Joint Defense/Veterans Audiology Conference 2010
February 24, 2010

DALC FUTURE APPLICATIONS

DALC Overview

- Acquisition & logistics support for VA healthcare system, extending to DoD healthcare
  - National contracts for hearing aids
  - National contracts for hearing aid accessories, batteries, and other prosthetic devices
  - National contracts for hearing aid repair
- DALC staff in attendance

ROES Program Overview

- Automation and information management resources in support of:
  - DALC business operations
  - DALC stakeholder programs (i.e., Audiology)
- Partnership with VA Audiology Program, extending to DoD Audiology

Information Management Incubator

- Capabilities based on VA information systems architectures, but designed with a common framework of program objectives in mind
- Existing and emerging capabilities need not be restricted to VA
- Benefits of a coordinated strategy for information management
  - Cost savings in the acquisition of products and services
  - Improved continuity of care throughout an individual's military and civilian life
  - Standard-setting model for the delivery of world-class hearing care

Highlights

- Audiometric information management
  - Central repository of audiometric information
- NOAH data exchange
- ROES
- Web-based audiogram display
- Ear Impression / earmold scanning
  - Includes delivery of scanned image with ROES order
- Business intelligence
- Outcome measures
- TeleAudiology

Audiometric Information Management

Audiogram Edit for ZZTESTPATIENT,PAMS(3331) (Age 69) as seen on OCT 07, 2009 by QUITMEYER,KEVIN L

File Device Options/Graph Help

Audiogram Entry | Pure Tones | Speech Audiometry | Acoustic Immitance | Graph Display

Import Data

AIR CONDUCTION (Hz)

	250	500	750	1000	1500	2000	3000	4000	6000	8000
RIGHT Initial	40	45		45		45	50	55	85	
Retest										
Masked										
Masking Level										
LEFT Initial	30	30		40		40	45	55	75	
Retest										
Masked										
Masking Level										

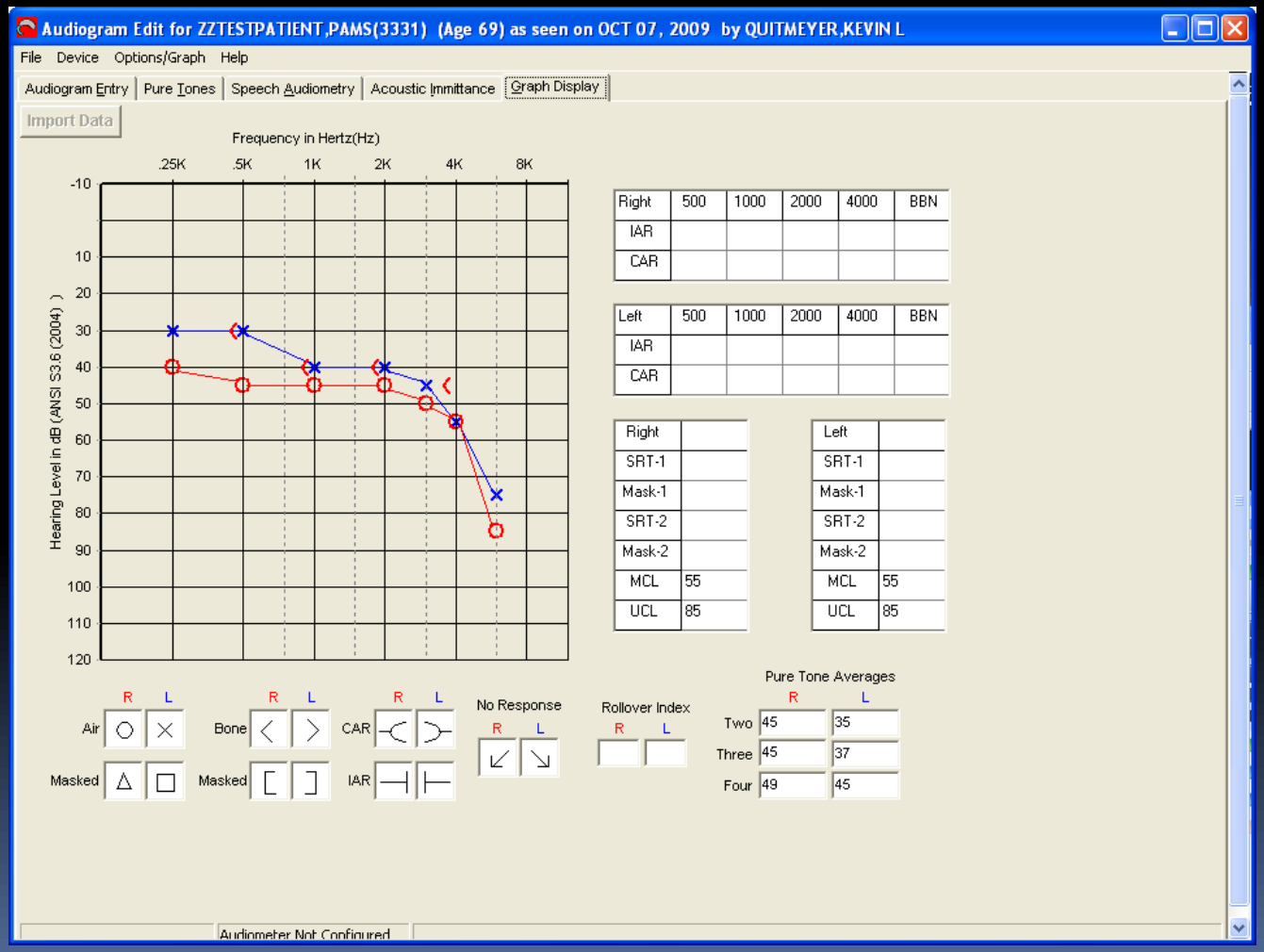
BONE CONDUCTION (Hz)

