

# National Electronic Disease Surveillance System

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402 471 – 1372

Good afternoon I am John Hall with the State of Nebraska NEDSS program.  
Thank you for the opportunity to speak to you today.

# Background

- How and why we are involved

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In 1997 the Nebraska Department of Health Public health laboratory located in the Nebraska State Capital, Lincoln was closed as a cost saving measure.

The state public health laboratory function was relocated to the University of Nebraska Medical Center, a teaching hospital, in Omaha about 60 miles north east of Lincoln.

The laboratory relocation severed many long established information channels and made public health data collection extremely challenging.

Our State Epidemiologist, Dr. Tom Safranek saw the need and value of an electronic reporting. With Tom's leadership, HHSS partnered with the university medical center and a local software company to develop a web based laboratory data reporting and order entry system to resolve these new problems.

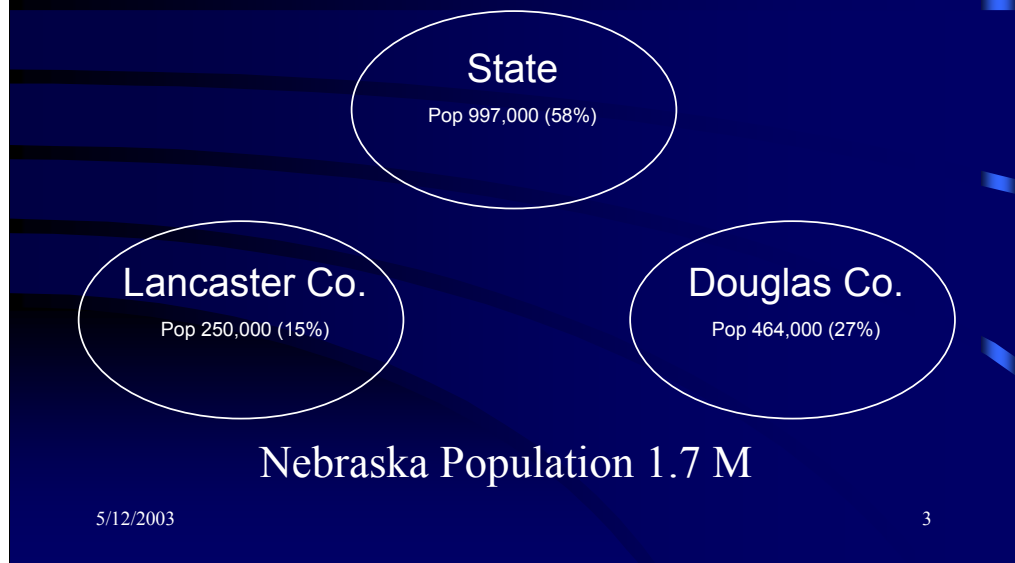
We call the system PHLIP, it is operational and continues to grow and provide a vital service.

The first health program to come "on line" was the pediatric blood lead program.

When Doctor Safranek saw opportunity to participate in the NBS, he knew immediately that the NBS was something that the State of Nebraska needed to do.

We made a successful grant application to the CDC and are now one of the first states to implement the NBS.

# Nebraska Public Health Surveillance Organizations



This is how our state public health surveillance organizations are organized.

The State population is 1.7 million.

Douglas and Lancaster counties (Omaha and Lincoln) represent our two major urban centers. These agencies share state surveillance responsibility.

The remainder of the state is covered through the State Health and Human Services Public Health Assurance Division.

While we do have other organized county and regional health departments it has not been feasible for these agencies to engage in surveillance.

This may change as rural and urban populations shift, we may see an increase in the number of public health surveillance entities.

This is an important point not to be ignored in the design of the NBS.

# Collaborators

- Centers for Disease Control and Prevention
- Douglas County Health Department
- Lancaster County Health Department
- University of Nebraska Medical Center - Public Health Laboratory

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Our main collaborators are the two largest county health departments: Douglas County Health Department and Lancaster County Health Department, and the University of Nebraska Medical Center.

The Management and staff at these organizations have made huge contribution in time and energy to this project. We would not be as far along today without their help.

The university medical center provides key elements of NBS infrastructure and management support.

The medical center is also HHSS's partner in the development the public health laboratory information program PHLIP.

