

# Patient Logging Data: Information Overload

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# Objectives

- Construct a data retrieval plan for continuous evaluation of patient logging
- Design basic data questions that can be answered with minimal time commitment
- Describe the importance of using this data to accurately identify student performance
- Effectively evaluate program goals and outcomes for clinical year performance



# Data, Data, Data...

Can there be too much of a good thing?

# Information Overload

- The phrase was first used in 1970
  - Author, A. Toffler, referred to difficulty understanding an issue caused by presence of too much information
  - Preceded the internet
- Digital and Information Age
  - Consume data - instantaneously
  - Produce data - without knowing what to do with it
- A survey by Reuters once found that 2/3 of managers believe that the data deluge has made their jobs less satisfying

# Can there be too much of a good thing?

- Three worries raised by economists:
  1. Overload can make people feel anxious and powerless
  2. Overload can reduce creativity. You must be able to focus in order to develop new ideas
  3. Overload can make workers less productive

# Available Software

- Typhon
- E\*Value
- Eval Source
- SPSS or SAS
- Excel/Access
- Others?

# What data do you collect

- B3.03 *Supervised clinical practice* experiences *must* provide sufficient patient exposure to allow each student to meet **program-defined requirements** with patients seeking:
  - a) medical care across the life span to include, infants, children, adolescents, adults, and the elderly,
  - b) women's health (to include prenatal and gynecologic care),
  - c) care for conditions requiring surgical management, including pre- operative, intra-operative, post-operative care and
  - d) care for behavioral and mental health conditions.

# What data do you collect

- B3.04 Supervised clinical practice experiences must occur in the following **settings**: outpatient, emergency department, inpatient and operating room.
- B3.07 Supervised clinical practice experiences should occur with preceptors practicing in the following **disciplines**: family medicine, internal medicine, general surgery, pediatrics, ob/gyn and behavioral and mental health care.



# Other data you might collect

- Level of involvement (student participation)
- Patient insurance type
- Practice setting (Urban vs Rural)
- Other ideas?



# Step 1: Program defined expectations

- Program defined expectations should be outcomes based, a reflective process based on program goals and mission
- Can no longer just rely on numbers
- Numbers do not equal competency
- Assessment is the key

ARC-PA (2013) *What is "Expected? "Program Defined Expectations* [PowerPoint slides]. Retrieved from <http://www.arc-pa.org/documents/Program%20Defined%20Expectations%204.2014.pdf>

# Program defined expectations cont.

- Programs need to move away from looking for a number and focus instead on defining other ways to measure achievement.
- Programs must develop learning outcomes and assessment tools that measure achievement of those outcomes.
- Programs need qualitative-conceptual measures of achievement, not numbers. These should be tied to instructional objectives and competencies that relate to the areas listed in the Standards .

ARC-PA (2013) *What is "Expected? "Program Defined Expectations* [PowerPoint slides]. Retrieved from <http://www.arc-pa.org/documents/Program%20Defined%20Expectations%204.2014.pdf>

# Program defined expectations cont.

- Student logs can insure exposures to required patient experiences
- Numbers cannot be used to show competency, however, there is absolutely no chance of developing competency or meeting requirements if the student is not exposed to the experiences needed
- There is no magic number of experiences that equals competence

# What good are the numbers?

- Site assessment
- Student assignment to sites
- Are students on site?
- More than zero is essential
- Program self-study issues
  - Are the sites adequate?

ARC-PA (2013) *What is "Expected? "Program Defined Expectations* [PowerPoint slides]. Retrieved from <http://www.arc-pa.org/documents/Program%20Defined%20Expectations%204.2014.pdf>

## Step 2: Come up with basic data questions

- Are students seeing patients across the life span?
- Are sites sufficiently training our students?
- Are students meeting program defined expectations of X number of exposures to Y?
- Could a family medicine site meet our expectation as a pediatrics site?
- Does seeing more patients correlate to higher board scores?

