

# MD Consult Improves Patient Care, Increases Physician Productivity and Cuts Health Care Costs

In today's challenging healthcare environment, healthcare institutions and physicians need an efficient, cost-effective, accurate, and authoritative medical resource, one that can improve patient care, increase physicians' productivity, and help keep down costs.

Physicians and healthcare institutions face increasing pressures on several fronts. With healthcare costs rising, they need to find ways to provide the best possible care in a more cost-effective manner. It can also be difficult for physicians to keep up with new medical findings, new procedures, and new standards for patient care. Additionally, patients are better educated about medical issues than ever before, and are demanding more information about their care and condition. Liability is an ever-present threat. All this is occurring while physicians feel as if they have less time than ever to devote to their patients.

A single medical resource can help address all these issues. MD Consult offers Web-based access to over 50 medical reference books, over 70 medical journals and clinics, MEDLINE, comprehensive drug information, clinical practice guidelines, over 6,500 customizable patient education handouts, daily personalized clinical updates, and online CME. Because it is online, it is accessible anywhere a physician has Internet access. Some of the content on MD Consult is also available via PDA for even more mobile access.

#### CASE STUDIES INSIDE:

Medical City Dallas Hospital Case Study .....	5
Medical Center in Texas Case Study .....	9

A survey conducted with physicians across the country that use MD Consult found that MD Consult increases their productivity, helps them keep current with their specialties and best medical practices, aids in the choice of diagnostic tests or therapy, and saves them a significant amount of time in their practices each week. Following are the highlights:

- **MD Consult significantly improves physician productivity.** In the survey physicians report that on average, it saves them 2.3 hours per week.
- **MD Consult improves patient care.** One hundred percent of physicians surveyed, say that MD Consult has led to better patient care.
- **MD Consult helps physicians answer clinical questions more quickly.** One hundred percent of physicians surveyed say that MD Consult has allowed them to answer clinical questions more quickly.
- **MD Consult helps with patient self-care.** Physicians report widespread use of MD Consult's ability to create customized patient handouts in several languages.
- **MD Consult helps physicians stay abreast of the most current medical practices and guidelines.** One hundred percent of the physicians surveyed say that MD Consult helps them stay more current within their specialties, and stay more current with best practices.
- **MD Consult offers significant financial benefits for health care institutions, with a very high return on investment.** In multiple case studies, MD Consult was found to have a very high return on investment (ROI), and offer substantial financial benefits to healthcare institutions. The projected five-year net benefits ranged from over \$4.5 million to nearly \$5.7 million, and the ROIs ranged from 352% to 3,776%.

## MD Consult Improves Physician Productivity and Effectiveness

Physicians surveyed found that MD Consult has improved their productivity and effectiveness, helped them with quicker and more accurate patient diagnoses, and helped them stay more up-to-date with the latest medical findings and practices:

- One hundred percent of physicians surveyed say that MD Consult helps them stay more up-to-date within their specialties, and stay more current with best practices.
- Physicians report that their use of MD Consult saves them, on average, 2.3 hours per week.
- One hundred percent of physicians surveyed say that MD Consult has allowed them to answer clinical questions more quickly. It has allowed them to answer questions more quickly in 61% of their cases.
- One hundred percent of physicians surveyed say that MD Consult has helped in the choice of diagnostic tests or therapy.
- One hundred percent of physicians surveyed say they are extremely confident in the trustworthiness of the MD Consult content.
- One hundred percent of physicians surveyed say that MD Consult is either extremely accessible or easily accessible. 70% say it is easily accessible, and 30% say it is extremely accessible.
- One hundred percent of physicians surveyed say that MD Consult is either extremely easy to use or easy to use.

◆ Dr. David Pierce of Beaverton, Oregon, says of MD Consult, "It's hard to practice medicine now without it. I rely on it all the time. In the old days, you had to rummage through multiple books, and call a consultant to get the latest information. But I don't have to do that now. I just go to MD Consult."

◆ Dr. Marc Cordova of Seattle adds, "It's a very fast and convenient tool for the practicing physician to quickly look through a variety of sources for clinical information. You can get information about the most up-to-date guidelines, treatments and protocols – even for someone who is not computer-savvy."

