

**A Pharmacy Pilot or Demonstration Research Project for a  
New Practice Model for Community Pharmacy**

A Demonstration Project to Study the Effects of Implementing Tech-Check-Tech Programs in  
Community Practice to Engage Community Pharmacists in Clinical Pharmacy Services in Iowa

PHASE TWO  
QUARTER THREE REPORT

Iowa Pharmacy Association &  
Drake University College of Pharmacy and Health Sciences

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## **LEADERSHIP TEAM MEMBERS**

Megan Myers, PharmD, will serve as Project Coordinator. She will oversee the project, conduct regular on-site visits with each site, coordinate the study activities, chair the regular team meetings, and lead the writing of the study reports to the Board of Pharmacy.

Michael Andreski, RPh, MBA, PhD, Assistant Professor of Social and Administrative Pharmacy, Drake University College of Pharmacy and Health Sciences serves as research consultant and principal investigator, participates in regular team meetings, and participates in the writing of the study report.

T.J. Johnsrud, NuCara Health Management, Inc., provides a pharmacy management perspective for coordinating the community pharmacy clinical services and Tech-Check-Tech programs within the community pharmacy sites. He participates in regular team meetings.

Anthony Pudlo, PharmD, MBA, BCACP, Vice-President of Professional Affairs, and Kate Gainer, PharmD, Executive Vice President/CEO, Iowa Pharmacy Association, will oversee coordination of clinical pharmacy services available to community pharmacy sites in this study.

## **IPA'S PHASE 2 QUARTER 3 GOALS:**

- 1) Tech-Check-Tech (TCT) to be fully implemented and occurring 75% of business days (M-F).
- 2) Sites to submit data collected for both research aims within 7 days of the end of the month.
- 3) Sites to increase time spent counseling patients on both new and refilled prescriptions.
- 4) Pharmacists begin to expand upon patient care services including meeting with other health care providers and developing business plans to implement new services.

## PHARMACY SITE-SPECIFIC INFORMATION

### **Pharmacy Site #8:**

Thrifty White Pharmacy #42  
400 Grand Ave  
Spencer, IA 51301  
712-262-1523  
License #504  
Amy Fitch, Pharmacist-In-Charge  
License #17211

### **Pharmacy Site #9:**

Hy-Vee Pharmacy #1192  
115 South 29<sup>th</sup> Street  
Fort Dodge, IA 50501  
515-576-5320  
License #981  
Thomas F. Donner, Pharmacist-In-Charge  
License #16040  
Christine Donner-Tiernan, On-Site Responsible  
Pharmacist

### **Pharmacy Site #10:**

Walgreens Pharmacy #12108  
2719 Grand Ave  
Ames, IA 50010  
515-232-8276  
License #804  
Anne Stover Garcia, Pharmacist-In-Charge  
License #20768

### **Pharmacy Site #11:**

Hartig Drug #3  
2255 JFK Road  
Dubuque, IA 52002  
563-588-8708  
License #767  
Emily Vyverberg, Pharmacist-In-Charge  
License #21065

### **Pharmacy Site #12:**

Main at Locust Pharmacy and Medical Supplies  
129 W Locust St  
Davenport, IA 52803  
563-324-1641  
License #774  
Lisa C Ploehn, Pharmacist-In-Charge  
License #16831

### **Pharmacy Site #13:**

Target Pharmacy  
3400 Edgewood Rd SW  
Cedar Rapids, IA 52404  
319-396-4777  
License #1135  
Sarah Lewis, Pharmacist-In-Charge  
License #21575

### **Pharmacy Site #14:**

Wester Drug; License #399  
315 E 2<sup>nd</sup> Street  
Muscatine, IA 52761  
563-263-7044  
Cory Garvin, Pharmacist-In-Charge  
License #20245  
Michelle Garvin, Pharmacy Owner, Certified  
Pharmacy Technician  
CPhT#38010161153651; Registration # 2016

### **Pharmacy Site #15:**

Medicap Pharmacy #8036  
208 E. Euclid Ave.  
Indianola, IA 50125  
515-961-5303  
License # 495  
Shanna Zwanziger, Pharmacist-In-Charge  
License #19096

### **Pharmacy Site #16:**

Thrifty White Pharmacy #56  
1320 Broadway  
Denison, IA 51442  
712-263-4646  
License #157  
Tim Weber, Pharmacist-In-Charge  
License #17699

### **Pharmacy Site #17:**

Walgreens Pharmacy #07967  
15601 Hickman Rd  
Clive, IA 50325  
515-961-5303  
License #1257  
Kori Nagel, Pharmacist-In-Charge  
License #20047

**Aim 1: Implement and assess the impact of a Tech-Check-Tech program in community pharmacies in Iowa on patient safety measures.** “50 refills per month for the remainder of the project will be double checked for errors.”