## Step 3: Construct data retrieval plan

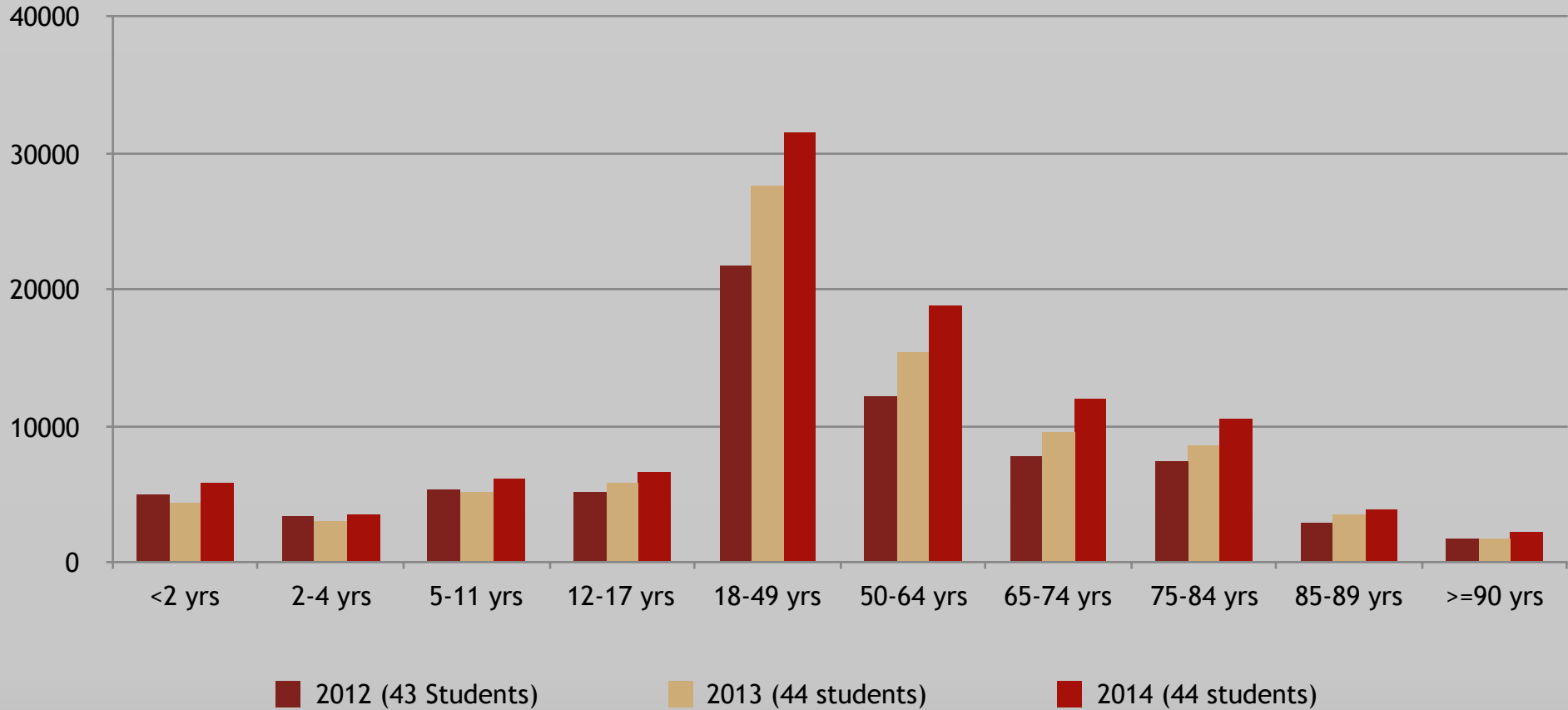
- Analysis of numbers using Comparisons, Correlations etc.
  - Student to Student, Classes
  - Patients, Diagnosis
  - Clinical Sites
  - Preceptors
  - Level of Participation
  - Endless possibilities...