◆ Dr. Matti Palo of Covington, Louisiana, an orthopedic surgeon, notes that "MD Consult gives me the opportunity to find the most current literature and studies, and the most current textbooks. It offers me a basis for treatment, and a way to make sure that I'm staying current with medical practices." Dr. Palo adds that one of its greatest benefits is "being able to access it anywhere where I have Internet access. I can't take textbooks into surgery, but I can certainly review MD Consult from any hospital computer prior to a surgery case."

◆ Dr. Brett Moran, Associate Professor of Internal Medicine uses MD Consult "when I have a specific clinical question I need answered." Recently, for example, he used it to refresh his knowledge about the standard of care for Chronic Obstructive Pulmonary Disease (COPD). "I had a patient who had been put on an unusual regimen for it, and I wanted to make sure about the proper standard of care for treatment," he says. Summing up his experience with the service, he says, "I find it a comprehensive and easy-to-use resource that helps my medical acumen."

The increase in physician productivity is exemplified by the experiences of the Medical City Dallas Hospital, which found that physicians at the hospital were able to perform patient diagnoses 30% more quickly than without it.

## Improving Patient Care

The ultimate goal of any medical resource or technology is to improve patient care. A survey of physician and in-depth case studies at hospitals show that MD Consult is an especially useful tool for improving patient care:

- One hundred percent of physicians surveyed say that MD Consult has led to better patient care – a more accurate assessment, effective diagnosis, and a solution for the patient.
- Physicians say that their use of MD Consult has led to better patient care in 29% of their cases.

MD Consult is also being used as an integral part of hospital-wide efforts to offer the best medical care possible. For example, the Medical City Dallas Hospital emphasizes having its physicians practice evidence-based medicine, in which physicians diagnose and treat patients based on established treatment guidelines and case studies. At the core of this practice is the use of MD Consult, which gives physicians access to clinical practice guidelines, case studies, and other relevant materials. Because MD Consult is available from the Web, physicians have instant access to it no matter where they are located.

MD Consult is also used by physicians for medical emergencies. At Medical City, a patient in an operating room was suffering complications because of a little-known drug interaction. The Medical City librarian was contacted from surgery, and within minutes was able to find information on MD Consult about the interaction and how to combat it, and faxed it directly to the operating room. Using the information, the anesthesiologist was able to solve the medical emergency.

An important part of medical care today is patient outreach and education, and physicians and hospitals laud MD Consult's ability to create a wide variety of customized patient handouts in several languages.

Dr. Tao Sheng Kwan-Gett of Seattle, Washington frequently uses this feature. "I find the patient handouts are very useful," he says. "Because it has such a large number of handouts, I don't have to keep copies of handouts in my files. I can call up a handout when I need it and print it out."

MD Consult handouts have also been used by hospitals who are looking to improve their patient outreach programs. A medical center in Texas, for

example, was looking for a way to make it simpler for physicians to provide customized patient handouts. Because the center is located in an area with sizable English-speaking and Spanish-speaking populations, it wanted handouts that could be created in both English and Spanish. It turned to MD Consult, and the service is now heavily used by physicians to create patient handouts so that patients can be informed about self-care and follow-up care – and handouts can be easily customized and printed out in English or Spanish.

## Financial Benefits

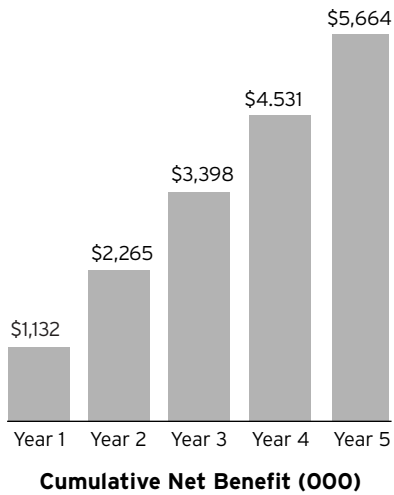
In addition to improving physician productivity and effectiveness, and improving the quality of patient care, MD Consult has very real financial benefits for healthcare institutions. In-depth financial analyses of three health care institutions found that MD Consult will yield five-year projected net benefits of more than \$4.5 million to nearly \$5.7 million each, with an annual estimated benefit per physician using MD Consult ranging from \$2,266 to \$4,580. Returns on investment range from 352% to 3,776%. The payback period in all instances was one month.