| <u>Aggregate Data from Technician checked prescriptions collected Feb. 2<sup>nd</sup> – Oct. 31<sup>st</sup>:</u> |                        |                             | <u>Aggregate data from Baseline collection (Pharmacist-checked prescriptions):</u> |                      |
|---|------------------------|-----------------------------|--|----------------------|
|   | <b>Since Feb 2015:</b> | <b>Aug – Oct 2015 only:</b> | Total Prescription Refills Checked   | 7,884                |
| Total Rx Refills Checked  | 6,979                  | 2,333                       | Wrong Drug   | 0                    |
| Wrong Drug  | 2                      | 1                           | Wrong Strength   | 0                    |
| Wrong Strength  | 1                      | 0                           | Safety Cap Error   | 18                   |
| Safety Cap Error  | 6                      | 2                           | Wrong Amount   | 19                   |
| Wrong Amount  | 2                      | 1                           | Other Errors   | 13                   |
| Other Errors  | 1                      | 6                           | Broken Tablet=1  |                      |
| <i>Patient-Safety errors</i>  | 3                      | 1                           | Not Refrigerated=1   |                      |
| <i>For Patient-Safety Errors:</i>   |                        |                             | Incorrect Packaging=2  |                      |
| Error rate  | 0.043%                 | 0.04%                       | Administrative= 9  |                      |
| Mean  |                        | 0.03%±0.01%                 | <i>Patient-Safety errors</i>   | 4                    |
| p-value*  |                        | (p=0.63)                    | <i>(4 of the other errors)</i>   |                      |
| Range   |                        | 0% to 0.33%                 | <i>For Patient-Safety Errors</i>   |                      |
| <i>Administrative errors</i>  | 15                     | 9                           | Error rate   | 0.051%               |
| <i>For Administrative Errors:</i>   |                        |                             | Mean   | 0.053%±0.112%        |
| Error rate  | 0.21%                  | 0.386%                      | Range  | 0% - 0.27%           |
| Mean  |                        | 0.47%±0.78%                 | <i>Administrative errors</i>   | 46                   |
| p-value*  |                        | (p=0.74)                    | <i>For Administrative Errors</i>   |                      |
| Range   |                        | 0 – 2%                      | Error Rate   | 0.583%               |
| <b>Total Errors</b>   | <b>18</b>              | <b>10</b>                   | Mean   | 0.58%±0.67%          |
| <b>Overall Error Rate</b>   | <b>0.26%</b>           | <b>0.429%</b>               | Range  | 0% - 2.2%            |
| <b>Mean Error Rate</b>  |                        | <b>0.5% (±0.78%)</b>        | <b>Total Errors</b>  | <b>50</b>            |
| <b>p-value*</b>   |                        | <b>(p=0.696)</b>            | <b>Overall Error Rate</b>  | <b>0.634%</b>        |
| <b>Range</b>  |                        | <b>0% to 2%</b>             | <b>Mean Error Rate</b>   | <b>0.63% (±0.7%)</b> |
|   |                        |                             | <b>Range</b>   | <b>0.00% to 2.2%</b> |

**Current Observation:**

The overall error rate (p=0.696), patient-safety error rate (p=0.63), and administrative error rate (p=0.74) showed no significant differences compared to baseline.

\*Please see appendix A for individual site data

**Aim 2: Implement and assess the impact of a Tech-Check-Tech program in community pharmacies in Iowa and in facilitating the provision of community pharmacist-provided medication therapy management.**

“The primary data sources will be self-reported pharmacist daily activity logs and numbers of both compensated and identified opportunities for MTM and other patient care services. Once the Tech-Check-Tech procedures have been initiated and are performing adequately as defined above, the pharmacist(s) at the participating pharmacies will begin to focus on increasing the amount of MTM services provided.”

**Aggregate data: Composition of Pharmacist Day**

|   | <b><u>Baseline</u></b>             | <b><u>TCT August 1<sup>st</sup> - Oct. 31st</u></b> | <b><u>p-value compared to baseline</u></b> |
|---|------------------------------------|---|--|
| <b>Time Spent in Dispensing</b>           | 74.23%<br>Range = 52.63% -- 85.99% | 54.6%<br>Range = 44.77% -- 79.45%                   | <b>p=0.011</b>                             |
| <b>Time Spent in Management</b>           | 6.83%<br>Range = 2.16% -- 24.56%   | 7.8%<br>Range = 2.03% -- 15.69%                     | p=0.866                                    |
| <b>Time Spent in Patient Care</b>         | 16.40%<br>Range = 8.23% -- 32.16%  | 32.79%<br>Range = 6.53% -- 52.95%                   | <b>p=0.005</b>                             |
| <b>Time Spent in Practice Development</b> | 1.89%<br>Range = 0% -- 5.54%       | 1.05%<br>Range = 0% -- 2.46%                        | p=0.24                                     |
| <b>Time Spent in Other Activities</b>     | 0.65%<br>Range = 0% -- 4.32%       | 3.7%<br>Range = 0% -- 18.94%                        | p=0.125                                    |

**Current Observation:**

The amount of time pharmacists spend in dispensing has gone down significantly with a corresponding significant increase in patient care activities and no significant change in other categories.

\*Please see appendix A for individual site data

**Aggregate data: Number of Services Provided**

| <b><u>Number of services provided from Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</u></b> | <b><u>Number of service provided during baseline collection:</u></b> |
|--|--|
| Reimbursed Patient Care Services per Pharmacist Hour                                       | Reimbursed Patient Care Services per Pharmacist Hour                 |
| Average            1.23 ± 1.18        (p=0.08)*  | Average            0.455 ± 0.553                                     |
| Range             0.20 to 3.72   | Range             0.149 to 1.98                                      |
| Non-Reimbursed Patient Services Care per Pharmacist Hour                                   | Non-Reimbursed Patient Services Care per Pharmacist Hour             |
| Average            3.02 ± 2.37        (p=0.082)*   | Average            1.499 ± 0.805                                     |
| Range             0.56 to 8.28   | Range             0.407 to 3.18                                      |
| Total Patient Care Services per Pharmacist Hour  | Total Patient Care Services per Pharmacist Hour                      |
| Average            4.24 ± 3.24        (p=0.049)*   | Average            1.954 ± 1.097                                     |
| Range             0.76 to 10.52  | Range             0.989 to 4.355                                     |
| *p value comparison with baseline  |  |

**Current Observation:**

Individually the amount of both reimbursed and non-reimbursed patient care services per pharmacist per hour have increased, and are trending towards statistical significant. When combined, the increase is statistically significant. Over an average 8-hour shift, the pharmacist at baseline performed approximately 3 reimbursed services and 12 non-reimbursed services. This quarter, over an average 8-hour shift, the pharmacist performed approximately 10 reimbursed services and 24 non-reimbursed services.

