

OBS Term Frequency Analysis Using InDxLogic/AAI

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Sound Family Medicine, Puyallup, WA

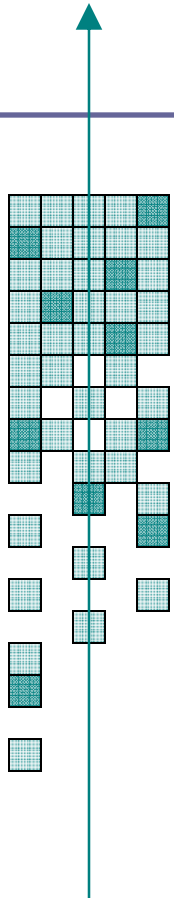
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Who are we?



- Private Family Practice
- 3 sites in Washington State
- 36 providers
- Open 7 days a week
- InDxLogic/AAI user since 2008
- 10,000 documents per month

Objectives



- **Introduction**
 - What is InDxLogic/AAI ?
 - Document type description
- **Our methods**
 - Key considerations
 - OBS term mapping
- **Our results**
 - Frequency graphs
 - How we use this information

What is InDxLogic/AAI?

Advanced Auto Indexing (AAI) Automates Import of Document Images

1. You start with a document image
2. InDxLogic (AAI) analyzes it
3. The document, OCR text and data flow into the EMR like a lab interface

InDxLogic Advanced Auto Indexing enables data reporting



Data Capture using AAI

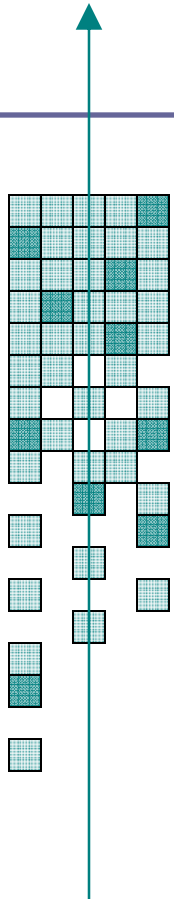
Advanced Auto Indexing (AAI) Automates Import of Data within Document Images

1. Previously a manual process
2. Manual system is staff/cost intensive
3. AAI creates data capture automation opportunity
4. Can be superior to Lab interface: “see Note” issue.

Advanced Auto Indexing enables data mapping to where you need it in the Centricity flow sheet



Who sets up the mapping?

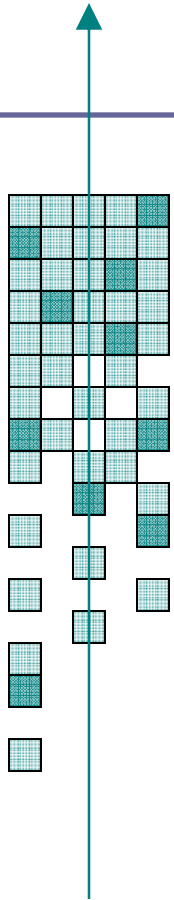


1. Indexing staff
2. Clinical Informatics staff
3. Provider feedback through the Centricity flag system
4. AAI Trainers

Mapping is a team effort



What is an InDxLogic Document Type?



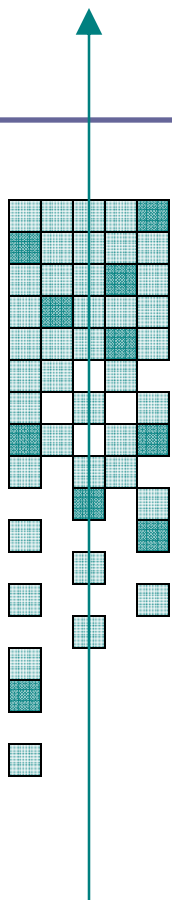
An InDxLogic/AAI Document Type Member consists of:

1. Document Class Member [Document Type:Summary Line] **AND**
2. Associated attributes (signature status, provider, return OCR, etc) **AND**
3. Associated OBS Term and Value

InDxLogic AAI has expanded the concept of Document Type and Summary to Document Type Member



How Many Document Type Members are there?



