MERCER

Pharmacy Reimbursement:

Cost of Dispensing Survey Results

Minnesota Department of Human Services

November 17, 2020

Mercer Government

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Executive Summary

The Minnesota Department of Human Services (DHS), engaged Mercer Government Human Services Consulting (Mercer), part of Mercer Health & Benefits LLC, to develop and conduct a Pharmacy Cost of Dispensing Survey to study the cost of dispensing prescriptions to Minnesota Health Care Program (MHCP) recipients. This survey provides DHS with updated pharmacy cost information to inform future reimbursement policy decisions and to assist DHS in its efforts to remain compliant with the Centers for Medicare & Medicaid Services (CMS) Federal Covered Outpatient Drugs final rule (CMS-2345-FC). In the final rule, effective April 1, 2016 (42 CFR, Part 447), CMS requires fee-for-service (FFS) Medicaid pharmacy programs to adopt Actual Acquisition Cost (AAC)-based ingredient cost reimbursement, which is more reflective of pharmacies' actual purchase prices paid for ingredient costs, plus a professional dispensing fee (PDF) which is intended to be reflective of pharmacies' actual cost to dispense.

Cost of Dispensing Survey

Mercer surveyed 1,034 outpatient pharmacy providers enrolled in MHCP using the survey tool shown in Appendix B. Mercer analyzed the response data and performed a statistical analysis of the costs associated with professional dispensing of prescriptions, defined by 42 CFR 447.502, which states, "Professional dispensing fee means the fee which:

- Is incurred at the point of sale or service and pays for costs in excess of the ingredient cost of a covered outpatient drug each time a covered outpatient drug is dispensed.
- Includes only pharmacy costs associated with ensuring that possession of the appropriate covered outpatient drug is transferred to a Medicaid beneficiary. Pharmacy costs include, but are not limited to, reasonable costs associated with a pharmacist's time in checking the computer for information about an individual's coverage, performing drug utilization review and preferred drug list review activities, measurement or mixing of the covered outpatient drug, filling the container, beneficiary counseling, physically providing the completed prescription to the Medicaid beneficiary, delivery, special packaging and overhead associated with maintaining the facility, and equipment necessary to operate the pharmacy."

To group similar pharmacy operations, Mercer classified the survey responses by pharmacy type:

- 340B Covered Entity, defined as a pharmacy participating in the federal 340B discount program as a covered entity.
- Independent Retail, defined as 4 or fewer stores under common ownership

- Long Term Care (LTC), defined as pharmacies primarily servicing long term care facilities
- Retail Chain, defined as 5 or more stores with common ownership or corporate identity
- Specialty, defined as pharmacies where specialty prescriptions comprise at least 25% of their prescription count and prescription sales.

Results

The calculated unweighted median cost of dispensing across all pharmacies is $10.67. Weighted by total prescription volume, the median cost of dispensing across all pharmacies is $9.91. Statistical analysis revealed significant differences in average cost of dispensing between Retail Chain and Specialty pharmacy types. However, the data collected showed no statistically significant difference in the average cost of dispensing between Retail Chain and the following pharmacy types: Independent Retail, 340B Covered Entity and Long Term Care. The cost of dispensing for a rural pharmacy did not differ significantly from the cost for an urban pharmacy. Detailed results of additional pharmacy attribute analysis are included in the report.

Limitations of Analysis

In preparing this document, Mercer has used and relied upon data supplied by DHS and the pharmacies participating as MHCP providers. DHS and participating pharmacies are responsible for the validity and completeness of this supplied data and information. We have reviewed the data and information for consistency and reasonableness. In our opinion, it is appropriate for the intended purposes. If the data and information are incomplete or inaccurate, the values shown in this analysis may need to be revised accordingly.

All estimates are based upon the information available at a point in time, and are subject to unforeseen and random events. Therefore, any projection must be interpreted as having a likely range of variability from the estimate. Any estimate or projection may not be used or relied upon by any other party or for any other purpose than for which it was issued by Mercer. Mercer is not responsible for the consequences of any unauthorized use.

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Cost of Dispensing Survey

Introduction

On February 1, 2016, CMS published the federal Covered Outpatient Drugs final rule (CMS-2345-FC). The federal regulation ensures that Medicaid programs reform payment methodologies for prescription drugs. Under the final rule, CMS requires FFS Medicaid pharmacy programs to adopt AAC-based ingredient cost reimbursement, which is more reflective of pharmacies' actual purchase prices paid for ingredient costs, plus a PDF which is more reflective of pharmacies' actual cost to dispense. The regulation required all states to be in compliance with the reimbursement requirements of the final rule by April 1, 2017.

DHS adopted a dispensing fee of $10.48, based on the state of Indiana's cost of dispensing survey, in July 2019. In 2020, DHS contracted with Mercer to conduct an updated Pharmacy Cost of Dispensing Survey to determine current cost of dispensing information for Minnesota pharmacies enrolled as MHCP providers. The survey obtained information on the costs associated with dispensing covered outpatient drugs to MHCP recipients.

Mercer's survey process is outlined in detail below; it consists of thorough stakeholder engagement and input, survey question development, intake and validation of survey data, statistical analysis, development of the report and the final recommendations.

Methodology

The study methodology included the following tasks:

- Held a project kick-off meeting with DHS to identify the population to be surveyed, reviewed the survey objectives and survey instruments, and identified timelines to complete the survey and final report.
- Requested a list of active providers who billed MHCP for prescription drugs for MHCP recipients — including available contact and address information — and identified the universe of providers (study population) to be surveyed.
- In the Cost of Dispensing Survey, included demographic data questions to collect contact information and provider types for the survey population.
- Sent a letter to inform the pharmacy providers of the pending cost of dispensing survey.
- Held a stakeholder meeting to educate providers on the survey and survey process.

- Distributed the cost of dispensing survey tool, instructions and a letter from DHS to all pharmacy providers identified by DHS. DHS's letter was used to highlight the importance of the survey and provide methods for submission of the requested information needed for the cost of dispensing analysis. The letter highlighted the mandatory nature of the survey based on Minnesota state statute 256B.0625.
- Received completed surveys from pharmacies and sent follow-up reminder emails to pharmacies that had not yet submitted the survey.
- Conducted reminder phone calls in the final two weeks of the collection period to pharmacies that had not yet submitted the survey.
- Performed desk reviews on all surveys submitted.
- Compiled outpatient pharmacy self-reported data into a Mercer database and performed initial cost analysis of the data using the professional dispensing costs described in 42 CFR 447.502.
- Conducted a statistical analysis, including a regression analysis, of the Cost of Dispensing Survey data to determine an average cost and percentile distribution of cost of dispensing a prescription to a FFS MHCP recipient.
- Prepared the draft report.
- Reviewed the draft report with DHS.
- Finalized the report. The final report includes:
  - Executive summary
  - Cost of Dispensing study
  - Results and conclusion
  - Appendices containing various exhibits

Survey Instrument Development

Mercer designed the survey to be a transparent, comprehensive and easily completed tool that addresses a pharmacy provider's cost to dispense a prescription drug to a MHCP recipient. The tool was designed to capture all expense elements recorded in a pharmacy's financial records. The Minnesota DHS Cost of Dispensing Survey focused on collecting the actual costs incurred by pharmacy providers that dispense prescription drugs to MHCP recipients. The survey tool was designed following review of cost of dispensing surveys conducted both at the national and individual state levels, and based on the needs identified by DHS and key stakeholders.