	250	500	750	1000	1500	2000	3000	4000
RIGHT Initial		30		40		40		45
Retest								
Masked								
Masking Level								
LEFT Initial								
Retest								
Masked								
Masking Level								

	RIGHT	LEFT
INTER-TEST CONSISTENCY		
PURE TONE AVERAGES		
Two	45	35
Three	45	37
Four	49	45
SRT(Masking Level)		
Initial		
(Masking Level 1)		
Final		
(Masking Level 2)		

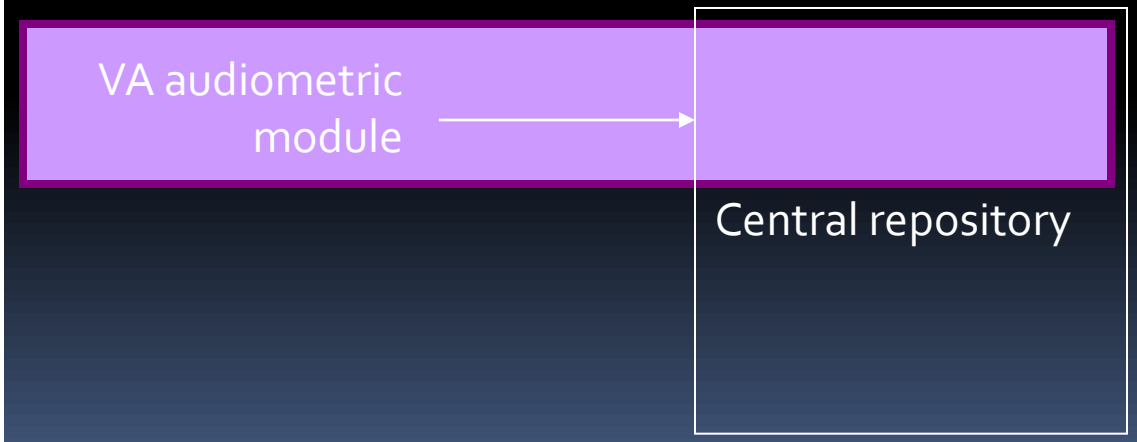
Audiometer Not Configured

Audiometric Information Management



Versatility of a National Repository

- VA audiometric module resides locally at each Audiology clinic, but feeds a national repository of patient audiograms/audiometric exams
- Over 1.1 million audiogram records and growing



