Consultant Services

Consultant pharmacists provide cognitive services ranging from the required drug regimen review (DRR) process to geriatric clinical research. The extent of involvement and variety of services offered depend primarily on the consultant pharmacist's interest, motivation, formal training or experience, practice environment, relationship with other caregivers, and the availability of reimbursement for services. The clinical efforts of the pharmacist should be well above the minimum standards mandated by federal regulations. That has proven to be the case, with many consultant pharmacists becoming involved in highly innovative, interactive, and progressive activities. (Table 6-1)

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<thead>
<tr>
<th>Table 6-1</th>
<th>Selected Consultant Pharmacist Activities</th>
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<tbody>
<tr>
<td></td>
<td>Development of innovative medication distribution systems</td>
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<tr>
<td></td>
<td>Drug regimen review (DRR)</td>
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<td></td>
<td>Resident assessment and care planning</td>
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<td></td>
<td>Drug utilization or use review (DUR)</td>
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<td></td>
<td>Drug use evaluation (DUE)</td>
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<td>Quality assurance activities</td>
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<td>Continuous quality improvement (CQI)</td>
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<td></td>
<td>Infection control</td>
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<td>Formulary development</td>
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<td>Nutritional support services</td>
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<td>Policy and procedure development</td>
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<td>Committee participation</td>
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<td></td>
<td>Laboratory test ordering and interpretation</td>
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<td></td>
<td>Therapeutic drug monitoring</td>
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<td>Facility staff inservice education and training</td>
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<td>Medication pass observation</td>
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<td>Participation in state survey process</td>
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<td>Clinical research</td>
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<td></td>
<td>Pharmacoeconomic studies</td>
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<td></td>
<td>Specialized clinical activities</td>
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</table>
Pharmaceutical Care and Consultant Pharmacy Practice

The measurement of quality of care in nursing facilities (NFS) has shifted from standardizing the process of providing care to measuring the outcome of that care. All services provided in NFS, including consultant pharmacy services, will be judged by the new standard. No matter what services the consultant offers, constant attention must be devoted to assessment, accountability, the achievement of positive outcomes and the continuous improvement of quality services offered.

To meet this challenge, pharmacy practice must evolve from a focus on the dispensing of medications to one in which pharmacists take full responsibility for the outcomes of their professional activities and therapeutic decisions.

This practice philosophy is known as pharmaceutical care, and is defined as "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life."

The concept of pharmaceutical care is incorporated into the mission of consultant pharmacy practice. It requires a fundamental change in the way consultant pharmacists practice, how they perceive themselves as healthcare professionals, how practice is defined, and how consultant services are provided.

In pharmaceutical care, the pharmacist has a direct responsibility for, and relationship with, the patient for the provision of that care. Pharmacists must work with patients and professionals in designing, implementing and monitoring a therapeutic plan to achieve specific outcomes for that patient. (Table 6-2) The pharmacist must 1) identify potential and actual drug-related problems (DRP), 2) resolve actual DRPs and 3) prevent potential DRPs.

Table 6-2
Seven Steps to Achieving Better Therapeutic Outcomes

- Collect and interpret relevant patient information to determine whether problems are drug related.
- Identify drug-related problems.
- Describe the desired therapeutic goals.
- Describe feasible therapeutic alternatives.
- Select and individualize the appropriate treatment regimen.
- Implement the decisions regarding drug use.
- Design the monitoring plan to achieve the desired therapeutic goals.

To resolve or prevent DRPs, the consultant pharmacist identifies therapeutic objectives for individual patients, designs a therapeutic plan to meet the objectives, implements the plan and monitors its progress.
Pharmaceutical care is becoming the domain of all pharmacists but it is the focus of consultant pharmacy practice. Consultant pharmacists are well equipped to provide pharmaceutical care because many of the routine practice activities offered by consultant pharmacists are already oriented towards patient outcomes and pharmaceutical care. 

### Table 6-3

**Selected Pharmaceutical Care Services Provided by Pharmacists**

- Drug regimen review
- Monitoring for patient outcomes of care
- Identifying and resolving drug interactions
- Counseling patients
- Monitoring drug compliance
- Selecting cost-effective drug products
- Using pharmacokinetic dosing
- Following good formulary management practice
- Conducting DURs
- Educating health care professionals
- Providing case management to coordinate medication use

### Outcomes and Pharmaceutical Care

The common goal among the many facets of pharmaceutical care is that the pharmacist must intervene with cognitive skills to optimize pharmaceutical outcomes. By using their skills and imagination, pharmacists can creatively solve even the most unusual patient problems while maintaining the resident's dignity.

Five general clinical outcomes that are the goals of pharmaceutical care identify what pharmacists should strive to achieve when intervening in a patient's drug therapy:

1. Curing a patient's disease
2. Eliminating or reducing symptoms
3. Arresting or slowing the disease process
4. Preventing disease or symptomatology
5. Achieving desired alterations in physiologic processes (laboratory values, radiologic changes, and hemodynamic parameters)

Traditionally, outcomes of therapy have focused on indicators of health, primarily morbidity and mortality, as the important outcomes to measure. More recently, the definition of outcomes has broadened to include quality of life (QOL), health status, health functioning, cognitive functioning, physical functioning, and patient preferences.
Table 6-4
Selected Outcomes of Pharmaceutical Care

<table>
<thead>
<tr>
<th>Quality of life</th>
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<tbody>
<tr>
<td>- physical status</td>
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<tr>
<td>- functional abilities</td>
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<tr>
<td>- psychological status and well being</td>
</tr>
<tr>
<td>- social interactions</td>
</tr>
<tr>
<td>- economic status</td>
</tr>
</tbody>
</table>

| Health status                  |
| Health functioning             |
| Cognitive functioning          |
| Physical functioning           |
| Patient preferences           |
| Pharmacoeconomic outcomes      |

Quality of life is becoming one of the primary outcomes to study. Quality of life domains include physical status, functional abilities, psychological status and well being, social interactions and economic status and factors.⁷

Increasingly, pharmaceutical care outcomes are used to assess the impact of drug therapy and the ability of pharmacists to affect positive outcomes.