Development and receipt of the cost of dispensing survey tools included:

- Developed survey tool and instructions for completion and submission alternatives in collaboration with DHS.
- Created an online web-based survey.
- Created an Excel®-based spreadsheet to accommodate retail pharmacy chains that submitted surveys for multiple locations.
- Established and monitored an email support mailbox and a toll-free number for technical assistance.

Survey Population

A list of 1,034 enrolled outpatient pharmacy providers obtained from DHS served as the main data source to identify the study population. The starting population included 33 340B pharmacies, 57 LTC pharmacies, 14 Specialty pharmacies, 179 Independent Retail pharmacies and 751 Retail Chain pharmacies.

Responding pharmacies were re-assigned to the Specialty pharmacy type if both their reported specialty sales and prescription counts were greater than 25% of their total sales and prescription counts. Four Retail Chain pharmacies responding to the survey were re-assigned to the Specialty pharmacy type, and starting populations for Retail Chain and Specialty were adjusted to 747 and 18, respectively.

Survey Distribution and Follow-up

Mercer and DHS hosted a stakeholder meeting on May 27, 2020, to announce the upcoming survey and allow for pharmacy provider input and questions regarding the survey process. Mercer emailed the Cost of Dispensing Survey letter along with secure links to the survey tool and survey instructions on June 18. Mercer hosted a technical assistance meeting on June 25 to assist providers with survey completion. A reminder notice was sent to the non-responding pharmacies on July 8. Mercer and DHS extended the survey deadline from July 31 to August 7 to provide additional opportunities for pharmacies to respond and increase the response rate. Mercer contacted pharmacies with incomplete but fixable responses for clarification. In addition, Mercer made revisions to the survey data in cases where omissions or obvious mistakes were identified to maximize the usable response data for the analysis.

Survey Response Rate and Non-response Bias

Of 1,034 pharmacies in the study population, 875 pharmacies responded to the survey, representing a total response rate of 84.6%. Of the 875 pharmacies that responded, 110 pharmacies provided non-usable responses and 765 pharmacies provided usable responses to the study, representing a usable response rate of 74.0%.

Usable responses were defined as responses that contained sufficient data to permit calculation of the pharmacy's cost of dispensing based on the following variables:

- 12-month reporting period
- Measurable financial reporting period
- Number of years open
- Pharmacy has been open at least one year
- Prescription area square footage
- Total square footage
- Total number of prescriptions
- Prescription sales (not including over-the-counter sales)
- Total sales
- Prescription department payroll
- Total prescription department costs
- Total facility costs
- Total overhead costs
- Total sales less than total costs of dispensing
- Specialty pharmacies reporting count and sales of specialty prescriptions

Responses that were missing critical information required to calculate the average cost of dispensing per prescription were unusable and excluded from the analysis. Responses received from pharmacies located outside of Minnesota were also excluded. Table 1 reports the numbers and reasons for responses excluded from the sample.

Table 1: Accounting of Unusable Responses — Missing Data or Logical Errors*

Reason	Number Dropped from Sample*
Missing or Invalid Financial Period	0
Missing Pharmacy Department Area Square Footage	15
Missing Total Square Footage	16
Missing Total Number of Prescriptions	10

Reason	Number Dropped from Sample*
Missing Prescription Sales	11
Missing Total Sales	12
Missing Prescription Department Payroll	11
Missing Prescription Department Expenses	9
Missing Overhead Costs	11
Costs of Dispensing Greater Than Total Sales	24
Open Less Than a Year	24
Outliers	9
Self-Identified as Specialty, but Missing Specialty Data	3
Out of State	48

*These counts are non-unique. Pharmacies that had multiple missing essential data elements are counted multiple times.

After the average cost of dispensing (COD) was calculated for each respondent, the results were analyzed for outliers. Nine pharmacies were identified as outliers and dropped from the sample population. Of the nine outliers, one pharmacy was a Specialty pharmacy with an average COD greater than $3500, and the other eight outlier pharmacies (two 340B Covered Entity, two Independent Retail, and four Retail Chain) were pharmacies with average COD greater than $150, ranging from $184 to $595. Four of these eight pharmacies were identified as Home Infusion pharmacies by their business names.

Responses by pharmacy type of the 765 pharmacies providing usable responses to the survey are as follows:

Pharmacy Type	Number of Usable Responses	Percentage of Total Usable Responses
340B Covered Entity	19	2.5%
Independent Retail	49	6.4%
Long Term Care	16	2.1%
Retail Chain	673	88.0%
Specialty	8	1.0%

To determine whether the distributions of the responding sample by type characteristics differed from those observed in the study population, chi-square analysis was performed. The results were statistically significant ($p < 0.0001$) for pharmacy type, indicating that the distribution of respondents by pharmacy type does not match the distribution by pharmacy type of the study population. Retail Chain pharmacies responded to the survey at a higher rate than other pharmacy types.

Cost and Expense Elements

Costs included in the professional cost of dispensing calculation include those defined in 42 CFR 447.502, which states, “Professional dispensing fee means the fee which:

- Is incurred at the point of sale or service and pays for costs in excess of the ingredient cost of a covered outpatient drug each time a covered outpatient drug is dispensed.
- Includes only pharmacy costs associated with ensuring that possession of the appropriate covered outpatient drug is transferred to a Medicaid beneficiary. Pharmacy costs include, but are not limited to, reasonable costs associated with a pharmacist’s time in checking the computer for information about an individual's coverage, performing drug utilization review and preferred drug list review activities, measurement or mixing of the covered outpatient drug, filling the container, beneficiary counseling, physically providing the completed prescription to the Medicaid beneficiary, delivery, special packaging and overhead associated with maintaining the facility, and equipment necessary to operate the pharmacy.”