## Question One

Are students seeing patients across the life span? (ARC B3.03)

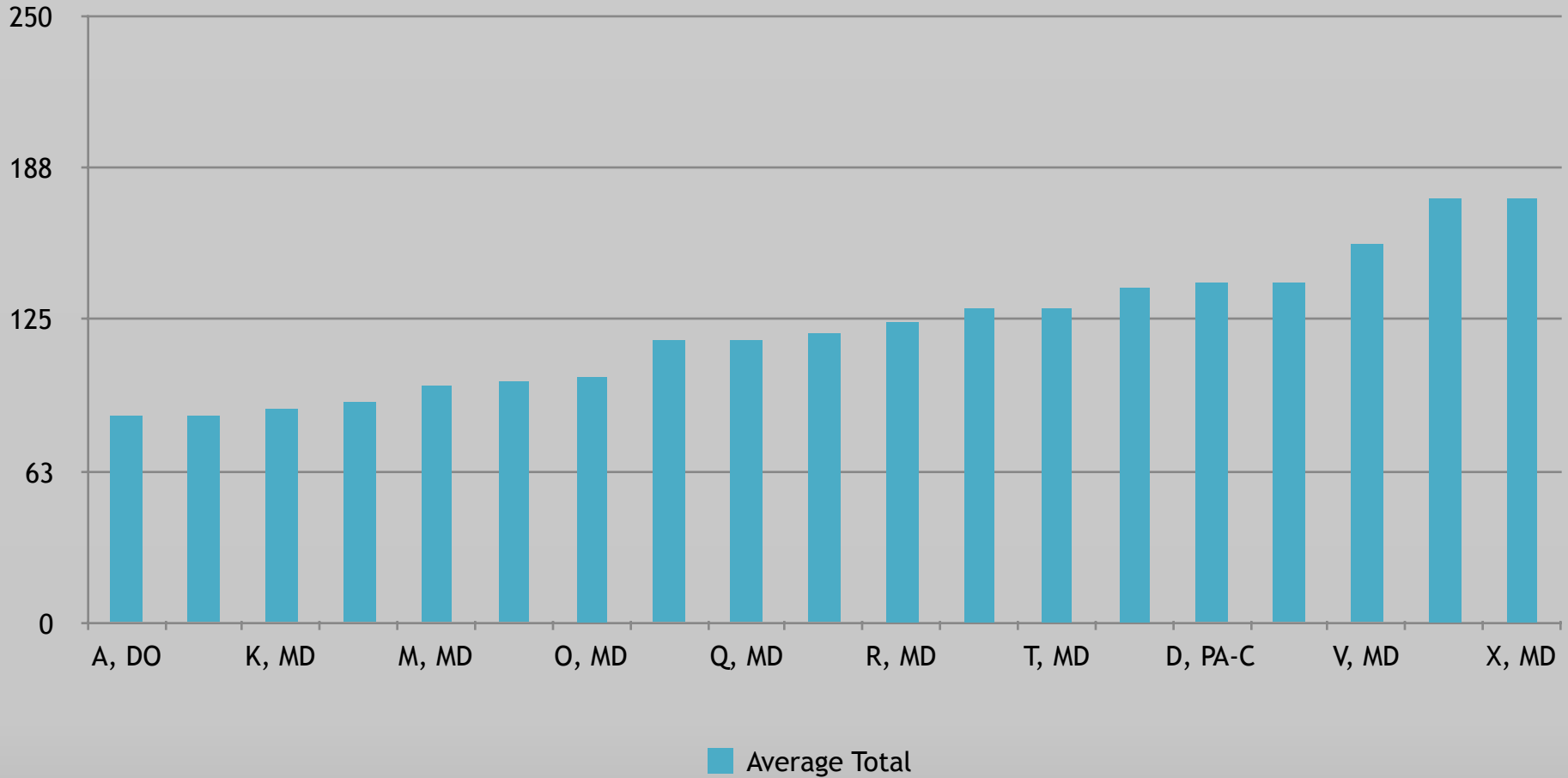
## Documented Patient Encounters by Age



## Question Two

Are sites sufficiently training our students?

## OB Average Patient Numbers by Site





# Other Information to look at

- 
- Students evaluation of the preceptor
- Preceptors evaluation of the student
- Site evaluation data
- Other sources specific to each Program

## Question Three

Are students meeting program defined expectations of X number of exposures to Y?