\*Please see appendix A for individual site data.

**Aggregate Data: Number of services per hour:**

| <b>Service Type</b>  | <b>Baseline</b>   | <b>TCT Aug 1<sup>st</sup> – Oct. 31<sup>st</sup></b>             | <b>p-value compared to baseline</b> |
|--|---|--|-------------------------------------|
| <b>Prescription Counseling</b><br>Reimbursed                                     | Avg. = 0.0173<br>Range= 0 – 0.10<br>4/10 Pharmacies Provided        | Avg. = 0.26<br>Range = 0 – 2.53<br>3/10 pharmacies provided      | p=0.36                              |
| <b>Prescription Counseling</b><br>Non-Reimbursed                                 | Avg. = 1.160<br>Range= 0.218 – 3.069<br>10/10 Pharmacies Provided   | Avg. = 2.25<br>Range= 0.28 – 5.73<br>10/10 pharmacies provided   | p=0.12                              |
| <b>Drug Therapy Problems Identified Through Dispensing DUR</b><br>Reimbursed     | Avg. = 0.00486<br>Range= 0 – 0.0455<br>2/10 Pharmacies Provided     | Avg. = 0.004<br>Range = 0 – 0.35<br>1/10 pharmacies provided     | p=0.82                              |
| <b>Drug Therapy Problems Identified Through Dispensing DUR</b><br>Non-Reimbursed | Avg. = 0.119<br>Range= 0.21 – 0.51<br>10/10 Pharmacies Provided     | Avg. = 0.139<br>Range = 0 – 0.33<br>9/10 pharmacies provided     | p=0.74                              |
| <b>Drug Information Request</b><br>Reimbursed                                    | Avg. = 0.014<br>Range= 0 – 0.136<br>2/10 Pharmacies Provided        | Avg. = 0<br>Range = 0<br>0/10 pharmacies provided                | p=0.33                              |
| <b>Drug Information Request</b><br>Non-Reimbursed                                | Avg. = 0.0823<br>Range= 0.0054 – 0.191<br>10/10 Pharmacies Provided | Avg. = 0.206<br>Range = 0 – 0.45<br>9/10 pharmacies provided     | <b>p=0.03</b>                       |
| <b>Patient Education</b><br>Reimbursed   | Avg. = 0.0049<br>Range= 0 – 0.049<br>1/10 Pharmacies Provided       | Avg. = 0.001<br>Range = 0 – 0.4<br>3/10 pharmacies provided      | p=0.439                             |
| <b>Patient Education</b><br>Non-Reimbursed                                       | Avg. = 0.0549<br>Range= 0 – 0.189<br>9/10 Pharmacies Provided       | Avg. = 0.135<br>Range = 0.2 – 0.46<br>10/10 pharmacies provided  | p=0.113                             |
| <b>Immunizations</b><br>Reimbursed   | Avg. = 0.361<br>Range= 0.107 – 1.74<br>10/10 Pharmacies Provided    | Avg. = 0.632<br>Range = 0.04 – 1.52<br>10/10 pharmacies provided | p=0.231                             |
| <b>Immunizations</b><br>Non-Reimbursed   | Avg. = 0.00277<br>Range= 0 – 0.0186<br>2/10 Pharmacies Provided     | Avg. = 0.139<br>Range = 0 – 0.8<br>3/10 pharmacies provided      | p=0.153                             |
| <b>Injection Administration</b><br>Reimbursed                                    | Avg. = 0.00261<br>Range= 0 – 0.0182<br>3/10 Pharmacies Provided     | Avg. = 0.237<br>Range = 0 – 1.1<br>3/10 pharmacies Provided      | p=0.104                             |
| <b>Injection Administration</b><br>Non-Reimbursed                                | Avg. = 0.00<br>Range= 0<br>0/10 Pharmacies Provided                 | Avg. = 0.0<br>Range = 0<br>0/10 pharmacies Provided              | p=n/a (the same result)             |