Increased attention to outcomes has been stimulated by a number of factors. These include increased sophistication of consumers; increased ability to measure outcomes and observe effects; increased concern over the expense of health care, including both direct cost of therapy and indirect cost associated with managing complications of therapy; the growing number of elderly and the incidence of chronic problems in this population; and an increased interest in and understanding of quality of life issues.⁸

Consultant pharmacists have the opportunity and responsibility to monitor outcomes and are able to make decisions about the course of care based on these observations. They need to consider how they can incorporate outcomes data into their day-to-day patient care decisions. As tools to assess QOL become more widely available, consultant pharmacists will be presented with additional professional opportunities to increase their activity in this area. Consultant pharmacists will work with the interdisciplinary team in a variety of environments – from hospitals to LTC to home health care – to assess health status and improved outcomes and QOL.⁷
Pharmaceutical Care Plan

Consultant pharmacists can help to achieve positive outcomes of pharmaceutical care by developing a comprehensive pharmaceutical care plan for each resident as part of the overall care planning process. The pharmaceutical care plan is a dynamic document that should contain all identified problems being treated with medications, and should identify criteria used to support the diagnosis when possible. The plan should be reviewed and updated throughout the patient's therapy and should address any potential drug-related problems that have occurred or that are likely to occur. A desired therapeutic outcome or goal must be associated with each patient problem in terms that are specific and quantifiable whenever possible. Finally, monitoring parameters – both subjective and objective – should be established and the frequency of monitoring should be specified.

While most pharmacists have not had the formal training in care planning that nurses have, they will increasingly become involved in this important function. Through maintenance of an organized pharmaceutical care plan, pharmacists can document their role in optimizing the patient's therapeutic outcome as an important component of the provision of pharmaceutical care.

Under the new paradigm of pharmaceutical care, the professional domain of pharmacists extends far beyond the traditional role of responsibility for drug product alone. Based on this understanding, the role of the consultant pharmacist has been extended to include any matter that is related to drug therapy. This could include administrative issues such as development of policies and procedures or formularies. It could cover a wide variety of clinical issues, including commenting on prescribed drug therapy; requesting the ordering of laboratory tests for appropriate drug therapy monitoring; suggesting alternative or additional drug therapy; or serving in a wide variety of nontraditional clinical capacities.

Drug Regimen Review

A major responsibility of consultant pharmacists is drug regimen review (DRR) – the systematic evaluation of medication therapy viewed within the context of resident-specific data.

Federal regulations require the consultant pharmacist to conduct a drug regimen review (DRR) of each resident at least monthly in nursing facilities (NFs) and at least quarterly in intermediate care facilities for the mentally retarded (ICFs–MR), in order for these facilities to participate in and receive funding from the Medicare/Medicaid program.

DRR is a dynamic quality assurance process to enhance the therapeutic outcome of pharmacologic agents and to optimize cost-effective medication therapy in individual residents. Commonly referred to as a "chart review," it is much more than that.
Table 6-5
Selected Examples of DRR Findings

Use of a medication without an appropriate diagnosis
ex. The use of an antipsychotic without the diagnosis of a specific abnormal target behavior

Use of an inappropriate medication dosage
ex. Use of the standard adult dose of a medication in a frail elderly resident

Concurrent use of potentially interacting medications
ex. Concurrent use of digoxin and quinidine without monitoring serum digoxin concentration

Use of duplicative therapy
ex. Concurrent use of multiple antihypertensive agents when one medication may be sufficient

Continued use of medication that is no longer necessary
ex. Continued use of anti-ulcer medication long after ulcer has healed

Presence of a medication-related adverse reaction
ex. Residual morning drowsiness resulting from the excessive use of nighttime sedatives

Request for a laboratory test
ex. A patient receiving a drug for which therapeutic drug monitoring is needed.

PRN drug not being used
ex. A prn order exists for a medication that has not been used in a long time

DRR is an ongoing, comprehensive, and patient-specific process concerning all aspects of a resident's drug therapy. It requires the collection of information from a variety of sources in an organized, systematic manner. It includes evaluation of that information; communication of findings and recommendations of the evaluation to others; and finally, repetition of the process on a routine basis.

There are many methods of performing a satisfactory DRR. The review process generally takes one of three approaches: the general review, which is an overview of each individual resident's drug therapy; the focused review, which targets a particular drug or therapeutic class in an entire facility; or the problem-oriented review, which focuses on a resident's medical problems and their response to drug therapy.12

The consultant pharmacist determines whether the resident's medication orders represent optimal therapy for that individual. This determination is based on the documentation of an accurate diagnosis for which drug therapy is the best method of treatment, and the selection of a medication in the appropriate formulation, dose, frequency, and duration based on the health and characteristics of the patient.
Through DRR, the consultant pharmacist monitors procedures, techniques, and personnel responsible for medication administration to verify that the resident has received all medications in conformance with prescriber's orders and facility policies.

A goal of DRR is the optimization of medication therapy. A major focus of DRR is the identification of inappropriate drug therapy, including the prescribing of the following: an incorrect dose of a medication, a medication without an appropriate supporting diagnosis, or potentially interacting medications. (Table 6–5) Through DRR, the consultant pharmacist identifies potential drug–related problems (Table 6–6), and determines their clinical significance. This can be accomplished through examination of the resident's medical record for information — such as laboratory test data or documentation of adverse effects — that will clarify or refute the existence of a problem; by conferring with personnel providing care for the resident; or by direct assessment of the resident.

The evaluation of the resident's response to drug therapy and subsequent recommendations based on that evaluation is the cornerstone of the consultant pharmacist's role in assuring that each resident receives optimal drug therapy.¹³

Consultant pharmacists are bound by ethical principles to be faithful to their duty to patient health and safety and to provide DRR to the best of their ability. This necessitates keeping current with therapeutic and regulatory issues.¹⁴

<table>
<thead>
<tr>
<th>Table 6-6</th>
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<tbody>
<tr>
<td>Drug Related Problems*</td>
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</table>

1. The patient has a medical condition that requires drug therapy (a drug indication), but the patient is not receiving a drug for that indication.
2. The patient has a medical condition for which the wrong drug is being taken.
3. The patient has a medical condition for which too much of the correct drug is being taken.
4. The patient has a medical condition for which too little of the correct drug is being taken.
5. The patient has a medical condition that is the result of an adverse drug reaction.
6. The patient has a medical condition that is the result of a drug—drug, drug—food, or drug—laboratory interaction.
7. The patient has a medical condition that is the result of not receiving the drug that has been prescribed.
8. The patient has a medical condition that is the result of taking a drug for which there is no valid medical indication.
The entire DRR process is explained in detail in the American Society of Consultant Pharmacists (ASCP) publication, *Drug Regimen Review: A Process Guide for Pharmacists.*

ASCP has published guidelines for assessing the quality of DRR in long-term care facilities. (Appendix E) These guidelines define minimum standards for DRR that all consultant pharmacists should provide, and are not intended to limit consultant pharmacists in their efforts to provide optimal care. The guidelines identify objective and measurable components of quality DRR for five areas: evaluating medication orders; monitoring medication administration; evaluating response to drug therapy; communicating observations and recommendations; and the importance of establishing and maintaining a supportive environment.

Effective DRR can only take place in a supportive environment that recognizes the value of the consultant pharmacist as a part of the facility's health care team and allows input from other members of the team. DRR-related activities provide both an opportunity to foster interprofessional relationships and a reflection of current attitudes and cooperation.

