

**Butler University – Butler Business Accelerator**

**Interim Report of Findings—Butler Business Accelerator Research Study on Medication Remote Dispense Solution for Long Term Care Centers**



**Interim Report of Findings (ROF)**

The Butler Business Accelerator (BBA), a consulting services group within the College of Business at Butler University, is conducting a market research study to measure the impacts and implications of implementing the Wellfount Pharmacy remote dispense solution (TedRx) in long term care centers.

The market research study is currently underway, with the intent to complete three separate on-site facility assessments, measuring both the pre-implementation and post-implementation medication management processes at selected and participating long term care centers.

At this juncture, one of the three

participating sites has been fully assessed, with the BBA having concluded its efforts, documenting the key impacts and implications of the remote dispense solution deployed at that facility. At this time, to maintain confidentiality, the specific participating sites will remain anonymous.

This document will serve as an Interim Report of Findings from the BBA market research study, providing summary results, outcomes and measures from the study until additional sites can be completed.

Actual aggregated results and findings are subject to change based on outcomes from the assessments to

be completed at the two remaining long term care centers that are presently transitioning to the Wellfount TedRx solution.

The market research study is being completed with full participation from all three selected long term care facilities.

The facility that has now fully implemented the Wellfount solution reviewed and confirmed the information presented within this Interim Report of Findings.



**Key ROF Sections:**

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**Description of Overall Study Methodology**

The Butler Business Accelerator is completing the market research study through an iterative approach of assessing and analyzing each of the participating sites with stakeholder interviews, process mapping, activity time study, observations, and data collection.

These steps are completed and data is compiled on-site at 45 days prior to the implementation of the remote dispense system at each facil-

ity, and again 90 days after the implementation has been completed and the remote dispense system is fully operational at each site.

The BBA resources facilitating and conducting the market research study include faculty from the Butler College of Pharmacy, as well as experienced healthcare consultants and College of Business student intern analysts.

The iterative, fact-based approach

used in conducting the market research allows for aggregated information across all three participating facilities to be triangulated and cross referenced for accuracy and consistency in findings.



## Remote Medication Dispense Solution



Traditional 30 day medication “punch card”



Single dose medication “pouch”

The remote dispense medication management solution provided by Wellfount Pharmacy (TedRx) consists of four key elements.

The first is the actual **central pharmacy operations** that fills and distributes medications from its central, regional and local warehouse and retail facilities based on orders from the participating long term care center.

The second is the **on-site secured storage technology** that is used to maintain the supply of bulk canisters filled with medications that have been shipped to the long term care facility. It is

from this device that single dose medications are dispensed for patients within the facility.

The third is an **information technology platform** that serves as the engine and the brains for the medication storage device, connected and integrated with the device, allowing for secure end-user access, dispensing of medications and management of on-site medication inventory.

The final element is an actual **on-site Pharmacy Technician** employed by Wellfount Pharmacy who services the specific long term care center, managing and

maintaining the receipt, storage, administration, dispense and return of ordered medications for facility patients.

This solution replaces the traditional central filled pharmacy distribution methodology where by orders are typically filled with 30 day supply “short cycle” or 7 day supply “punch cards” of medications for patients, which are delivered to long term care centers and maintained on medication carts and in medication storage locations for use in daily med pass deliveries.

## Process Analysis

One of the key elements of the analysis for this study included a **core and key process mapping** effort to identify, document, verify, observe and measure all of the processes related to medication management at the participating long term care facilities.

For the initial facility that has now been completed, there were **nine (9) core processes** that were involved in medication management, primarily involving the nursing staff, nursing management team and the Director of Nursing (DON) at the site.

The core processes illustrated to the left were further broken down into another layer of key processes, and the project team directly observed and measured each of those processes **over a two day period, both before**

**and after** implementation, including observation of **first, second and third shift activities**.

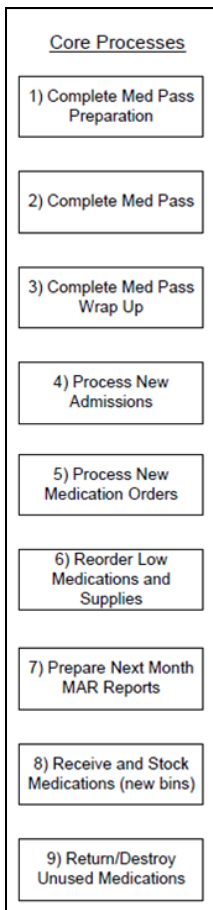
The BBA collected the following items for each step in the processes and used in measuring both the pre-implementation and the post-implementation activity and consumption.

- Staffing roles involved
- Time consumption by activity
- Medication supply usage
- Non-medication supply usage
- Electronic documentation
- Manual documentation
- Space utilization
- Motion/workflow
- Verbal communication
- Patient interaction
- Staff interaction

The team documented all items for the current state as a baseline, then compared to the post-

implementation observations to note changes in the above items and develop findings on the impact of the remote dispense solution.

