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Analysis of the Indian Health Service Prescription Cost Sur vey for Fiscal Year 1996

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Abstract

The objective of this study was to determine the costs associated with outpatient prescription dispensing in the Indian Health Service (IHS), and to compare these costs to national figures. The study began as a written survey sent out to chief pharmacists in five IHS Areas: Albuquerque, Navajo, Oklahoma, Phoenix, and Portland. Participant pharmacists were asked to report a variety of costs, including facilities maintenance, telecommunication expenses, and salaries. Patient volume data were also collected. Data obtained were compared to the 1997 Searle-NCPA Digest data for pharmacies filling 200 or more prescriptions daily.

Total IHS average prescription costs were $753,637, or 52% less than the Digest average. Average IHS non-drug expenses were $479,709, or 28% less than Digest average of $669,197. Total costs were $1,233,346, or 45% less than Digest average of $2,226,276. Total annual average prescriptions were 81,201 vs. 91,820 for Digest average. Total average per prescription costs are, therefore, $15.19 for the IHS pharmacies compared to $24.24 for the Digest national average. Limitations and implications of the data are discussed.

Introduction

In August 1997, the Indian Health Service (IHS) Pharmacy Business Committee (PBC) initiated a prescription cost survey to determine the IHS cost of prescription dispensing. Its purpose was to determine costs associated with outpatient prescription dispensing and to compare the findings to generally accepted national data. The reasons for initiating such a survey were several. First, the information gathered would be used by the PBC to serve as a management planning tool. Second, the IHS accounting system does not provide a cost report associated with outpatient prescription dispensing, so this financial information was unknown. Third, pharmacists throughout IHS could use this information for financial evaluation at their practice sites. Lastly, this information would be available for tribes,should they request an evaluation of outpatient prescription services.

Methodology

A written survey went out to fifteen IHS chief pharmacists in five IHS Areas: Albuquerque, Navajo, Oklahoma, Phoenix, and Portland. Twelve of the fifteen pharmacists from a diverse sampling of IHS facilities responded. The instructions asked the participant pharmacists to collect data from

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specified IHS reports, to provide for consistency in data reporting. All data collected reflect activities from fiscal year 1996 (FY96).

Each participating facility supplied their own data. The FY96 total annual outpatient drug costs, the total number of outpatient prescriptions filled, and the number of weekly outpatient pharmacy hours of operation were taken from the annual IHS Pharmacy Report. The pharmacists also listed other related pharmaceutical costs. These items reflect associated prescription costs such as vials, bottles, computer labels, bags, etc. Also included were pharmacy-distributed patient medication aids such as specialty pillboxes, oral syringes, and insulin supplies. Computer costs other than from the Resource and Patient Management System (RPMS) and any references used to aid dispensing were also reported. Any other associated items not included above were incorporated into their survey response.

Internal costs were identified. Collected from each facility's IHS Hospital and Clinic (H&C) 0101 Report, annual costs for housekeeping, facilities and grounds maintenance, and utilities were obtained. Next, the total square footage of each facility and the square footage of the outpatient pharmacy were reported. Their service unit's maintenance department provided each facility's measurements. Annual costs for these items were calculated on the basis of the proportion of space occupied. Rent expense was not included in this report. Recurring telecommunication expenses and the management information systems (MIS) site manager's time dedicated to pharmacy were included as well. Outpatient pharmacy personnel salaries and benefits from the H&C 0101 were also reported.

Each facility provided their patient volume data. From the IHS 1A Report, each Area provided the number of outpatient provider visits (OPV) and the number of primary care provider visits (PCPV) for FY96. Each facility's medical records department provided the participating pharmacists with the number of active charts. For consistency in reporting, the number of active charts was defined as those charts active during the prior three-year period.

All the provided data were then converted into costs. A mean was determined to report the average FY96 IHS costs for the twelve responding pharmacies. This information was then compared to the 1997 NCPA-Searle Digest (formerly known as the NARD-Lilly Digest). The Digest was selected for comparison because it is considered by the pharmacy profession to be the best source of pharmacy financial information in the United States.[1] It was first published in 1932 by Eli Lilly and Company, and has been published annually ever since, even though the publication is no longer affiliated with Lilly. The 1997 Digest figures reflect information collected from calendar year 1996, collected from independent US pharmacies that filled 200 or more prescriptions daily. The Digest report reflects averages for respondent pharmacies in this prescription volume range.