**Aggregate Data: Number of services per hour (continued):**

| <b>Service Type</b>                                       | <b>Baseline</b>  | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b>          | <b>p-value compared to baseline</b> |
|---|--|--|-------------------------------------|
| <b>Patient Screening/Testing</b><br>Reimbursed            | Avg. = 0.00494<br>Range = 0 – 0.0453<br>2/10 Pharmacies Provided | Avg. = 0.01<br>Range = 0 – 0.008<br>2/10 pharmacies provided   | p=0.439                             |
| <b>Patient Screening/Testing</b><br>Non-Reimbursed        | Avg. = 0.00668<br>Range= 0 – 0.0394<br>5/10 Pharmacies Provided  | Avg. = 0.02<br>Range = 0.0 – 0.009<br>4/10 pharmacies provided | p=0.27                              |
| <b>MTM Current Medication List/History</b><br>Reimbursed  | Avg. = 0.0104<br>Range= 0 – 0.0491<br>4/10 Pharmacies Provided   | Avg. = 0.032<br>Range = 0 – 0.14<br>7/10 pharmacies provided   | p=0.197                             |
| <b>MTM Current Medication List/History</b> Non-Reimbursed | Avg. = 0.0115<br>Range= 0 – 0.0806<br>5/10 Pharmacies Provided   | Avg. = 0.028<br>Range = 0 – 0.17<br>6/10 pharmacies provided   | p=0.392                             |
| <b>MTM Medication Reconciliation</b><br>Reimbursed        | Avg. = 0.0104<br>Range= 0 – 0.0491<br>4/10 Pharmacies Provided   | Avg. = 0.011<br>Range = 0 – 0.39<br>5/10 pharmacies provided   | p=0.888                             |
| <b>MTM Medication Reconciliation</b><br>Non-Reimbursed    | Avg. = 0.0166<br>Range= 0 – 0.0549<br>6/10 Pharmacies Provided   | Avg. = 0.012<br>Range = 0 – 0.05<br>5/10 pharmacies provided   | p=0.573                             |
| <b>MTM Patient Follow-up</b><br>Reimbursed                | Avg. = 0.0071<br>Range= 0 – 0.0526<br>4/10 Pharmacies Provided   | Avg. = 0.019<br>Range = 0 – 0.10<br>4/10 pharmacies provided   | p=0.357                             |
| <b>MTM Patient Follow-up</b><br>Non-Reimbursed            | Avg. = 0.00138<br>Range= 0 – 0.0077<br>2/10 Pharmacies Provided  | Avg. = 0.030<br>Range = 0 – 0.10<br>7/10 pharmacies provided   | <b>p=0.042</b>                      |
| <b>MTM Patient Interview</b><br>Reimbursed                | Avg. = 0.00112<br>Range= 0 – 0.0494<br>4/10 Pharmacies Provided  | Avg. = 0.017<br>Range = 0 – 0.47<br>7/10 pharmacies provided   | p=0.482                             |
| <b>MTM Patient Interview</b><br>Non-Reimbursed            | Avg. = 0.00745<br>Range= 0 – 0.0434<br>3/10 Pharmacies Provided  | Avg. = 0.007<br>Range = 0 – 0.039<br>3/10 pharmacies provided  | p=0.898                             |
| <b>MTM Provider Consult</b><br>Reimbursed                 | Avg. = 0.00511<br>Range= 0 – 0.0165<br>4/10 Pharmacies Provided  | Avg. = 0.01<br>Range = 0 – 0.03<br>6/10 pharmacies provided    | p=0.246                             |
| <b>MTM Provider Consult</b><br>Non-Reimbursed             | Avg. = 0.0365<br>Range= 0 – 0.192<br>6/10 Pharmacies Provided    | Avg. = 0.058<br>Range = 0 – 0.287<br>9/10 pharmacies provided  | p=0.535                             |
| <b>MTM Other Services</b><br>Reimbursed                   | Avg. = 0.00035<br>Range= 0 – 0.0035<br>1/10 Pharmacies Provided  | Avg. = 0.001<br>Range = 0<br>1/10 pharmacies provided          | p=0.343                             |
| <b>MTM Other Services</b><br>Non-Reimbursed               | Avg. = 0<br>Range= 0<br>0/10 Pharmacies Provided                 | Avg. = 0.015<br>Range = 0<br>1/10 pharmacies provided          | p=0.343                             |



### **Current Observation**

There appears to be an increase in patient counseling, addressing DURs, immunizations, and medication reconciliation. The amount of time spent answering drug information questions and completing patient follow-up activities has increased significantly. Anecdotally, pharmacists have reported having more time with each patient, providing a better quality service than prior to TCT.

\*Please see appendix A for individual site data.

### **SUMMARY**

- Tech-Check-Tech portion of the study in Phase II sites went live on February 2, 2015.
  - As a group, Phase II sites used the Tech-Check-Tech model approximately **79.38%** of the time when possible this quarter, which is above the goal of 75%.

| <b>Months</b>    | <b>Average % of time doing TCT</b> | <b>Range of time using TCT days</b> |
|------------------|------------------------------------|-------------------------------------|
| August - October | 77.92%                             | 46% - 100%                          |

- Staffing has not been a barrier with a majority of these sites.
- IPA hosted a live meeting for both Phase I and II sites on September 11, 2015 to review the project's progress, provide opportunities for small group discussions, and continued discussion of the Pharmacists Patient Care Process endorsed by APhA and several national pharmacy organizations. Specifically challenges and possible solutions for documenting, follow up and monitoring were discussed.
  - The next live meeting will be in March or April of 2016.
- The IPA project manager completed 2 visits at each of the 10 Phase II sites since the beginning of the project and will continue to visit sites every 2-3 months after maternity leave.

### **EXPANDING PHARMACIST-PROVIDED PATIENT CARE SERVICES**

- Sites are working on:
  - Expanding MTM opportunities
  - Expanding immunizations offered
  - Expanding Med Sync, compliance packaging and adherence programs
  - Pursuing collaborative practice agreements
  - Reaching out to other providers to let them know about pharmacy services
  - Site 11 has implemented a new program collaborating with Mercy Hospital to provide discharge counseling and follow-up on day 8 and day 25 post-discharge. This is a revenue generating service.
- Sites have reported they have already noticed more time for counseling

## PHARMACIST AND TECHNICIAN TRAINING

- Required pharmacist and technician training modules were completed by all initial participating staff by November 14, 2014.
  - Additional staff have been trained throughout quarter three (Appendix C).
- Revised CEI modules are available for future staff additions. Modules are being used for phase I and phase II sites. The modules are on-demand and accredited for C.P.E.
  - Modules were available starting September 9, 2014.