Consultant pharmacists make their recommendations and observations either directly into the resident's chart, or on a separate pharmacy note which may or may not become part of the permanent medical record. They also communicate their findings and concerns by phone, fax, mail and in person. This communication should be made in a manner that promotes interaction with other health professionals as allies, not adversaries.

Some physicians might not appreciate the consultant pharmacist's intervention. They may interpret it as an unpleasant invasion where someone is telling them how to do their job. In order to effectively communicate with physicians, the consultant needs good oral and written communication skills, negotiation skills and training in conflict resolution. The consultant pharmacist can develop relationships with attending physicians using several techniques:

- Send a letter to all attending physicians at a facility describing the consultant pharmacist's background, education, training, practice experience and role in the nursing facility. Include a photograph.

- Make it a point to meet and get to know the attending physicians. Find out when the physician will be in the facility; rearrange the consultant pharmacist's schedule to facilitate accompanying the physician on patient rounds.

- Set up a meeting with the physician – either in the facility or, if appropriate, in the physician's office – just to introduce the consultant pharmacist. Always try to have some interactions that are not patient-specific or related to recommendations.

The physician has to know the consultant pharmacist – what he looks like, who he is, and what he knows – to develop confidence in the consultant pharmacist's abilities and therapeutic recommendations.
Every instance of individualized pharmaceutical care provided to a patient should be documented in the medical record. Documentation allows for continuity of care and peer review or evaluation of the consultant pharmacist's work. It creates a "paper trail" to establish responsibility. Consultant pharmacists may seek authorization to write in the medical record in the facilities they serve.

The Impact of DRR

Consultant pharmacists have been performing DRR in nursing facilities for more than 20 years. By minimizing excessive numbers of medications prescribed and the total daily doses of medications taken, they have encouraged more appropriate and cost-effective drug therapy. They have enhanced the quality of life of nursing home residents.17

The recommendations of consultant pharmacists are not simply an academic exercise. The consultant pharmacist must report any irregularities found during the DRR process to the attending MD or director of nursing or both. While they may not agree with the consultant's recommendation, they must act on it by documenting their decisions concerning the recommendation.

The drug therapy recommendations resulting from consultant pharmacists' DRR are routinely and commonly accepted by prescribers. Commonly 70 to 80 percent or more of consultant pharmacists' drug therapy recommendations are accepted by physicians. A large portion of these recommendations have positive therapeutic consequences for the resident.18,19

Consultant pharmacists may increase the chances of having their recommendations accepted by practitioners if they present them from a clinical and economic perspective.20

While DRR has had a very favorable impact, the process is undergoing continuous refinement and improvement. As therapy in nursing facilities becomes more complex, and the understanding of geriatric drug therapy increases, there is recognition that drug therapy problems still exist21 and further improvements in DRR are needed.

The process was little more than a screening method when consultant pharmacists first assumed the responsibility for DRR; it will continue to evolve to a true comprehensive pharmaceutical care process that assesses the outcomes of drug therapy. The process will become increasingly complex, requiring consultant pharmacists to keep current with a vast amount of new information.

In some clinical conditions, such as AIDS, pharmacists must review extremely complex and constantly changing drug regimens with numerous and frequent lab tests to monitor. AIDS patients may be using medications for unlabeled indications and multiple medications from a particular class, and may experience pharmacokinetic alterations that further complicate therapy.22
As drug therapy in the elderly becomes better understood through experience and clinical studies, more standardization will develop. The Agency for Health Care Policy and Research (AHCPR) is a leader in this effort, having already published practice guidelines for the management of acute pain, pressure ulcers, cataracts, depression, HIV infection, benign prostatic hypertrophy, cancer pain, unstable angina, heart failure and urinary incontinence. Consultant pharmacists will be able to use the findings of these and additional AHCPR consensus reports as a means to continue to improve the quality of drug therapy.

Consultant pharmacists will incorporate more advanced approaches to assessing drug therapy, and will adopt a more systematic and thorough approach to DRR. One approach to drug therapy evaluation is provided by the Pharmacists Workup of Drug Therapy (PWDT). PWDT directs the consultant pharmacist's decision-making concerning a patient's drug therapy. It helps consultants evaluate their success in identifying and solving a patient's drug-related problems. The PWDT consists of seven steps that must be carried out and appropriately documented for each patient receiving pharmaceutical care.

1. Collect and interpret relevant patient information to determine whether the patient has drug-related problems
2. Identify drug-related problems
3. Describe desired therapeutic goals
4. Describe feasible therapeutic alternatives
5. Select and individualize the most appropriate treatment regimen
6. Implement decisions about drug use
7. Design a monitoring plan to achieve desired therapeutic goals

Pharmacists must focus on patients, not their medical records. It is necessary for them to observe, interview, assess, evaluate and even touch the recipients of drug therapy to assess the impact of that therapy.

Physical assessment of the resident will become a new and logical role for consultant pharmacists. It will be a very different approach from what the MD or nurse practitioner would take, because it will be for the purpose of assessing the outcomes of drug therapy.

Consultant pharmacists are already becoming involved in physical assessment even though this has not traditionally been a component of pharmacy practice nor has it been included in most pharmacy school curricula. Monitoring for the presence of tardive dyskinesia in patients receiving antipsychotic agents is one example of patient assessment performed by consultant pharmacists. Other examples include assessing the patient's state of hydration when receiving diuretics, looking for the presence of myasthenia gravis in patients receiving phenytoin and looking for the presence of claudication in patients receiving beta-receptor antagonists. (Table 6–7)
### Table 6-7

<table>
<thead>
<tr>
<th>Drug</th>
<th>Physical Assessment Parameters</th>
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<tbody>
<tr>
<td></td>
<td>Therapeutic effect</td>
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<tr>
<td>Phenytion</td>
<td>Elimination of seizure activity</td>
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<tr>
<td></td>
<td>Weight loss due to effective diuresis</td>
</tr>
<tr>
<td>Diuretic</td>
<td>Decreased pulse</td>
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<tr>
<td></td>
<td>In atrial fibrillation: Control of pulse rate</td>
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<tr>
<td>Beta-Blocker</td>
<td>Decreased muscle rigidity</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>Improvement in target behavior, eg, agitation</td>
</tr>
<tr>
<td>Antiparkinson drugs</td>
<td>Decreased muscle rigidity</td>
</tr>
<tr>
<td>Digoxin</td>
<td>In atrial fibrillation; Control of pulse rate</td>
</tr>
<tr>
<td>Angiotensin Converting Enzyme Inhibitors (ACEI)</td>
<td>Decreased blood pressure</td>
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</table>

This important function greatly increases consultant pharmacists’ abilities to assess the outcomes of drug therapy and will afford them with even more professional opportunities.