The financial benefits were made up of increases in physician productivity, who are able to see more patients per week; a reduction in the cost of interlibrary loans by as much as 50%; attracting new physicians to medical facilities, who bring with them new patients; and an increase in librarian productivity.

The following are the financial results of two healthcare institutions using MD Consult:

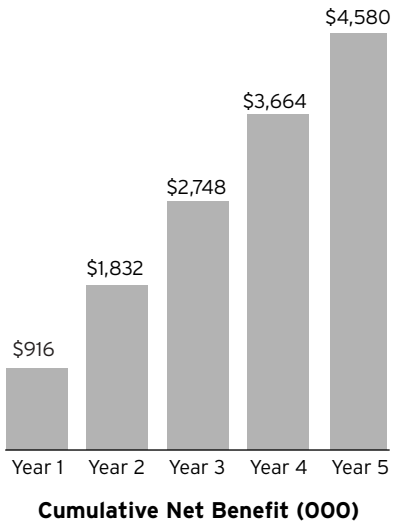
### • Medical City Dallas Hospital

By using MD Consult, Medical City Dallas Hospital will realize a projected five-year net benefit of \$5,664,519, an annual ROI of 3,776%, a payback period of one month, and an annual benefit per physician using MD Consult of \$2,266. It is able to improve patient care while increasing the number of patients physicians can see, and increase adherence to evidence-based medicine. The following chart highlights the year-by-year benefits:



• **Another Medical Center in Texas**

By using MD Consult, another medical center in Texas will realize a projected five-year net benefit of \$4,580,087, an annual ROI of 352%, and an annual benefit per physician using MD Consult of \$4,580, with a payback period of one month. The center has also been able to better educate medical residents, improve patient care through the use of informational handouts, and increase physicians' productivity. The following chart highlights the year-by-year benefits:



**Conclusion**

MD Consult increases physicians' productivity, helps them keep current with their specialties and best medical practices, helps in the choice of diagnostic tests or therapy, and saves them a significant amount of time in their practices each week. It also improves patient care, and offers substantial financial benefits to institutions that use it. In three in-depth business analyses, healthcare institutions found that MD Consult will yield five-year projected net benefits of from more than \$4.5 million to nearly \$5.7 million each, with an annual estimated benefit per physician using MD Consult ranging from \$2,266 to \$4,580. Returns on investment range from 352% to 3,776%.

# Medical City Dallas Hospital Improves Patient Care, Increases Physicians' Productivity & Reduces Costs with MD Consult

## IN BRIEF

- **Goal:** For the Medical City Dallas Hospital to improve patient care by helping physicians practice evidence-based medicine, while cutting costs and increasing physician productivity.
- **Solution:** MD Consult
- **Results:** By using MD Consult, Medical City realized a projected five-year net benefit of \$5,664,519, an annual ROI of 3,776%, a payback period of one month, and an annual benefit per physician using MD Consult of \$2,266. It was able to improve patient care while increasing the number of patients physicians could see, and increase adherence to evidence-based medicine.

## CONTENTS

The Challenge: Improve Patient Care Using Evidence-Based Medicine.....	6
The Bottom Line for Medical City .....	6
Medical City Librarian Assesses MD Consult .....	8

Medical City Dallas Hospital, a large, for-profit, urban hospital, was looking to improve patient care by increasing its physicians' use of evidence-based medicine. But because of budget limitations, having the most current reference library was not always possible. Additionally, its associated physicians are spread throughout the metropolitan Dallas area, and they could not easily access the library's resources. To solve the problem, Medical City subscribed to MD Consult. The results were improved patient care; an increase in physician productivity because they can perform diagnoses 30% more quickly; a projected five-year net benefit of \$5,664,519; an annual ROI of 3,776%; payback period of one month; and an annual benefit per physician using MD Consult of \$2,266.