The expenses included in the cost of dispensing calculation are classified as follows: prescription department payroll expenses, prescription department expenditures, facility expenses and other non-facility administrative expenses. Prescription department payroll expenses and prescription department expenditures are allocated in full to the cost to dispense. Facility expenses are allocated as a percentage of square footage, and other non-facility administrative expenses are allocated as a percentage of sales.

Prescription department expenditures, allocated at 100%, included:

- Prescription containers, labels and other pharmacy supplies
- Professional liability insurance
- Prescription department licenses, permits and fees
- Dues, subscriptions and continuing education for the prescription department
- Delivery expenses (prescription-related only)
- Compounding expenses
- Computer systems (related only to the prescription department for dispensing and ancillary services)
- Claims transmission charges
- Depreciation directly related to the prescription department

- Professional education and training
- Costs attributed to 340B, including program management and inventory segregation
- Other prescription department-specific costs not identified elsewhere

Overhead associated with maintaining the facility and equipment necessary to operate the pharmacy are split into facility expenses and other non-facility administrative expenses. Facility expenses, allocated based on area ratio, included:

- Rent
- Utilities (gas, electric, water and sewer)
- Real estate taxes
- Facility insurance
- Maintenance and cleaning
- Depreciation (not including depreciation directly related to the prescription department)
- Mortgage interest

Other non-facility administrative expenses, allocated based on sales ratio, included:

- Professional services (for example, accounting, legal and consulting)
- Security costs
- Telephone and data communication
- Transaction and merchant fees
- Computer systems and supports (not included as direct pharmacy expenses, for example, the cash register in a non-dispensing section of a store or an inventory system for non pharmacy department products)
- Depreciation not captured elsewhere
- Amortization
- Office supplies
- Office expenses
- Other insurance

- Franchise fees
- Non-mortgage interest

Total pharmacy operational expenses, including overhead and labor costs, are obtained by summing payroll expenses, prescription department expenses, facility expenses allocated by square footage and other non-facility administrative expenses allocated by percentage of sales to the prescription department as identified above.

The cost of dispensing a prescription is obtained by dividing the total pharmacy operational expenses by the total number of prescriptions reported in the time period. All other costs and expenses collected were not identified in the definition of “professional dispensing fee” described in the final rule.

Of the unweighted average COD observed, the percentage of component costs for the five different pharmacy types are shown in Table 2. See Figures 1 and 2 for a comparison of dispensing fee components by Pharmacy Type.

Table 2: Percentage of Component Costs by Pharmacy Type

	Prescription Department Other (Non-Payroll)	Prescription Department Payroll	Facility Costs	Other Store Costs
340B	7.3%	78.6%	1.7%	12.4%
Independent Retail	18.8%	70.9%	3.4%	6.9%
Long Term Care	17.3%	72.9%	5.5%	4.4%
Retail Chain	13.8%	74.9%	4.6%	6.8%
Specialty	31.2%	55.2%	6.4%	7.1%