## CONCLUSION

There has been no statistical difference in error rates on refills for Phase II sites with Tech-Check-Tech as the traditional Pharmacist-Check-Tech model. Pharmacists are re-adjusting their days to be ready to maximize the use of the freed up time for patient care activities. The increase in the overall time spent in patient care and number of services done is significant.

## FUTURE DIRECTION/GOALS

In the fourth quarter we aim to maintain the amount of days TCT is practiced, to continue to demonstrate positive results regarding error rates, and expand further on direct patient care services pharmacists are providing.

## PHASE TWO PROJECT TIMELINE

|             |   |
|-------------|---|
| Month 1-3   | Project start-up; Identify sites  |
| Month 2     | Submit proposal to Iowa Board of Pharmacy for pilot/demonstration project –<br><i>Approved November 19, 2014</i>  |
| Month 5     | Community pharmacies implement Tech-Check-Tech programs; pharmacists engage in collaborative practice agreements for patient care delivery –<br><i>Implemented TCT February 2, 2015</i> |
| Month 23    | Pilot project authority expires for Tech-Check-Tech<br><i>Pilot ends August 2, 2016</i>   |
| Month 22-24 | Data analyses and report writing  |

**APPENDIX A**

In order to protect the confidentiality of each site, there is no correlation between the order of the individual site reports H-Q and the numerical designation on page 3 of this report.

**Individual Site Data for Site H: Percent of time utilizing TCT = 67.69%**

| <b><u>Site H Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</u></b> |                        | <b><u>Site H data from Baseline collection (Pharmacist-checked prescriptions):</u></b> |       |
|---|------------------------|--|-------|
| Total Rx Refills Checked  | 151                    | Total Prescription Refills Checked   | 750   |
| Wrong Drug  | 0                      | Wrong Drug   | 0     |
| Wrong Strength  | 0                      | Wrong Strength   | 0     |
| Safety Cap Error  | 0                      | Safety Cap Error   | 1     |
| Wrong Amount  | 0                      | Wrong Amount   | 1     |
| Other Errors  | 3 (all administrative) | Other Errors   | 0     |
| Total Errors  | 3                      | Total Errors   | 2     |
| Overall Error Rate  | 1.99%                  | Overall Error Rate   | 0.27% |

**Composition of Pharmacist Day**

|   | <b><u>Baseline</u></b> | <b><u>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></u></b> |
|---|------------------------|--|
| <b>Time Spent in Dispensing</b>           | 75.36%                 | 58.01%   |
| <b>Time Spent in Management</b>           | 2.16%                  | 5.35%  |
| <b>Time Spent in Patient Care</b>         | 21.61%                 | 34.68%   |
| <b>Time Spent in Practice Development</b> | 0.86%                  | 1.96%  |
| <b>Time Spent in Other Activities</b>     | 0%                     | 0%   |

**Number of Services Provided per Pharmacist Hour**

|   | <b><u>Baseline</u></b> | <b><u>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></u></b> |
|---|------------------------|--|
| <b>Reimbursed Patient Care Services</b>     | 0.35                   | 2.19   |
| <b>Non-Reimbursed Patient Services Care</b> | 0.87                   | 2.05   |
| <b>Total Patient Care Services</b>          | 1.22                   | 4.24   |

**Individual Site Data for Site I: Percent of time utilizing TCT – 89.23%**

| <b>Site I Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</b> |     | <b>Site I data from Baseline collection (Pharmacist-checked prescriptions):</b> |      |
|--|-----|---|------|
| Total Rx Refills Checked   | 150 | Total Prescription Refills Checked  | 750  |
| Wrong Drug   | 0   | Wrong Drug  | 0    |
| Wrong Strength   | 0   | Wrong Strength  | 0    |
| Safety Cap Error   | 0   | Safety Cap Error  | 2    |
| Wrong Amount   | 0   | Wrong Amount  | 1    |
| Other Errors   | 0   | Other Errors  | 0    |
| Total Errors   | 0   | Total Errors  | 3    |
| Overall Error Rate   | 0%  | Overall Error Rate  | 0.4% |

**Composition of Pharmacist Day**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Time Spent in Dispensing</b>           | 71.71%          | 45.99%  |
| <b>Time Spent in Management</b>           | 13.48%          | 9.84%   |
| <b>Time Spent in Patient Care</b>         | 8.23%           | 37%   |
| <b>Time Spent in Practice Development</b> | 2.26%           | 1.46%   |
| <b>Time Spent in Other Activities</b>     | 4.32%           | 5.7%  |

**Number of Services Provided per Pharmacist Hour**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Reimbursed Patient Care Services</b>     | 0.40            | 2.25  |
| <b>Non-Reimbursed Patient Services Care</b> | 1.78            | 8.28  |
| <b>Total Patient Care Services</b>          | 2.18            | 10.53   |