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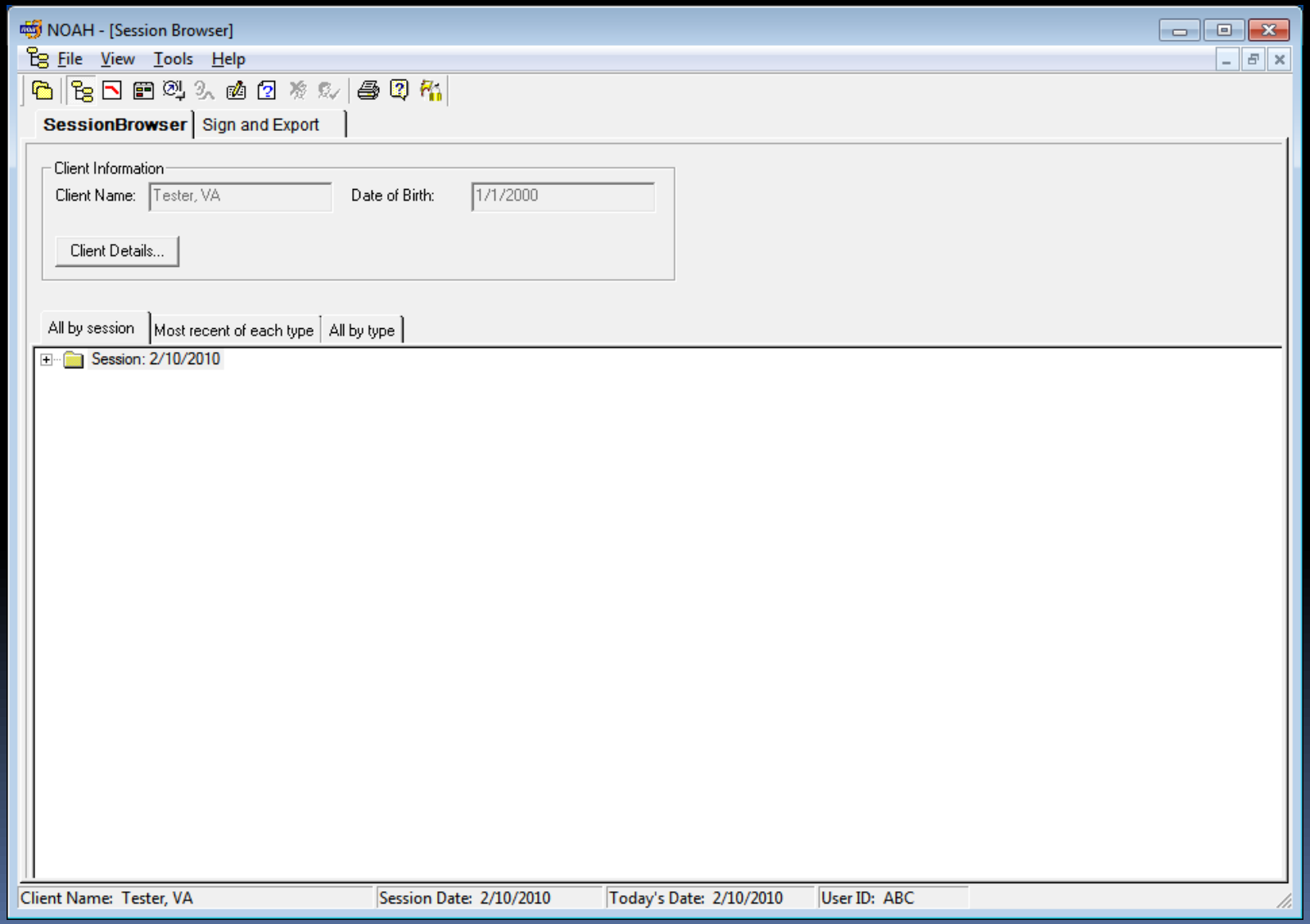
Sequence/flow of data exchange (NOAH to VA)

- Audiogram collected through NOAH (NOAHAud or 3rd party audiogram module)
- Audiogram signed and exported to VA repository (similar to QUASAR module functionality)
- Audiogram available to VA applications

NOAH v3.8


NOAH - [Session Browser]
File View Tools Help
SessionBrowser
Sign and Export
Client Information
Client Name: Tester, VA
Date of Birth: 1/1/2000
Client Details...
All by session
Most recent of each type
All by type
Session: 2/10/2010
Client Name: Tester, VA
Session Date: 2/10/2010
Today's Date: 2/10/2010
User ID: ABC

NOAH v3.8

NOAH - [Session Browser]

File View Window Help

SessionBrowser | Sign and Export

Client Information

Patient ID: 0000003

Name: VA Tester

Date of Birth: 1/1/2000

Sign and Export

Signature: ****

Sign and Export

Static

Type of visit

- C&P
- Audiological Evaluation
- Other

Referral source

Insert : 'NOT ADEQUATE FOR RATING PURPOSES'

Comments: Comments test field

- 2/10/2010 4:20:28 PM
  - New Audiogram
  - Sign and Export action
  - Audiogram Changed
  - New Audiogram

Client Name: Tester, VA | Session Date: | Today's Date: 2/10/2010 | User ID: ABC

Sequence/flow of data exchange (VA to NOAH)

- Audiogram collected through VA/QUASAR module
- Audiogram signed and exported to VA repository
- Audiogram delivered to originating station's NOAH database
  - (also available to NOAH at other stations)
- Audiogram available in NOAH for fitting modules, etc.

