To: Cathy Polley, RPh
Food Marketing Institute

From: Avalere Health

Date: February 17, 2010

Re: Methodology to Calculate Pharmacy Costs Related to Patient Messaging Programs

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Executive Summary

The Food Marketing Institute (FMI) commissioned Avalere Health to develop a methodology to calculate the cost to the pharmacy to administer patient messaging programs. Pharmacies administer patient messaging programs to educate patients about prescribed medications and to improve adherence to drug therapy. Pharmacies deliver patient messages through mailings, phone calls, in-store communication, and other communication channels. Drug manufacturers sometimes partner with the pharmacies to sponsor patient messaging programs and to develop the message content. In cases where programs are sponsored, the pharmacies receive a reimbursement from the manufacturer to subsidize the cost of these messaging programs.

Pharmacies sometimes outsource process elements of patient messaging programs to outside vendors. The outside vendor may be responsible for identifying appropriate content for the patient, printing and mailing materials, or contracting with manufacturers for program reimbursement. Under these scenarios, the payment received from the manufacturer is shared between the pharmacy and the vendor. Pharmacies may also choose to self-sponsor the programs and assume all costs without sponsorship or reimbursement from a manufacturer.

Following a series of interviews with a variety of pharmacies and vendors about the messaging program process, we created a methodology to calculate per-message costs associated with mailed refill reminders, phone calls, and in-store printed messages. Determination of these costs would require a survey of pharmacies and outside vendors to quantify the resources consumed and expenses incurred related to each type of messaging program.

Analysis Approach

FMI requested Avalere to develop a methodology to determine the per-message cost to administer programs to communicate information to patients with regard to refill reminders, medication information, dosage change, therapeutic equivalence, generic substitution, and disease prevention. These communications can be delivered via letter, phone call, email, text messages, and in-person printed materials at the pharmacy.

To understand the costs that pharmacies incur to administer patient messaging programs, we conducted a series of interviews with representatives from pharmacy chains, grocery stores with pharmacies, and vendors that supply content and process services related to these programs. We spoke with six small and large pharmacy and grocery chains. The chains varied in the

degree to which they utilize services provided by outsourcing vendors. We also interviewed two vendors to which pharmacies outsource processes involved in the patient messaging programs. We conducted the interviews in late-2009 and early-2010 using a semi-structured interview protocol.

Defining the Patient Messaging Process

Through the interviews, we identified the steps required to set up and maintain patient messaging programs. The following section describes the process involved in the most common messaging programs: refill reminder letters, in-store printed materials, and telephone calls. Email and text messaging are relatively new communication channels for these programs and, based upon our feedback from interviews, are not widely used by many pharmacies at this time.

Refill Reminder Letters

Some pharmacies mail refill reminder letters to patients to provide notification that a current prescription therapy that was previously dispensed at the pharmacy may require a refill soon or may, in fact, be overdue for dispensing. The types of medications that are considered for a refill reminder program are generally for chronic, ongoing use and may represent treatments for many different disease states. Pharmacies administer these programs with the intent of improving patient adherence to the medications. Manufacturers of chronic medications may sometimes contract with the pharmacies to sponsor a program to encourage patient adherence to their product. As an example, Figure 1 depicts the steps involved in a refill reminder letter program. In addition to mailed refill reminders, a few pharmacies also send letters discussing therapy dosage changes, therapeutically equivalent alternatives to or generic substitution opportunities for the current medication therapy, or general disease prevention information. The process to create these messages is quite similar to the refill reminder process discussed here.