This data group was selected for comparison for three reasons. First, most mid- to large- sized IHS facilities fill more than 200 prescriptions daily (although not all surveyed IHS facilities have that large a daily prescription activity profile). Second, non-government pharmacies with large prescription volumes tend to have better economies of scale. Third, many state Medicaid programs allow for prescriptions to be dispensed as only a one-month supply. The Digest pharmacies report an overall 73% prescription volume based on state Medicaid and other third party reimbursements.[2] It is assumed, then, that almost three-quarters of their prescriptions were dispensed as a one-month supply. Since most IHS facilities fill to the next appointment, the average IHS medication quantity is a two to three month supply of medications. It is assumed that any price break received by government contract pricing is offset by the medication quantity the IHS dispenses.[3]

Adjustments were also made to make the Digest information comparable to the reported IHS data. The Digest reports their prescription costs and volume in terms of sales. Since the Digest is a financial analysis publication, it recognizes that retail pharmacies are a for-profit business. As a government agency, the IHS does not sell prescriptions. Therefore, a comparison could not be made between the Digest sales and IHS costs. To make the information relevant, calculations were made to determine cost of prescriptions for both groups. The Digest prescription cost was calculated by taking the Digest's reported Cost of Goods Sold, less the value of non-prescription inventory at cost, multiplied by the inventory turnover rate.[4] The non-prescription inventory cost was subtracted because the IHS does not sell over-the-counter (OTC) items; therefore only the prescription items costs were calculated.

Total expenses were also identified. Ten of the twelve participant IHS facilities reported their other related drug costs, internal costs, personnel salaries and benefits, and all other expenses. A mean was calculated for those reporting facilities. The Digest reports expenses of other related drug costs, utilities, computers, and all other expenses. Since rent was excluded by the IHS facilities, the Digest average rent expense was subtracted for purposes of consistency.

Table 1. Comparison of IHS and Digest pharmacy cost data

	IHS Average	NCPA-Searle Digest	% Difference†
Total Costs	$1,233,346	$2,226,276	45%
Total Rx Costs	$753,637	$1,557,079 (calculated)	52%
Cost/Rx	$9.28	$16.96 (calculated)	45%
Rx Cost/Active Chart	$33.51	Not available	
Rx Cost/OPD Visit	$11.43	Not available	
Rx Cost/PCPV	$17.64	Not available	
Rxs/Hour	30	27.1	-10%
Rxs/Day	222.5	>200	
Total Rxs	81,201	91,820	11%
Square Footage	1,139	4,929	77%
Hours/Week	49	65	24%

† Positive percent indicates the IHS figures are lower; negative percent indicates the IHS figures are higher. % difference is calculated as: $\frac{\text{Digest} - \text{IHS}}{\text{Digest}}$

Results:

The total average prescription costs per pharmacy for the IHS in FY96 was $753,637, as compared to the Digest average of $1,557,079. This is a significant 52% difference in prescription costs between the IHS and the national average. The IHS reported $479,709 as the average total non-drug expense per pharmacy. The reported Digest average was $669,197. This reflects a 28% difference in the overall non-drug expenses between the IHS and the Digest pharmacies. Adding the average total drug and non-drug expenses, the IHS total cost is $1,233,346 while the Digest figure is $2,226,276. The IHS total cost is 45% less than the national Digest average. Table 1 summarizes these and other data referred to in this discussion.

The FY96 average total number of prescriptions per IHS reporting facility is 81,201, approximately 11.6% lower than the Digest average of 91,820. Five of the reporting IHS pharmacies were smaller facilities that filled less than 200 prescriptions per day, which may account for the lower prescription volume. However, all IHS facilities, regardless of size or volume, use a prime vendor contract to purchase pharmaceuticals. Therefore, it is assumed that the drug prices are the same for each IHS facility. The average cost per prescription for the IHS is $9.28, which is 45% less than the Digest average cost of $16.96.