Increasingly, the need for DRR in other long-term care environments such as assisted-living facilities, board and care homes and others is being recognized. These facilities typically do not receive comprehensive pharmacy services. They are, therefore, deprived of the benefit of DRRs conducted by pharmacists on a regular basis in spite of the fact that they are typically staffed with nonlicensed personnel who are basically unskilled in the area of medication management.

### Improving Quality of Services and Care

Traditionally, consultant pharmacists have participated in quality assurance. Quality assurance is described as “a commitment to excellence and a commitment to ongoing self-examination, (and) a program that continually examines and monitors the level of services, identifies areas needing improvement, and implements recommendations.”

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The quality assurance process encompasses five steps: (1) setting or reinforcing standards; (2) measuring performance to standards; (3) analyzing results; (4) acting on results; and (5) continued monitoring of performance.30

The focus is now turning towards the concept of total quality management (TQM) which entails "organizational activities designed to continually improve performance and productivity levels, improve efficiency and predictability of the care process, reduce unnecessary care and waste, contain costs and improve outcomes and quality of life." TQM represents a fundamental paradigm shift in health care management. Its focus is on continuous and unrelenting improvement in the processes that provide care, rather than attempts to improve the actions of individual health care professionals.31

Under the TQM model, change is based on the needs of the "customer." For consultant pharmacists, the customer is not only the resident, but also the many users of the pharmacy’s "output" or services, such as the medical and nursing staff, administration, and other health care professionals working in the facility.32

TQM is accomplished through continuous quality improvement (CQI). The primary focus of CQI is the continual improvement of outcomes via improvement of systems in order to improve both staff performance and overall patient outcomes.30

Becoming involved in CQI activities offers consultant pharmacists the opportunity to analyze their contributions more globally. This is a paradigm shift for those who have typically looked at residents and their drug regimens individually. The power of CQI lies in the aggregate data. It could involve collecting and analyzing aggregate data pertaining to medication errors, medication appropriateness determined through drug use evaluation (DUE), medication administration, or compliance to clinical and/or regulatory criteria.

Consultant pharmacists must practice CQI if they are providing services to a facility accredited by the Joint Commission for Accreditation of Health Care Organizations (JCAHO) that requires CQI. CQI is becoming a crucial marketing tool for the consultant pharmacist. It is a good way to beat the competition or attract the business of a facility.33

The consultant pharmacist is in a prime position to introduce CQI into a facility and serve as the pivotal person in initiating this process. Consultants must think of themselves as a facility consultant, not just a consultant pharmacist. To be effective, the CQI process must involve the entire facility, from management to staff to part-time consultants.31 If the consultant pharmacist is the only one practicing CQI, then the facility does not have CQI.

The consultant pharmacist is responsible for ensuring the quality of the entire drug use process and the provision of pharmacy services. This includes DRR, adherence to pharmacy policies and procedures, medication administration, proper labeling of drugs, infection control, medication ordering and delivery and documentation.36,30 Ongoing assessment allows for
adaptation of systems and procedures to ensure pharmacy services are meeting the needs of each resident. Consultant pharmacists can also use CQI to track therapeutic recommendations through outcomes management by looking for improvement in outcome and quality of life.\(^\text{37}\)

The time is ripe for CQI to become part of pharmacists' services. Hospitals are required to practice CQI if they wish to become accredited by the JCAHO. 1994 standards have replaced QA with "quality assessment and improvement" that is geared more towards performance. In 1996, the JCAHO standards pertaining to quality assessment and improvement will fall under the heading of "performance improvement."

CQI is a good way for the consultant pharmacist to become recognized as a valuable member of the health care team. The pharmacist with a clear understanding of CQI and how it can best be implemented into the long-term care facility will definitely have a marketing advantage over other pharmacy practitioners who are less well equipped.\(^\text{37}\)

**Quality Assessment and Assurance Committee**

OBRA requires every NF to maintain a quality assessment and assurance committee (QAAC) to oversee the quality of all services and ensure that quality of care issues are effectively addressed. This committee is required to study and improve care using an interdisciplinary approach to measure patient care outcomes. The QAAC utilizes the DUE process to monitor and evaluate drug use in the facility. The committee consists of the director of nursing, a physician and at least three other members of the facility staff.\(^\text{38}\)

The regulations do not mandate the consultant pharmacist's participation on the QAAC. However, because of the important role played in the management of patient care, the consultant pharmacist must assume an influential role as a member of this crucial committee.\(^\text{39}\)

The consultant pharmacist can assist the committee in identifying issues in which quality assessment and assurance activities are necessary. Participation in the QAAC will enable the consultant pharmacist to contribute to the quality of care and quality of life of the nursing facility resident.

A recent nationwide survey determined that the pharmacist is invited to participate in the QAAC in almost 90% of facilities polled.\(^\text{40}\)

**Drug Use Evaluation**

Another important tool that consultant pharmacists use to ensure quality of drug therapy is drug use evaluation (DUE). DUE is defined as a structured, ongoing, organizationally authorized quality assurance process designed to ensure that drugs are used appropriately, safely and effectively.\(^\text{41}\)
The benefits of DUE are appropriateness, safety, therapeutic effectiveness and cost-effectiveness. The optimization of drug therapy, which results in a better outcome and overall improvement in the quality of life and care for a particular individual, is the most obvious objective.\textsuperscript{44}

Drug use evaluation (DUE) is the most accepted and valid mechanism to induce positive change in medication use.\textsuperscript{45} DUE embodies the basic principles of CQI and represents an excellent example for consultant pharmacists to use in applying CQI in their practices. As a component of the CQI process, DUE has proven to be a very important process by which consultant pharmacists can improve patient outcomes.\textsuperscript{44}

DUE involves the evaluation of drug therapy on a facility-wide basis based on criteria developed and approved by a facility's Quality Assessment and Assurance Committee (QAAC).\textsuperscript{44,45}

DUE can be performed on a retrospective, concurrent, or prospective basis. Regardless of the type of DUE to be performed, there are a number of basic elements that must be present and adhered to in order to have an effective process. These elements include the use of objective, measurable criteria that can be used to compare and measure data collected; ongoing, planned and systematic monitoring of data; monitoring of actual drug use and identifying any associated problems; resolution of problem intervention; documentation of the resolution of the problem; and follow-up to see that the resolutions are being adhered to.\textsuperscript{44} (Table 6-8)

\begin{table}[h]
\centering
\begin{tabular}{l}
1. Select the drug, drug category, or disease entity to evaluate \\
2. Develop screening criteria and establish a standard of care \\
3. Gain QAAC approval of criteria \\
4. Implement the data collection process \\
5. Summarize the data collected \\
6. Present findings evaluation \\
7. Take necessary corrective actions \\
8. Assess effectiveness of action plan \\
9. Document completion of DUE, actions taken, and resolution of problems \\
10. Revise criteria and repeat DUE.
\end{tabular}
\caption{Steps in the DUE process}\label{table:6-8}
\end{table}

The primary emphasis on DUE intervention should be educational, with the goal of positive behavior modification, including modifying improper prescribing and improving the quality of therapeutic outcomes.