Figure 1. Refill Reminder Letter Process
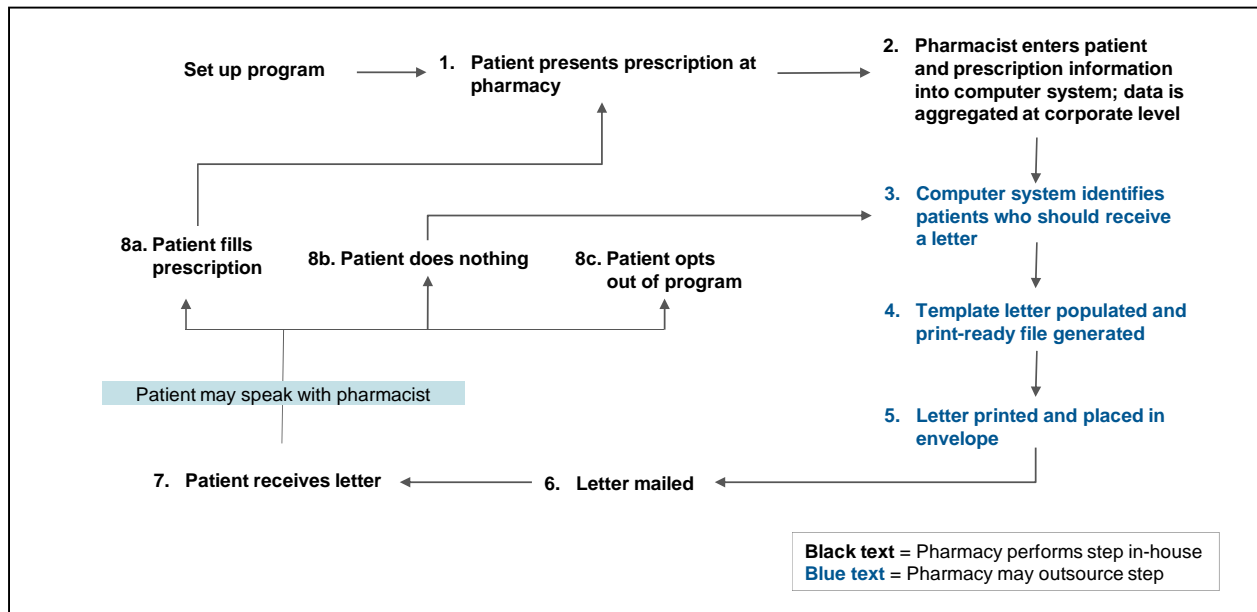
To set up the refill reminder program, pharmacies designate server space on their information technology (IT) systems, create letter content and templates and program protocols, and establish printing and mailing capacity. Compliance, clinical, and/or legal teams review and approve components of the program. Pharmacies may negotiate contracts with a manufacturer to sponsor a refill reminder letter program for a specific product, either directly or through an outside vendor. Some pharmacies also find it necessary to provide training for pharmacists and staff at local pharmacies regarding how to respond to patient inquiries about refill reminder letters.

The process begins when a patient presents a prescription at the pharmacy. The pharmacist or pharmacy technician enters the patient and prescription information into the pharmacy dispensing system. All patient prescription dispensing history is eventually captured on a centralized server, typically housed at the corporate level. Customized software installed on the server routinely performs a review of all patient dispensing histories to determine patients who are due for a refill of their medication, while maintaining patient confidentiality. This review typically occurs on a daily basis. The software program processes the data and determines the appropriate notification letter for the patient according to the protocols defined for the prescribed drug that is identified through the review process. If the program identifies a patient who is due for a refill, the program will generate a formatted letter. A print ready file of all letters to be mailed is sent electronically to the location that is responsible for printing and distribution – the local pharmacy, a centrally located corporate fulfillment center, or a contracted service provider.

The patient letter identifies the drug that is being targeted through the program and may include additional information as to why poor adherence to the drug regimen may result in suboptimal medical outcomes over time. The pharmacy or contracted provider prints the letter, applies postage to the mailing, and mails the letter directly to the patient. Once a patient receives a

letter, the patient may contact the pharmacy for a refill of the medication, opt-out of the refill reminder program, or do nothing. Any patient action may also involve speaking with a pharmacist or staff at the local pharmacy regarding the therapy or to opt-out of the program.

Pharmacies sometimes outsource elements of their refill reminder programs to vendors that offer specialized services for these types of programs. To illustrate this, the blue text in Figure 1 indicates steps that may be outsourced based upon information from our interviews. Outside vendors often coordinate the contracting process for sponsored programs with manufacturers on behalf of pharmacies. This service centralizes the contracting process since vendors have relationships with both manufacturers and pharmacies. Vendors may also provide the software and analytical services to identify patients that are eligible for the adherence program. In this case, pharmacies conduct additional aggregation of the data to create an output file that is provided to the outside vendor.

As described earlier, pharmacies may also utilize outside vendors for the printing and mailing of letters to expand processing capacity. Under this outsourcing scenario, the manufacturer may provide reimbursement to the vendor, and the vendor then typically passes on a portion of the total reimbursement to the pharmacy to cover costs assumed by the pharmacy. If the pharmacy does not employ a vendor for contracting, the manufacturer reimburses the pharmacies directly.

