Pricing Pharmaceutical Products and Services

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Learning Objectives

• Define service cost and explain why a manager needs to know this cost
• Define, differentiate and give examples of direct and indirect costs
• State and explain one method for calculating service costs and, given specific financial data for a pharmacy, use the method to calculate a pharmacy’s cost of providing a given service
Learning Objectives

• Explain the importance of using pro forma information in calculating service costs
• Define and differentiate full and differential costs
• Estimate a pharmacy’s differential cost of providing a service
• Discuss how demand, competition, pharmacy image, pharmacy goals, price signaling and non-monetary costs affect pricing decisions
Components of Price

- Ingredient cost
- Service cost
  - Prescriptions – cost to dispense
- Net income
Ingredient Cost

• What the pharmacy pays for the drug product it dispenses
• Several different measures
Actual Acquisition Cost (AAC)

- The price the pharmacy pays for the product it dispenses
- Varies according to:
  - Source: direct versus wholesaler
  - Volume of purchases
  - Incentives and special deals
  - Type of pharmacy
Average Wholesale Price (AWP)

- NOT the average price at which wholesalers sell the product
- The cost assigned to a product by its manufacturer and listed in a regularly published source
- Overstates actual acquisition cost
Estimated Acquisition Cost (EAC)

• Established by third-party payers to estimate actual acquisition cost
• AWP - defined percentage
• ex: AWP - 10%
Service Cost

- The average, or per unit, cost of providing a service
- Covers expenses such as salaries, rent and utilities, and depreciation
- For prescriptions, it’s called the cost to dispense
Types of Costs

- **Direct Costs**
  - Result directly from providing the service
  - If the service were not provided, there would be no direct costs
  - Dispensing-related direct costs include costs of labels and containers, patient education materials, and pharmacy licenses
Types of Costs

• Indirect costs
  – Do not result directly from a given service
  – Examples: rent, utilities, manager’s salary
  – Costs shared by all services provided by the pharmacy
Allocating Indirect Costs

• The cost of providing a service includes all direct costs and a “fair share” of indirec
ts
• Determining the “fair share” is called cost allocation
• What is a “fair share”? 
  – No one right answer
  – Logical and reasonable
  – Causal relationship
Service Cost Example: Cost to Dispense

• Estimate Richmond Pharmacy’s cost of dispensing a prescription (see Figure 1)
• The method presented is logical, reasonable, and reflects causal relationships
• Not necessarily the only correct method
Estimating the Cost to Dispense

- Gather information
- Classify expenses as direct or indirect
- Allocate indirect expenses
- Total dispensing-related expenses
- Calculate cost to dispense
Gather Information

• Pro forma income statement
• Other operating information:
  – Manager works 60 hours per week; spends 40 hours on dispensing-related duties
  – Employee pharmacist works 45 hours per week; all on dispensing-related duties
  – Other employees work 100 hours per week; of this, 56 hours in dispensing-related duties
Gather Information

- Other operating information:
  - Pharmacy occupies 2,787 sq. ft.
  - Prescription department occupies 680 sq. ft.
  - Pharmacy will dispense 47,428 Rx’s next year
  - Prescription containers, delivery costs, and computer are direct expenses of the prescription department
Classify Expenses

- Direct costs
- Indirect costs
  - Indirect salary costs
  - Indirect housing costs
  - Other indirect costs
Direct Costs

• Result directly from dispensing prescriptions
• Richmond Pharmacy’s direct costs:
  – Prescription containers $  9,214
  – Delivery costs 4,009
  – Computer 5,409
  – Total direct costs $18,632
Indirect Salary Costs

- Salary costs include all salaries, fringe benefits, and payroll taxes paid by the pharmacy for the employee
- Allocated based on ratio of time spent on dispensing-related functions
- Calculation done separately for each employee
## Indirect Salary Costs

<table>
<thead>
<tr>
<th>Employee</th>
<th>Salary</th>
<th>Rx hrs</th>
<th>Total hrs</th>
<th>Rx-Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager</td>
<td>$95,482</td>
<td>40</td>
<td>60</td>
<td>$63,655</td>
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<tr>
<td>Employee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacist</td>
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<td>45</td>
<td>45</td>
<td>93,750</td>
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<tr>
<td>Technician</td>
<td>61,884</td>
<td>56</td>
<td>100</td>
<td>34,655</td>
</tr>
</tbody>
</table>