PHLIP allows Internet ordering of of public health laboratory tests and the reporting of test results.

This experience was a fitting precursor to NBS roll-out at the medical center's location.

# Collaborators

- Nebraska Health and Human Services - Public Health Assurance
- Nebraska Information Management Services
- Computer Science Corporation - CDC contractor

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The Nebraska State Information Management Services (IMS) developed Guardian, our single sight LOGON portal which I will describe later.

IMS will also provide key infrastructure NBS support as we migrate the NBS to their location in Lincoln.

I must also mention the Computer Science Corporation and its field deployment team. They have provided strong and high quality support during system implementation and they have been excellent partners.

LABORATORY CORPORATION OF AMERICA  
STATE REPORTING

DATE: 10-09-2002 PAGE: 1

LAB ADDRESS: LABCORP KANSAS CITY  
1706 N CORNINGTON AVE  
KANSAS CITY MO 64120-0000

PATIENT NAME/ADDRESS PAT. ID

NE

SPECIMEN NUMBER	SPECIMEN DATE	AGE YEARS MONTHS	SEX	BIRTHDATE	RPT DATE
27762001650	10-04-2002	046 01	M	09/30/	10/09/2002

TEST NAME: Hep C Virus Ab Result: 140608 \* REPEATEDLY REACTIVE

enter w/c ACP  
PL

AGENCY ADDRESS: COMMUNICABLE DISEASE  
NE HHS RSL  
P.O. BOX 95007  
LINCOLN NE 68509-5007

CUSTOMER ADDRESS: ACCT # 26409490  
NE DEPT OF CORRECTIONAL SERV  
D & I  
3216 W. VAN ORRN P.O BOX 22800  
LINCOLN NE 68542-2900  
PHONE: (402) 479-6333  
PHYSICIAN: LE MAR

Collected Oct - 4

Analyzed Oct - 9

Local Health Oct - 11

MO State Oct - 24

NE State Nov - 04

11-04-2002

HHSS RECEIVED  
OCT 11 2002

KCMO HEALTH DEPT.-CDP  
OCT 11 2002  
REC'D & FORWARDED

This slide is a real world example of what we are trying to avoid.

The dates on this form show one month transpired from the time a sample arrived at the laboratory until the results were reported to HHSS.

# Nebraska Timelines

- Early 2002    Prototype delivered to Nebraska
  - users begin interacting with local prototype
- Fall 2002    Release 1.0
  - user testing and gap analysis
- Jan 2003    Nebraska goes live
  - acceptance testing
  - preparation for NETSS phase out

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Early in 2002 the Epi staff at the three using organizations got their first exposure to the NBS.

Upon the release of version 1.0, the pace of training increased in preparation to “go live” and to thoroughly vet the system.

From the time we began using the pre production system we conducted weekly teleconferences. These conference calls included end users, system developers, and project managers.

These calls were very beneficial. Many end user suggestions during these calls were implemented.

Finally, on January 13, 2003, the system went LIVE!

At Nebraska Health and Human Services Dennis Leschinsky, our lead epidemiology investigator, entered the very first case record into the NEDSS Based System.

We continue testing and preparation for the phase out of NETSS, the system NEDSS will replace.



# Benefits

- Real Time Data
- Paperwork Reduction
- Fewer Errors
- One Time Entry
- Automated Reporting
- Distributed Access
- Results Tracking
- Data Warehousing
- HL-7 Data Standard
- Platform Independent

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These are the anticipated benefits of the NBS.

I must add, we are in the first stages of using the NBS and have not fully realized many of these benefits.

Currently, LabCorp is the only laboratory sending data into the system and this data is currently moving into a test instance of the NBS and not available to our end users.

We are planning to begin the LabCorp data feed into our operational NBS beginning May 5<sup>th</sup> after the latest revision of the messaging system is installed.

## Current Status

- System operational
  - 13 January 2003
- Three agencies on-line
- Disease categories tracked
  - Hepatitis, Meningitis and Vaccine Preventable

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The NBS became operational on January 13th 2003.

We have three public health entities on line

Douglas county health department,

Lancaster county health department,

and the Nebraska Health and Human Services System.

And these are the disease categories that we currently track.

# NEDSS FIRST DAY



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- Sergei and Jeff ensure everything goes according to plan as Dennis Leschinsky enters the first record while Deb Horne watches.