The number of prescriptions processed per hour was compared. IHS facilities average 30 prescriptions per hour, whereas the Digest average is 27.1. IHS fills 9.7% more prescriptions per hour than the national average.

In terms of space, the square footage of the average pharmacy in the Digest report is 4,929 sq. ft., while the IHS reports an average 1,139 sq. ft. The Digest relates square feet in terms of area and sales. It does not report a breakdown of the area represented by prescription, over-the-counter, storage, or other functions.

Last, the average number of hours of operation per week was compared. For IHS pharmacies, the average is 49 hours per week; the Digest reports 65 hours per week, reflecting a difference of 24.6% fewer hours open at IHS facilities compared to Digest facilities. The Digest reports the number of hours open with no allocation of pharmacists' time. Most IHS facilities dedicate one half day per week to the pharmacists' administrative time for associated pharmacy activities. In addition, most of the field facilities were not open on the weekend, which is reflected in the lower overall IHS average.

Conclusion

This report is the first of its kind to compare the IHS to national pharmacy data using the NCPA-Searle Digest. This report provides information for the IHS to consider when analyzing pharmacy financial data. The focus of this report encompasses those outpatient pharmacy-dispensing activities delineated by the third of the IHS Pharmacy Standards of Practice, "to assure the availability, preparation, and control of medications."[4] It does not reflect inpatient hospital pharmacy costs, nor does it look at the value of the other pharmacy services provided by the IHS Standards of Practice. These value added services include pharmacists' assuring the appropriateness of therapy; verifying that patient's understand their medications and their appropriate outcomes; providing drug information, drug therapy consultation, and staff education relating to drug therapy; providing health promotion and disease prevention activities relating to drug use and preventive drug therapy; and managing therapy for selected patients for whom drugs are the principal method of treatment.

In summary, there is a difference in costs for both prescriptions and overall costs associated with operating a pharmacy when comparing IHS to Digest facilities. The Pharmacy Business Committee was able to demonstrate that the IHS pharmacy program could perform a financial analysis of their outpatient pharmacy program. In view of the data presented, this report suggests that the IHS operates a competitive outpatient pharmacy program at substantially lower cost than the US average. □

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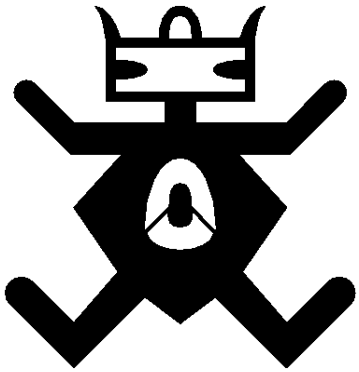

Are Antibiotics Indicated for the Treatment of Acute Otitis Media?

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In 1997, the British Medical Journal published a review of available data regarding the effectiveness of antimicrobials in the treatment of acute otitis media (AOM). This article, entitled "Antimicrobials for acute otitis media? A review from the International Primary Care Network,"[1] was distributed to Billings Area IHS providers as part of an ongoing Infectious Disease CME project. Responses from our providers highlighted some fundamental problems we will be obliged to confront.

The authors conclude that "existing research offers no compelling evidence that children with AOM routinely given antimicrobials have shorter duration of symptoms, fewer recurrences, or better long term outcomes than those who don't receive them. It also is not clear that routine compared with selective use . . . prevents complications."

Earlier this century the advent of antibiotic drugs led to widespread optimism that the scourge of infectious disease was soon to become a thing of the past. Faith in technology created the assumption that newer antibiotics could always be developed to counter emerging resistance to older drugs.

But in the late twentieth century, the bugs are winning. Hopes that wholly synthetic antibiotics like the fluoroquinolones, with no counterparts in nature, would frustrate germs' resistance mechanisms proved naive.

Every time we prescribe an antibiotic, we add a selective pressure to the microfloral environment. Germ populations in individual patients are progressively altered, as are those in our species as a population. Excreted and discarded antibiotics are flushed into sewers, where a broader ecological transformation occurs. That enthusiastic antibiotic use makes a major contribution to this microbial evolution is nowhere more apparent than in hospitals, where nosocomial infections take a heavy toll in money and lives.

