advantages for the team. Data is now entered more consistently, leading to fewer downstream errors. Members of the drug receiving team are extremely happy with the new form, citing its user friendliness as a critical improvement over the previous system. Additionally, we believe that the faster processing times will improve stakeholders' satisfaction.

After seeing the success of our revamped drug receipt process, we don't intend to stop there. We plan to roll out similar fillable forms to other business units and further automate receipts. Constantly rethinking our workflows and prioritizing efficiency are just two of the ways Fisher BioServices remains an industry leader.