Figure 1

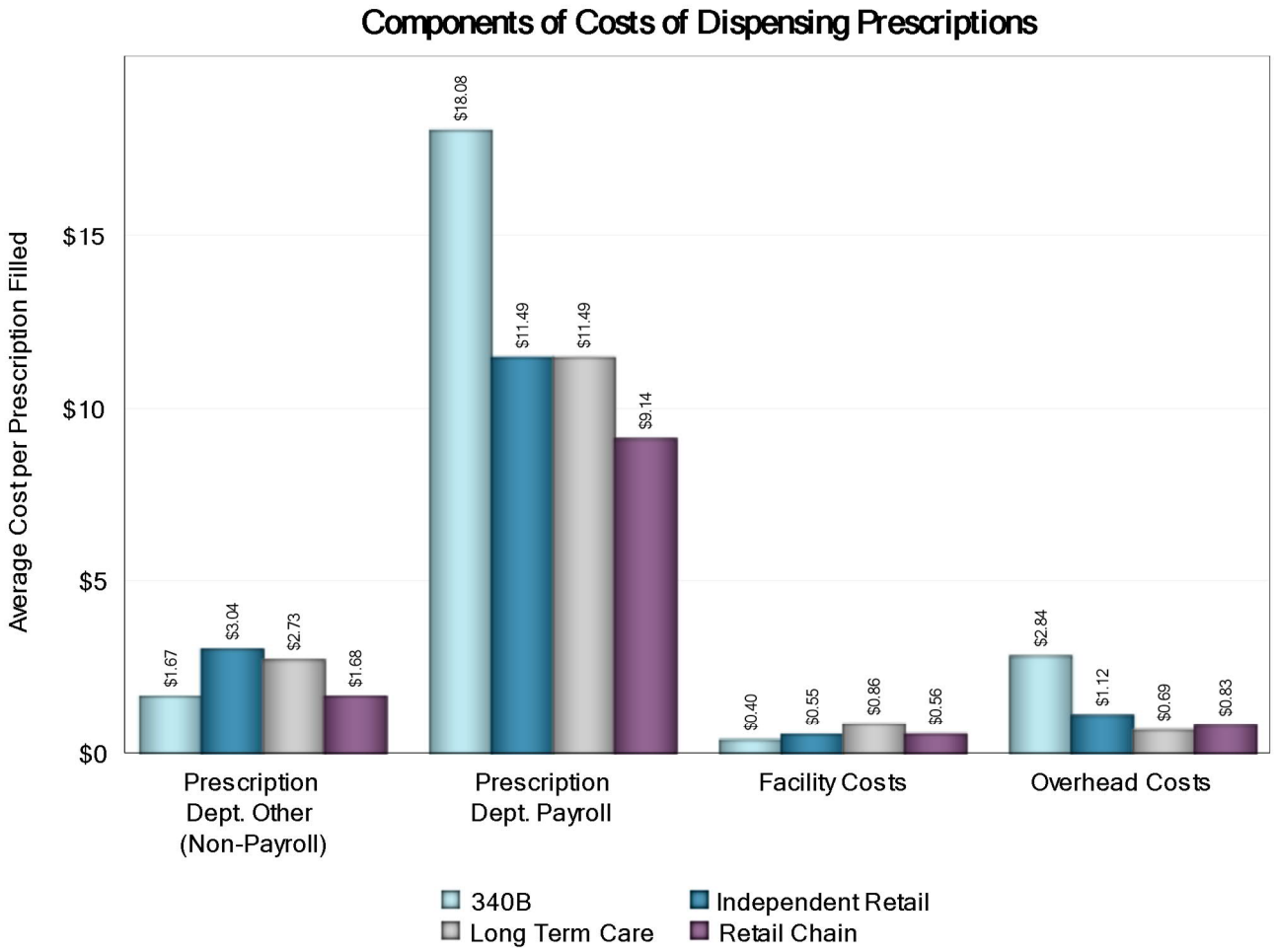
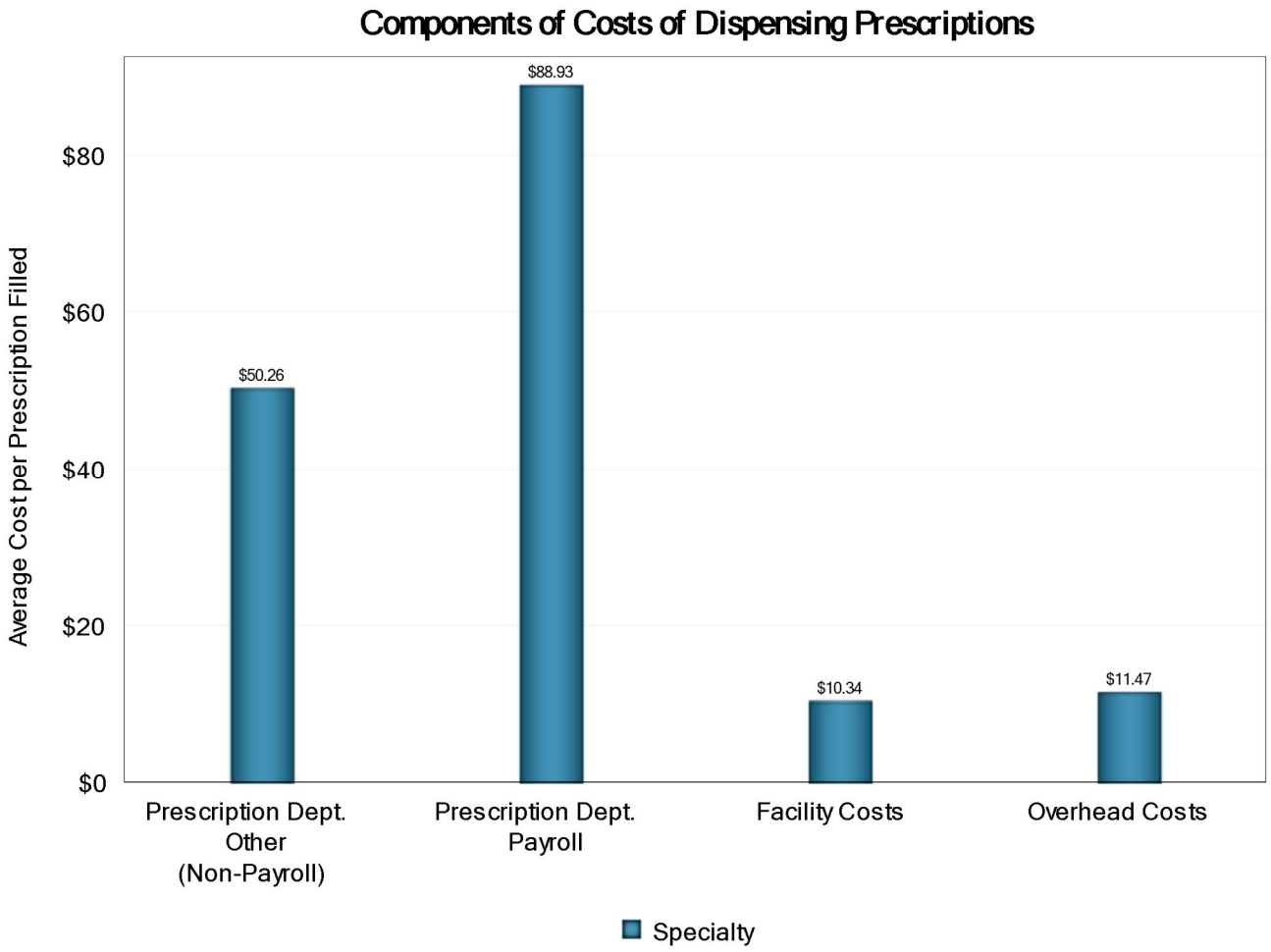

Components of Costs of Dispensing Prescriptions
Average Cost per Prescription Filled
$0
$5
$10
$15
$1.67
$3.04
$2.73
$1.68
$18.08
$11.49
$11.49
$9.14
$0.40
$0.55
$0.86
$0.56
$2.84
$1.12
$0.69
$0.83
Prescription Dept. Other (Non-Payroll)
Prescription Dept. Payroll
Facility Costs
Overhead Costs
340B
Independent Retail
Long Term Care
Retail Chain

Figure 2



Inflation Adjustments

The Consumer Price Index (CPI), published by Bureau of Labor Statistics, was used to standardize total pharmacy operational expenses, including overhead and labor costs, to the same time period ending on August 31, 2020, for all urban consumers. Fiscal period end dates reported by pharmacies ranged from June 30, 2019, to July 1, 2020. Table 3 shows the fiscal period begin and end dates, mid-point CPI (average of beginning and ending month CPIs), terminal month CPI, inflation factor and number of pharmacies, with the corresponding year end date included in the analysis.

Table 3: Inflation Factors Used to Standardize Costs to August 2020

Fiscal Period Begin Date	Fiscal Period End Date	Mid-point CPI	Terminal Month CPI (August 2019)	Inflation Factor	Number of Pharmacies
01JUL2018	30JUN2019	251.712	259.918	1.033	4
29JUL2018	03AUG2019	252.776	259.918	1.028	78
01AUG2018	31JUL2019	252.776	259.918	1.028	11
01SEP2018	31AUG2019	254.202	259.918	1.022	150
01OCT2018	29SEP2019	255.548	259.918	1.017	23
01OCT2018	30SEP2019	255.548	259.918	1.017	2
01NOV2018	31OCT2019	256.092	259.918	1.015	1
30DEC2018	28DEC2019	256.571	259.918	1.013	165
01JAN2019	31DEC2019	256.571	259.918	1.013	224
01FEB2019	31JAN2020	256.558	259.918	1.013	83
31MAR2019	31MAR2020	257.346	259.918	1.010	1
18JUN2019	18JUN2020	256.974	259.918	1.011	2
24JUN2019	24JUN2020	257.971	259.918	1.008	1
01JUL2019	30JUN2020	257.971	259.918	1.008	18
01JUL2019	01JUL2020	257.971	259.918	1.008	2

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Results and Conclusions

Mercer analyzed the survey data to calculate the pharmacy cost of dispensing. This section presents details on the various methods for calculating the cost of dispensing and the results of Mercer's analysis.