The particular focus of an individual DUE is almost limitless but is often chosen based on observed or likely problems. These include drugs that have potentially serious adverse reactions, narrow therapeutic index, very high use rates, or drugs that are very costly.
The assessment and evaluation of drug therapy of individual residents that is central to the DRR process provides an excellent basis for the development and implementation of a formal DUE program.

Monitoring of Psychoactive Drug Therapy

The Omnibus Budget Reconciliation Act of 1987 (OBRA ’87) established statutory requirements to encourage the appropriate use of psychoactive medications in NFs. Studies of medication use in NFs revealed that psychoactive medications, particularly antipsychotic medications, were frequently used excessively and inappropriately. Under current regulations, NFs must scrutinize the use of all antipsychotic medications for appropriateness, and provide close monitoring to determine whether the resident is benefiting from the therapy or is experiencing adverse effects.

The OBRA regulations and the related HCFA rules regarding the use and monitoring of antipsychotic drugs in NFs did not specify that this process requires involvement of the pharmacist. However, consultant pharmacists across the country saw an opportunity and became involved. Consultant pharmacists have developed systems that identify and monitor objective target behaviors to be controlled, correlating antipsychotic use with both beneficial and adverse effects. The success that consultant pharmacists have had in reducing the inappropriate use of antipsychotic medications in nursing facilities has been dramatic, with reductions of 50% not being uncommon. At the same time, more favorable patient outcomes have been achieved, including a higher level of functioning and enhanced quality of life.

Consultant pharmacists familiar with the factors associated with antipsychotic drug use in NFs are better prepared to help staff develop appropriate assessment and alternative (nondrug) treatment approaches to problem behaviors. This encourages more rational therapy, improves resident well-being, and helps facilities comply with federal regulations.

Gradually, the focus on inappropriate use of antipsychotics is extending from NFs to other long-term care environments such as assisted living facilities where consultant pharmacists are beginning to demonstrate similar success.

Inservice Education

An important activity that has brought respect and recognition to many consultant pharmacists is the presentation of inservice education programs to nursing and other facility staff. Inservice programs are tailored to meet the specific needs of the facility. They may cover a wide variety of topics, such as drug therapy for particular disease states; side effects and monitoring parameters for medications; federal regulations; or policies and procedures. Inviting nurses and other staff members to suggest topics for presentation and offering continuing education (CE) credit for inservice programs can provide an incentive to increase participation.
Regularly scheduled, high quality, inservice presentations can greatly increase the visibility and effectiveness of the consultant pharmacist in nursing facilities and other care environments. They can reinforce the consultant pharmacist's role as a drug therapy expert and enhance the important and multifaceted role that the consultant pharmacist plays as part of the facility's health care team.\(^6\)

**Participation on Facility Committees**

Earlier regulations required pharmacist membership on a number of specific committees. With the focus on outcomes required, consultant pharmacist participation on specified committees has been eliminated. However, consultant pharmacists continue to participate on a variety of committees in the facilities they serve. (Table 6-9) Through this participation, the consultant pharmacist not only provides important information about the resident's drug therapy and desired outcomes, but can also learn more about the status and care of each resident. The committees can also serve as a means of communication between the facility and physician if inappropriate prescribing patterns are noted or if the consultant pharmacist's recommendations are not being acted upon. The medical director can intervene through committee actions and discussion to influence inappropriate prescribing practices.\(^5\)

**Table 6-9**

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<thead>
<tr>
<th>Suggested Consultant Pharmacist Committee Participation</th>
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<tr>
<td>Quality assessment and assurance</td>
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<td>Patient care</td>
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<td>Pharmaceutical services</td>
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<td>Patient care planning</td>
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**Medication Room Inspections**

The consultant pharmacist or delegated personnel inspect each medication room regularly to check for outdated or discontinued medications, and proper labeling and storage of all medications. An audit of controlled drugs should also take place during the inspection. Not only will this survey encourage good medication practices, it will also help to prepare the facility for state surveys by eliminating problems the surveyors may interpret as deficiencies.
Infection control in long-term care is undergoing a metamorphosis. Providers are having an increasingly difficult job keeping residents and staff free of infection. Defining a framework for a successful infection control program and implementing the steps necessary to reduce infection risk can pave the way to a healthier environment for residents and staff alike.62

Infections are a serious and growing problem in NFs, resulting in considerable morbidity, mortality, and expense. Each year, about 1.5 million infections occur in NFs. Twenty-seven percent of hospital admissions from nursing homes are a result of infections.63

Infections are the most common cause of resident death and hospitalization. The cost of infections – in increased staff time, supplies and antibiotics – is very high.

The frail elderly patient, who may be malnourished and have decreased immune response, is at high risk for infections64 such as influenza, hepatitis B, urinary tract infections or even tuberculosis, which occurs in the nursing facility at a rate twice that seen in the community.65 Alarming, the incidence of tuberculosis has increased 20% since 1985. Of special concern is the emergence of a strain that is resistant to all the commonly used antitubercular drugs.66

Antibiotics are frequently inappropriately used in nursing homes67 and the development of resistant strains of bacteria makes treatment difficult. The treatment of the many opportunistic infections typical in patients with AIDS also presents a tremendous challenge.68

Federal regulations require that NFs “establish and maintain an infection control program designed to provide a safe, sanitary, and comfortable environment and to help prevent the development and transmission of disease and infection.”69

The challenges of infection control have presented many opportunities for consultant pharmacists to reduce infection in residents and staff. Many consultant pharmacists serve on the infection control committee and participate in the development and implementation of infection control policies and procedures. Consultant pharmacists have developed programs to routinely screen staff for tuberculosis and have also developed programs for pneumococcal disease immunization in the long-term care populations they serve.69 They can also develop and oversee programs to immunize staff and family against influenza, which can result in dramatic decreases in absence due to illness.62

A consultant pharmacist who is knowledgeable in the management of infected pressure ulcers can play an important role in enhancing the quality of care for the resident and reducing overall costs for the facility. This is done by providing inservice education programs, information on new treatments and prevention, care plans, and documentation of response to treatment.62
Consultant pharmacists may decrease the risk of infection by correcting improper techniques of medication administration such as inappropriate administration of eye drops, improperly washed hands, contamination of medicine cups or tablet crushers, or contamination of oral medications administered with applesauce.72

There are additional ways that consultant pharmacists can intervene to decrease the risk of infection. These include inspection of opened irrigation and other bulk containers that may spread infection if contaminated; limiting the use of topical antibiotics; discouraging the use of prophylactic antibiotics; implementation of ordering procedures for anti-infective agents; conducting antibiotic use review, and review of antibiotic susceptibility and resistance data to educate physicians on appropriate antibiotic use; and delivery of educational inservice programs.65,73-74

