


We need to teach pharmacy students to become part of the institution they work for. The institution is the hospital or clinic they work for, but more importantly it is pharmacy. They need to communicate commitment.

We need to communicate to them that we work hard to preserve our traditions, our accomplishments, and their future. They will soon be expected to do the same. Do they know how to communicate that to others. We need to spend time in our curriculum teaching students what to communicate to advance the profession.

We need to take an active role in what the institution does. We need to demonstrate that we are a team member.



How do we become better at communication?

λ Changes for the teacher


- Become a facilitator for learning
- Become a resource for students
- Serve as a model practitioner
- Adopt a case based instruction model

Communicate practice!

Do yourself what you would have your peers do.

Serve as a model for someone else.

Communicate by doing.



**How do we become
better at
communication?**

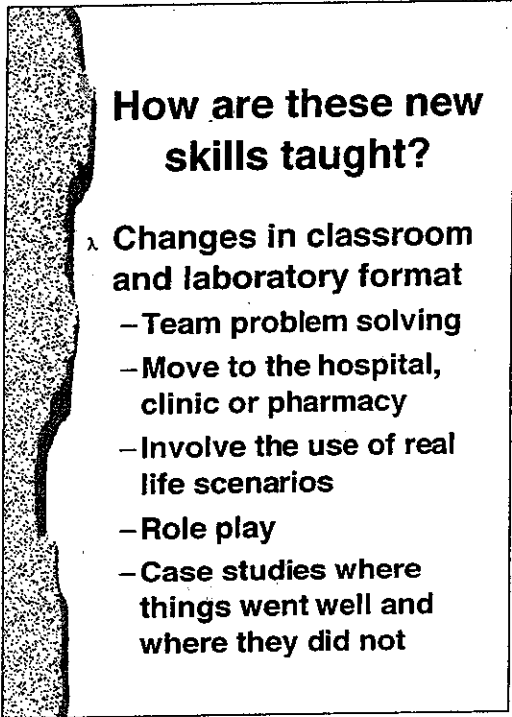
Changes for the student

- Active participation in the learning
- Learn by doing
- Learn to set goals and self assess
- Learn from peer review
- Develop and use interaction with other practitioners, patients and families

Students have responsibility in becoming good communicators.

Not only are students asked to perform tasks. Students are asked to learn developed behaviors that model professional pharmacy practice.

Students should learn by doing.



How are these new skills taught?

- λ Changes in classroom and laboratory format**
 - Team problem solving**
 - Move to the hospital, clinic or pharmacy**
 - Involve the use of real life scenarios**
 - Role play**
 - Case studies where things went well and where they did not**

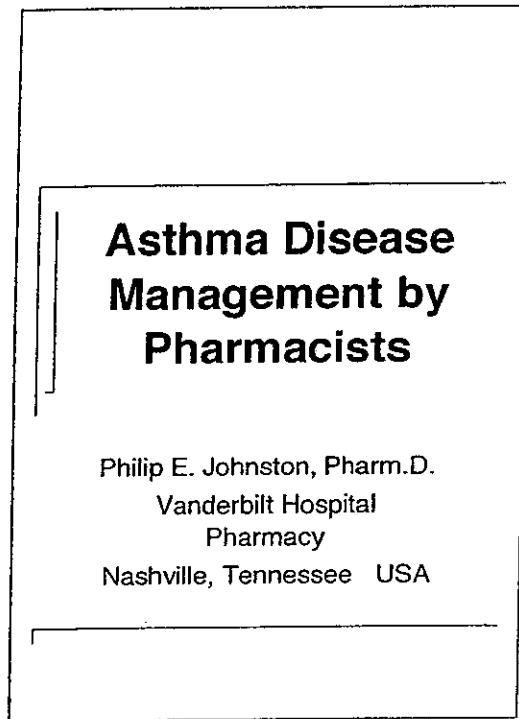
Measure the competency and behavior of the learner, not the facts they know.

Use these examples to develop the communication skills you want the pharmacist to know.

Asthma disease management by pharmacists

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Greetings from Nashville Tennessee and Vanderbilt University Hospital.

It is a distinct honor to be with you here today.

The title of the presentation today is Asthma Disease Management by Pharmacists.

Purpose of this Presentation

- √ Outline asthma impact in the USA
- √ Review the role of the pharmacist
- √ Asthma project completed at Vanderbilt University Hospital

The purposes of this presentation are to:

1. Outline the impact asthma has on health care in the USA
2. Review the role of the pharmacist in managing asthma, and
3. Review a pharmacy project on an asthma from Vanderbilt University Hospital

Asthma in the USA

- √ 12 million Americans
- √ 15 million physician visits
- √ 479,000 hospitalizations
- √ 1.2 million emergency room visits
- √ 10 million missed school days
- √ \$3.6 billion a year in direct costs and 2.6 billion in indirect costs

Asthma is a serious disease in America. There are substantial direct health care costs involved.