NOTE: This case study was authored by the Case Study Forum. The Case Study Forum is dedicated to writing and publishing case studies for the IT community.

## Benefits

Objective	Benefits Achieved
Improve patient care using evidence-based medicine	MD Consult gives physicians access to clinical practice guidelines, case studies, and other materials that form the basis for practicing evidence-based medicine.
Improve physicians' efficiency	Using MD Consult, physicians can diagnose patients 30% more quickly, leading to an increased number of patients that physicians can see each week.
Provide a comprehensive medical library on a limited budget	With MD Consult, Medical City has a full complement of medical reference books, journals, MEDLINE, comprehensive drug information, customizable patient education hand-outs, and clinical practice guidelines, at a reasonable cost.
Provide physicians with remote access to medical information	Using Web-based access, Medical City-associated physicians throughout the Dallas area can get immediate access to all of MD Consult's resources.

## **The Challenge: Improve Patient Care Using Evidence-Based Medicine**

Medical City Dallas Hospital is a for-profit, Dallas-based hospital at which 1,250 physicians practice more than 95 medical specialties. It has 598 beds, and treats approximately 150,000 people on an outpatient basis every year.

As a way to improve patient care, the hospital emphasizes having its physicians practice evidence-based medicine, in which physicians diagnose and treat patients based on established treatment guidelines and case studies. But the hospital, like many other medium-sized urban hospitals, operates under budgetary restraints, making it difficult for its library to find the budget to pay for the necessary medical texts, journals, and other reference materials.

### **Why MD Consult was chosen:**

**“Because of budget limitations, we were not able to have as up-to-date and comprehensive a book and reference collection as we would like. But we still wanted to find ways to help our physicians practice evidence-based medicine.”**

MIRIAM MUALLEM, MLS, AHIP  
MEDICAL CITY LIBRARIAN

The physicians associated with the hospital are located throughout the Dallas metropolitan area, and even if the Medical City library had the materials that the physicians needed, it would be difficult for them to get access to it during their normal working hours.

To solve these problems, Medical City purchased a subscription to MD Consult, which offers Web-based access to over 50 medical reference books, over 70 medical journals and clinics, MEDLINE, comprehensive drug information, clinical practice guidelines, over 6,500 customizable patient education handouts, daily personalized clinical updates, and online CME.

Initially, 20 physicians registered to use the service, but word quickly spread of its benefits. Currently 270 physicians and 30 pharmacists are registered.

### **The Bottom Line for Medical City**

A detailed analysis of the implementation shows that Medical City will gain a five-year net benefit of \$5,664,519 from the service. It will yield an annual ROI of 3,776%, has a payback period of one month, and will yield an annual benefit per physician using the service of \$2,266.

The financial benefits come in large part because of an increase in physician productivity. Thanks to MD Consult, physicians have been able to cut the amount of time it takes to perform a diagnosis by 30%, and so they can see an increased number of patients each week, while still improving the quality of patient care. Because Medical City is a for-profit hospital, the more patients physicians see in a week, the greater the revenues to the hospital. And because patients are receiving better medical care, the hospital will attract an increased number of patients over time.

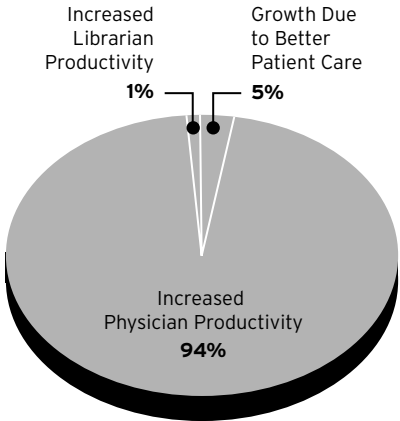
**Quantifying the business benefits:**

**Medical City's bottom line for the project – A projected five-year net benefit of \$5,664,519, an annual ROI of 3,776%, a payback period of one month, and an annual benefit per physician using MD Consult of \$2,266.**

Using MD Consult, the hospital was able to reduce its interlibrary loan costs by 20%. And librarian productivity has been increased as well – MD Consult allows physicians and pharmacists to do their own searches of medical literature, freeing up librarians for other tasks.