This is a photo I took of the activity as the first case record was entered.

Shown here are Delis Leschinsky at the keyboard, Sergei Li Computer Science Corporation Field Team Manager, Jeff Gehring Nebraska Project Manager, and Debora Horne Data Entry assistant looking on.

## Current Status

- Over 3000 person and organizations in data store
- Over 800 cases entered and reported
- Live lab data feed beginning 5 May

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These 3000 records represent all our hospital, laboratory and health care professional trading partners.

Since January over 800 laboratory reports have been entered manually. Hepatitis represents our largest volume.

Our live LabCorp data feed will be implemented the first part of May.

This is where we are at now and the future holds many challenges .

# Nebraska Challenges

- Parallel field testing NETSS – NEDSS and NETSS phase out
- Data validation ELR vs. paper - developing trust
- User training and acceptance

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The most immediate challenge is the NETSS / NEDSS parallel testing.

This testing is to verify system reporting to CDC.

We currently enter data into both NETSS and NEDSS systems and compare the output data after it arrives at CDC. Each reporting entity then participated in a conference call with the CDC to resolve any discrepancies.

NETSS is the legacy disease reporting data system that the NEDSS system will replace.

We will also need to do data validation by comparing our current incoming paper and electronic laboratory data reports.

Our end users acceptance has been excellent, but ongoing training and business process development will be needed.

# Nebraska Challenges

- Mastering work flow: de-duplication, maintenance, and reviewing of inbound lab data
- Revise State Rules and Regulation
- Facilitating hospitals and laboratory participation

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If electronic lab reports contain insufficient information, automatically routing to the proper program will not occur, this task will then be accomplished manually.

We have not yet felt the pressure of hundreds of lab reports coming into the system and do not fully understand the administrative burden this may present.

State law does not specifically address electronic laboratory reporting. Current reporting rules presuppose a paper system.

We need re write our rules to facilitate electronic reporting and possibly offer some incentives to reporting entities.

The very process of administrative rule change will prove to be an opportunistic vehicle to solicit buy in.

We will need to be innovative in our approach to facilitating full participation by our public health trading partners.

Only with adequate infrastructure, ease of use, and proper motivation, will we gain their trust and cooperation.

# Nebraska Challenges

- Managing varied data streams
- Selecting optimal ELR data management approach
  - In house
  - Contractor
  - Reporting laboratory

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Even with highly motivated trading partners we remain confronted with a variety of data streams.

Moving the data toward a common standard will remain a challenge with a variety of solutions, and picking the optimum solution will require careful analysis and planning.

# Nebraska Challenges

- Initial data loading
  - Initial data load of persons and organizations completed by hand
- Legacy data integration
- Managing lab reports during phased roll out

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To assist in a smoother implementation several individuals devoted significant time to the initial data load of hospitals, clinics, Labs, physicians, and other health care professionals. We hand entered several thousand records.

To fully benefit from a unified NSB it would be very beneficial for the Epi staff to have access to current and historic data.

Much of our current Epi data is in stored the NETSS system. While the NBS has reporting and analysis capacity, it will be limited until the data store grows or we incorporate legacy data.

As lab reporting via the NBS continues and grows we need to develop procedures to handle those results for which a NBS PAM does not exist to prevent orphaned data.

On the following slides I will provide some unique views of the Nebraska NBS.



# Single Site Access

- Guardian
  - Developed by State IMS
  - Single logon
  - Single site administration
  - User directory