**Total** $192,060
Housing-Related Indirect Costs

- $38,395 rent and utilities expenses
- Prescription department occupies 680 sq. ft.
- Pharmacy occupies 2787 sq. ft.
- Allocated housing-related indirect costs = $38,395 \times \frac{680}{2787} = $9,368
Other Indirect Costs

• Advertising $11,617
• “All other expenses” $82,335
• Total other indirect costs $93,952
Other Indirect Costs

- Prescription sales = $1,633,266
- Total sales = 1,967,787
- Allocated other expenses =
  $93,952 \times \frac{1,633,266}{1,967,787} = 77,980
Total Dispensing-Related Expenses

- Direct costs $18,362
- Indirect salary 192,060
- Indirect housing 9,368
- Indirect other 77,980

- Total $298,040
Calculate Cost to Dispense (CTD)

- CTD = Total dispensing-related expenses
  
  Expected prescription volume

- CTD = $298,040
  
  47,428

- CTD = $6.28
Calculating Cost to Dispense

\[
CTD = DC + \Sigma (RXS \times HW/TH) + IFC \times \frac{RXSF + IVC \times RXSA}{TSF \times TSA} \]

- **CTD** = Cost to dispense a prescription
- **DC** = Direct costs
- **RXS** = Each employee's salary expense
- **HW** = # hours the employee works in prescription-related functions
- **TH** = Total hours the employee works in pharmacy
- **IFC** = Indirect fixed costs
- **RXSF** = Prescription department area, in square feet
- **TSF** = Pharmacy total area, in square feet
- **IVC** = Indirect variable costs
- **RXSA** = Prescription department sales
- **TSA** = Total sales of pharmacy
Cost to Dispense

• Average cost of dispensing a prescription
• Average amount to be added to ingredient cost if the pharmacy is to break-even
• Sensitive to prescription volume:
  – as volume increases, CTD decreases
  – as volume decreases, CTD increases
Service Cost Example: Osteoporosis Screening

• Richmond Pharmacy would like to start a service to screen for osteoporosis

• How much should the pharmacy charge?

• What is the cost of providing a screening session?
Gather Information

• Pro forma income statement
• Other operating information:
  – service will be open 5 hours per week
  – part-time pharmacist will be hired to operate service at $40 per hour
  – manager spends 2 hours of his 60 hours per week in duties related to the service
  – technicians spend 4 hours of their 100 hours per week in duties related to the service
Gather Information

• Other operating information:
  – Pharmacy will be renovated. Service will occupy 150 sq. ft. of pharmacy’s 2787 sq. ft.
  – Renovation will increase depreciation expense by $2,000 per year
  – Equipment to measure bone mineral density will be leased for $5,000 per year
  – $2,000 per year for promotion
  – Estimate 1,000 screening sessions for next year
Classify Expenses - Direct Costs

- Pharmacist salary:
  $40 / hr \times 5 \text{ hrs / wk} \times 52 \text{ wks} \quad \$10,400
- Depreciation \quad 2,000
- Machine lease \quad 5,000
- Promotion \quad 2,000
- **Total Direct Costs** \quad \$19,400
# Indirect Salary Costs

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<th>Rx-Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technician</td>
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<td>Manager</td>
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<td>$3,183</td>
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<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>$5,658</td>
</tr>
</tbody>
</table>
Housing-Related Indirect Costs

- $38,395 rent and utilities expenses
- Screening service will occupy 150 sq. ft.
- Pharmacy occupies 2787 sq. ft.
- Allocated housing-related indirect costs
  \[ \frac{38,395 \times 150}{2787} = 2,066 \]
Other Indirect Costs

• “All other expenses” = $82,335
• No causal method of allocation
  – Should use sales ratio
  – No estimate of screening sales because no price per screening
  – Use floor-space ratio for lack of a better alternative
• Allocated other expenses =
  $82,335 \times \frac{150}{2787} = \$4,431
Costs NOT Related to Osteoporosis Screening