In-Store Printed Messaging

Some pharmacies print a patient information message at the pharmacy at the time a prescription is dispensed, either on the backside of the consumer medicine information (CMI) that prints with each prescription label and receipt or on a separate sheet of paper. The printing may contain information on side effects, the importance of adhering to the medication regimen, supplemental therapies related to the prescribed medication, and/or general health tips. Pharmacies may contract with sponsors to administer in-store printed messaging for particular medications that are dispensed to patients. Figure 2 depicts the steps involved in the in-store printed messaging process.

Figure 2. In-Store Printed Messaging Process
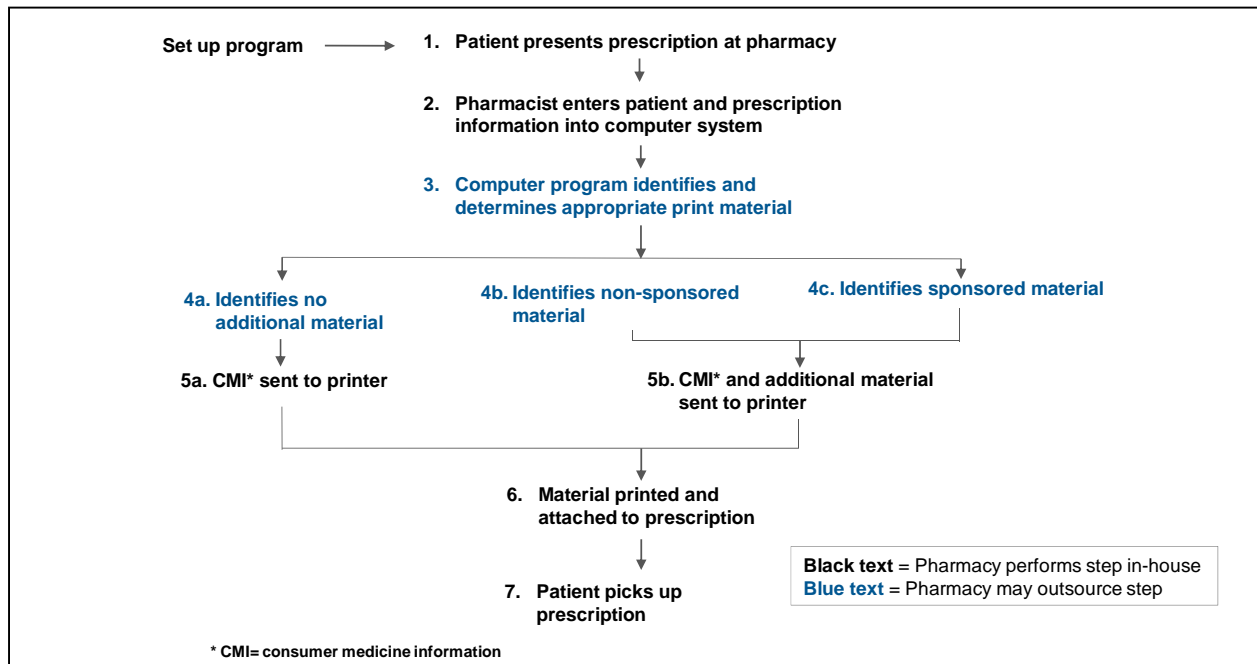
To set up the in-store printed messaging process, the pharmacy develops the content and establishes protocols to define the material that should be printed for each patient. If the material is sponsored, the pharmacy contracts with the manufacturer and coordinates to develop the content for the message. For all sponsored and unsponsored material, the pharmacy's clinical and legal teams review the content of the messages. The pharmacy may acquire additional IT infrastructure, such as additional server space or a duplex printer, to build capacity for these programs.
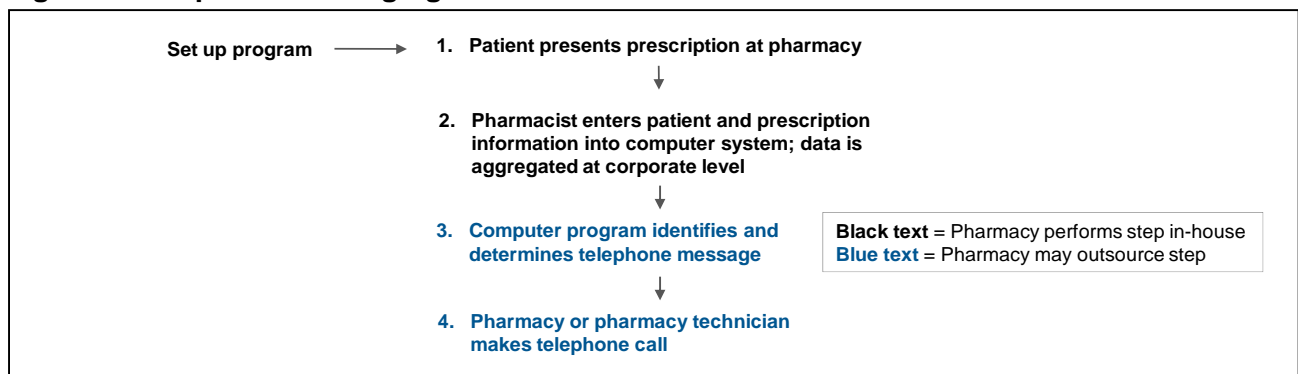
The in-store printed messaging process begins when a patient presents a prescription at the pharmacy. A pharmacist or pharmacy technician enters the patient and prescription information into the pharmacy dispensing system. Data regarding the medication for the patient is then analyzed in real-time with a software program to identify the appropriate materials to be printed, based upon the medication being dispensed. The pharmacist prints and supplies the CMI and additional content that may be generated with the prescription at the time of dispensing.