# Look at the student patient logs

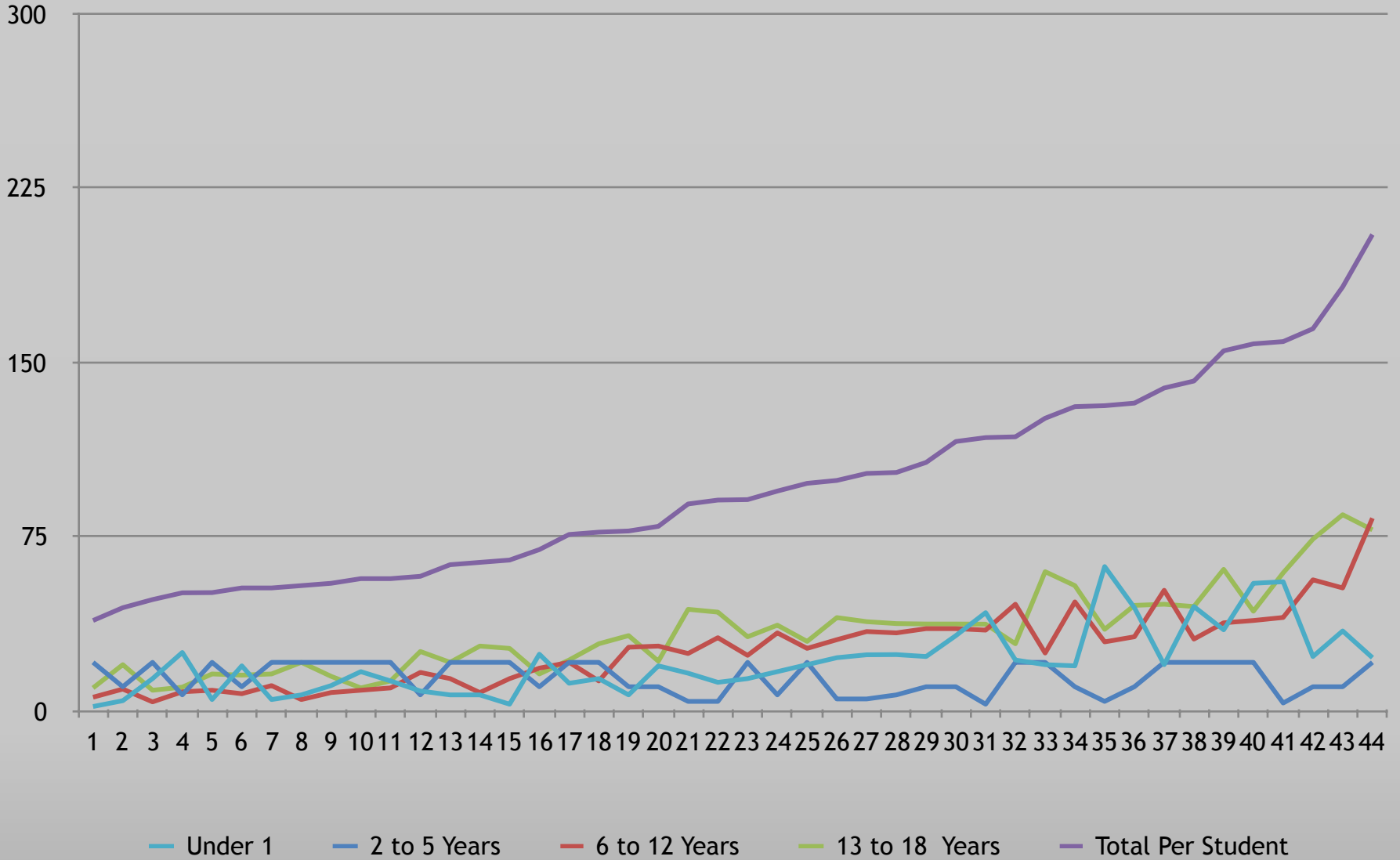
- Check ICD-10 and or CPT codes on student logs
- Assess students knowledge and skills



## Question Four

Can we use existing family medicine sites to meet ARC requirement B3.07, “preceptors practicing in the discipline of pediatrics”?