**Individual Site Data for Site J: Percent of time utilizing TCT – 94.37%**

| <b>Site J Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</b> |       | <b>Site J data from Baseline collection (Pharmacist-checked prescriptions):</b> |       |
|--|-------|---|-------|
| Total Rx Refills Checked   | 306   | Total Prescription Refills Checked  | 750   |
| Wrong Drug   | 1     | Wrong Drug  | 0     |
| Wrong Strength   | 0     | Wrong Strength  | 0     |
| Safety Cap Error   | 0     | Safety Cap Error  | 1     |
| Wrong Amount   | 1     | Wrong Amount  | 1     |
| Other Errors   | 0     | Other Errors  | 2     |
|  |       | Wrong patient identification = 2  |       |
| Total Errors   | 2     | Total Errors  | 4     |
| Overall Error Rate   | 0.65% | Overall Error Rate  | 0.53% |

**Composition of Pharmacist Day**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Time Spent in Dispensing</b>           | 76%             | 54.24%  |
| <b>Time Spent in Management</b>           | 4.71%           | 13.03%  |
| <b>Time Spent in Patient Care</b>         | 17.92%          | 30.27%  |
| <b>Time Spent in Practice Development</b> | 1.37%           | 2.46%   |
| <b>Time Spent in Other Activities</b>     | 0               | 0%  |

**Number of Services Provided per Pharmacist Hour**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Reimbursed Patient Care Services</b>     | 0.22            | 0.38  |
| <b>Non-Reimbursed Patient Services Care</b> | 1.32            | 1.92  |
| <b>Total Patient Care Services</b>          | 1.54            | 2.30  |

**Individual Site Data for Site K: Percent of time utilizing TCT – 49.23%**

| <b>Site K Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</b> |     | <b>Site K data from Baseline collection (Pharmacist-checked prescriptions):</b> |       |
|--|-----|---|-------|
| Total Rx Refills Checked   | 190 | Total Prescription Refills Checked  | 909   |
| Wrong Drug   | 0   | Wrong Drug  | 0     |
| Wrong Strength   | 0   | Wrong Strength  | 0     |
| Safety Cap Error   | 0   | Safety Cap Error  | 1     |
| Wrong Amount   | 0   | Wrong Amount  | 0     |
| Other Errors   | 0   | Other Errors  | 0     |
| Total Errors   | 0   | Total Errors  | 1     |
| Overall Error Rate   | 0%  | Overall Error Rate  | 0.11% |

**Composition of Pharmacist Day**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Time Spent in Dispensing</b>           | 59.29%          | 44.77%  |
| <b>Time Spent in Management</b>           | 3.02%           | 4.28%   |
| <b>Time Spent in Patient Care</b>         | 32.16%          | 49.4%   |
| <b>Time Spent in Practice Development</b> | 5.54%           | 0.56%   |
| <b>Time Spent in Other Activities</b>     | 0%              | 0.99%   |

**Number of Services Provided per Pharmacist Hour**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Reimbursed Patient Care Services</b>     | 1.98            | 3.72  |
| <b>Non-Reimbursed Patient Services Care</b> | 2.37            | 5.83  |
| <b>Total Patient Care Services</b>          | 4.35            | 9.55  |

**Individual Site Data for Site L: Percent of time utilizing TCT = 96.92%**

| <b>Site L Data from Technician checked prescriptions collected from Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |     |  | <b>Site L data from Baseline collection (Pharmacist-checked prescriptions):</b> |       |  |
|--|-----|--|---|-------|--|
| Total Rx Refills Checked   | 171 |  | Total Prescription Refills Checked  | 857   |  |
| Wrong Drug   | 0   |  | Wrong Drug  | 0     |  |
| Wrong Strength   | 0   |  | Wrong Strength  | 0     |  |
| Safety Cap Error   | 0   |  | Safety Cap Error  | 4     |  |
| Wrong Amount   | 0   |  | Wrong Amount  | 6     |  |
| Other Errors   | 0   |  | Other Errors  | 0     |  |
| Total Errors   | 0   |  | Total Errors  | 10    |  |
| Overall Error Rate   | 0%  |  | Overall Error Rate  | 1.17% |  |

**Composition of Pharmacist Day**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Time Spent in Dispensing</b>           | 81.6%           | 61.99%  |
| <b>Time Spent in Management</b>           | 3.96%           | 2.03%   |
| <b>Time Spent in Patient Care</b>         | 12.03%          | 33.55%  |
| <b>Time Spent in Practice Development</b> | 2.41%           | 0%  |
| <b>Time Spent in Other Activities</b>     | 0%              | 2.43%   |

**Number of Services Provided per Pharmacist Hour**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Reimbursed Patient Care Services</b>     | 0.15            | 1.57  |
| <b>Non-Reimbursed Patient Services Care</b> | 1.06            | 1.29  |
| <b>Total Patient Care Services</b>          | 1.21            | 2.86  |

**Individual Site Data for Site M: Percent of time utilizing TCT = 46.15%**

| <b>Site M Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</b> |     | <b>Site M data from Baseline collection (Pharmacist-checked prescriptions):</b> |       |
|--|-----|---|-------|
| Total Rx Refills Checked   | 157 | Total Prescription Refills Checked  | 750   |
| Wrong Drug   | 0   | Wrong Drug  | 0     |
| Wrong Strength   | 0   | Wrong Strength  | 0     |
| Safety Cap Error   | 0   | Safety Cap Error  | 2     |
| Wrong Amount   | 0   | Wrong Amount  | 2     |
| Other Errors   | 0   | Other Errors  | 1     |
| Total Errors   | 0   | Total Errors  | 5     |
| Overall Error Rate   | 0%  | Overall Error Rate  | 0.67% |