Physicians, however, must deal with individual cases, weighing the cost to society against the well-being of the individual patient. We naturally tend to side with the individual; but this article suggests that our very notions of what constitutes the individual good may be misguided. If a patient's well-being is not safeguarded by antibiotics, then the supposed conflict with social responsibility disappears.

Reluctance to forego routine antibiotic use in AOM might arise from the conviction that it represents a "safer" approach to treatment of the individual, even when the provider might concede the hazards of antibiotic overuse in the population taken as a whole. There is also a common perception that most worried parents will not be satisfied with anything "less than" antibiotics.

It seems probable that bacterial AOM is both over diagnosed and over treated in this country. This is only one aspect of a much broader problem. The routine use of antimicrobials is deeply ingrained in our medical and lay cultures. If we do not undertake to alter this course, we might well see our children succumbing to diseases we "conquered" decades ago. As individual providers and as an organization, we must assume responsibility for considering this issue every time we confront a decision involving antibiotic usage. If our practices do not evolve, the bugs most certainly will.

For every gorillacillin, there is a Godzillabacter. □

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Lead Screening of Native American Children: Targeted or Universal?

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Background

Although current studies continue to demonstrate a decline in the prevalence of elevated blood lead levels (BLL) in children, lead remains a common, preventable, environmental health threat. From the recent results of the National Health and Nutrition Examination Surveys (NHANES III Phase 2), it is estimated that 890,000 children (4.4%), ages 0-5, have elevated blood lead levels (>10ug/dl). "These levels continue to vary markedly by age, sex, race/ethnicity, urban status, income, and other socioeconomic factors. Blood lead levels were consistently higher for younger children than for older children . . . for males than for females, for blacks than for whites, and for central city residents than for non-central-city residents. Other correlates of higher blood lead levels included low income, low educational attainment, and residence in the Northeast region of the United States."[1]

In 1997, the Centers for Disease Control and Prevention (CDC), as well as the American Academy of Pediatrics (AAP), revised their policies toward lead screening of children. Based upon data from lead screening studies and cost benefit analyses of universal screening, the CDC and the AAP recommend a targeted screening methodology, utilizing history questionnaires with appropriate blood assays, rather than universal screening of all children. The purpose of the revision was "to help states and communities expand screening and follow-up of children who most need these services and limit screening among children who are not exposed to lead."[2] In addition, it will be the responsibility of state and local health officials to decide on the detailed screening criteria, with the advice of health care providers and other concerned groups.

Recently, the Indian Health Service (IHS) has been asked to reevaluate its Lead Screening Policy for Native American Children by the Environmental Protection Agency (EPA) to determine whether targeted screening or universal screening is more appropriate in Indian Country. IHS currently adheres to a policy that does not dictate targeted or universal screening of lead in Indian children but defers to other knowledgeable agencies. IHS recommends that the service units (SU) design plans and protocols that will be utilized in conjunction with the standards and guidelines established by the AAP and the individual state's Early and Periodic Screening, Diagnosis, and Treatment Programs.[3] In addition, IHS recommends the use of the AAP's Recommendations for Preventative Pediatric Health Care. To determine which screening procedure is most applicable, this review will examine the current childhood lead screening practices within the past five years and recent BLLs studies of Native American children occurring in the 12 IHS Areas.

Methods

Most IHS Area Offices report prevalence data from BLL studies of Native American children within their Areas. By using the 1997 Native American Child Population Data, an estimate number of children with elevated BLLs was calculated for the same age groups as are used in the submitted IHS Area lead studies. It is assumed that divergence in numbers for child population data from 1997 and that of the time periods used in the individual Area BLL studies would not heavily impact calculated estimates. It must be noted that since there have been no IHS-wide BLL studies, estimates can only be calculated.

Results

Of the twelve IHS Area Offices, six submitted data. After determining the prevalence of elevated BLL in the studies, it was observed that the Portland Area had a prevalence of 5.75%, which was above the national level (4.4% in NHANES III Phase 2). The Oklahoma City Area had reported a 32% prevalence of children with elevated BLL on initial analysis (TEAL Study). Currently, the Oklahoma City Area reports that the level as been reduced to 4% (screening approximately 30 children a month) through increased lead education and primary prevention practices. All other IHS Area lead studies reporting prevalence data yielded values below the national level.