# Peds Patients During FM Clerkship



Peds %	TOP 20 ICD CODES DESCRIPTION	S, PA-C %	TOP 20 ICD CODES DESCRIPTION	B, PA-C %	TOP 20 ICD CODES DESCRIPTION	H, MD %	TOP 20 ICD CODES DESCRIPTION	E, MD %	TOP 20 ICD CODES DESCRIPTION	C, PA-C %	TOP 20 ICD CODES DESCRIPTION
23.39%	V20 - HEALTH SUPERVISION OF INFANT/CHILD	18.13%	V70 - GENERAL MEDICAL EXAMINATION	8.29%	V20 - HEALTH SUPERVISION OF INFANT/CHILD	7.30%	V70 - GENERAL MEDICAL EXAMINATION	2.16%	401 - ESSENTIAL HYPERTENSION	7.50%	V20 - HEALTH SUPERVISION OF INFANT/CHILD
3.94%	786 - RESPIRATORY SYMPTOMS	3.93%	715 - OSTEOARTHRITIS AND ALLIED DISORDERS	7.67%	401 - ESSENTIAL HYPERTENSION	6.13%	401 - ESSENTIAL HYPERTENSION	2.78%	465 - ACUTE URI MULTIPLE SITES	5.58%	401 - ESSENTIAL HYPERTENSION
3.81%	465 - ACUTE URI MULTIPLE SITES	3.78%	401 - ESSENTIAL HYPERTENSION	6.12%	V70 - GENERAL MEDICAL EXAMINATION	4.41%	461 - ACUTE SINUSITIS	1.95%	272 - DISORDERS OF LIPOID METABOLISM	5.06%	460 - ACUTE NASOPHARYNGITIS
3.54%	381 - NONSUPPURATIVE OTITIS MEDIA	3.32%	465 - ACUTE URI MULTIPLE SITES	3.95%	272 - DISORDERS OF LIPOID METABOLISM	3.80%	477 - ALLERGIC RHINITIS	1.17%	V20 - HEALTH SUPERVISION OF INFANT/CHILD	3.66%	719 - OTHER/UNSPECIFIED DISORDERS JOINT
3.08%	460 - ACUTE NASOPHARYNGITIS	3.17%	780 - GENERAL SYMPTOMS	3.64%	465 - ACUTE URI MULTIPLE SITES	2.94%	465 - ACUTE URI MULTIPLE SITES	0.91%	719 - OTHER/UNSPECIFIED DISORDERS JOINT	3.32%	V70 - GENERAL MEDICAL EXAMINATION
3.00%	461 - ACUTE SINUSITIS	3.02%	V20 - HEALTH SUPERVISION OF INFANT/CHILD	2.79%	250 - DIABETES MELLITUS	2.64%	272 - DISORDERS OF LIPOID METABOLISM	1.46%	V70 - GENERAL MEDICAL EXAMINATION	3.14%	250 - DIABETES MELLITUS
2.79%	382 - SUPPURATIVE/UNSPEC OTITIS MEDIA	2.87%	V72 - SPECIAL INVESTIGATIONS/ EXAMINATIONS	2.64%	381 - NONSUPPURATIVE OTITIS MEDIA	2.33%	250 - DIABETES MELLITUS	0.75%	V72 - SPECIAL INVESTIGATIONS/ EXAMINATIONS	2.97%	V22 - NORMAL PREGNANCY
2.40%	314 - HYPERKINETIC SYNDROME OF CHILDHOOD	2.72%	380 - DISORDERS OF EXTERNAL EAR	2.40%	460 - ACUTE NASOPHARYNGITIS	1.96%	034 - STREP SORE THROAT AND SCARLET FEVER	0.75%	786 - RESPIRATORY SYMPTOMS	2.62%	461 - ACUTE SINUSITIS
2.26%	493 - ASTHMA	1.96%	461 - ACUTE SINUSITIS	2.25%	786 - RESPIRATORY SYMPTOMS	1.90%	466 - ACUTE BRONCHITIS AND BRONCHIOLITIS	0.80%	461 - ACUTE SINUSITIS	2.27%	780 - GENERAL SYMPTOMS