Pharmacies may outsource steps of the in-store printed messaging process, as well. For example, pharmacies may purchase software from outside vendors to identify the appropriate printed content for each particular medication that is dispensed. Vendors may also contract with the manufacturers on behalf of the pharmacy to sponsor the messages and/or maintain and update the software. If a vendor coordinates contracting with the sponsoring manufacturer, the manufacturer provides reimbursement to the vendor, who then shares a portion of the revenue with the pharmacy. If the pharmacy does not employ a vendor for contracting, the manufacturer reimburses the pharmacies directly.

Telephone Messaging

Some pharmacies make direct calls to patients regarding their medication therapy to provide a refill reminder or information about generic alternatives to their current medication therapy that may be available and appropriate. These calls are generally made from a centralized call center. Pharmacists or pharmacy technicians conduct the phone calls, depending on the nature of the call. For these direct calling programs, pharmacies occasionally contract with manufacturers or health plans for sponsorship or utilize outsourcing vendors. Figure 3 depicts the steps involved in the telephone messaging process.

Figure 3. Telephone Messaging Process

Set up program ⟶ 1. **Patient presents prescription at pharmacy**
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2. **Pharmacist enters patient and prescription information into computer system; data is aggregated at corporate level**
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3. **Computer program identifies and determines telephone message**

Black text = Pharmacy performs step in-house
Blue text = Pharmacy may outsource step
↓
4. **Pharmacy or pharmacy technician makes telephone call**

To build the telephone messaging capacity, pharmacies develop IT infrastructure to process prescription data and identify patients who should be contacted, equip a national call center with telephones, telephone lines, and computer systems, and establish scripts containing the appropriate message for each patient. The clinical and legal teams review the protocols and scripts. Finally, pharmacy technicians and pharmacists receive training necessary to both place and receive patient calls.

The telephone messaging process begins when a patient presents a prescription at the pharmacy. The pharmacist or pharmacy technician enters the patient and prescription information into the computer system and the data is transmitted to a corporate database where it is aggregated with all prescription dispensing history. A software program flags patients who should be contacted by pharmacy technicians or pharmacists at the call center based upon the particular criteria established under the program. Once contact is made, patients may follow-up on the call by talking to their local pharmacist, choose to opt-out of the program in the future, refill the prescription, or do nothing.

Proposed Methodology to Determine Cost of Patient Messaging

Based on the results of our interviews and our review of the messaging process, we recommend the following methodology to collect operational expense data that should be considered when calculating a per-message cost of patient messaging programs. The methodology distinguishes between the personnel, direct, and indirect costs associated with the

most common patient messaging programs: refill reminder letters, in-store printed messaging, and telephone messaging. Since our methodology includes only tangible expenses related to conducting the programs, we do not provide guidance on how to quantify items such as the value of the initiative to a program sponsor for de-identified access to a pharmacy's patient population associated with the messaging programs, nor do we define a reasonable amount for reimbursement from an outside entity.[1] While items such as these may be considered as part of a reasonable payment from a sponsor, placing a value on these falls outside of the scope of our analysis.