Phrase Hit Count for: Sound Family Medicine Main Account
Total Phrases: 2344 Phrases with a match: 1426

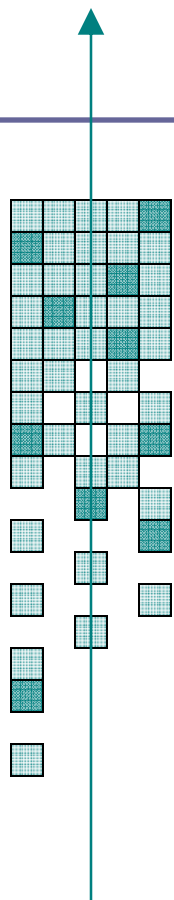
ID	Document Type	Summary	Observation	Sign	Clinical Date
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Phrase Hit Count for: Clinic 2
Total Phrases: 1052 Phrases with a match: 369

ID	Document Type	Summary	Observation	Sign	Clinical Date
17766	Pap Smear	Pap Smear	Pap smear	Signed	FA
15693	Consents	Patient Authorization		Signed	FA
16898	Mammogram	MAMMOGRAM	Mammogram	Signed	FA
16894	FLU CONSENTS	Flu Consent	Flu vax	Signed	FA
24988	Consultation Report	Cardiovascular		Signed	FA

AAI defines the scope of unique document members

What is a Centricity OBS term?



An InDxLogic/AAI 2011 Document Associated OBS Term Value can either be:

1. Dynamic (Numeric, Text)
2. Static (Text)

OBS terms and their associated values can be mapped with InDxLogic/AAI 2011

Dynamic OBS term

Is a numeric or textual value that changes

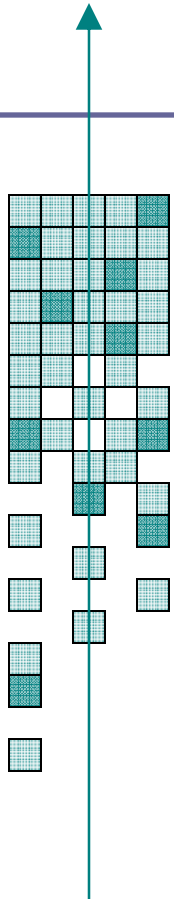
For example:

- 1. Hg/Hct has a range of valid numeric values**
- 2. Impression/Plan has content change with each new document**

Dynamic OBS terms can be “mapped” to content but must be manually reviewed for their numeric value.



Dynamic OBS term: Example



Step 1. Map document content

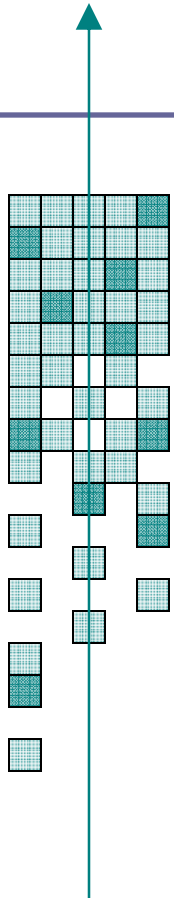
Step 2. Assign OBS term

Step 3. Set “Indexer Review” attribute

Step 4. Submit document



Dynamic OBS term: Example Hg/Hct



Step 5. Everything is indexed; simply highlight and right click numeric OBS entry

PHYSICIAN REPORT

Report For or : Mitchell, Sam A, MD

Names Martha G. Clancey Loc: S3NX

DOB: 10/12/1962 Attend Dr: Mitchell, Sam A, MD

Reg/Admit: 09/26/06 Submitted ICD-9: 21!::9 621.2

Specimen: 0927: Collected: 09127/06-0710

Test	Result	Flag	Reference	Site
<u>HEMATOLOGY</u>			L	<u>12.0-16.0 gm/a.</u>

<u>HEMOGLOBIN & HEMATOCRIT</u>	L	<u>36.0-46.0 t</u>
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Hgb
Hct

9.9
28

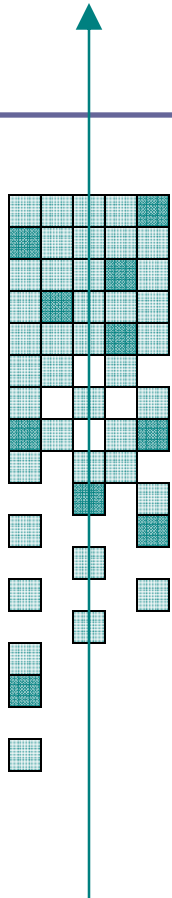
HCT
HGB

Admit Dr: Fan 532150
unit/KRA: XY25686477 S350-A

Prim case Dr. Mitchell,S
Name: Martha G. Clanc



Dynamic OBS term: Example Hg/Hct



Step 6. View in flow sheet!