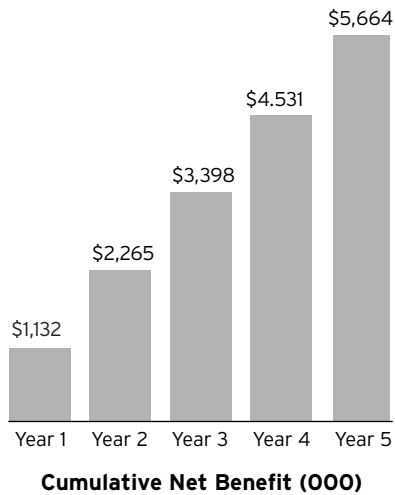
Even more important than the dollar figures, though, is the way in which MD Consult has improved patient care by enabling physicians to practice evidence-based medicine. And because MD Consult is available via the Web, physicians have access to its resources no matter where they are, including in offices away from the hospital, as well as after-hours at home.

MD Consult has also helped physicians handle potentially life-threatening emergencies. In one instance, a patient in an operating room was suffering complications because of a little-known drug interaction. The Medical City librarian was contacted from surgery, and within minutes was able to find information on MD Consult about the interaction and how to combat it, and faxed it directly to the operating room. Using the information, the anesthesiologist was able to solve the medical emergency.



**Cumulative 5 Year Net Benefit = \$5,664,519**

The following chart provides a detailed, five-year analysis.



### BUSINESS ANALYSIS OF THE SOLUTION

#### Project Summary

Annual ROI	3776%
Cumulative Five Year Net Benefit	\$5,664,519
Payback Period (Months)	1
Annual Benefit/Physician	\$2,266

Project Costs	Start Up	Year 1	Year 2	Year 3	Year 4	Year 5
TOTAL PROJECT COSTS	\$0	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000

Benefits	Year 1	Year 2	Year 3	Year 4	Year 5
Increased librarian productivity	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500
Reduced cost of inter-library loans	\$400	\$400	\$400	\$400	\$400
Increased physician productivity	\$1,064,640	\$1,064,640	\$1,064,640	\$1,064,640	\$1,064,640
Growth due to better patient care	\$61,364	\$61,364	\$61,364	\$61,364	\$61,364
TOTAL BENEFITS	\$1,138,904	\$1,138,904	\$1,138,904	\$1,138,904	\$1,138,904

Financial Analysis	Start Up	Year 1	Year 2	Year 3	Year 4	Year 5
Net Value	\$0	\$1,132,904	\$1,132,904	\$1,132,904	\$1,132,904	\$1,132,904
Cumulative Value	\$0	\$1,132,904	\$2,265,807	\$3,398,711	\$4,531,615	\$5,664,519
Net Present Value	\$4,263,812					
Annual ROI	3776%					
Payback Period (months)	1					

#### Annual Business Metrics

Annual Cost/Physician	\$12
Annual Benefit/Physician	\$2,266

The financial analysis that appears in this case study was developed by Phormion, Inc. Results shown are not a guarantee of equivalent performance.

### Medical City Librarian Assesses MD Consult

With MD Consult, Medical City has been able to improve patient care, reduce costs, and improve physician and librarian productivity.

#### THE LAST WORD

Medical City Librarian Miriam Muallem, who has overseen the purchase and use of the service, sums up her experience by saying, "I consider it an excellent resource for the library, and use it extensively, especially for its full-text books and full-text journal articles. Physicians find it useful because it gives them guidelines for medical practices, refreshes their practical knowledge, and has helped them treat conditions that they may not have been familiar with. It's also very user-friendly."

