AMERICAN SOCIETY OF HEALTH-SYSTEM PHARMACISTS
Pharmacists in health systems helping people make the best use of medications

August 7, 1995

MEMORANDUM

TO: Authors of International Posters

FROM: Educational Services Division

SUBJECT: International Pharmacy Forum

I am pleased to inform you that your paper, identified below, has been scheduled for presentation at the upcoming Midyear Clinical Meeting in Las Vegas, Nevada. Please note that your poster presentation is scheduled on **Tuesday, December 5, 9:00 a.m.-11:30 a.m.**

The presentation number on the citation listed below refers to your booth number at the poster session. You may report to your assigned booth one hour before the session to begin preparing your poster display.

Intl-02
Quality Control of the Drug Administration of a General Hospital, C. Lacasa, C. Roure, J. Martinez, and R. Cot (Intl-02)

A copy of the booklet, *Information for Presenters of Papers at ASHP Meetings*, is enclosed. Please read carefully all of the information in the section describing poster presentations.

All persons participating in poster sessions must be registered for the Midyear Clinical Meeting, at least for the day on which the presentation is scheduled. The enclosed Program Announcement includes a meeting registration form and hotel reservation information.

Let me know if you have any questions or comments regarding your presentation; our fax number is (301) 657-1258. I look forward to meeting you in Las Vegas in December.

Enclosures: *Information for Presenters of Papers at ASHP Meetings*
Program Announcement

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Quality control of drug administration in a general hospital

Lacasa C(1), Roure C(1), Martinez J(1), Cot R

(1) Pharmacy Department, (2) Nursing Department

Hospital de Barcelona, Diagonal 660, 08034-Barcelona (Spain)

Comunicación presentada al 30th American Society Health-System Pharmacy Midyear Clinical Meeting
Las Vegas, December 1995

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Objectives

1. *To evaluate the medication error rate in the Hospital de Barcelona*
2. *To propose corrective measures*
3. *To reevaluate the situation to verify the efficacy of the corrective measures*
4. *To implement a system to obtain periodic measurements of the medication error rate as a clinical quality indicator.*

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Activity and drug distribution data, Hospital de Barcelona (private acute care) 1994

Beds	*Patients*	*Physicians*	*Specialties*	*Average stay*	*Operations*
356	*18,160*	*1,400*	*33*	*5.1*	*12,272*

Computerized unit dose distribution system:

* *Computerized prescription entry by 86 physicians (30% of 152.999 total orders)*
* *Medication administration record (MAR) updating for nurses*
* *24 hours-on line validation by 10 pharmacists*
* *Internal fax in units and pharmacy*

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Methods

Criteria used	*ASHP guidelines 1993 (1): error definition and classification* *Hartwig et al. 1991(2): medication errors severity levels* *Allan and Barker 1990 (3): study design*
Observers	*14 nursing supervisors*
Analysts	*4 pharmacists, 1 physician, 5 nursing supervisors*
Study steps	*1. Evaluation November 1994(n=839)* *2. Corrective measures for physcians, pharmacists and nurses* *3. Reevaluation June 1995 (n=855)*
Statistic	*Error rates comparation* — *Chi-square test* *Severity level comparation* — *Fisher exact test*

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Results

Table 1. Medication errors(*) during evaluation and reevaluation phases

		Evaluation	Reevaluation
Errors	**n**	57	30
	%	6.8	3.5
	IC 95%:	5.1-8.5	2.4-5.0
		(χ_2 = 9.4	p = 0.002)

(*): drug administrations with one o more errors

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Table 2. Types of errors detected

	Evaluation	Reevaluation
Prescribing	2	6
Omission	2	1
Time	19	4
Unauthorized drug	5	1
Dose	13	5
Dosage-form	0	0
Drug preparation-technique	6	1
Administration-technique	3	0
Deteriorated drug	0	0
Monitoring	14	17
Patient compliance	14	8
Other	2	4

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Types of errors (1)

Prescribing
Omission
Time
Unauthorized drug
Dose
Dosage-form
Drug preparation-technique
Administration-technique
Deteriorated drug
Monitoring
Compliance
Other

Severity levels (2)

Level 0 No error occurred
Level 1 No harm for the patient
Level 2 Increased monitoring
Level 3 Change in vital signs or additional laboratory monitoring but no harm for the patient.
Level 4 Need for drug treatment or increased length of stay.
Level 5 Permanent harm.
Level 6 Contribution to the death

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Table 4. Description of errors with severity greater than 1 in the evaluation

Error	Type according to ASHP	Severity level
Morphine 30 mg instead of 40 mg	Dose	2
Indomethacin dispenssed with 90-minute delay	Time	2
Tolbutamide instead of paroxetine	Prescription	3

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Table 3. Error analysis by severity level

Severity level	Evaluation		Reevaluation	
	n	%	n	%
1	55	6.4	30	3.5
2	2	0.2	0	0
3	1	0.1	0	0
	(χ^2 Yates = 9.4		p =0.002)	

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Conclusions

1. The error rate decreased significantly from 6.8% a 3.5% after aplying corrective measures. These results are in the low levels found by others authors.

