

Advanced Health Information Technologies and Solutions

Treating patients successfully depends on many factors. Often a successful outcome depends on the knowledge of the physician and a complete and accurate medical record of the patient. Northrop Grumman has a long history supporting electronic medical records and health information exchange technologies. Our health information network services, natural language processing technologies, and medical ontology products can provide physicians with critical information that can mean the difference between a successful outcome or far more serious consequences ...

The Patient

You've seen maybe hundreds of patients like her in your practice over the years. While no two patients are the same, and no exam is truly ever routine, this is no problem, right? Jane Doe is a vivacious 16-year old high school student and a military dependent visiting her family in your community. Jane is very active in athletics and is an avid lacrosse player and swimmer. After introducing yourself, Jane tells you that she has a sore throat and malaise. Also, Jane states that she has been in good health, has been very active in sports and physical activities, and that she has no known allergies.

The Examination

Your examination of Jane reveals her pulse is 108 regular, temperature is 102 F and her blood pressure is 120/80. Her eyes and ears are normal. However, examination of the pharynx reveals pinpoint yellow pustules, and percussion of the maxillary sinuses show tenderness on the right side. Jane has a lymph node in her right cervical area that is slightly tender. Her chest is clear to auscultation and percussion.

Your initial instincts tell you to suspect that Jane has strep throat; therefore, you order a rapid strep test, a CBC, and a throat culture.

The Diagnosis and Treatment

Your support staff and lab technicians exhibit their usual efficiency and the test results come back quickly. The rapid strep test is positive and the CBC shows a normal hemoglobin and hematocrit, but the white count is 12,000 with 85% neutrophils.

Just as you suspected: streptococcal pharyngitis. It's a routine case of step throat. You prescribe Amoxicillin 250 mg q.8.h. for 10 days, and Tylenol 350 mg q.6.h. PRN. The antibiotics should take care of Jane's problems in short order. Soon, she'll be another healthy and happy former patient. Perhaps...

But What If?

But, do you have all of the facts? Suppose that you depend upon paper records. Or, perhaps your practice has electronic medical records, but the system in your office is not networked with electronic medical records in your local community or your state. What if Jane has been treated elsewhere? What if she has had a surgical procedure that is relevant to her current condition? Would you know? Would your information system alert you?

Just Suppose That...

Five years ago, on a crowded Southern California freeway, Jane was an occupant in a vehicle involved in a serious accident. Among other consequences of the accident, Jane underwent a splenectomy. Now, given the splenectomy, instead of a routine strep throat, combined with a complication such as meningitis, Jane's condition is actually a life threatening emergency.

While This Is Fiction ...

Of course the scenario outlined above is fiction. However, similar real cases have occurred with tragic, fatal outcomes that were the result of splenectomy immunosuppression. In these cases, knowledge of the history of splenectomy was not known. An information system with the capability to access all of a patient's medical records and alert the attending physician to potential life-threatening conditions could have been a life-saving factor in these cases.

Health Information Technology Solutions for the 21st Century

Northrop Grumman is one of the nation's leading information systems companies and has served America's health and research institutions for 20 years. We offer advanced information technology with world-class health expertise and provide solutions in electronic health records, health information management, disease surveillance systems, networks, data exchanges and systems integration. We provide 21st Century health information exchange solutions and advanced ontology systems supported by natural language processing technology.

Health Information Exchange

Northrop Grumman is the prime developer supporting the interoperability framework between the U.S. Department of Defense (DoD) and Veterans Affairs (VA), yielding significantly enhanced longitudinal health records for America's service members, veterans and their families. The systems in the framework connect both electronic health record (EHR) platforms from VA hospitals and clinics (VistA) with the DoD healthcare system (AHLTA). These connections allow clinicians in both environments to view more complete health information at the point of care than is available on either EHR alone.

Advanced Ontology Systems

Northrop Grumman is on the cutting edge of information technology applications in medical ontology. Our technology includes natural language processing (NLP) systems. NLP is a technology that is capable of converting information between human understandable language and discrete computable data elements. The resulting readable and computable outputs, when combined with a robust clinical rules engine and semantic search engines, can then be put to multiple uses—advanced clinical decision support, advanced clinical research, biosurveillance, quality monitoring and more.

For More Information

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