**Composition of Pharmacist Day**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Time Spent in Dispensing</b>           | 79.57%          | 60.85%  |
| <b>Time Spent in Management</b>           | 3.76%           | 4.68%   |
| <b>Time Spent in Patient Care</b>         | 14.52%          | 14.89%  |
| <b>Time Spent in Practice Development</b> | 0%              | 0.64%   |
| <b>Time Spent in Other Activities</b>     | 2.15%           | 18.54%  |

**Number of Services Provided per Pharmacist Hour**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Reimbursed Patient Care Services</b>     | 0.33            | 0.20  |
| <b>Non-Reimbursed Patient Services Care</b> | 1.76            | 1.39  |
| <b>Total Patient Care Services</b>          | 2.10            | 1.59  |



**Individual Site Data for Site N: Percent of time utilizing TCT – 100%**

| <b><u>Site N Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</u></b> |       | <b><u>Site N data from Baseline collection (Pharmacist-checked prescriptions):</u></b> |       |
|---|-------|--|-------|
| Total Rx Refills Checked  | 750   | Total Prescription Refills Checked   | 868   |
| Wrong Drug  | 0     | Wrong Drug   | 0     |
| Wrong Strength  | 0     | Wrong Strength   | 0     |
| Safety Cap Error  | 2     | Safety Cap Error   | 0     |
| Wrong Amount  | 0     | Wrong Amount   | 1     |
| Other Errors  | 0     | Other Errors   | 0     |
| Total Errors  | 2     | Total Errors   | 1     |
| Overall Error Rate  | 0.27% | Overall Error Rate   | 0.12% |

**Composition of Pharmacist Day**

|   | <b><u>Baseline</u></b> | <b><u>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></u></b> |
|---|------------------------|--|
| <b>Time Spent in Dispensing</b>           | 79.4%                  | 79.45%   |
| <b>Time Spent in Management</b>           | 5.32%                  | 4.9%   |
| <b>Time Spent in Patient Care</b>         | 13.95%                 | 14.61%   |
| <b>Time Spent in Practice Development</b> | 1.33%                  | 1.05%  |
| <b>Time Spent in Other Activities</b>     | 0%                     | 0%   |

**Number of Services Provided per Pharmacist Hour**

|   | <b><u>Baseline</u></b> | <b><u>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></u></b> |
|---|------------------------|--|
| <b>Reimbursed Patient Care Services</b>     | 0.21                   | 0.90   |
| <b>Non-Reimbursed Patient Services Care</b> | 1.06                   | 1.97   |
| <b>Total Patient Care Services</b>          | 1.27                   | 2.87   |

**Individual Site Data for Site O: Percent of time utilizing TCT – 52.31%**

| <b><u>Site O Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</u></b> |     | <b><u>Site O data from Baseline collection (Pharmacist-checked prescriptions):</u></b> |     |
|---|-----|--|-----|
| Total Rx Refills Checked  | 150 | Total Prescription Refills Checked   | 750 |
| Wrong Drug  | 0   | Wrong Drug   | 0   |
| Wrong Strength  | 0   | Wrong Strength   | 0   |
| Safety Cap Error  | 0   | Safety Cap Error   | 0   |
| Wrong Amount  | 0   | Wrong Amount   | 0   |
| Other Errors  | 0   | Other Errors   | 0   |
| Total Errors  | 0   | Total Errors   | 0   |
| Overall Error Rate  | 0%  | Overall Error Rate   | 0%  |

**Composition of Pharmacist Day**

|   | <b><u>Baseline</u></b> | <b><u>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></u></b> |
|---|------------------------|--|
| <b>Time Spent in Dispensing</b>           | 85.99%                 | 77.94%   |
| <b>Time Spent in Management</b>           | 3.26%                  | 7.56%  |
| <b>Time Spent in Patient Care</b>         | 10.13%                 | 6.53%  |
| <b>Time Spent in Practice Development</b> | 0.62%                  | 0.35%  |
| <b>Time Spent in Other Activities</b>     | 0%                     | 7.62%  |

**Number of Services Provided per Pharmacist Hour**

|   | <b><u>Baseline</u></b> | <b><u>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></u></b> |
|---|------------------------|--|
| <b>Reimbursed Patient Care Services</b>     | 0.16                   | 0.20   |
| <b>Non-Reimbursed Patient Services Care</b> | 1.18                   | 0.56   |
| <b>Total Patient Care Services</b>          | 1.34                   | 0.76   |

**Individual Site Data for Site P: Percent of time utilizing TCT = 86.15%**

| <b>Site P Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</b> |                        | <b>Site P data from Baseline collection (Pharmacist-checked prescriptions):</b> |      |
|--|------------------------|---|------|
| Total Rx Refills Checked   | 150                    | Total Prescription Refills Checked  | 750  |
| Wrong Drug   | 0                      | Wrong Drug  | 0    |
| Wrong Strength   | 0                      | Wrong Strength  | 0    |
| Safety Cap Error   | 0                      | Safety Cap Error  | 1    |
| Wrong Amount   | 0                      | Wrong Amount  | 2    |
| Other Errors   | 3 (all administrative) | Other Errors  | 0    |
| Total Errors   | 3                      | Total Errors  | 3    |
| Overall Error Rate   | 2%                     | Overall Error Rate  | 0.4% |

**Composition of Pharmacist Day**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Time Spent in Dispensing</b>           | 52.63%          | 29.61%  |
| <b>Time Spent in Management</b>           | 24.56%          | 15.69%  |
| <b>Time Spent in Patient Care</b>         | 18.25%          | 52.95%  |
| <b>Time Spent in Practice Development</b> | 4.56%           | 1.74%   |
| <b>Time Spent in Other Activities</b>     | 0%              | 0%  |