# Medical Center in Texas Improves Medical Education, Helps Patient Outreach, and Reduces Costs with MD Consult

## IN BRIEF

- **Goal:** This medical center in Texas wanted to improve patient care by helping physicians practice evidence-based medicine, while cutting costs and increasing physician productivity.
- **Solution:** MD Consult
- **Results:** By using MD Consult, the medical center will realize a projected five-year net benefit of \$4,580,087, an annual ROI of 352%, and an annual benefit per physician using MD Consult of \$4,580, with a payback period of one month. It has also been able to better educate medical residents, improve patient care through the use of informational handouts, and increase physicians' productivity.

## CONTENTS

The Challenge: Improve Patient Care and Help Researchers and Students While Reducing Costs .....10

The Bottom Line for This Medical Center in Texas .....11

Medical Center Manager of Outreach and Education Praises MD Consult .....12

Another medical center in Texas, a nationally recognized hospital, teaching and research institution, has three diverse but related missions: to train students, residents and post-doctoral fellows; to perform cutting-edge research; and to provide the best medical care for its patients in affiliated hospitals. It was looking for the most comprehensive and cost-effective research tool to help accomplish all three missions, and turned to MD Consult. The results were improved patient care due to physicians getting vital medical information at the point of care; better patient outreach through the use of informational handouts in English and Spanish; the ability of researchers, residents, physicians, and students to find in a single search what otherwise would take extensive research to find; a projected five-year net benefit of \$4,580,087; an annual ROI of 352%; a payback period of one month; and an annual benefit per physician using MD Consult of \$4,580.

NOTE: This case study was authored by the Case Study Forum. The Case Study Forum is dedicated to writing and publishing case studies for the IT community.

## Benefits

Objective	Benefits Achieved
Provide a single source of "federated" searching for medical information	Physicians, students, and researchers can use a single resource, MD Consult, rather than multiple resources to quickly find the information they need.
Provide the most current edition of textbooks	Because MD Consult makes available the full text of just-released textbooks, students and physicians always have the most current version available.
Offer full text searching of journals	Unlike many of its competitors, MD Consult offers the full text of journals, not just abstracts, allowing physicians, students, and researchers to keep abreast of the most current research.
Offer an easy way for physicians to create patient handouts in English and Spanish	MD Consult handouts can be customized by physicians in both languages, saving physicians time and improving patient care.

## **The Challenge: Improve Patient Care and Help Researchers and Students While Reducing Costs**

This medical center in Texas has three core missions – to provide the best medical care possible for its patients in affiliated hospitals; to train students, residents and postdoctoral fellows; and to perform cutting-edge research. Its three institutions train more than 3,500 students, residents, and postdoctoral fellows each year. Biomedical research advances at the center are a result of more than 2,000 research projects annually, totaling more than \$300 million. Its physicians conduct more than two million outpatient visits and treat thousands in its affiliated hospitals.

Physicians, students, residents, and researchers have a complex and diverse set of research needs, and the medical center was looking for a way to meet all of them in a cost-effective manner. Physicians, for example, needed easy access to clinical practice guidelines and drug information resources. Students and residents required full-text searching for the latest textbooks. Researchers had to have full-text searching for the most current journals.

Additionally, the center recognized patient handouts can help improve medical care. It was looking for a way to make it simpler for physicians to provide customized patient handouts. And because the center is located in an area with sizable English-speaking and Spanish-speaking populations, it wanted handouts that could be created in both English and Spanish.

To solve these problems, the medical center purchased a subscription to MD Consult, which offers Web-based access to over 50 medical reference books, over 70 medical journals and clinics, MEDLINE, comprehensive drug information, clinical practice guidelines, over 6,500 customizable patient education handouts, daily personalized clinical updates, and online CME.

The solution has proved to be so useful that in 2003, the service was used almost 40,000 different times at the center.

### **Why MD Consult was chosen:**

**“We were looking for a comprehensive way to search through full-text journals and textbooks, clinical practice guidelines, drug interactions, and patient handouts in a single, easy-to-use search interface.”**

MEDICAL CENTER MANAGER OF  
CAMPUS OUTREACH, REFERENCE,  
AND EDUCATION

## The Bottom Line for This Medical Center in Texas

A detailed analysis of the implementation shows that the medical center will gain a projected five-year net benefit of \$4,580,087 from the service. It will yield an annual ROI of 352%, and has a payback period of one month. It will give the center an annual benefit per physician using MD Consult of \$4,580.