Chart - NOT FOR PATIENT USE - Harry S. Winston MD @ Southside Clinic (IDLCENTRICITY02/Demo) - 4/27/2011 1:21 PM - [Chart]

Go Actions Options Help
Desktop Chart Sched Reg Reports LinkLogic New View Print Help

Bessie A. Crandell Home: (503) 644-9139 Work: None
95 Years Old Female (DOB: 11/19/1915) Patient ID: 678 Insurance: Consolidated Health Care Group: CHCS5355

Find Pt. Protocols Graph Handouts Update Phone Nt. Refills Organize

Summary History Problems Medications Alerts/Flags **Flowsheet** Orders

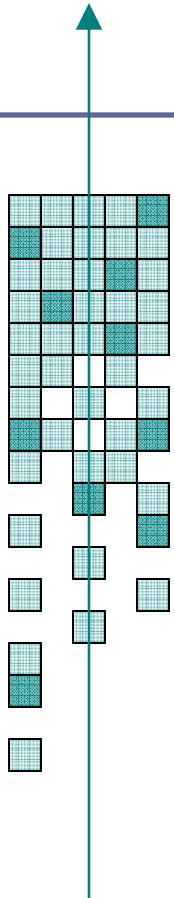
View: <Attached - CBC> Set Attached View Use Date Range To

Days	04/08/2011				
WBC					
RBC					
HGB	9.8				
HCT	30.3				
MCV					
MCH					
MCHC					
PLATELETS					
PMN %					
LYMPHS %					
MONOCYTE %					
EOSINOPHIL %					
BASOPHIL %					
RDW					

Date: Value: Tag: Comment:
By: Range: State: Name:

For Help, press F1 LinkLogic: Jobs = 0;

Dynamic OBS term: Example Impression



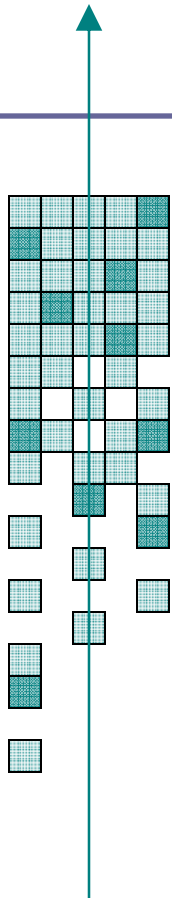
Step 1. Map document content

Step 2. Assign OBS term

Step 3. Set “Indexer Review” attribute

Step 4. Submit document

Dynamic OBS term: Example Impression



STATUS: Si

Sierra View District Hospital
Diagnostic imaging Department
263 East InDxLogic Way
Bend, OR 93221
Ph 503 268 6868 Fax 503 268 6800

Patient: FIONA FLANAGAN Ordering Physician: DUNCAN MD, PAT Primary Care Physician: DUNCAN
 Sex: F Account Number: SVDH63 48356
 Status: Location:

Lumbar spine
 Date of Birth: 01/19/1972 Unit Number: SVDH 35679
 Age: 39 Date of Exam: 03/28/11
3/28/2011 14

Findings: STATUS: Signed
 Lumbar spine examination 5 views Lower back pain 2 months
 3/28/2011 1405 hours.

Adequate alignment
No lumbar fracture
No spondylolisthesis
No significant disc narrowing
No pars defects

Findings:
Adequate alignment lumbar vertebral bodies. No lumbar fracture
No spondylolisthesis.
No significant disc narrowing.
No pars defects on the oblique views

Impression:
No fracture.
Satisfactory alignment.
No significant disc narrowing. Hip joint spaces well-maintained.

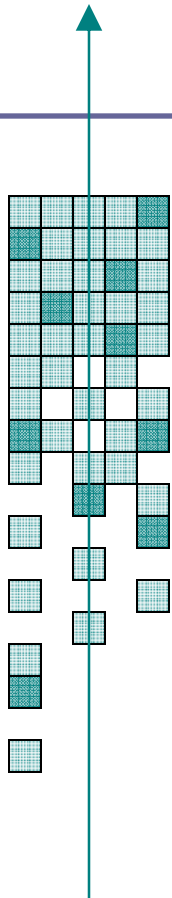
No fracture.
Satisfactory alignment.
No significant disc narrowing.
Hip joint spaces well-maintained.