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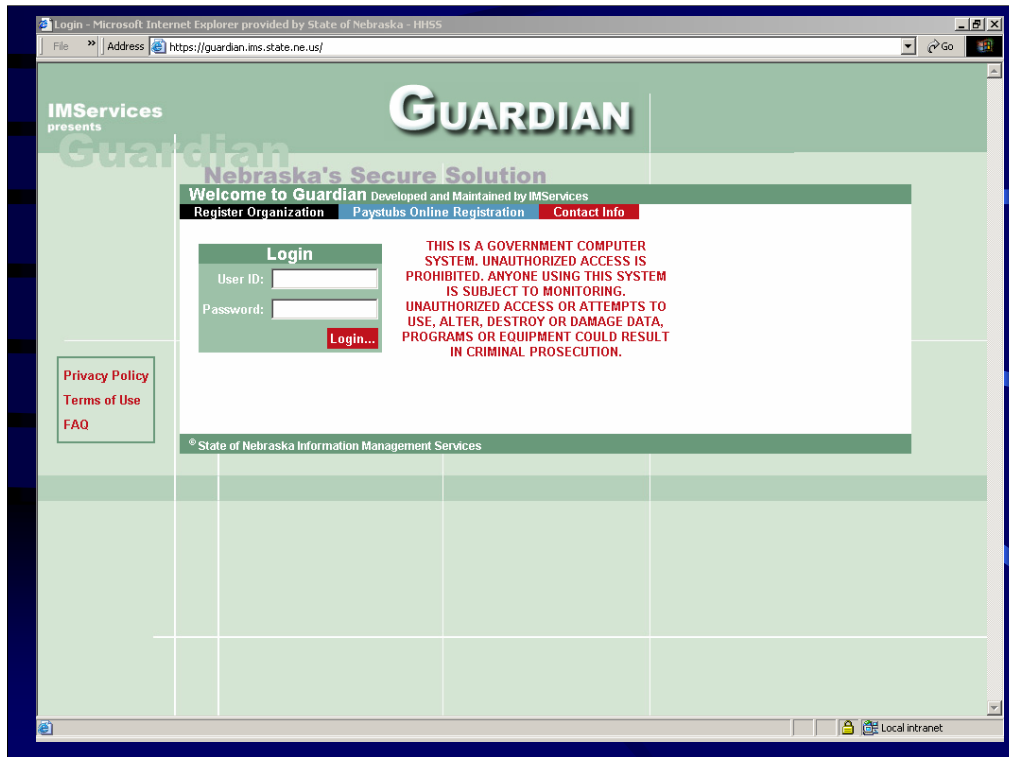
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Guardian is a single logon portal developed by our state IMS.

It allows our trading partners a single access to each of our current web based information systems: NEDSS, PHLIP, and HAN.

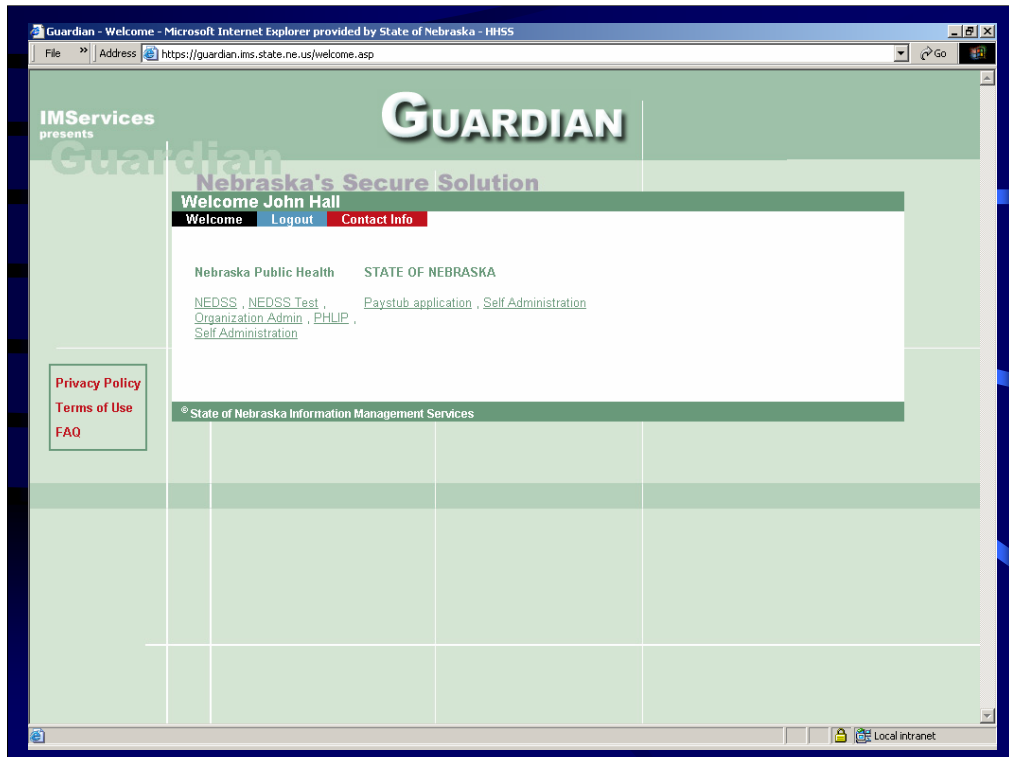
It also allows tighter access control by system administrators.