- *The introduction of the remote dispense solution (technology and human elements) impacted nearly 40% of all key process steps in some form.*
- *In total, the project team documented and measured over 100 key process steps to understand the overall impact of introducing the remote dispense system.*
- *The BBA obtained and utilized quantitative and qualitative measures to determine the tangible and intangible impacts of the remote dispense system. These impacts are noted in other areas of this interim Review of Findings.*



## Drug Cost Analysis

Approximately 5% of a long term care facility’s overall monthly operating expense is made up of medication costs. That number may vary by facility, level of patient acuity, payer mix for health insurance and a number of other factors. But as an example, for a single facility with 120 patient residents that incurs \$1M in expense every month, that’s nearly \$60,000 in medication supplies incurred each month.

To determine the impact of the remote dispense system on drug costs, the market research study included the collection of **monthly drug costs** for the four (4) months prior to the system deployment, as well as for the four (4) months following the system deployment.

In an attempt to **normalize the drug cost data** from both pre and post implementation timeframes, the team removed from the analysis the top 10%,

“most costly” line items, and the bottom 10% “least costly” line items.

Finally, the BBA divided the resulting monthly drug costs into the number of skilled nursing days for each month in order to calculate the **drug costs per patient day (PPD)**, a standard industry measurement in the long term care industry.

The team then compared the average monthly PPD drug costs for the four (4) month periods before and after the implementation.



## Tangible, Quantitative Impacts

By measuring the actual nurse staff **time** involved in completing specific activities in the core medication management processes, and by measuring the consumption, return and destruction of actual medications and the related **costs**, both before and after the implementation of the remote dispense solution, the BBA calculated the following tangible impacts realized from the remote dispense solution.

Med Pass Prep Time:	Reduced by approximately 18%*
Med Pass Cycle Time:	Reduced by approximately 16%*
Med Pass Wrap Up Time:	Reduced by approximately 12%*
New Order/Admit Entry Time:	Reduced by approximately 35%*
Med Receipt/Stock/Return Time:	Reduced by approximately 85%*
Med Destruction Time:	Reduced by approximately 68%*
Drug Cost per Day:	Reduced by approximately 15%**
Normalized Drug Cost per Day:	Reduced by approximately 39%**
Returned/Destroyed Meds:	Reduced by approximately 70%

\* *Total estimated nursing staff hours saved through all noted reductions equated to over 16 hours per day spread over all three shifts.*

\*\* *Four month average drug cost per patient day down from \$36ppd to \$31ppd (and from \$23ppd to \$14ppd for “normalized” drug charges).*

## Supporting Details for Tangible Impacts

The following commentary provides additional detail to support the source of the time and material savings realized from implementing the remote dispense solution, which included both the single dose dispensing technology, as well as the on-site Pharmacy Technician’s support.

- Easier counting of medications during med pass prep
- Eliminated hunting of punch cards on carts, punching of meds from bubble packs, crushing of solids within single dose pouch during med pass
- Less counting of narcotics and re-stocking of meds at shift changes
- Additional Pharmacy Technician support provided for reduced nurse time for new medication orders and med receipt, stocking and return processing
- Single dose dispensing reduced unused meds requiring return to pharmacy or destruction (for narcotics that cannot be returned and must be destroyed instead)

## Intangible, Qualitative Impacts

In addition to the tangible impacts noted on the previous page, the BBA also noted the following intangible, qualitative impacts:

- Increased nurse availability for patient care and counseling
- Increased nurse satisfaction through the following:
  - ◇ Not having to deal with punch cards
  - ◇ Not handling medication shipment receipts and returns
  - ◇ Ending shifts on time
  - ◇ Increased time caring for patients instead of handling medications
- Improved availability of on-site medication inventory
- Improved quality and reduction of possible errors through the use of single dose package imprinting
- Improved patient satisfaction through increased nurse availability
- Advanced nurse training, Pharmacy Technician recruiting and on-boarding process, TedRx pre-launch medication configuration and change management disciplines were all noted as factors that impacted the solution implementation process for the participating long term care facility

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*“I’ve worked in places all over the country and this is the first remote dispense system I’ve worked with. It’s been really good. I hope there are more.” —1st Shift RN*

*“I know other nurses say they have to keep going back and forth to the med room during their med pass, but if you plan up front and get what you need beforehand, you can avoid all that.” - 1st Shift RN*

*“It’s like my wedding day. I learned so much about what I’d do different that I could make it even better if I could do it over again” - Management*

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## Concluding Notes

While the results noted here are representative of only one (1) long term care facility that has been fully assessed to date, the results point to positive tangible and intangible benefits afforded to the long term care center through the TedRx remote dispense solution.

A final Report of Findings will be documented to include the observations and outcomes from the two remaining long term care centers participating in the market study once all post-implementation analysis is completed for each site.

This Report of Findings does not represent a publishable, peer-reviewed market research study deliverable. The participating long term care center, who received no form of monetary or non-monetary inducement for its participation in this study by either Butler University or Wellfount Pharmacy, reviewed and confirmed outcomes and observations.

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