**Number of Services Provided per Pharmacist Hour**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Reimbursed Patient Care Services</b>     | 0.58            | 0.26  |
| <b>Non-Reimbursed Patient Services Care</b> | 0.41            | 3.49  |
| <b>Total Patient Care Services</b>          | 0.99            | 3.75  |

**Individual Site Data for Site Q: Percent of time utilizing TCT – 97.1%**

| <b>Site Q Data from Technician checked prescriptions collected Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup>:</b> |     | <b>Site Q data from Baseline collection (Pharmacist-checked prescriptions):</b> |       |
|--|-----|---|-------|
| Total Rx Refills Checked   | 158 | Total Prescription Refills Checked  | 750   |
| Wrong Drug   | 0   | Wrong Drug  | 0     |
| Wrong Strength   | 0   | Wrong Strength  | 0     |
| Safety Cap Error   | 0   | Safety Cap Error  | 6     |
| Wrong Amount   | 0   | Wrong Amount  | 5     |
| Other Errors   | 0   | Other Errors  | 2     |
|  |     | Broken tablet = 1   |       |
|  |     | Refrigerated item not in fridge = 1   |       |
| Total Errors   | 0   | Total Errors  | 13    |
| Overall Error Rate   | 0%  | Overall Error Rate  | 1.73% |

**Composition of Pharmacist Day**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Time Spent in Dispensing</b>           | 80.75%          | 52.83%  |
| <b>Time Spent in Management</b>           | 4.04%           | 4.76%   |
| <b>Time Spent in Patient Care</b>         | 15.22%          | 42.41%  |
| <b>Time Spent in Practice Development</b> | 0%              | 0%  |
| <b>Time Spent in Other Activities</b>     | 0%              | 0%  |

**Number of Services Provided per Pharmacist Hour**

|   | <b>Baseline</b> | <b>TCT Aug. 1<sup>st</sup> – Oct. 31<sup>st</sup></b> |
|---|-----------------|---|
| <b>Reimbursed Patient Care Services</b>     | 0.17            | 0.60  |
| <b>Non-Reimbursed Patient Services Care</b> | 3.18            | 3.39  |
| <b>Total Patient Care Services</b>          | 3.35            | 3.99  |

## **APPENDIX B**

### **Site Requirements for New Practice Model (NPM) Project**

The following is a guideline of requirements asked of sites in the NPM project. If a site struggles to meet the requirements, members from the NPM task force will review the site's progress and develop a plan of action to help the site succeed. If the site continues to be unable to meet the requirements, the members from the task force will provide a recommendation to the board of pharmacy to consider withdrawing the site from the study.

Sites that consistently struggle with:

- 1) Submitting data on time
- 2) Changing workflow to incorporate Tech-Check-Tech
- 3) Ongoing staffing issues including low number of hours doing Tech-Check-Tech
- 4) Using freed up time to reduce pharmacist hours or engage in non-patient care activities

**APPENDIX C**  
Staff Changes for Quarter 3

New Staff addition to project since August 2015

| Site                  | Position | Name                | Signed Letter | Signed study consent | Completed training |   |
|-----------------------|----------|---------------------|---------------|----------------------|--------------------|---|
| Walgreens Ames        | CPhT     | Randall Treadway    | 8/25/2015     | 8/25/2015            |                    | Filling tech, not a new employee but is newly certified           |
| Walgreens Clive       | CPhT     | Shawn Forester      | 8/17/2015     | 8/17/2015            | n/a                | Filling tech  |
| Walgreens Clive       | CPhT     | Michelle Bunce      | 8/17/2015     | 8/17/2015            | n/a                | Filling tech  |
| Walgreens Clive       | CPhT     | Amanda Lepinski     | 8/11/2015     | 8/11/2015            | n/a                | Filling tech  |
| Walgreens Clive       | CPhT     | Kirsten Carstarphen | 8/10/2015     | 8/10/2015            | n/a                | Filling tech  |
| Walgreens Clive       | CPhT     | Abby Cowan          | 8/10/2015     | 8/10/2015            | n/a                | Filling tech  |
| Walgreens Clive       | CPhT     | Tatjana Sehic       | 8/10/2015     | 8/10/2015            | n/a                | Filling tech  |
| Walgreens Clive       | CPhT     | Keisha Boles        | 8/10/2015     | 8/10/2015            | n/a                | Filling tech  |
| Walgreens Clive       | CPhT     | Addyson Rosa        | 8/10/2015     | 8/10/2015            | n/a                | Filling tech  |
| Wester Drug Muscatine | CPhT     | Kaitlin Umlandt     | 8/10/2015     | 8/10/2015            | n/a                | Filling tech  |
| Wester Drug Muscatine | CPhT     | Jessica Rhalf       | 7/23/2015     | 7/23/2015            | n/a                | Filling tech  |
| Wester Drug Muscatine | CPhT     | Morgan Harris       | 7/23/2015     | 7/23/2015            | n/a                | Filling tech  |
| Hartig Drug Dubuque   | PIC      | Emily Vyverberg     | 6/25/14       | 6/25/14              | 11/14              | Resuming position as PIC – current PIC will resume staff position |

Staff that has left since August 2015

| Site                      | Position | Name             |
|---------------------------|----------|------------------|
| Target/CVS – Cedar Rapids | CPhT     | Nicole Hernandez |
| Hartig Drug – Dubuque     | RPh      | Anthony Pape     |