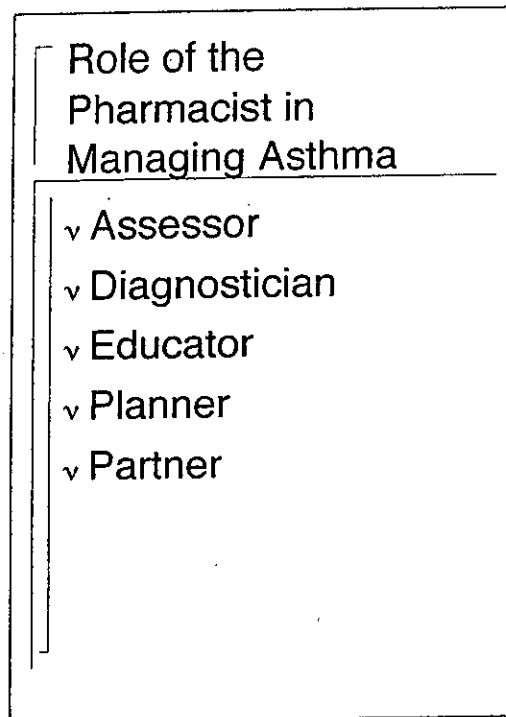
There are additional indirect costs involved, when you consider days missed from work, and inability to work in later stages of the disease.

The annual costs are listed here in dollars. My estimate is that this amounts to approximately 421 billion yen and 304 billion yen respectively for direct and indirect costs.

Obviously, there is an opportunity to improve this situation.

Pharmacists in America see asthma management as a significant opportunity which will give them job satisfaction, and will improve the general health of the public.

Some insurance companies and managed care organizations are paying pharmacists to manage asthma patients.



What does the pharmacist do as a manager of asthma?

The pharmacist assesses the patient's current situation to determine what factors can be improved, including medications, the home environment, and habits of the patient.

The pharmacist is a diagnostician, in that the pharmacist can detect problems as they occur which may worsen the patient situation. This could include adverse drug reactions, non-compliance or other issues.

The pharmacist is an educator, advising the patient about the disease they have, instructing how to dose medications appropriately, etc.

The pharmacist is planner. Many times the pharmacist finds themselves working with patients over a number of weeks, building their skills, their confidence, and at times self-image of the patient.

And, the pharmacist works as a partner. Many times we find the patient with asthma needs someone to motivate and encourage them to participate in the management program. The patients need someone who takes interest in improving the health status of the patient, and can show them that they can feel better.

Vanderbilt Experience

- v Studies support
 - **use comprehensive, frequent contact**
- v Goals of *this* study:
 - **reduce emergency room visits,**
 - **reduce urgent care visits,**
 - **reduce hospitalizations,**
 - **reduce overall costs, and**
 - **improve quality of life**

At Vanderbilt we wanted to determine if a pilot pharmacist management program would work.

We knew from the literature that when asthma patients were offered a comprehensive program, and had frequent health care contact, they improved. They improved their compliance, their health, and their outlook.

The goals of our small project were numerous and aggressive.

Our hope was to identify some of the most costly patients in our population, and offer them as many aspects of care as we could.

Our goals were to reduce visits to the emergency room, to the clinic, and to the hospital. In addition, we hoped to decrease overall costs, and to improve quality of life.

Vanderbilt Experience Patients

- √ **18 to 70 yo (mean 37)**
- √ **Diagnosis of asthma**
- √ **At least one emergency urgent or hospitalization visit in past 12 months**
- √ **Accessible by telephone**
- √ **Able to participate six months**
- √ **Primary care physician agreement**
- √ **No life threatening illness**

Patients were identified by practitioners in the emergency department and by the co-investigator in the study.

The patients ranged from 18 to 70 years of age with a mean age of 37.

All had a diagnosis of asthma at the beginning of the study.

Every patient had been in the emergency room, an urgent visit, or hospitalization visit during the 12 months prior to the study.

All patients were required to have telephone access, and pledged to participate for six months.

Each patient's primary care physician agreed to their patient participating.

The patient must not have any other life threatening illness.

Vanderbilt Experience Methodology

- √ **Prospective**
- √ **15 patients, 5 moderate 10 severe; served as own control**
- √ **QOL measured at time 0, - 2 months, 4 months**
- √ **15 - childhood asthma**
- √ **15 - at least two triggers and on a bronchodilator and inhaled corticosteroid**
- √ **13 of 15 - care plans for poor**

At the beginning of this prospective there were 15 selected patients, 5 with moderate disease and 10 with severe disease.

Each patient's quality of life was measured at the beginning of the study, at two months, and at four months. A quality of life measurement measured several aspects of life that effect the asthma patient. We will discuss these later.

All 15 were diagnosed with asthma as children, had at least two "triggers" (antigens, particles, etc) that stimulate an asthma event or "attack". 15 were already on a bronchodilator and an inhaled corticosteroid.

13 of the 15 were in managed care plans funded by the state.