Results

The results of Mercer's cost of dispensing calculations are provided in Table 4. The results of the cost of dispensing analysis can be used to inform the development of MHCP pharmacy payment policy. Mercer recommends defining Community Retail as either all pharmacy types, or all pharmacy types with the exception of Specialty. All of these statistics are measures of central tendency of the costs of dispensing data collected in this survey. In other words, any of these statistics provides a representation of the cost to dispense a prescription across Community Retail pharmacies within Minnesota.

Table 4: Minnesota Results: Cost to Dispense

		Weighting Method			
Statistic	**Community Retail Definition**	**Unweighted**	**Response Probability**	**Total Prescription Volume**	**Medicaid Prescription Volume**
Winsorized Mean	All	$12.43	$13.02	$11.43	$13.87
	Exclude Specialty	$12.28	$12.59	$11.14	$12.23
Median	All	$10.67	$11.18	$9.91	$10.77
	Exclude Specialty	$10.57	$11.10	$9.85	$10.54

Analysis and Findings for Cost of Dispensing

Various calculation methods may be used to determine an average dispensing cost based on the usable survey data. Mercer conducted multiple calculation methods, including:

- Medians
- Unweighted means
- Weighted means considering prescription volume (total and Medicaid) and response probability
- Winsorized means

Means and medians are used to determine an average and midpoint cost of dispensing a prescription by MHCP pharmacy providers. Unweighted means and medians represent an average and midpoint cost *per prescription per pharmacy* for pharmacies in the sample. By weighting means and medians by the response probability, the impact of non-response bias is reduced. Weighting by response probability assumes that within pharmacy type, non-respondents are similar to respondents — the data is then re-weighted to match the distribution by pharmacy type of the study population. Means and medians weighted by the total number of prescriptions or number of Medicaid prescriptions are used to determine an average and midpoint cost for all prescriptions in the sample. This method of calculating the mean is equivalent to summing all of the total pharmacy operational costs in the sample divided by the total of all prescriptions in the sample.

To minimize the impact of low or high outliers or highly skewed distributions in the calculation of average costs, a winsorized approach was used by setting the cost of dispensing that was below the fifth percentile to the fifth percentile and those that were higher than the ninety-fifth percentile to the ninety-fifth percentile prior to calculating the statewide average costs.

The unadjusted mean, winsorized means, medians and twenty-fifth and seventy-fifth percentiles of the average cost per prescription estimated according to each weighting method are shown in Tables 5A, 5B, 5C, 5D and 5E for different groupings of pharmacy types into the Community Retail classification.

- Table 5A groups all pharmacy types together into Community Retail.
- Table 5B groups 340B Covered Entity, Independent Retail, Long Term Care, and Retail Chain pharmacies together into Community Retail.
- Table 5C groups Independent Retail, Long Term Care, and Retail Chain pharmacies together into Community Retail.
- Tables 5D and 5E show the statistics for 340B Covered Entity and Specialty pharmacies if they are ungrouped and analyzed independently.

Table 5A: Means, Medians and Percentile Distribution of Cost of Dispensing — Community Retail Pharmacies (All Pharmacy Types Grouped)

Method	Mean	Winsorized Mean*	Median	Twenty-Fifth Percentile	Seventy-Fifth Percentile
Unweighted	$14.36	$12.43	$10.67	$9.10	$14.40
Weighted by response probability	$16.02	$13.02	$11.18	$9.15	$15.06
Weighted by total prescription volume	$12.05	$11.43	$9.91	$8.83	$12.89
Weighted by Medicaid prescription volume	$14.30	$13.87	$10.77	$9.09	$15.06

Table 5B: Means, Medians and Percentile Distribution of Cost of Dispensing — Community Retail Pharmacies (340B, Independent Retail, Long Term Care, Retail Chain Grouped)

Method	Mean	Winsorized Mean*	Median	Twenty-Fifth Percentile	Seventy-Fifth Percentile
Unweighted	$12.81	$12.28	$10.57	$9.09	$14.24
Weighted by response probability	$13.46	$12.59	$11.10	$9.14	$14.58
Weighted by total prescription volume	$11.55	$11.14	$9.85	$8.80	$12.52
Weighted by Medicaid prescription volume	$12.85	$12.23	$10.54	$9.05	$14.40

Table 5C: Means, Medians and Percentile Distribution of Cost of Dispensing — Community Retail Pharmacies (Independent Retail, Long Term Care, Retail Chain Grouped)

Method	Mean	Winsorized Mean*	Median	Twenty-Fifth Percentile	Seventy-Fifth Percentile
Unweighted	$12.54	$12.05	$10.53	$9.08	$13.89
Weighted by response probability	$13.14	$12.30	$10.89	$9.12	$14.35

Method	Mean	Winsorized Mean*	Median	Twenty-Fifth Percentile	Seventy-Fifth Percentile
Weighted by total prescription volume	$11.30	$10.96	$9.79	$8.75	$12.14
Weighted by Medicaid prescription volume	$12.34	$11.79	$10.19	$8.95	$13.98

Table 5D: Means, Medians and Percentile Distribution of Cost of Dispensing — 340B Covered Entity Pharmacies

Method	Mean	Winsorized Mean*	Median	Twenty-Fifth Percentile	Seventy-Fifth Percentile
Unweighted	$22.98	$22.98	$20.46	$16.32	$24.49
Weighted by response probability	$22.98	$22.98	$20.46	$16.32	$24.49
Weighted by total prescription volume	$22.48	$22.51	$17.21	$14.17	$24.16
Weighted by Medicaid prescription volume	$22.20	$20.88	$19.86	$16.32	$24.16

Table 5E: Means, Medians and Percentile Distribution of Cost of Dispensing — Specialty Pharmacies

Method	Mean	Winsorized Mean*	Median	Twenty-Fifth Percentile	Seventy-Fifth Percentile
Unweighted	$161.00	$161.00	$56.84	$38.89	$252.96
Weighted by response probability	$161.00	$161.00	$56.84	$38.89	$252.96
Weighted by total prescription volume	$38.77	$35.53	$25.43	$25.43	$47.70

Method	Mean	Winsorized Mean*	Median	Twenty-Fifth Percentile	Seventy-Fifth Percentile
Weighted by Medicaid prescription volume	$51.24	$50.15	$52.39	$47.70	$52.39

In addition to calculating the cost of dispensing a prescription on a statewide basis, the study determined the average costs of dispensing for subgroups of pharmacies classified by various pharmacy characteristics (Appendix A).

Regression Analysis of Pharmacy Characteristics

A multivariable linear regression model was carried out to examine the relationship between a set of pharmacy characteristics and the average cost of dispensing for each pharmacy responding to the survey with usable data. This statistical method simultaneously considers a set of pharmacy characteristics and their relationship with the average cost of dispensing a prescription. The model performance, adjusted R-squared, measures how well the model fits the data and denotes the percentage of variation in average cost of dispensing accounted for by a set of the pharmacy characteristics. Because costs were right skewed and large differences in costs were seen between pharmacy types, the cost of dispensing was log normal transformed. The regression coefficient for each predictor variable represents a multiplier of the average cost of dispensing per unit change in the predictor variable, holding all other variables constant.