Appropriate expense data should be collected from pharmacies via survey to calculate all relevant personnel, direct, and indirect costs of patient messaging programs. For each patient messaging program, total relevant costs should be divided by total patient messages to derive a cost per patient message. These costs should include both local and corporate pharmacy expenses that are above and beyond the cost of normal pharmacy operations. The survey should focus on staff involved and the time spent on various tasks at each step of the messaging process. For example, component costs collected would include salary, wage, benefit, and payroll tax expenses of those involved, direct expenses of resources consumed and direct outsourcing expenses, as well as indirect expenses that are shared with other business functions. The survey should account for all steps in the messaging process and job functions such as day-to-day management and oversight of the programs, set-up, training, clinical and legal review of message content, IT maintenance and software updates, and additional staff time spent interacting with patients specifically attributable to the program initiatives.

Many of the pharmacies that we interviewed outsource some or nearly all of the processes related to their patient messaging programs. If pharmacies outsource the mailing of the refill reminder letters, for example, the pharmacy should report expenses related to payments for the service to the outside vendor. Ideally, in order to capture the full spectrum of program costs, the study should include vendors that manage messaging programs on behalf of pharmacies, as well as pharmacies that administer the entire process in-house.

Cost Components of Patient Messaging Programs

The calculation to determine the per-message cost of patient messaging programs will vary by the type of messaging conducted, the level of outsourcing involved, and the degree to which resources or staff that are utilized for the programs are shared with other business functions. Table 1 displays the various cost components that should serve as a framework for identifying and collecting appropriate expense data to develop a sound estimate of per-message costs for patient messaging programs. The sections below describe some overarching guidelines for a cost study; namely, examples of each component and a suggested allocation method.

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[1] The American Recovery and Reinvestment Act of 2009 required that payment received for certain communications, including those about a health-related product or service, be reasonable in amount. Reimbursements made to pharmacies by outside entities to offset the costs of conducting certain patient messaging programs are subject to this provision. The Act gives the Secretary of Health and Human Services the authority to determine the meaning of the term "reasonable in amount." The Secretary will release a proposed rule in early 2010 and interested parties will have an opportunity to comment.

Table 1. Personnel and Direct Costs for Patient Messaging Programs

Cost Component	Refill Reminder Letters	In-Store Printed Messaging	Telephone Messaging	Cost Allocation Method
Personnel	Salary, wages, benefits and payroll taxes for pharmacists and pharmacy staff, clinical, management, IT, compliance, mail fulfillment, and legal and contracting staff	Salary, wages, benefits and payroll taxes for pharmacists and pharmacy staff, clinical, management, IT, compliance, mail fulfillment, and legal and contracting staff	Salary, wages, benefits and payroll taxes for pharmacists and pharmacy staff, clinical, management, IT, compliance, mail fulfillment, and legal and contracting staff	(Salary, wages, benefits, payroll taxes) X (percent of total hours attributed to process)
Direct Costs	Computer software and hardware, printers (purchase or lease), equipment for maintenance, paper, mailing supplies, postage, toner, IVR (opt-out system), non-labor training expense	Computer software and hardware, printers (purchase or lease), equipment for maintenance, paper/labels, mailing supplies, postage, toner, non-labor training expense	Computer software and hardware (purchase or lease), telephone charges, call center space, IVR (opt-out system), non-labor training expense	Full expenses where 100% attributable
Indirect Costs	Utilities, rent/depreciation, storage, liability and property insurance, travel, property taxes, maintenance and repairs	Utilities, rent/depreciation, storage, liability and property insurance, travel, property taxes, maintenance and repairs	Utilities, rent/depreciation, storage, liability and property insurance, travel, property taxes, maintenance and repairs	Expenses allocated based upon a reasonable estimate of the percent of time/resources attributable to the process (over and above normal course of operations)

Personnel-related cost calculations should be based on both the amount of staff time involved during the patient messaging process and the salary, wages, benefit, and payroll tax expenses for each employee. Detailed information on the amount of time that staff from management, compliance, IT, clinical, pharmacy, and legal departments dedicate to tasks such as contracting, protocol creation, oversight, maintenance, document review, training, and patient interaction

should be collected, when feasible. Absent a time-and-motion study, a reasonable estimate can be obtained through a survey of employees that solicits estimates of time spent specifically on these programs. The survey should distinguish between one-time and repeated tasks related to the program. Salary, wage, benefit and payroll tax expenses can be collected directly from payroll data provided by pharmacies. When possible, survey results should be benchmarked to publicly available wage and salary information from the Bureau of Labor Statistics, to identify potential outliers.