Vanderbilt Experience Methodology cont'

- v **Initial visits (1 to 2 hours)**
 - Home (5) or clinic
 - Peak flow meter, an spacer, and calendar
 - Completed a quality of life questionnaire
 - Patient history
 - Education about asthma
 - Questions from patients
 - Recommendations
 - Agreements by patients to monitor and record

The initial visit by the pharmacist was very important and was a very involved one. As you can see on the slide, the pharmacist collected a lot of information, taught the patient, and determined what the most difficult issues were with the patient.

All patients were given a "spacer" to aid in the administration of their metered dose inhalers.

Patients were also given a record to keep during the six months.

Vanderbilt Experience Methodology cont'

Initial visits included:

- Medication types
- Handling side effects of medications
- Use and care of inhalers, etc
- Peak flow monitoring
- Use of the meter
- Records
- Demonstrations
- Goals of management
- Structure and function of the lungs
- Asthma definition
- Asthma episode explanation
- Warning signs
- Causes of episodes
- Prevention of episodes

By the end of the first visit, the patient had heard an extensive review of their disease, and the treatment plan for them.

In addition, the patient was introduced to many of the factors they needed to know about predicting an urgency, and what to do to prevent an urgent or emergent visit.

At the end of the first visit, the pharmacist was well aware of the challenges, and had the information to develop a treatment plan for the patient.

Vanderbilt Experience Methodology cont'

v Follow up

- (20 to 30 minutes)
- Telephone calls every two weeks
- Diary results discussed
- Regimen adjustments made
- Recommendations to the patient and physician
- Contact was more frequent when needed

The pharmacist was aware that the patients were not going to be able to meet all the goals set for them after just one visit.

Follow up telephone calls were scheduled every two weeks. However, if the patient needed the pharmacist, they could call at other times.

During the calls, the pharmacist discussed the patient's diary, adjustments in the patient's medication, and recommendations.

Patients mentioned many times that they were glad they could talk with someone whenever they needed to. Some of the calls prevented the patient from having to seek other medical services.

Vanderbilt Experience Methodology cont'

√ **Tools**

- **Asthma Quality of Life Questionnaire**

- √ **Activities**
- √ **Symptoms**
- √ **Emotional functions**
- √ **Environmental
exposure**

The quality of life questionnaire is a number of questions used to evaluate the patients activities of daily living, their incidence of symptoms, how they function emotionally, and their environment.

The set of questions is designed to allow the person evaluating it to know the positive and negative influences on the patient.

Vanderbilt Experience Methodology cont'

√ Tools continued

- Patient History Questionnaire
 - √ Family and social history
 - √ Environmental status
 - √ Triggers
 - √ Warning signs
 - √ Asthma management
 - √ Patient's perception of asthma
 - √ Patient's management effectiveness
 - √ Patient's knowledge of asthma
 - √ Asthma's effect on the patient and family

Another questionnaire was administered for the patients.

The pharmacist sat with the patient and asked about the living arrangements, pets, the patient's management of an acute episode, and the patient's knowledge of asthma.

I have with me a list of many of the questions the patient's were asked if you wish to see them after the presentation.

Vanderbilt Experience Methodology cont'

v **Statistical Analysis**

- **Domain mean scores at baseline, two months, and four months**
- **Repeated measures analysis of variance for each domain at each time period**
- **F-value significance based on one group**
- **Paired t-test to compare domain mean scores at each time period**

I will not be reviewing all of the statistics and analysis techniques in this short presentation.

However, mean scores, and other analysis, for quality of life measures rose to statistical significance at the four month time, and remained at that level for the remainder of the study.

Vanderbilt Experience Results

- √ **Activity scores - significant improvement at 4 months,**
- √ **Asthma symptoms improved**
- √ **Feelings of concern**
 - **frustration or fear all or most of the time about their asthma, but by the fourth month these feelings were experienced some to little of the time.**

Activity scores reached significance at four months, changing from totally to very limited, to moderate to some activity limitations

Asthma symptoms originally occurred most of the time, but patients experienced symptoms very little by the fourth month

Emotional feelings of concern, frustration or fear about asthma occurred all or most of the time originally. But, by the fourth month, these feelings were experienced some to little of the time.

All three domains improved!

Vanderbilt Experience Results cont'

- √ **Environmental exposure causing asthma decreased form very often to very little.**
- √ **One patient did not improve in each of the four domains, due to environmental work conditions**

Environmental exposure causing asthma decreased form very often to very little.

One patient did not improve in any of the four domains, due to environmental work conditions.

Vanderbilt Experience Results cont'

- v Utilization and Cost - six months prior vs six months of study
- v 2 emergency visits vs 37
- v 0 urgent care visits versus 34
- v 0 hospitalizations vs 9
- v \$400 cost versus \$39,300
- (46,800 yen versus 4,598,100 yen)

Costs of care dropped significantly with the pharmacists intervention and management.

Overall, the cost dropped over 90 percent. This excludes the pharmacists time however.

Even with the pharmacist involvement, costs were much less. A pharmacist's hourly rate is much less than physicians, and the pharmacist who performed this study was a resident, which was less.

If we do the study again we will calculate more of the direct and indirect costs.