The following pharmacy characteristics were included in the regression model:

- Type of pharmacy
- Building ownership
- Whether emergency services are offered 24 hours daily
- Percentage of prescriptions accounted for by Medicaid
- Percentage of prescriptions that are compounded
- Length of time in business
- Number of hours open per week
- Whether enhanced services, including delivery of Medicaid prescriptions, are offered
- Rural or urban location

- Mercer determined the rural or urban designation by first mapping pharmacy zip codes to county codes with a USPS crosswalk (2nd Quarter 2020) available from the Office of Policy Development and Research (PD&R), on the US Department of Housing and Urban Development (HUD) website. The county codes were then matched to Core Based Statistical Area (CBSA) indicator codes from the Health Resources and Services Administration's (HRSA) Area Health Resources File (2018-19) to define geographic type.

Table 6 shows the results of the log normal transformed regression analysis, which examines the relationship between pharmacy characteristics and the average cost of dispensing. Each pharmacy characteristic is represented as a categorical variable, where the reference (base) case is a pharmacy with the following characteristics:

- Retail Chain pharmacy
- Building not owned
- 24-hour emergency services not available
- < 20% of prescriptions accounted for by Medicaid
- 0.1–0.99% prescriptions compounded
- In business 12–24 years
- Open 70–79 hours per week
- No delivery of prescriptions
- Urban location

The intercept represents the average cost per prescription for a pharmacy with these characteristics. The averages represented by the regression were based on log-transformed data, which normalizes the data, reducing distortion and influence of responses in the right tail of the distribution. The average estimated costs per prescription based on the regression are lower than the winsorized averages from Table 5C, indicating a high level of distortion caused by a small number of responses in the distribution of cost of dispensing prescriptions. For each characteristic, the results for the reference pharmacy are displayed as Base, since they are captured by the intercept, the base case pharmacy. Because the cost of dispensing was log normal transformed, the result for each non-reference category represents the multiplier of the cost of dispensing to the base case, holding all other characteristics constant. For each characteristic that varies from the base case, the base cost is multiplied by its associated factor.

Overall, the model explained 44.5% of the variance in average cost of dispensing a prescription. Based on the tests of the regression coefficients, three comparisons to the reference case were significantly related to cost of dispensing.

The characteristics that had a statistically significant relationship to the cost of dispensing were:

- Specialty pharmacy type compared to Retail Chain
- Building owned (compared to building not owned)
- Prescriptions delivered (compared to prescriptions not delivered)

The results for the intercept indicate that average base case cost of dispensing was $8.85.

Table 6: Regression Analysis Examining the Relationship between Pharmacy Characteristics and an Average Cost of Dispensing

			95% Confidence Interval		
Model Predictor	**Level**	**Base and Multipliers**	**Lower Bound**	**Upper Bound**	**P-Value**
Intercept	Intercept	$8.85	7.16	10.95	***
Pharmacy Type	340B Covered Entity	1.55	0.97	2.49	NS
	Independent Retail	0.93	0.68	1.28	NS
	Long Term Care	0.96	0.57	1.62	NS
	Retail Chain	Base	1.00	1.00	
	Specialty	5.66	2.72	11.78	***
Building Owned	No	Base	1.00	1.00	
	Yes	1.25	1.05	1.47	**
Open 24 Hours Emergency	No	Base	1.00	1.00	
	Yes	1.11	0.83	1.47	NS
Percent Prescriptions Medicaid	0 - 19.99%	Base	1.00	1.00	
	20% or more	1.71	0.53	5.57	NS
Percent Prescriptions Compounded	0 - 0.099%	1.04	0.86	1.27	NS
	0.1 - 0.99%	Base	1.00	1.00	
	1% or more	1.06	0.85	1.32	NS
Years In Business	0 - 11.99	1.15	0.97	1.35	NS
	12 - 24.99	Base	1.00	1.00	
	25 or more	0.96	0.79	1.18	NS
	Not specified	1.73	0.84	3.55	NS
Hours Per Week	0 - 69.99	1.16	0.95	1.42	NS

	70 - 79.99	Base	1.00	1.00	
	80 or more	1.01	0.80	1.28	NS
Prescriptions Delivered	No	Base	1.00	1.00	
	Yes	1.23	1.01	1.50	*

			95% Confidence Interval		
Model Predictor	**Level**	**Base and Multipliers**	**Lower Bound**	**Upper Bound**	**P-Value**
County Type	Rural	0.88	0.74	1.05	NS
	Urban	Base	1.00	1.00	

* Indicates that p < 0.05
** Indicates that p < 0.01
*** Indicates that p < 0.001
NS Indicates that the characteristic is not significant

Appendix A

Pharmacy Characteristics and Average Cost of Dispensing a Prescription

Table A1: Pharmacy Characteristics and Average Cost of Dispensing a Prescription

				Winsorized Means Weighted By:				Medians Weighted By:			
	n	N	%	Unweighted	Response Probability	Total Rx Volume	Medicaid Rx Volume	Unweighted	Response Probability	Total Rx Volume	Medicaid Rx Volume
Overall											
Community Retail	765	1034	100.0%	$12.43	$13.02	$11.43	$13.87	$10.67	$11.18	$9.91	$10.77
Pharmacy Type											
340B	19	33	3.19%	$19.75	$20.56	$18.16	$21.30	$20.46	$20.46	$17.21	$19.86
Independent Retail	49	179	17.31%	$13.38	$13.62	$12.84	$13.59	$13.01	$13.01	$12.89	$12.88
Long Term Care	16	57	5.51%	$14.06	$14.56	$13.20	$17.46	$13.37	$13.37	$11.58	$16.49
Retail Chain	673	747	72.24%	$11.98	$12.06	$10.78	$11.39	$10.38	$10.38	$9.56	$9.79
Specialty	8	18	1.74%	$24.16	$27.82	$22.56	$43.86	$56.84	$56.84	$25.43	$52.39