Direct costs, defined as those items or service expenses that are incurred specifically for patient messaging programs should be allocated entirely towards the cost of patient messaging programs. Direct costs could include expenses related to purchased or leased software and hardware, paper, toner, supplies and postage. If the pharmacy, as part of a patient messaging program, maintains an interactive voice response (IVR) system to process calls from patients, the cost of the IVR system is also a direct cost. The survey should include questions about the number of consumable items (e.g., sheets of paper, toner cartridges) used for each type of messaging program as well as the cost of procurement. When possible, results on procurement costs should be benchmarked to available market prices.

Indirect costs pertain to items or services required for messaging programs that are typically shared with other business functions. Indirect costs include software and hardware expenses when these are not solely dedicated to the messaging programs, phone service (outside of a dedicated calling center), utilities and various occupancy costs (rent/depreciation, property tax, property insurance, maintenance and repairs) related to building space that is utilized for the programs as well as for other functions. Appropriately allocating these indirect costs would require additional data collection and surveying in order to determine the degree to which these expenses are directly attributable to the messaging process and distinct from other business functions. For example, the expenses related to computer processing and printing functions that are shared between messaging programs and other business functions can be allocated based upon the processing time consumed or the percent of printed materials attributed to messaging programs, versus other functions. In such cases, reasonable estimates would be collected based upon surveys of personnel involved in the process, to determine the degree to which these expenses represent processes that are above and beyond the cost of normal pharmacy operations.

Once all personnel, direct, and indirect costs are identified and appropriately allocated to the messaging programs, a total cost of messaging can be calculated. The cost per patient message would be determined by dividing the summed personnel, direct, and allocated indirect costs for all pharmacies within a particular pharmacy organization by the total number of messages generated under each program across the organization. Based upon our interviews, we found that pharmacies that outsource the management of messaging programs often have reports detailing the total number of messages provided through sponsored programs. However, pharmacies that manage messaging program in-house may have to provide a reasonable estimate of the number of messages.

*Sampling Issues and Representativeness Related to Estimating Costs of Patient Messaging
Programs*

An estimate of the costs related to patient messaging programs should be representative of the
broadest population of pharmacies that conduct these programs. Therefore, consideration must
be given to the types of programs that are conducted and the degree to which pharmacies
outsource the processes involved in the programs in order to derive an appropriate sample of
pharmacies for a study. During the course of our interviews, we found that there is variability
across pharmacy organizations with respect to the type of messaging that is conducted (refill
reminder letters, in-store printed messages, and telephone messages). Moreover, while many
firms choose to outsource many of the processes to outside vendors, there is variability as to
the number of processes that are outsourced by pharmacies.

We anticipate that the costs of each individual program will vary based on the type of
messaging that is conducted. Thus, calculating a cost per patient message across all
messaging types may not be meaningful or practical. Therefore, determining a cost estimate of
each individual messaging program across a sample of pharmacy organizations appears to be
more representative of the types of programs that are being conducted.

Our primary perspective for this memorandum was to describe costs or patient messaging
programs borne by the pharmacy. However, in order to determine the full cost of patient
messaging programs, expenses incurred by outside vendors that perform many of the
outsourced processes would also need to be included to determine an estimate of the true cost
of patient messaging. If the expenses incurred by outside vendors cannot be captured, the
perspective of the estimate would be limited to only those costs borne directly by the pharmacy.
Therefore, determining an appropriate sample size to represent the breadth of programs that
are being conducted and the degree to which processes are outsourced by pharmacies may be
somewhat challenging. Representation of all possible combinations of program types and
outsourcing levels would be ideal to derive the most meaningful estimate. Given that this may
not be practical, we suggest separate sampling strategies to estimate the costs of these
programs based upon the type of program conducted, and whether or not pharmacies
outsource the processes involved to an outside vendor.