<<Signature on File>>
 M.O

Dictated By: MacLennan, Thomas W MD E-Signed By: MacLennan, Thomas W MD
 : DUNCAN MD, PAT MacLennan, Thomas W MD
 Transcribed Date/Time: 03/28/11 1429 Printed Date/Time: 03/28/11 1429 Report it: 0328-0166
 Page: 1 Recipient:

<<Signature

Dynamic OBS term: Example Impression



Fiona Flanagan
39 Years Old Female (DOB: 01/19/1972) Patient ID: 728 Home: (503) 648-9875 Work: (503) 489-7845 Insurance: Group:

Find Pt. Protocols Graph Handouts Update Phone Nt. Refills Edit Sign Append Route Organize

Summary History Problems Medications Alerts/Flags Flowsheet Orders

Document View: All Alerts(0)/Flags(0) Group By Date

	0	Date	Summary	Provider	Loca
		04/20/2011 12:	Imag Rpt: Lumbar spine examination 5 views	Pat P. Duncan MD	EAST
		04/20/2011 12:	Path Rpt: Placenta, delivery:	Pat P. Duncan MD	EAST
		04/19/2011 12:	Path Rpt: Placenta, delivery:	Pat P. Duncan MD	EAST

Doc ID: 37 Properties: Imaging Report at EAST on 04/20/2011 12:00 AM by Pat P. Duncan MD Attach

Findings:
Adequate alignment lumbar vertebral bodies. No lumbar fracture
No spondylolisthesis.
No significant disc narrowing.
No pars defects on the oblique views

Impression:
No fracture.
Satisfactory alignment.
No significant disc narrowing. Hip joint spaces well-maintained

For Help, press F1 LinkLogic: Jobs = 0;

Now "Impression" is available to populate an encounter form component



Static OBS term

Has value that is predictable and defined by textual content

For example:

Colonoscopy: Done

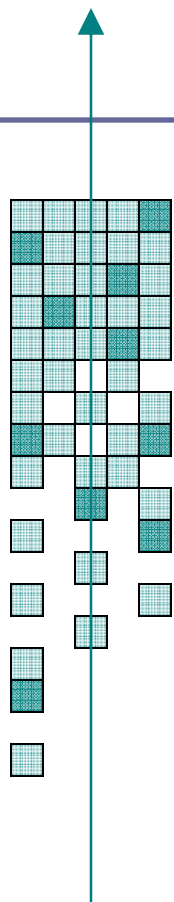
A PAP smear: ASCUS, Dysplasia, LGSIL, CIN, etc

Mammogram: BIRADS I, BIRADS II, etc

Static OBS terms and their values can be “mapped” to content and their capture is easily automated.



Our Methods



Key Considerations

1. NCQA/HEDIS Measures
2. Meet Meaningful Use
3. Improving Clinical Outcomes
4. Patient Population Care Management

Documents contain valuable clinical information!

Our Methods

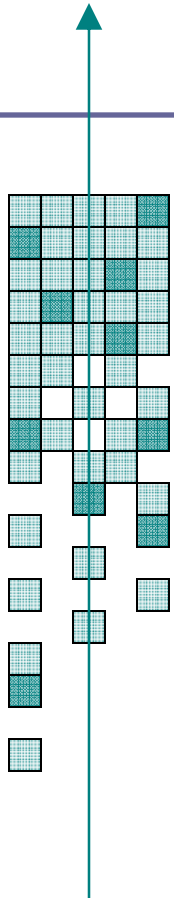
Key Considerations

1. Ease of use
2. Cost efficient
3. Seamless integration with Centricity
4. Automate flow sheet data entry

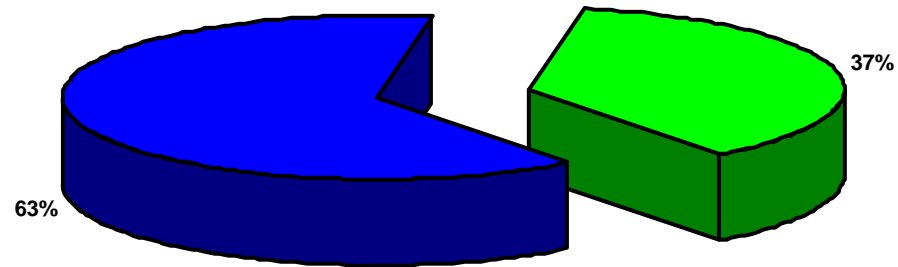
Create reportable metrics from unstructured data sets