NOAH v3.8

NOAH - [Client Register]

File Edit View Tools Window Help

All Clients | Recent Clients | Search for Clients | Business System Import

Import	Business System...	First Name	Last Name	Birt...	Type	Create Date	Creator	Import Status
Import	37330	John	Blanc	12/...	Patient Import	8/5/2009	User1	Not Imported
Import	9629091	Bill	Mountain	6/1...	Audiogram Import	10/1/2010	User1	Not Imported

Client Name: | Session Date: | Today's Date: 2/10/2010 | User ID: ABC

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ROES

ROES Order Select Frameset - Windows Internet Explorer

https://vaww.dalc.oaim.va.gov/scripts/ngwns32.dll

Select an Action:

- Exit to Desk Top Entry
- Digital Hearing Aids
- FMs/Remotes/CI Processors
- Other Commodities
- Service Request
- Device Registration
- Cochlear Implants
- CI Registry
- Record Updates
- Select Another Patient
- Station Parameters
- Pending Actions
- Authorized Aids
- Audiogram Search
- Enter Outcome Measures

View Order History

Exit to Desk Top

ROES Patient Orders - Processed

Ordering Station: 791 - DENVER (DALC)

Patient: ZZTESTPATIENT,PAMS SSN: 333-33-3331 DOB: APR 01, 1940

Tran Date	Order Number	Order Type	By	Status	Serial #	Item
03/03/04	G45149-0438	CUSTOM HEARING AIDS	PJU	CANCELED		9100

<< BACK FORWARD>>

Unprocessed Orders Processed Orders

Done Internet 100%

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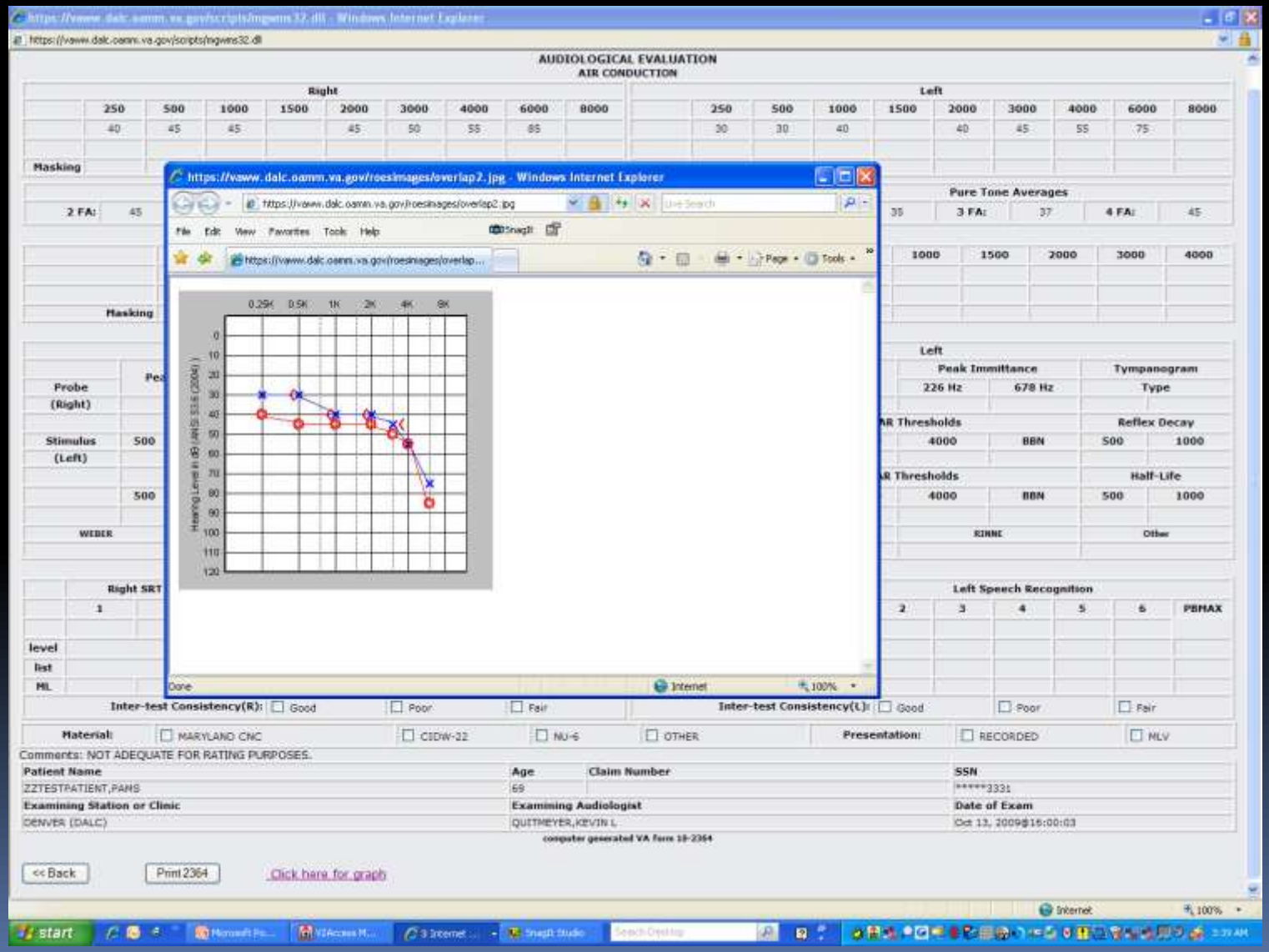
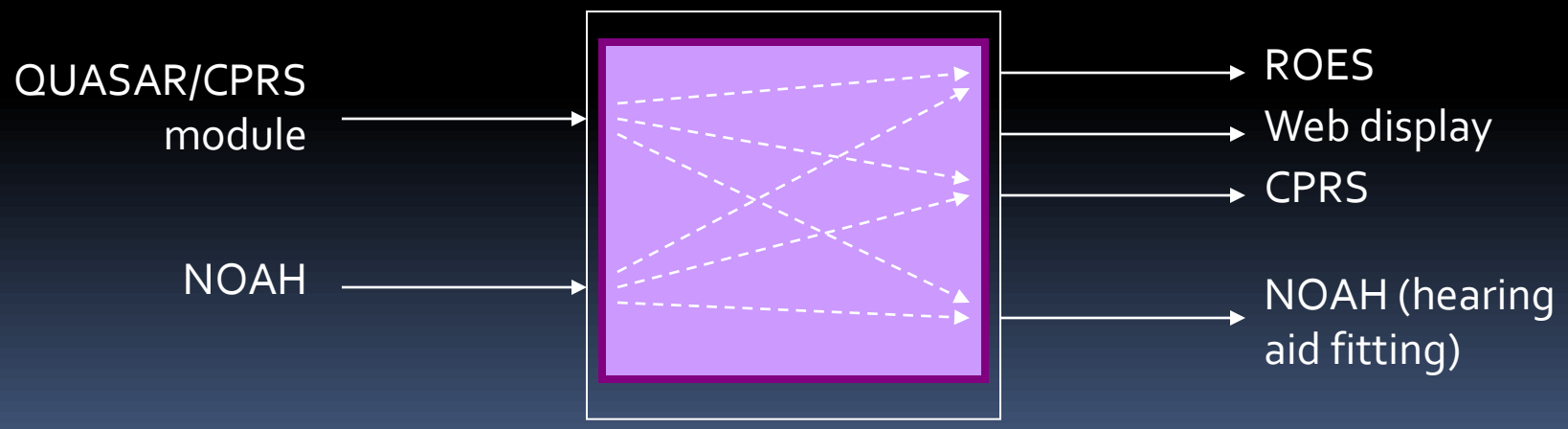
Web-based audiogram display