2. During the evaluation phase, two level 2 errors and one level 3 error were detected. In the reevaluation phase, there were no errors with a severity level of greater than 1.

3. Fewer errors were found in prescriptions that were entered by computer.

4. This study has led to the establishment of a system to obtain an annual medication error rate for use as a clinical quality indicator.

5. One limitation of the study is that there were no independent observers; nevertheless, it has been useful to increase the awareness of the personnel involved of the need to advise the most serious errors, wich are difficult to detect by observation in small samples.

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2. Hartwig SC, Denger SD, Schneider PJ. Severity-indexed incident report-based medication error reporting program. *Am J Hosp Pharm.* 1991; 48, 2616.

3. Allan EL, Barker KN. Fundamentals of medication errors research. *Am J Hosp Pharm.* 1990; 47:555-71.

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1.67 for CIVAS. Sensitivity analysis of best and worst staff mix ranged from 4.0:1 to 2.3:1 always in favor of CIVAS. Cost avoidance was dollar 6,700, giving an annualized total of dollar 70,000. Penicillins, cephalosporins, metronidazole and gentamicin accounted for 49 percent of cost avoidance. Pediatric CIVAS is significantly more cost effective than ward based preparation.

3213309

PRESCRIPTION BENEFITS MANAGEMENT: MANAGING CARE AND COST

Cano, S. B. (Fallon Healthcare System, 25 Winthrop Street, Worcester, MA 01604, USA) (Abstract of Meeting Presentation)

ASHP Midyear Clinical Meeting **30:**PI-05 (Dec) 1995

English

The evolution of integrated health care systems, concurrent with the growth of managed care, is being driven by a marketplace requirement to improve quality and lower costs. In this context, the value of the prescription benefit will continue to receive significant attention. One approach to optimizing the value of the pharmaceuticals is to utilize a prescription benefits manager (PBM). Currently, PBMs utilize fundamental strategies such as purchasing discounts, formularies, and generic substitution to minimize the costs associated with the prescription benefit. In the future, PBMs may manage therapy and outcomes through a disease-focused approach involving integrated data-links. Pharmacists will play a pivotal role as the interface between PBMs and integrated health care systems develops.

Learning objectives: 1. Discuss the rationale for providing a prescription drug benefit to managed care enrollees. 2. Define the terms disease management and outcomes management. 3. Propose mechanisms by which integrated health care systems and PBMs may interface in the future.

Self-assessment questions: 1. An increase in use of prescription drugs will contribute to an overall increase in health care costs. 2. In disease management programs, patients will be taking a more active role in their care. 3. PBMs can serve as a rich source of data by which to measure and manage outcomes.

Answers: 1. (F), 2. (T), 3. (T).

3213310

PROMOTING THE COST EFFECTIVE USE OF ACE INHIBITORS AT A VA MEDICAL CENTER

Kicklighter, C. E. (VA Medical Cntr. (119), 1055 Clermont St., Denver, CO 80220, USA) and Hendrickson, J. R. (Abstract of Meeting Presentation)

ASHP Midyear Clinical Meeting **30:**P-517(R) (Dec) 1995

English

The goal of this study is to determine the most cost-effective use of the currently available ACE inhibitors at the Denver Veterans Affairs Medical Center. This study focuses on patients who previously have been on captopril or benazepril for either hypertension or congestive heart failure. Patients on captopril will be converted to benazepril or fosinopril. Outcome measures will include compliance, number of clinic visits required for titration and monthly drug costs before and after the conversion. Patients on twice to three times a day benazepril will be converted to fosinopril. Monitoring parameters for all patients include blood pressure, renal function, and exercise tolerance. After patients are successfully converted through a pharmacy managed ambulatory care clinic, they will continue to be followed by their primary care provider. Data is collected on each patient that attempts conversion. Results will be presented on the effectiveness of this drug regimen modification and can be extrapolated to patient populations similar to the Denver Veterans Affairs Medical Center.