OBS Term Frequency



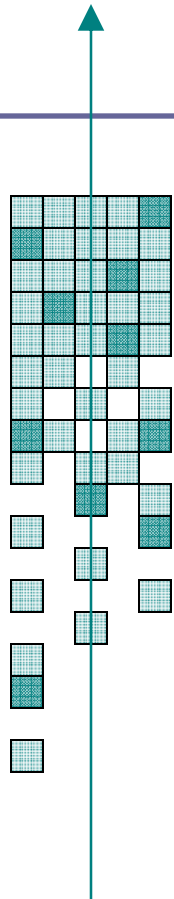
SFM Percentage of Documents with OBS Data



Paper documents contain significant amounts of clinical data!



OBS Term Frequency

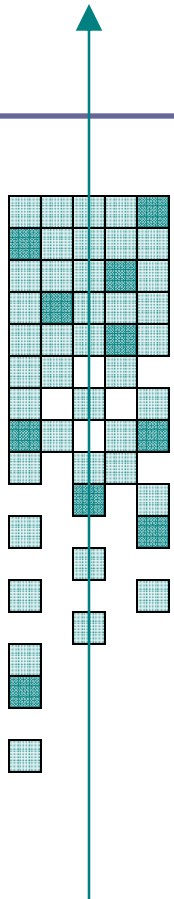


SFM Document Volume: 60,131

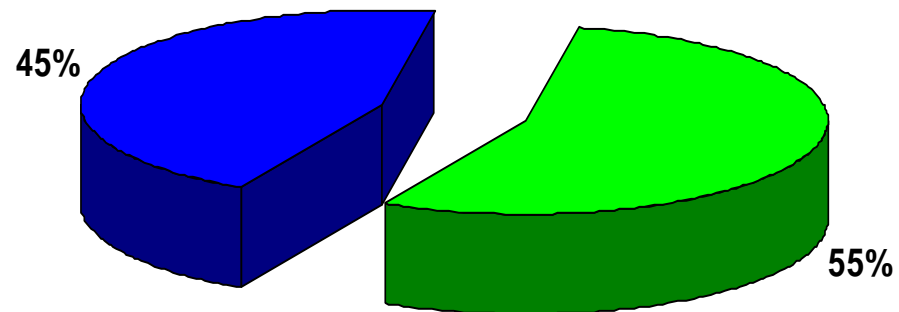
Clinical Event	# documents processed	% OBS Data	% of clinical events
Immunization	11714	19.16	52.97
Mammography	6057	9.91	27.40
Colonoscopy	2124	3.47	9.59
Cervical Cytology/HPV	2076	3.4	9.40
Diabetic Eye Exam	13	0.23	0.64
Total	21984	37%	100
No OBS Data	38147	63%	

Top 5 clinical events by category

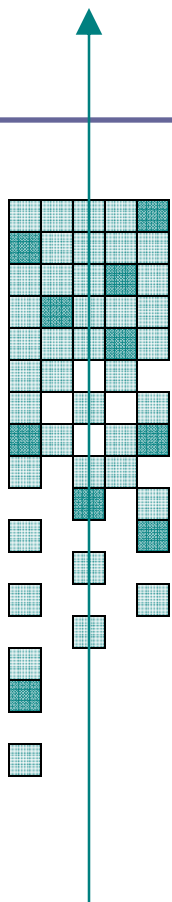
OBS Term Frequency



Clinic 2 Percentage of Documents with OBS Data



OBS Term Management

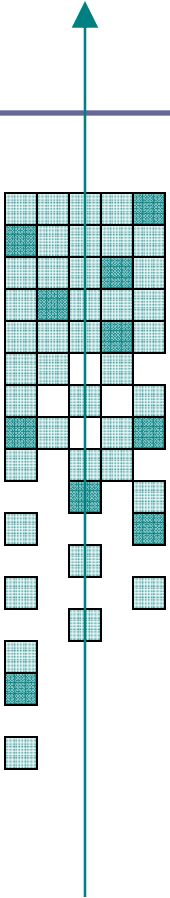


Clinic 2 Document Volume: 32,753

Clinical Event	# documents processed	% OBS Data	% of clinical events
Cervical Cytology	8801	26.87	
Mammography	3392	10.36	20.63
Diabetic Eye Exam	765	2.34	4.66
Chest Xray	754	2.3	4.58
Colonoscopy	2124	2.13	4.24
All others (EGD, ECHO, US Carotid, etc)	2035	6.21	12.37
Total	17871	55%	100.00
No OBS Data	14882	45%	