Versatility of the Repository

- Note that *any* consumer system will be able to consume data fed into the repository by *any* feeder system



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DeepSee - /VAH - demo (demo) - Windows Internet Explorer

http://10.157.6.114:57772/csp/sys/bi/%25cspapp.bi.index.cls

DEEPSEE

Main | Data Modeler | Controls | Administrator

Home | Log Off

ID: Rank : Top Grand Sub Find

Subject Area

PatientHearingLoss

Dimension

- Age Group At Visit
- L 1000 Loss
- L 2000 Loss
- L 250 Loss
- L 4000 Loss
- L 500 Loss
- L 8000 Loss
- R 1000 Loss
- R 2000 Loss
- R 250 Loss
- R 4000 Loss
- R 500 Loss
- R 8000 Loss
- Age At Visit
- L 1000 dB
- L 2000 dB

Computation

Measures

- Count
- AverageAgeOfPatientAtVisit
- L 1000 dB
- L 2000 dB
- L 4000 dB
- L 500 dB
- L 8000 dB

Drill Down

Others

Filter Clear | Edit

[L 250 Loss = Mild loss] AND [R 250 Loss = Mild loss] AND [L 500 Loss = Mild loss] AND [R 500 Loss = Mild loss] AND [L 1000 Loss = Mild loss] AND [R 1000 Loss = Mild loss] AND [L 2000 Loss = Mild loss] AND [R 2000 Loss = Mild loss] AND [L 4000 Loss = Mild loss] AND [R 4000 Loss = Mild loss] AND [L 8000 Loss = Mild loss] AND [R