Reducing Medication Errors

Federal regulations require that the pharmaceutical services provided to nursing facilities include procedures that ensure the accurate acquiring, receiving, dispensing and administration of all drugs to meet the needs of each resident. Consultant pharmacists are in an excellent position to lead a collaborative and interdisciplinary effort to detect, measure and ultimately prevent medication errors which can lead to serious morbidity and mortality.31

A Medication Administration Error Survey (Med Pass) is a required component of the HCFA survey procedure. The survey focuses on process rather than outcome. It is designed to identify specifically defined medication errors and to calculate a medication error rate for the facility. The minimum standards of the HCFA survey are not sufficient for a CQI medication error detection and prevention program.31 During the Med Pass the observer evaluates the facility with regard to use of proper personnel, proper medication identification and preparation, accurate charting, proper patient identification, the use of sanitary or aseptic techniques, accurate administration techniques and medication cart security.75

As long as no significant errors are detected during the survey and the overall medication error rate is less than five percent, no deficiency is noted by the surveyors. There is no further evaluation of the errors that did occur.

Many consultant pharmacists serve as observers in Med Pass observation programs that they have implemented in order to help nursing staff prepare for the survey process.

Some consultant pharmacists conduct a survey that simulates the state survey. Others perform partial surveys or spot checks. Through this activity the consultant pharmacist acts as a liaison between the provider pharmacy and NF to identify potential problems, educates the facility staff and prepares them for the survey, provides pharmaceutical reviews66 and designs inservice education programs to help the nursing staff improve their medication administration techniques,77 which results in enhanced quality of care.
The consultant pharmacist can use the CQI approach to evaluate the entire medication-use system in order to identify problems in the processes that result in all types of medication errors, not only those dealing with drug administration. When problems are identified, the consultant pharmacist can work to make the necessary changes to eliminate the source of errors. This can be done through the development of policies and procedures and other interventions.\textsuperscript{59}

Techniques for proper drug administration have become an area in which the pharmacist excels uniquely. Pharmacists are asked for comprehensive information on drug administration, not only on oral solids and liquids but other dosage forms that may be associated with improper administration techniques, including otics and ophthalmic solutions, metered-dose inhalers, topical preparations, nebulizers and transdermal patches. By providing details on proper drug administration, a drug's maximal effectiveness will be achieved.

By taking the initiative to improve medication administration techniques in a positive rather than punitive way, consultant pharmacists improve their relationships with the facility staff and document their positive contribution to improving patient care.

The consultant pharmacist's efforts to encourage proper medication administration increases the likelihood that the patient will benefit from the drug, thus increasing the value of the pharmaceutical care received.\textsuperscript{70}

### Adverse Drug Event Monitoring

Detection and prevention of adverse drug events (ADEs) – which include product-related deficiencies, as well as adverse reactions to medications – is an important aspect of pharmaceutical care in which consultant pharmacists can become involved.

While ADEs may occur in patients of any age, elderly nursing home residents are especially vulnerable, particularly from newly marketed products. This is because the pre-approval clinical trials rarely include this segment of the elderly population.\textsuperscript{65}

Adverse drug events may be attributed to high risk medications including digitalis glycosides, antipsychotics, sedatives, hypnotics, diuretics, and anti-inflammatory agents, or they may be due to inappropriate prescribing.\textsuperscript{65}

Active participation by consultant pharmacists to detect and report adverse events through an organized monitoring system is a logical and important component of pharmaceutical care. The consultant pharmacist's role is especially important in the NF and other long-term care environments which, unlike hospitals, may have limited direct physician supervision.\textsuperscript{51,62}

Consultant pharmacists can collect information on ADEs during the DRR and DUE process. They can coordinate a facility-wide system for monitor-
ing and reporting ADEs through the pharmacy department or through the QAAC. The consultant pharmacist can also educate staff on ADE through inservices or a newsletter.

They can actively participate in ongoing programs and can also participate in postmarketing surveillance programs conducted by the FDA and drug companies.

Consultant pharmacists can also participate in FDA's voluntary reporting system "Medwatch" to report product problems, including contamination, defective components, poor packaging, product mix-up, questionable stability, device malfunctioning, medication labeling, medical devices, special nutritional products and other products regulated by the FDA. (Appendix F)

Reducing The Cost of Care

Consultant pharmacists have been very successful in their efforts to improve pharmaceutical care, and have been very well received by other members of the health care team. A crucial question remains unanswered — are the activities of consultant pharmacists cost-effective?

Although not large in number, published studies investigating the cost benefit of consultant pharmacy services have indicated that consultant pharmacist activities can decrease health care costs. Cost savings from consultant pharmacy services may be realized from reduction in the total number of medications used, a decrease in the amount of time required for drug administration and averted hospitalizations.

The savings from pharmacist-conducted drug regimen review in skilled nursing facilities (SNFs) was estimated to be $220 million. This study used 1983 dollars and only examined the impact in SNFs. Therefore, the actual financial impact of consultant pharmacists practicing today in an expanded arena of settings is considerably greater.

Table 6-10
Selected Cost-Saving Interventions

- Reduction in medication usage
- Reduction in wasted medications
- Reduction in nursing time needed for drug administration
- Use of drug formularies and generic medications when appropriate
- DUE programs to promote cost-effective therapy
- Staff education to promote cost-effective therapy
- Promoting regulatory compliance, thus avoiding fines and penalties
- Averted hospitalization for adverse drug reactions
- Averted institutionalization resulting from poor compliance
- Averted hospitalization caused by treatment failures
Specific interventions that can reduce the overall cost of drug therapy have been identified. (Table 6—10) Consultant pharmacists can reduce costs through the DRR process by recommending the discontinuation of unnecessary, duplicative, and inappropriate medications; simplifying drug therapy to eliminate unnecessarily complex therapeutic regimens; reassessing the need for drug therapy; and decreasing the nursing time necessary for medication administration and documentation.

Each year almost a quarter of a million elderly people are hospitalized for adverse reactions to prescription and nonprescription drugs. More than 200,000 NF residents are being hospitalized needlessly at an annual cost of more than $942 million (in 1988 dollars). One-half of these avoidable admissions result from factors such as an insufficient number of adequately trained nursing staff, inability of staff to administer and monitor intravenous therapy, lack of diagnostic services and pressure from the staff and family for transfer to a hospital.

Consultant pharmacists can help to substantially reduce these costs through the elimination or early detection of adverse reactions and treatment failures. If consultant pharmacy services reduce these admissions by only a few percent, dramatic cost savings would be realized.

Cost savings can also result from nonclinical activities. By providing high quality pharmacy services, consultant pharmacists help the facility remain in compliance with federal and state regulations. This avoids citations, fines, possible decertification, and the time and money that would otherwise be required to correct these problems.