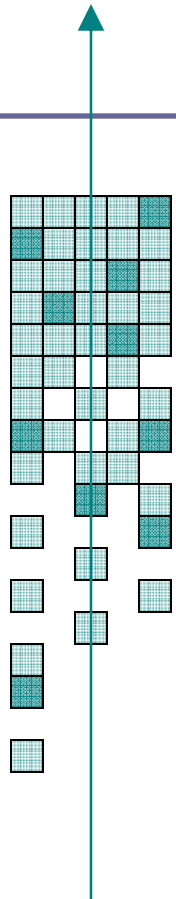
OBS Term Management



Clinic 2

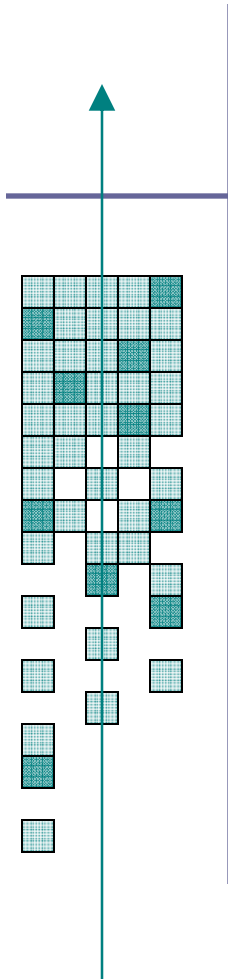
All other Observations	# Documents	% Documents	% Clinical Events
Holter EKG	480	1.46	2.91
EGD	456	1.39	2.77
US Carotid	227	0.69	1.37
PneumoVax	183	0.56	1.12
Stress Echo	176	0.54	1.08
HIPPA	136	0.42	0.84
ECHO	137	0.42	0.84
Advanced Directive	92	0.28	0.56
Nuclear Stress Test	71	0.22	0.44
Group B Strep	33	0.1	0.20
Breast Pathology	17	0.05	0.10
Bone Density	10	0.03	0.06
Diabetic Foot Exam	9	0.03	0.06
Lead Level	8	0.02	0.04
Total	2035	6.21	12.37

Conclusions



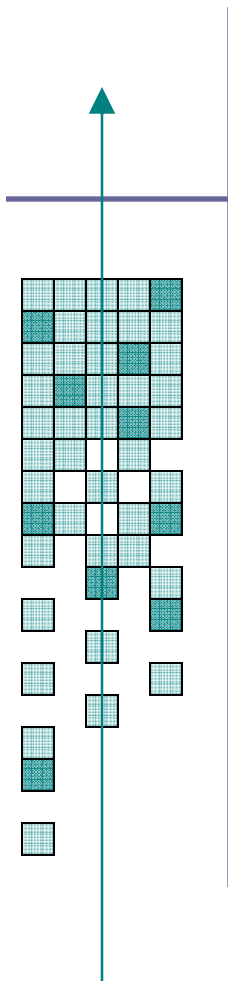
1. 37 – 55% of documents contain useful reportable data
2. Top 4 Observations are:
 - Immunization
 - Cervical Cytology
 - Mammography
 - Colonoscopy
3. Data Capture can be easily automated

Future Directions



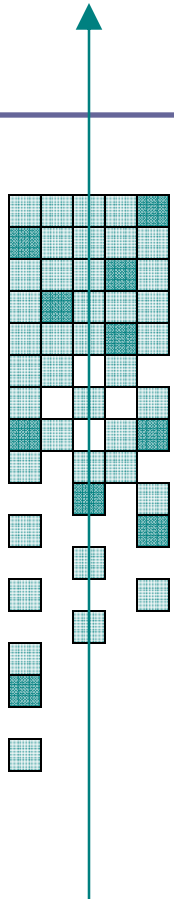
1. Develop Numeric OBS data capture workflows
2. Develop text block workflows to capture impression/plan data

OBS Term Frequency Analysis Using InDxLogic



Questions?

AAI 2011 feature summary



- **Dynamic (numeric) OBS values are permitted**
- **Multiple OBS terms are allowed**
- **OCR text editable**
- **OCR text annotation**
- **Duplicate detection**
- **Enhanced manual search toolset**
- **Tiff image management**
- **Import to DM or PM or both**