4,356 0.30%

Row

Column

- Age Group At Visit
- TotalNumberOfPatients

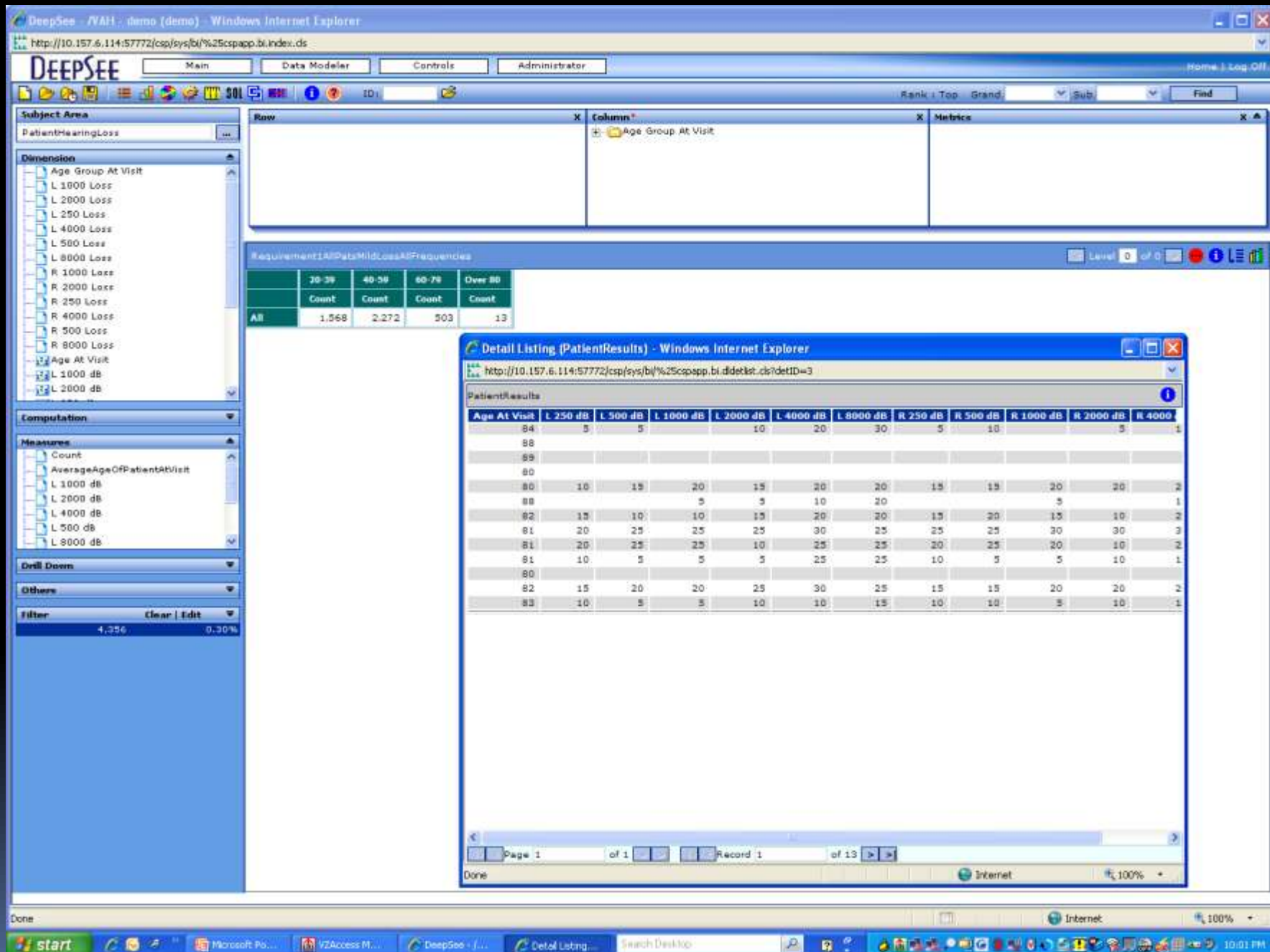
Metrics

Requirement2MildHearingLossAllFreqByAge

Level 0 of 0

	20-39	40-59	60-79	Over 80	TotalNumberOfPatients
	Count	Count	Count	Count	
All	1,568	2,272	503	13	4,356

Done Internet 100%


DeepSee - /VAH - demo (demo) - Windows Internet Explorer
http://10.157.6.114:57772/csp/sys/bi/%25cspapp.bi.index.cls
DEEPSEE
Main
Data Modeler
Controls
Administrator
Home | Log Off
Subject Area
PatientHearingLoss
Dimension
Age Group At Visit
L 1000 Loss
L 2000 Loss
L 250 Loss
L 4000 Loss
L 500 Loss
L 8000 Loss
R 1000 Loss
R 2000 Loss
R 250 Loss
R 4000 Loss
R 500 Loss
R 8000 Loss
Age At Visit
L 1000 dB
L 2000 dB
Computation
Measures
Count
AverageAgeOfPatientAtVisit
L 1000 dB
L 2000 dB
L 4000 dB
L 500 dB
L 8000 dB
Drill Down
Others
Filter
Clear | Edit
4,356
0.30%
Row
Column*
Age Group At Visit
Metrics
Requirement1AllPatsMildLossAllFrequencies
20-39
40-59
60-79
Over 80
Count
All
1,568
2,272
503
13
Detail Listing (PatientResults) - Windows Internet Explorer
http://10.157.6.114:57772/csp/sys/bi/%25cspapp.bi.dldetlist.cls?detID=3
PatientResults
Age At Visit
L 250 dB
L 500 dB
L 1000 dB
L 2000 dB
L 4000 dB
L 8000 dB
R 250 dB
R 500 dB
R 1000 dB
R 2000 dB
Page 1
of 1
Record 1
of 13
Done
Internet
100%
start
10:01 PM