The guardian system has growth potential and accommodates single site administration for access to many systems.

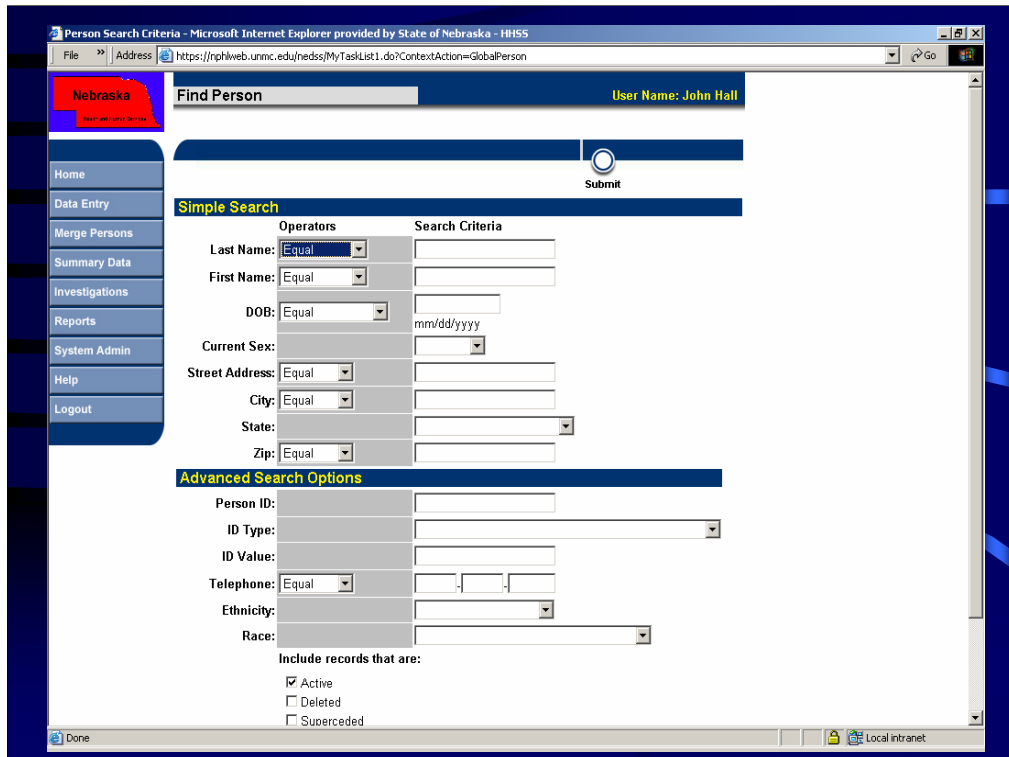


This is a screen shot of our Guardian single logon site that provides access to the NEDSS and PHLIP systems and can accommodate access to any future system.

We also use this site to access our health alert net. HAN.



This slide shows Guardian access to multiple systems and administration tools.



This is one of the NEDSS screen shots to allow those of you who have not seen the system to get an idea of its look.

This particular page is where you initially determine through a look up feature if an individual is contained in the system.

This look up feature is for any person, either healthcare professional or patient.

# Nebraska Future NEDSS

- NEDSS Paradigm will work for:
  - Maternal and Child Health
    - birth certificate, newborn screening, birth defects, newborn hearing, vaccinations
  - Vital Statistics
    - automated movement of birth data from HIS to NBS
  - Injury Surveillance
    - trauma registry, head injury registry, E-code data, EMS data

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We see the following areas of public health and vital statistics as having the greatest potential benefit, through integration with the NEDSS base system.

Most of these programs share the same infrastructure, personnel, and collect a common data set.

It makes sense to move toward a common interface for shared data and we think the NBS could be that common interface.

# Nebraska NEDSS



- Lancaster County Health Department user training

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This is a photo of our Lancaster county partners getting some training from Tony DeSilva of Computer Science Corporation.

Last Slide

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Thank you for your attention.

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