- Prescription containers
- Delivery
- Computer
- All are direct costs of dispensing
Total Osteoporosis Screening-Related Expenses

• Direct costs $ 19,400
• Indirect salary 5,658
• Indirect housing 2,066
• Indirect other 4,432
• Total $ 31,556
Service Cost (SC) for Osteoporosis Screening

- SC = Total service-related expenses
  Expected volume of service

- CTD = $31,556
  1,000

- CTD = $31.56
Service Cost (SC) for Osteoporosis Screening

• Average cost of screening a patient for osteoporosis

• Sensitive to prescription volume:
  – If volume is 500, SC is $63.12
  – If volume is 1,000, SC is $31.56
  – If volume is 2,000, SC is $15.78
Differential Costs

• To this point, we have considered the full costs of providing a service
• Full costs cover all direct costs and a fair share of indirect costs
• Differential costs are those that differ among alternative courses of action
Differential Costs

• Differential costs of osteoporosis screening are the additional costs the pharmacy incurs if it provides the service.

• In this case, differential costs are equal to the direct costs.
Differential Costs of Osteoporosis Screening Service

- Pharmacist salary: $40 / hr x 5 hrs / wk x 52 wks $10,400
- Depreciation 2,000
- Machine lease 5,000
- Promotion 2,000
- Total Direct Costs $19,400
Average Differential Cost

• Differential costs = $19,400
• Expected volume = 1,000 sessions

• Average Differential cost = $19,400 / 1,000
  = $19.40 per session
How Much To Charge?

- Full cost = $31.56 per session
- Differential cost = $19.40 per session
- Represent range of prices
- Charging less than average differential cost results in a loss
- Over long-run, must charge more than service cost to make a profit
- Non-cost factors
Non-Cost Factors

• As important as cost factors
• To be discussed:
  – Demand
  – Competition
  – Image
  – Quality Signaling
  – Goals
  – Non-monetary costs
Demand

• Quantity which consumers will buy at a given price
• Different from need
  – Need – objective
  – Demand - perceptions
• Can be affected by marketer
Demand

• Function of price
  – Higher price reduces quantity demanded
  – Lower price increases quantity demanded
Demand

• How much the quantity demanded rises or falls with a change in price is known as the price elasticity of demand
• Price elasticity of demand measures how sensitive consumers are to price change
Demand Curves

- Inelastic
- Elastic

Graph showing price and quantity with two demand curves indicating inelastic and elastic demand.
Consumers More Sensitive to Price*

- Cost of product is large part of total cost
- Minimal differences among products:
  - Consumer can judge quality
  - Comparisons are easy to make
- Switching costs are small

Pricing a New Service at Differential Cost

• Service cost very sensitive to volume
• Consumers very sensitive to price
• Lower price $\rightarrow$ higher quantity purchased $\rightarrow$ lower service cost
• Caution: in the long-run the service’s price must cover its full costs
Competition

- Must consider prices charged by competitors
- Pharmacy can charge higher prices only if it has a distinct advantage
- Consumers must understand and value the advantage
Image

- Consumers select based on perceptions
- Perceptions depend on pharmacy image
- Image based on many factors
  - Actual prices
  - OTC merchandise
  - Personnel
- Prices should be consistent with image
Price as a Signal of Quality*

• Price may signal quality to consumers
• More likely when consumers unable to judge quality
  – Great variability in quality
  – Product or service perceived as high risk
• More likely for services than for products

Goals

• Prices should be consistent with goals
• Goal of most pharmacies is to maximize long-term profit
• Requires setting prices high enough to generate a profit and low enough to attract sales
Goals

• Goal: build sales volume
• Strategy: low prices to attract sales
• Penetration pricing
Goals

• Loss leader pricing
• Goal: attract consumers to buy non-prescription merchandise
• Strategy: offer low prices on prescriptions
• Must have large volume of non-prescription sales
Goals

• Goal: target consumers willing to pay higher prices for superior service
• Strategy: charge higher prices, provide superior service
• Price skimming
Non-Monetary Costs*

- Time costs
- Search costs
- Psychic costs

Conclusions

• Pricing is a basic management function
• Requires consideration of both cost and non-cost factors