DeepSee - IVAH - demo (demo) - Windows Internet Explorer

http://10.157.6.114:57772/csp/sys/bi/%25cspapp.bi.index.cls

DEEPSEE

Main | Data Modeler | Controls | Administrator

Home | Log Off

ID: Rank : Top Grand Sub Find

Subject Area

AudiometricExam

Dimension

- Age of Patient At Visit
- Date of Visit
- Examiner
- L 1000 Loss
- L 2000 Loss
- L 250 Loss
- L 4000 Loss
- L 500 Loss
- L 8000 Loss
- R 1000 Loss
- R 2000 Loss
- R 250 Loss
- R 4000 Loss
- R 500 Loss
- R 8000 Loss
- Testing Station

Computation

Measures

- Count
- Age at Visit
- Age of Patient At Visit
- Avg L 8000
- Avg L 1000
- Avg L 2000
- Avg L 250

Drill Down

Others

Filter Clear | Edit

1,100,561 100.00%

Row: Age of Patient At Visit

Column

Metrics

- Avg L 250
- Avg L 500
- Avg L 1000
- Avg L 2000
- Avg L 4000
- Avg L 8000
- Avg R 250

Requirement3MeanThresholdFrequencydBLR

Level 0 of 0

Age of Patient At Visit	Avg L 250	Avg L 500	Avg L 1000	Avg L 2000	Avg L 4000	Avg L 8000	Avg R 250	Avg R 500	Avg R 1000	Avg R 2000	Avg R 4000	Avg R 8000
Under 20	14.75	15.88	15.92	17.22	20.11	21.20	13.35	14.23	13.91	17.22	17.11	19.40
20-39	12.94	12.98	13.08	14.26	21.38	20.13	13.06	13.06	13.20	14.26	18.74	18.70
40-59	20.11	21.58	24.07	32.13	49.95	49.82	20.03	21.38	23.81	32.13	47.42	48.25
60-79	26.75	29.49	35.12	49.75	67.83	69.90	26.65	29.31	34.62	49.75	66.34	69.37
Over 80	36.23	40.53	47.80	60.89	74.96	78.16	36.19	40.41	47.40	60.89	74.64	78.58

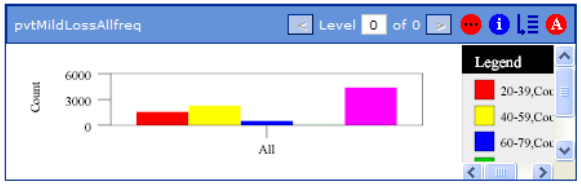
Done Internet 100%

DeepSee - /VAH - demo (demo) - Windows Internet Explorer

http://10.157.6.114:57772/csp/sys/bi/%25cspapp.bi.index.cls

Patient Populatation by Varying Hearing Loss (Either Ear)

Patients who have mild hearing loss across all frequency ranges



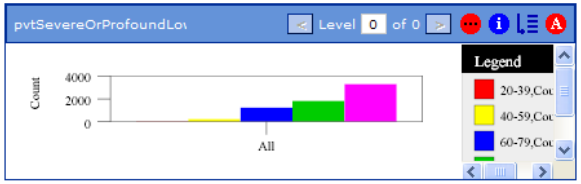
Patients who have mild high frequency hearing loss

pvtMildHigh

Level 0 of 0

	20-39	40-59	60-79	Over 80	Total Patients
	Count	Count	Count	Count	
All	1,789	2,696	749	163	5,397

Patients who have severe or profound low frequency hearing loss



Patients who have moderate mid-frequency and severe high-frequency hearing loss

pvtModMidAndSevereHig

Level 0 of 0

	20-39	40-59	60-79	Over 80	Total Patients
	Count	Count	Count	Count	
All	10	489	2,088	1,167	3,754