Discussion

With the estimated 890,000 children (in the general US population), ages 0-5, with elevated BLL, a very controversial debate ensues over the most appropriate method of screening children for lead, whether targeted or universal. Proponents of universal screening contend that targeted screening in certain locations would not only miss a large portion of children not residing in that locale but further isolate the disease. In addition, targeting regions with a higher prevalence of older housing does not cover older housing scattered in other areas.

Targeted screening by demographics could potentially exclude environmentally exposed children, while targeted screening using the CDC's 1997 questionnaire lacks symptom-specific questions associated with lead toxicity, and it may not be utilized by practitioners anyway, due to time constraints. Proponents of targeted screening declare that universal screening will waste resources in areas that lack a significant exposure to lead and will reduce these resources available in locations of greatest need, namely high lead exposure areas.

The cost of screening appears to be a major consideration in deciding which method to utilize. Universal screening is economically beneficial in communities where the prevalence of elevated BLL is at least 11% to 17%.[4] In areas with lower prevalence, universal screening may be inefficient and targeted screening preferred.

Conclusion

In reviewing the data from studies in the IHS Areas, it is reasonable to conclude that the low prevalence of elevated BLL does not warrant a revision of the current IHS lead policy to institute universal screening in Indian Country. From the cost analysis studies, it would appear that the IHS would benefit more by utilizing a targeted screening methodology rather than a universal one. This is not to say that universal screening is not needed at all. IHS still needs to maintain universal screening, as recommended in the 1997 CDC guidelines, in areas known to have a lead problem, either environmental or household. Not all IHS Areas submitted lead screening study data, thus data are incomplete for Native American children served by the Indian Health Service. In addition, most of the data relate to children in reservation settings and do not necessarily apply to Native American children in urban settings. To determine the true need for revising the current policy for lead screening, lead in urban settings needs to be addressed, as does the design and implementation of a scientific lead screening model. Only estimates and assumptions could be made from the data gathered.

With cost analysis studies favoring targeted screening, and because current data from lead screenings in Indian Country indicate a prevalence near the national level, the Indian Health Service should maintain its current policy until such time as there is evidence suggesting and need for change. □

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IHS Staff Development Council

The Indian Health Service (IHS) Staff Development Council is a nationwide group of nurse educators and staff developers employed by the IHS, tribal programs, and Urban Indian programs. The Council's goals include: 1) sharing resources and information, 2) networking with colleagues, 3) collaborating on educational activities, 4) meeting the learning needs of staff developers/nurse educators, and 5) identifying JCAHO criteria regarding competency.

If you are involved in staff development or nursing education, please consider this as your invitation to participate in our recently developed web site and to join us at our next annual meeting.

Through the web site, you can learn more about us and you can communicate with other staff developers and nurse educators on the bulletin board. Our web site is at *http://www.ihs.gov/NonMedicalPrograms/NursingEd.*

Our next annual meeting will be hosted by the IHS Albuquerque/Navajo Area Association of Nurse Educators (NAAASE). The meeting will be held in Albuquerque, New Mexico on June 15 and 16, 2000, in conjunction with the annual conference of the IHS National Council of Nurse Administrators (NCONA).

During our annual meeting, we conduct a business meeting and offer continuing education on topics of interest to staff developers and nurse educators. Topics from past meetings have included "Developing a Competency Program," "Developing a Web Site," "Conflict Resolution," "Measuring the Impact of Training," and "Developing a Nurse Leadership Training Program." We are in the planning stages now for the June 2000 meeting and would like your input regarding topics for the agenda. Please submit any ideas by posting them on the bulletin board of our web site (see address above) or by submitting them directly to Todd Benson, RN, Nurse Educator (and Chair of NAAASE), Fort Defiance Indian Hospital, PO Box 649, Fort Defiance, AZ 86504; phone (520) 729-3265; e-mail *tbenson@navfda.navajo.ihs.gov.* □

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