### Quantifying the business results:

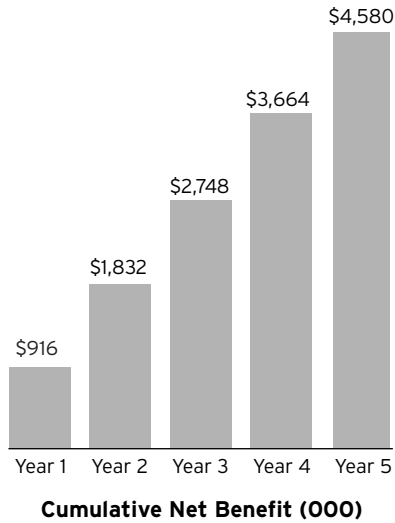
**The medical center's bottom line for the project—A projected five-year net benefit of \$4,580,087, an annual ROI of 352%, a payback period of one month, and an annual benefit per physician using MD Consult of \$4,580.**

The financial benefits come primarily because of an increase in physician productivity. Because physicians can more easily get information than they would without the service, they can make more effective use of their time and see more patients each month.

Librarian productivity has also improved – because physicians, students, residents, and researchers can use the product for their own searches, librarians are freed up for other tasks. The medical center's Manager of Campus Outreach, Reference, and Education, estimates that it saves her an hour a week.

Perhaps most important is that MD Consult has helped physicians improve patient care. Residents report using it to search for information about pharmaceutical usage and interactions. It is used at the point of care, for example, to help explain conditions to patients by displaying medically relevant pictures on-screen. And it is heavily used by physicians to create patient handouts so that patients can be informed about self-care and follow-up care – and handouts can be easily customized and printed out in English or Spanish.

The following chart provides a detailed, five-year analysis.



## BUSINESS ANALYSIS OF THE SOLUTION

Project Summary						
Annual ROI		352%				
Cumulative Five Year Net Benefit	\$4,580,087					
Payback Period (Months)		1				
Annual Benefit/Physician	\$4,580					

Project Costs	Start Up	Year 1	Year 2	Year 3	Year 4	Year 5
TOTAL PROJECT COSTS	\$0	\$52,096	\$52,096	\$52,096	\$52,096	\$52,096

Benefits	Year 1	Year 2	Year 3	Year 4	Year 5
Increased librarian productivity	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250
Increased physician productivity	\$949,464	\$949,464	\$949,464	\$949,464	\$949,464
Growth due to better patient care	\$17,400	\$17,400	\$17,400	\$17,400	\$17,400
TOTAL BENEFITS	\$968,114	\$968,114	\$968,114	\$968,114	\$968,114

Financial Analysis	Start Up	Year 1	Year 2	Year 3	Year 4	Year 5
Net Value	\$0	\$916,017	\$916,017	\$916,017	\$916,017	\$916,017
Cumulative Value	\$0	\$916,017	\$1,832,035	\$2,748,052	\$3,664,070	\$4,580,087
Net Present Value	\$3,447,536					
Annual ROI		352%				
Payback Period (months)		1				

Annual Business Metrics	
Annual Cost/Physician	\$260
Annual Benefit/Physician	\$4,580

The financial analysis that appears in this case study was developed by Phormion, Inc. Results shown are not a guarantee of equivalent performance.

## Medical Center Manager of Outreach and Education Praises MD Consult

Using MD Consult, the medical center has been able to better educate medical residents, improve patient outreach through the use of informational handouts (in English and Spanish), and improve patient care while reducing costs and increasing physicians' productivity.

The medical center's Manager of Campus Outreach, Reference, and Education, sums up her experience with MD Consult this way: "MD Consult has proven to be an excellent resource for federated searching, helping us search many disparate resources in a single interface. I've also found MD Consult to be a very client-centered operation that is always responsive, and quickly gets answers for me when I call."

**THE LAST WORD**