Additional studies documenting the cost-effectiveness of consultant pharmacy services are essential. Consultant pharmacists will be challenged to justify the benefits of services—such as DRR—to facilities, state and federal regulators, and the public.

When the true value of consultant pharmacy services has been established, it will be possible to establish appropriate reimbursement for pharmacy services and the cognitive skills of the consultant pharmacist.

As the long-term care environment continues to evolve, a variety of interventions designed to improve the use of drug therapy and decrease cost will be implemented. One possibility is a capitation payment system where a health care provider is paid a uniform per capita fee per patient whether or not the services or products are actually used. Capitation can be applied to total patient management or it can be applied to a single health care service, such as pharmaceutical services.

Capitation provides an incentive for efficient operations and has the potential for reducing excessive and unnecessary drug use and expenses. Under a capitation system, consultant pharmacy services that result in cost containment, such as drug regimen review and drug use evaluation, will be in demand.
Research Activities

Consultant pharmacists are well positioned for involvement in all types of research. Through their vast database of patient information, consultant pharmacists can study and document the effect they have on medication prescribing and use in the facilities they serve. Their access to patients can also be used to identify potential study subjects for drug use studies.

Research activities of consultant pharmacists can include involvement in postmarketing drug surveillance, which will be of increasing interest to the FDA and to manufacturers; participation in medication effectiveness studies; and new drug research in geriatric patients. Pharmacists can also perform studies on how their practice activities help to document positive outcomes in areas such as residential care and congregate living environments. This will provide valuable benefits to the patient as well as further document the importance of the pharmacist's roles in the expanding long-term care environment.

Geriatric Clinical Research

Clinical research is not a typical activity for most consultant pharmacists. Opportunities for involvement are increasing and some consultants have been successful in this area.

The importance of geriatric research has been recognized by the National Council for Patient Information and Education (NCPIE), the American Association of Retired Persons (AARP), and the US Food and Drug Administration. The FDA has published a "Guideline for the study of drugs likely to be used in the elderly," to encourage routine and thorough evaluation of the effects of drugs in older patients and to provide sufficient information on the proper use of medications in this patient population.

The recognized lack of available data on drug safety in geriatric patients and the increasing numbers of elderly have stimulated many pharmaceutical companies to study the use of their products in the elderly and to devote significant research assets to the development of new drugs.

More than one-half of the approximately 13 billion dollars spent by the United States pharmaceutical industry for new drug development is devoted to medications that will primarily be used in the elderly. A report released by the Pharmaceutical Manufacturers Association in 1993 indicated that more than 300 new medicines are in development for 44 diseases of aging, including osteoporosis, vascular disease, Alzheimer's disease, diabetes and others.

Geriatric clinical research presents a number of unique challenges and potential pitfalls. These problems must be considered by the consultant pharmacist. Collaboration with experienced researchers such as a physician or a college of pharmacy faculty member may be appropriate.
It can be difficult to locate subjects who meet study inclusion and exclusion criteria. Obtaining the patient's informed consent for participation in any study, while crucial, is a major impediment to drug research because of the varying levels of mental acuity among elderly persons. Multiple treatment regimens and co-morbid conditions make it difficult to single out the effects of one drug, especially in elderly patients whose renal and hepatic function are already compromised. In addition, serious ethical concerns have been voiced by consumer advocacy groups that elderly nursing home residents might be used as "guinea pigs" for research.

Before getting involved in clinical research, consultant pharmacists must be thoroughly prepared and should get involved for the right reasons. It is imperative to first establish a business plan with input from all aspects of the provider pharmacy's operations: data processing, administration and finance, in addition to consultant services.

Involvement in clinical research is an extremely labor-intensive commitment. A strong drug distribution system is important. It can be difficult to recruit NPs and other LTC environments as study sites without access to the drug distribution system. The ability to recruit subjects, conduct a study and deliver accurate and complete data is paramount.

Consultant pharmacists can become involved in clinical research in a variety of capacities. They can collect data, serve as study site coordinators or as full-service contract research organizations. Some consultant pharmacists serve to train other consultants to perform research and work to establish consultant pharmacist research networks.

Clinical research is an attractive way to expand personal and business horizons. It can give consultant pharmacists a first-hand opportunity to contribute to the quality of geriatric patient care.

Involvement in research may facilitate the exchange of information among other provider audiences. It may also strengthen relationships with others (eg, MDs, nurses, etc.) and increase the consultant's visibility.

Through properly conducted ethical research, a great deal of information can be learned about the clinical effects of medication use in the elderly without subjecting patients to any undue risk.44

The American Society of Consultant Pharmacists has published guidelines for consultant pharmacists conducting research. (Appendix G) In addition, the ASCP Research and Education Foundation provides seminars and materials concerning research in the elderly and in nursing homes.
Pharmacoeconomic Research

In addition to clinical research, a need also exists for pharmacoeconomic studies to determine the cost-effectiveness of consultant pharmacy services and the influence of pharmacist intervention on physician prescribing habits and patient outcomes.

The spiraling cost of health care is serving as a stimulus for efforts to reduce costs. Increasing long-term care expenses are being fueled by decreasing old-age mortality, resulting in a larger population in need of services than ever before.102

Four different types of economic analyses can be used to relate the likely benefits of drug intervention to their costs: cost minimization analysis (CMA), cost-effectiveness analysis (CEA), cost-utility analysis (CUA), and cost-benefit analysis (CBA). In each type of analysis, the costs and therapeutic consequences of different drugs (or other treatments) used in treating a particular medical condition are compared. The four types of analyses differ primarily in the way in which therapeutic consequences are measured: CBA measures therapeutic consequences in monetary terms, CEA in physical units (eg, lives saved), CUA in terms of preferences or quality of life (fre-quent expressed as quality adjusted life years), and CMA assumes therapeutic consequences are equal.102

Consultant pharmacists are well-positioned to play an important role in analysis and documentation of pharmacoeconomic outcomes. Through their DRR and DUE responsibilities, consultants have easy access to valuable data on outcomes, quality of life, and cost of therapy. Pharmacists possess the skills needed to evaluate new drugs as they come to market and should use those skills to help develop guidelines to optimize favorable patient outcomes.