				Winsorized Means Weighted By:				Medians Weighted By:			
	n	N	%	Unweighted	Response Probability	Total Rx Volume	Medicaid Rx Volume	Unweighted	Response Probability	Total Rx Volume	Medicaid Rx Volume
Building is Owned											
Yes	244	360	34.82%	$14.09	$14.10	$13.61	$14.57	$12.50	$12.89	$12.30	$13.96
No	521	674	65.18%	$11.66	$12.44	$10.65	$13.57	$9.84	$10.17	$9.43	$9.79
Open 24 Hours Emergency											
Yes	59	101	9.77%	$14.17	$14.44	$12.75	$15.79	$13.52	$13.52	$11.58	$14.96
No	706	933	90.23%	$12.29	$12.86	$11.24	$13.42	$10.53	$10.89	$9.75	$10.17
Percent Medicaid Prescriptions											
0 - 19.99%	762	1025	99.13%	$12.39	$12.91	$11.41	$12.95	$10.63	$11.16	$9.90	$10.55
20% or more	3	9	0.87%	$22.15	$24.38	$22.29	$41.75	$52.39	$52.39	$52.39	$52.39
Percent Compounded											
0 - 0.099%	264	401	38.78%	$12.73	$13.13	$11.79	$14.09	$10.81	$11.42	$10.25	$12.38
0.1 - 0.99%	188	265	25.63%	$12.89	$13.52	$11.68	$13.99	$11.57	$11.81	$10.15	$11.62
1% or more	313	368	35.59%	$11.91	$12.53	$11.05	$13.65	$10.23	$10.54	$9.71	$10.04
Prescriptions Delivered											
Yes	286	474	45.84%	$14.33	$14.62	$13.24	$16.40	$13.38	$13.37	$12.06	$13.52
No	479	560	54.16%	$11.30	$11.65	$10.29	$11.04	$9.82	$9.93	$9.39	$9.49
Years In Business											
0 - 11.99	321	436	42.17%	$13.80	$14.45	$12.46	$15.95	$12.06	$12.48	$11.42	$12.85
12 - 24.99	292	367	35.49%	$11.28	$11.80	$10.72	$12.60	$9.75	$9.99	$9.37	$9.59
25 or more	144	220	21.28%	$11.33	$11.90	$10.87	$12.41	$10.03	$10.18	$9.79	$10.49
Not Specified	8	11	1.06%	$19.72	$18.87	$18.42	$21.37	$19.36	$16.90	$16.90	$21.16

				Winsorized Means Weighted By:				Medians Weighted By:			
	n	N	%	Unweighted	Response Probability	Total Rx Volume	Medicaid Rx Volume	Unweighted	Response Probability	Total Rx Volume	Medicaid Rx Volume
Hours Open per Week											
0 - 69.99	304	494	47.78%	$14.35	$14.72	$13.38	$16.89	$12.91	$13.18	$11.84	$13.42
70 - 79.99	357	400	38.68%	$11.00	$11.10	$10.29	$10.74	$9.91	$9.89	$9.57	$9.57
80 or more	104	140	13.54%	$11.74	$12.49	$11.07	$13.01	$9.40	$10.15	$9.42	$10.15
County Type											
Rural	192	273	26.40%	$11.96	$12.13	$10.97	$11.46	$10.38	$10.53	$9.82	$9.97
Urban	573	761	73.60%	$12.59	$13.33	$11.57	$14.74	$10.86	$11.36	$9.98	$11.29

Appendix B

Minnesota Cost of Dispensing Survey

PHARMACY PROFILE									
By Location		Store Location Number/Identifier							
		1	2	3	4	5	6	7	8
1	National Provider Identifier (NPI) (10 digits)								
2	NCPDP Provider Number (if known)								
3	Provider name								
4	Street address								
5	Street address (Additional)								
6	City								
7	State								
8	ZIP code								
9	County								
10	Contact person								
11	Contact person email								
12	Telephone number								
13	Fax number								
14	Was there a change in pharmacy ownership during the reporting period?								
15	Was the pharmacy open the entire reporting year?								
16	Select the appropriate provider type.								
17	How many years has this location been in business as a pharmacy?								
18	Does the pharmacy provide 24-hour service?								
19	How many hours per week is the pharmacy department open? (Maximum of 168)								
20	What was the square footage for the prescription area at the end of the reporting period?								
21	Non-prescription area								
22	Total square footage	-	-	-	-	-	-	-	-

	PHARMACY PRESCRIPTIONS								
	By Location		Store Location Number/Identifier						
			1	2	3	4	5	6	7	8
Prescriptions	23	What was the total number of Minnesota Health Care Programs (MHCP) fee-for-service prescriptions (BIN #610459) filled by this pharmacy during the reporting period (not counting prescriptions for non-legend Over-the-Counter (OTC) items)?								
	24	What was the total number of MHCP fee-for-service prescriptions for non-legend Over-The-Counter (OTC) items filled by this pharmacy during the reporting period?								
	25	All other prescriptions (Non-MHCP-FFS) including MHCP Prepaid Medical Assistance Program (PMAP) and all other payers								
	26	Total prescriptions (Sum of previous 3 questions)	-	-	-	-	-	-	-	-
Compound	27	Total MHCP FFS compounded prescriptions								
	28	Total non-MHCP-FFS compounded prescriptions								
Delivery	29	Total MHCP FFS prescriptions delivered outside of the pharmacy (both physical and mail order)								
	30	Total non-MHCP-FFS prescriptions delivered outside of the pharmacy (both physical and mail order)								
LTC Section 1: Retrospectively billed claims for drugs dispensed from an automated drug distribution system meeting the requirements of MN Statute 151.58										
	31	Total prescriptions dispensed for LTC facilities								
LTC Section 2: Retrospectively billed claims for prescriptions dispensed Packaging Standards set forth in MN Rules 6800.2700										
	32	Total prescriptions dispensed for LTC facilities								
LTC Section 3: Other long term care packaging, billed prospectively										
	33	Total prescriptions dispensed for LTC facilities								
340B	34	Total MHCP FFS 340B prescriptions								
	35	Total non-MHCP-FFS 340B prescriptions								

	SPECIALTY DISPENSING INFORMATION								
	By Location		Store Location Number/Identifier						
			1	2	3	4	5	6	7	8
	36	Do specialty prescriptions comprise at least 25% of your total prescription count? If yes, please complete the specialty section. If no, you may skip the specialty section. Specialty pharmacy products are defined as those used by a small number of recipients or recipients with complex and chronic diseases that require expensive and challenging drug regimens. Examples of these conditions include, but are not limited to: multiple sclerosis, HIV/AIDS, transplantation, hepatitis C, growth hormone deficiency, Crohn's Disease, rheumatoid arthritis, and certain forms of cancer. Specialty pharmaceutical products include injectable and infusion therapies, biotechnology drugs, antihemophilic factor products, high-cost therapies, and therapies that require complex care.								
Specialty Prescription Counts and Sales	37	MHCP FFS hemophilia blood factor prescription count								
	38	Non-MHCP-FFS hemophilia blood factor prescription count								
	39	MHCP FFS all-other specialty drug prescription count								
	40	Non-MHCP-FFS all-other specialty drug prescription count								
	41	**Total number of specialty prescriptions**	-	-	-	-	-	-	-	-
	42	MHCP FFS hemophilia blood factor sales total (round all to the nearest dollar)								
	43	Non-MHCP-FFS hemophilia blood factor sales total								
	44	MHCP FFS all-other specialty drug prescription sales total								
	45	Non-MHCP-FFS all-other specialty drug prescription sales total								
	46	**Total specialty sales**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