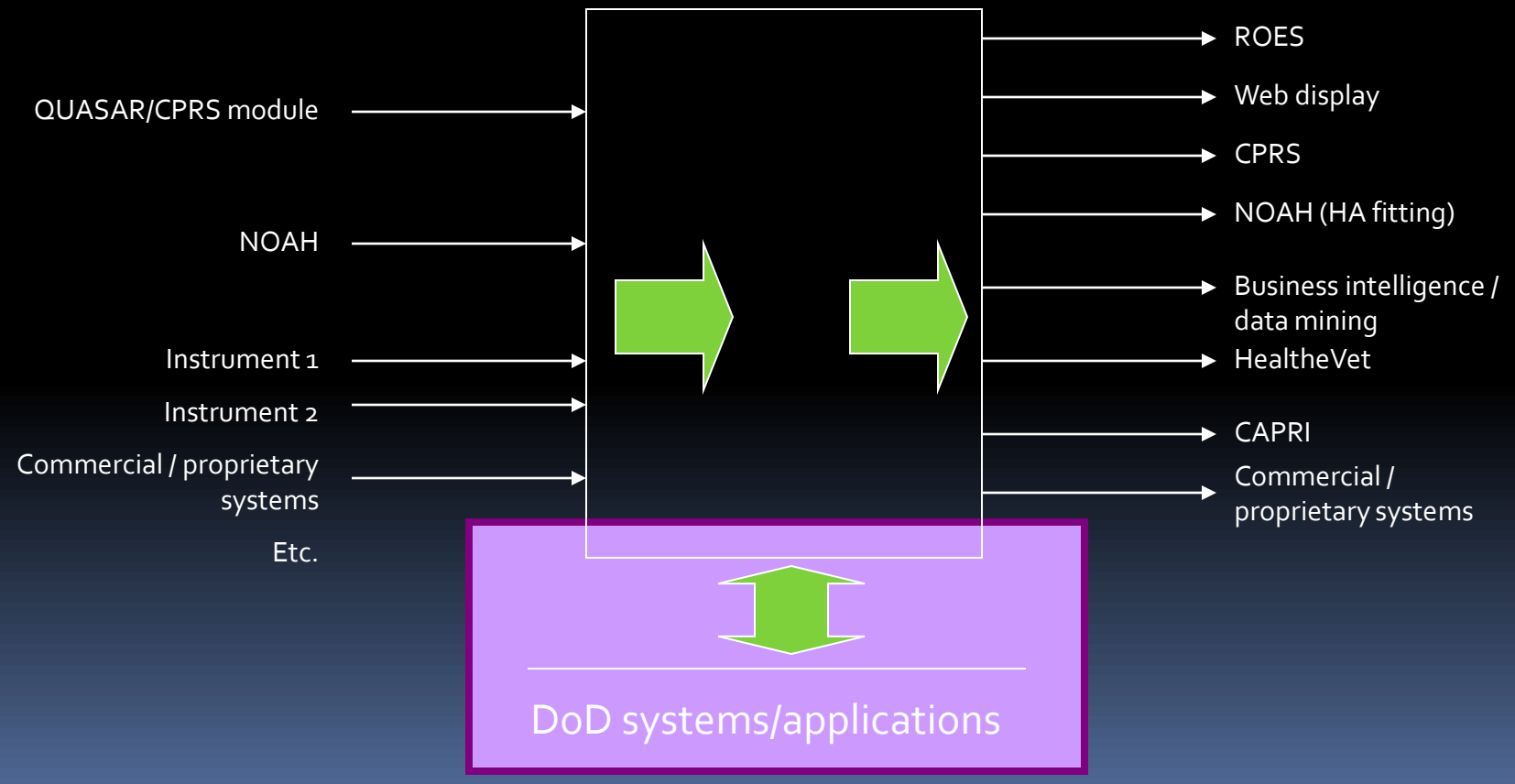
Done

Internet

100%

Versatility of the Repository

- Spectrum of possibilities



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Outcome Measures

Outcome Measures Module IOI-HA - Windows Internet Explorer

Quit

Audiology and Speech Pathology Service

Outcome Measures Questionnaire IOI-HA

Patient: ZZTESTPATIENT,PAMS

This questionnaire applies to devices:
Purchase Order Number:

Method of entry:
Method of entry should be by returned mail only.

1. Think about how much you used your present hearing aid(s) over the last two weeks. On an average day, how many hours did you use the hearing aid(s)?

None	Less than 1 hour per day	1 to 4 hours per day	4-8 hours per day	More than 8 hours per day

2. Think about the situation where you most wanted to hear better, before you got your present hearing aid(s). Over the past two weeks, how much has the hearing aid helped in those situations?

Not at all	Slightly	Moderately	Quite alot	Very much

3. Think again about the situation where you most wanted to hear better. When you use your present hearing aid(s), how much difficulty do you still have in that situation?

Very much	Quite alot	Moderate	Slight	None

4. Considering everything, do you think your present hearing aid(s) is worth the trouble?

Not at all	Slightly	Moderately	Quite alot	Very much

5. Over the past two weeks, with your present hearing aid(s), how much have your hearing difficulties affected the things you can do?

Very much	Quite alot	Moderately	Slightly	Not at all

6. Over the past two weeks, with your present hearing aid(s), how much do you think other people were bothered by your hearing difficulties?

Very much	Quite alot	Moderately	Slightly	Not at all

Done

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Congressional Initiative

- Hearing Center of Excellence
- HCOE Hearing and Auditory System Injury Registry
- DALC participation alongside VA Audiology Program on Registry Workgroup

Conclusion

- Kevin Quitmeyer
- ROES Program Director
- VA Denver Acquisition & Logistics Center
- 303-914-5160
- kevin.quitmeyer@va.gov