To continue their success, consultant pharmacists must demonstrate that their interventions improve patient quality of care and quality of life while at the same time reducing costs. When evaluating the financial impact of their interventions, consultant pharmacists must consider all the costs involved, such as drug cost, extra nursing visits, and the cost of sending home a patient who needs higher levels of care since family members may lose time from work to provide that care. Likewise, they must consider all savings such as decreased nursing time required for medication management, decreased need for patient care, improved nutritional status and decreased falls, and decreased need for hospitalizations, restorative care and further health professional interventions.1,2,7,102

Pharmaceutical manufacturers are responding to the health care industry's demand for more cost-effectiveness and quality of life data by adding more outcomes research staff and doubling the number of economic studies underway.102 Manufacturers must prove the value of pharmaceuticals,104 and cost-effectiveness and cost-benefit analyses are in demand.105

This presents consultant pharmacists with an excellent opportunity to obtain research grants and contracts for pursuing activities that can help improve
Table 6-11
Selected Studies
Demonstrating the
Economic Impact of
Consultant Pharmacist
Intervention

Kidder SW. Cost–benefit of pharmacist–conducted drug
regimen reviews. In a retrospective analysis of 23 published studies it was
estimated that national savings from pharmacist–conducted drug regimen
review amounted to an annual net savings of $220 million. Since this study
reported 1983 dollars, and used early study data that assessed relatively
rudimentary consultant pharmacist interventions, the savings that are seen
today undoubtedly greatly exceed this figure.

Neel AB, Pittman JC, Marasco RA et al. Psychoactive drug use
in Georgia nursing homes: effects of aggressive intervention. As the result of pharmacist intervention the percentage of a
population of 9,000 NF residents using psychoactive drugs declined from 78.35% to 47.3%. Antipsychotic use went from
31.5% to 19.5%. Monthly drug costs were reduced by $76,738.
Significant (nondocumented) savings could have resulted from
a decreased need for patient care; improved nutritional status;
decreased falls, hospitalization, restorative care, and professional
intervention.

Cooper JW. Effect of initiation, termination, and reinitiation of
consultant clinical pharmacist services in a geriatric long–term
care facility. The cost impact of consultant pharmacist services in a 72-bed
geriatric long–term care facility was assessed during initiation,
termination, and reinitiation of consultant pharmacist services.
It was determined that consultant pharmacists services decreased
the use of regularly scheduled medications by 59% and pm (as
needed) drugs decreased by 200%. Net drug savings were
calculated to exceed $32,000 annually.

Kharki SD, Mott P, Rosato L. Impact of a team approach on
reducing polypharmacy. The effectiveness of a team approach to drug regimen review
(DRR) in an intermediate care facility was assessed by compar-
ing two nursing units of 55 and 58 beds, one with DRR and one
without. The estimated yearly drug cost was almost $28,000
lower in the unit with the DRR intervention.

quality of life for their patients, and prove the effectiveness of their activities
in terms of cost and outcomes of pharmacy services.

Research documenting the pharmacoeconomic outcomes of consultant
pharmacist's activities is needed. A number of key studies have already
demonstrated that these activities can increase quality of care and quality of
life with considerable cost savings. (Table 6–11)
While these studies have provided valuable information, they do not truly assess pharmacoeconomic outcomes. They have measured the economic impact of consultant pharmacist's activities. In spite of this, they represent an important step in determining the value of consultant pharmacist's services. This information will go far in determining the kind of reforms that are made in health care, both now and as the baby boomers strain the system in years to come.108

The significance of pharmacoeconomics to consultant pharmacy practice cannot be overemphasized. Unless consultant pharmacists document the value of their services in terms of dollars and cents, other health care decision makers will not pay attention to their accomplishments.

Quality of Life Research

Quality of life is the major missing data piece in the deluge of outcomes and pharmacoeconomic studies now appearing in the literature. It is difficult to measure quality of life; however, instruments are now being developed. It is also very difficult to equate the economic value of improved quality of life.

The study of quality of life and therapeutic outcomes is a fertile area for long-term care research. This could be accomplished by incorporating quality of life measures into existing pharmacy databases maintained by consultant pharmacists. Especially important are studies that increase the recognition of the value of the pharmacist's cognitive skills.

Additional Cognitive Services

Policy and Procedure Development

Consultant pharmacists play a key role in the development of policies and procedures in the facilities they serve.109 A policy and procedure manual serves several important functions in any organization. It establishes policies, which are general statements about what activities will be pursued; and it delineates in detail the procedures to be followed to accomplish those activities in an efficient and consistent manner. A pharmacy policy and procedure manual should provide for standardized service in every area it addresses (Table 6-12), and should be used as a training aid and for the pharmacy and facility staff. It should serve as the administrative control mechanism, the evaluation standard and the definitive description of pharmacy service in the facility. As such, it must be unique to the facility for which it is developed.109

Having strong policies and procedures in effect helps ensure that the resident receives the best possible care and gives staff solid direction about how to handle unfamiliar or difficult situations.108 They can also be used by the consultant pharmacists to evaluate the facilities they serve or for other quality improvement activities.
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Brown Bag Seminars

Consultant pharmacists can offer "brown bag seminars" in a wide variety of long-term care environments where elderly are encouraged to bring all of their medication to the seminar in a "brown shopping bag" in order to discuss them with the pharmacist. This service may help answer the unmet needs of many senior citizens – especially those who may be receiving all or most of their medications by mail or through multiple pharmacies.117

Laboratory Test Monitoring

As nursing homes care for patients who require an increased acuity of care, consultant pharmacists will have an increasing opportunity to interpret and, in some states, order laboratory tests that can be used to monitor drug therapy.118

Consultant pharmacists are in an ideal position to perform therapeutic drug monitoring. They can make recommendations on the correct sampling times needed for appropriate peak/trough data and can monitor drugs with narrow therapeutic windows. They can also provide recommendations for standing lab test orders for certain drugs. The consultant pharmacist can also help cut waste and economize by scheduling a number of tests together or by having tests ordered in a bundle instead of a series of individual tests.114,115

Consultant pharmacists can track abnormal serum drug levels and evaluate potential changes that might be needed in therapy. They can work with physicians and the laboratory to determine the lab needs for individual patients.117

Pain Management

Elderly patients experience all types of pain – not only from cancer but from a multiplicity of chronic, progressively debilitating diseases such as degenerative joint disease, osteoporosis, coronary artery disease, peripheral vascular disease, emphysema, sensory deficits, or diabetes. When present, cognitive impairment may limit the information the patient can provide. Therapy could be limited by potential adverse drug effects.

Pharmacists play a prominent role in controlling geriatric pain. They can take part in the education of physicians and nurses about the safe and effective use of analgesics. They can also provide clinical monitoring of patients to minimize adverse consequences and maximize the effectiveness of therapy.118

Enteral and Parenteral Nutrition

Consultant pharmacists can work with dietitians and other caregivers in the area of enteral nutrition to optimize patient outcomes. They can provide information on products, administration techniques and drug interactions.119,120
Specialized Clinical Services

As consultant pharmacy continues to mature, a small but growing number of consultant pharmacists are beginning to offer a wide variety of specialized clinical services. These relate to specific conditions or unique patient populations such as Parkinson’s disease, psychiatric conditions, male sexual impotence, respiratory disease, pain management, chemotherapy and working with deaf patients.

References


15. Pinneke S. Showing the reduction of unnecessary drugs. Consult Pharm 1993; 8:306-305.