		FINANCIAL INFORMATION — SALES AND DIRECT EXPENSES								
		By Location	Store Location Number/Identifier							
			1	2	3	4	5	6	7	8
Sales	47	Enter beginning date range of financial reports								
	48	Enter ending date range of financial reports								
	49	Legend Drug Prescription sales other than 340B sales								
	50	Sales for prescriptions for non-legend OTC items								
	51	Sales of legend drugs purchased through the 340B program								
	52	Revenue for medication therapy management (MTM) and other patient education services from all payers - include all revenue for clinical services such as diabetes education, smoking cessation education, therapeutic interchanges or clinical interventions								
	53	Revenue for ancillary services - include revenue related to therapeutic monitoring services, care coordination, drug or vaccine administration, clozapine monitoring, or diagnostic services								
	54	Revenue for special packaging, including blister packs								
	55	Revenue for compounding not included elsewhere								
	56	Other sales such as retail sales and services								
	57	Total sales (Note: Should tie to total net sales on financial statements or tax returns)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COGS	58	Cost of goods sold (COGS): pharmaceuticals (*Note:* This will not be included in the cost to dispense calculation.)								
	59	Non-pharmacy COGS								
	60	Total COGS	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Pharmacy Department Expenditures	61	Prescription containers, labels, and other pharmacy supplies								
	62	Professional liability insurance for licensed personnel								
	63	Pharmacy department licenses, permits, and fees								
	64	Dues, subscriptions for pharmacy department								
	65	Delivery expenses (prescription related)								
	66	Expenses for compounding								
	67	Bad debts for prescriptions (Including uncollected copayments)								
	68	Computer systems costs related only to the pharmacy department for dispensing services								
	69	Computer systems costs related only to the pharmacy department for ancillary services								
	70	Claim transmission charges								
	71	Depreciation directly related to pharmacy department								
	72	Professional education and training								
	73	Costs for 340B program management								
	74	Other 340B costs (list other costs in comments section)								
	75	Other pharmacy department-specific costs not identified elsewhere								
	76	Total pharmacy department non-payroll costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

	FINANCIAL INFORMATION — PAYROLL EXPENSES									
	By Location		Store Location Number/Identifier							
			1	2	3	4	5	6	7	8
Pharmacy Personnel	77	Number of pharmacist full-time employees (FTEs)								
	78	Number of other pharmacy department FTEs (Do not include pharmacist(s) counted in previous question)								
	79	Pharmacist manager (owner) wages								
	80	Pharmacist manager (non-owner) wages								
	81	Dispensing staff pharmacist wages - Include only the wages associated with prescription dispensing activity. If a pharmacist splits time between dispensing, non-dispensing related patient education, and drug/vaccine administration, allocate wages by the portion of FTE spent on each activity.								
	82	Non-dispensing staff pharmacist wages: MTM and other patient education activities								
	83	Non-dispensing staff pharmacist wages: administration of vaccines or injectable drugs								
	84	Pharmacy technician wages								
	85	Delivery personnel wages								
	86	Other personnel wages								
	87	Pharmacy department payroll taxes								
	88	Pharmacy department benefits (Including health insurance and pension/profit sharing/retirement expenses.)								
	89	Total pharmacy department payroll	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Non-Pharmacy	90	Nurses or medical professionals performing ancillary services								
	91	Wages for personnel directly attributed to non-pharmacy, non-ancillary sales & services								
	92	Wages for personnel directly attributed to administrative or shared services								
	93	Payroll taxes and benefits not reported elsewhere								
	94	General employee expenses attributable to all employee types								
	95	Non-pharmacy department payroll	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	96	Total payroll expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

	FINANCIAL INFORMATION – OVERHEAD								
	By Location		Store Location Number/Identifier						
			1	2	3	4	5	6	7	8
Facility Expenses	97	Does the provider or a related party own the building?								
	98	If so, is the building fully depreciated?								
	99	If owned by a related party, what is the amount of building depreciation in the reporting period?								
	100	Rent (explain in comments if building is owned).								
	101	Utilities (gas, electric, water, and sewer)								
	102	Real estate taxes								
	103	Facility Insurance								
	104	Maintenance and cleaning								
	105	Depreciation expense (e.g., leasehold improvements, furniture, and fixtures)								
	106	Mortgage interest								
	107	Other facility-specific costs not identified elsewhere								
	108	Total facility costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Non-Facility Overhead	109	Marketing and advertising								
	110	Professional services (e.g., accounting, legal, consulting)								
	111	Security costs								
	112	Telephone and data communication								
	113	Transaction fees/merchant fees/credit card fees								
	114	Computer systems and support								
	115	Depreciation (not captured elsewhere)								
	116	Amortization								
	117	Office supplies								
	118	Office expense								
	119	Other insurance								
	120	Taxes other than real estate, payroll, or sales								
	121	Franchise fees (If applicable)								
	122	Other interest								
	123	Charitable contributions								
	124	Corporate overhead								
	125	Other costs not included elsewhere (explain in comments)								
	126	Total non-facility overhead	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	127	Total overhead	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

FINANCIAL RECONCILIATION									
By Location		Store Location Number/Identifier							
		1	2	3	4	5	6	7	8
Sales									
128	Total net sales from your financial statements or tax return								
129	Total net sales reported in the survey	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
130	Sales variance (please explain in comments)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
131	Total payroll expenses from your financial statements or tax return								
132	Total payroll reported	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
133	Payroll variance (please explain in comments)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
134	Total expenses from your financial statements								
135	Total expenses reported	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
136	Total expense variance (Please explain in comments)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

COMMENTS
The Comments section is for comments and clarifications. If reporting more than one location, be specific as to which location the comment pertains. If comments are provided in response to a question, be specific as to which question the comment pertains.

CERTIFICATION	
I have prepared this cost report and to the best of my knowledge and belief, it is true, correct, and complete	
Electronic Signature	
Position/Title	
STATEMENT OF PREPARER (If the preparer is someone other than the provider.)	
I have prepared this cost report and to the best of my knowledge and belief, it is true, correct, and complete	
Electronic Signature	
Position/Title	
Name of Company	

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