3213311

PUTTING DATA TO WORK: DISEASE MANAGEMENT IN A MANAGED CARE ENVIRONMENT

Edgren, B. E. and Diversified Pharmaceutical Services, 3600 W. 80th St., Bloomington, MN 55431, USA (Abstract of Meeting Presentation)

ASHP Midyear Clinical Presentation **30:**PI-121 (Dec) 1995

English

Disease Management (DM) is possibly the most overused, least understood term in managed care today. Everything from last year's value-added program to clinic-based patient care are in the category called Disease Management. This presentation will review the PBM perspective of Disease Management: where we've been, where we're headed and the diversified experiences from the field.

Learning objectives: At the conclusion of this session the participants will be able to: 1. Define the scope of Disease Management in the managed care marketplace. 2. Differentiate Disease Management programs based on market share, utilization, outcomes. 3. Identify three reasons MCOs should be interested in Disease Management.

Self-assessment questions: 1. Disease Management is a process-oriented use of patient generated information. 2. Disease Management is an innovative way to market drugs to MCOs. 3. MCOs view Disease Management as activities they're already doing. 4. The major issues facing Disease Management implementation are: (a) Patient confidentiality; (b) MD network issues; (c) Coordination; (d) All of the above;

Answers: 1. (T) 2. (T) 3. (T) 4. All of the above

3213312

QUALITY CONTROL OF THE DRUG ADMINISTRATION OF A GENERAL HOSPITAL

Lacasa, C. (Hospital de Barcelona, Diagonal 660, 08034 Barcelona, Spain), Roure, C., Martinez, J. and Cot, R. (Abstract of Meeting Presentation)

ASHP Midyear Clinical Meeting **30:**INTL-02 (Dec) 1995

English

The aim of this report is to evaluate the safety of the drug administration of a 356 bed general hospital, using a system of unit dose, which is fully computerized and incorporates order entry by doctors, monitoring by pharmacist and medication administration record. Initially, 839 observations were done of 12 hospital units; 57 (6.8 percent; CI 95 percent; 5.1-8.5 percent) were errors according to ASHP, 3 (0.3 percent) of which warranted monitoring of the patient. Corrections were made and applied by staff members. On reevaluation, 841 observations, 35 (4.16 percent; CI 2.33-5.99) were errors and none warranted monitoring. Thus the number of errors of the initial evaluation (ji2=2.7, p=0.05) was significantly reduced and the effectiveness of the measures taken was shown.

3213313

QUALITY OF LIFE ASSESSMENT OF PATIENTS RECEIVING GRANISETRON AND ONDANSETRON PRIOR TO AND AFTER CHEMOTHERAPY

Bernstein, G. (Elmhurst Memorial Hospital, 200 Berteau Avenue, Elmhurst, IL 60126, USA), Colgan, K., Martz, C., Dempsey, C. L., Shillington, A. C., Farley, P. A. and Jewell, M. A. (Abstract of Meeting Presentation)

ASHP Midyear Clinical Meeting **30:**P-46(B) (Dec) 1995

English

The purpose of this prospective study is to evaluate and compare quality of life scores of patients administered 5-hydroxytryptamine 3 antagonist agents (i.e., granisetron and ondansetron) using the Functional Living Index and Emesis (FLIE) in six Midwest cancer centers. The FLIE questionnaire is a self-administered tool, given to 150 outpatients on high and moderately high emetogenic chemotherapeutic regimens prior to, and 72 hours post chemotherapy. Results from the FLIE will provide a patient's perspective when evaluating possible differences between two drug therapies including dose and route and their impact on quality of life. The results from this study will be used to assist in developing treatment guidelines for chemotherapy induced nausea and vomiting.

3213314

SHIFT TO DISEASE MANAGEMENT PROVIDES AN OPPORTUNITY FOR THE PRACTITIONER AND MANUFACTURER

Hurtado, K. R. (Schering Corporation, 2000 Galloping Hill Road, Kenilworth, NJ 07033, USA) (Abstract of Meeting Presentation)

ASHP Midyear Clinical Meeting **30:**PI-92 (Dec) 1995

English

Disease Management is the vogue new concept that is over used but not well understood. Disease Management can be defined as an integrated system of implemented interventions, measurements, and refinements to current processes of care designed to optimize clinical and economic outcomes within a

30th ASHP MIDYEAR CLINICAL MEETING PRESENTATION ABSTRACTS

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