2.23%	477 - ALLERGIC RHINITIS	1.96%	692 - CONTACT DERMATITIS	2.09%	599 - OT DISORDERS URETHRA/URINARY TRACT	1.72%	382 - SUPPURATIVE/UNSPEC OTITIS MEDIA	0.68%	V22 - NORMAL PREGNANCY	2.09%	078 - OTHER DISEASE VIRUS/CHLAMYDIAE
2.09%	V70 - GENERAL MEDICAL EXAMINATION	1.81%	728 - DISORDERS MUSCLE/ LIGAMENT/FASCIA	1.94%	782 - SKIN/INTEGUMENTARY SYMPTOMS	1.59%	460 - ACUTE NASOPHARYNGITIS	0.62%	250 - DIABETES MELLITUS	2.09%	290 - SENILE/PRESENILE ORGANIC PSYCHOSES
1.82%	034 - STREP SORE THROAT AND SCARLET FEVER	1.66%	110 - DERMATOPHYTOSIS	1.86%	682 - OTHER CELLULITIS AND ABSCESS	1.47%	719 - OTHER/UNSPECIFIED DISORDERS JOINT	0.73%	789 - ABDOMINAL/PELVIC SYMPTOMS	1.75%	491 - CHRONIC BRONCHITIS
1.76%	780 - GENERAL SYMPTOMS	1.66%	706 - DISEASES OF SEBACEOUS GLANDS	1.78%	461 - ACUTE SINUSITIS	1.47%	724 - OT/UNSPEC DISORDER OF BACK	0.57%	724 - OT/UNSPEC DISORDER OF BACK	1.75%	789 - ABDOMINAL/PELVIC SYMPTOMS
1.66%	466 - ACUTE BRONCHITIS AND BRONCHIOLITIS	1.66%	719 - OTHER/UNSPECIFIED DISORDERS JOINT	1.63%	493 - ASTHMA	1.47%	V72 - SPECIAL INVESTIGATIONS/ EXAMINATIONS	0.52%	780 - GENERAL SYMPTOMS	1.57%	477 - ALLERGIC RHINITIS
1.56%	462 - ACUTE PHARYNGITIS	1.66%	995 - CERTAIN OTHER ADVERSE EFFECTS	1.63%	789 - ABDOMINAL/PELVIC SYMPTOMS	1.35%	726 - PERIPHERAL ENTHESOPATHIES	0.49%	466 - ACUTE BRONCHITIS AND BRONCHIOLITIS	1.57%	682 - OTHER CELLULITIS AND ABSCESS
1.27%	787 - DIGESTIVE SYSTEM SYMPTOMS	1.51%	238 - OT/UNSPECIFIED UNCERTAIN BEHAV NEOPLASM	1.55%	477 - ALLERGIC RHINITIS	1.35%	845 - SPRAINS AND STRAINS ANKLE AND FOOT	0.47%	787 - DIGESTIVE SYSTEM SYMPTOMS	1.40%	414 - OT CHRONIC ISCHEMIC HEART DISEASE
1.25%	078 - OTHER DISEASE VIRUS/CHLAMYDIAE	1.51%	382 - SUPPURATIVE/UNSPEC OTITIS MEDIA	1.55%	724 - OT/UNSPEC DISORDER OF BACK	1.29%	296 - AFFECTIVE PSYCHOSES	0.42%	477 - ALLERGIC RHINITIS	1.22%	462 - ACUTE PHARYNGITIS
1.21%	692 - CONTACT DERMATITIS	1.51%	724 - OT/UNSPEC DISORDER OF BACK	1.47%	008 - INTESTINAL INFECTIONS OT ORGANISMS	1.23%	462 - ACUTE PHARYNGITIS	0.33%	V58 - ENCOUNTER FOR AFTERCARE	1.22%	724 - OT/UNSPEC DISORDER OF BACK
1.18%	564 - OTHER FUNCTIONAL DIGESTIVE DISORD	1.36%	462 - ACUTE PHARYNGITIS	1.47%	530 - DISEASES OF ESOPHAGUS	1.23%	564 - OTHER FUNCTIONAL DIGESTIVE DISORD	0.42%	346 - MIGRAINE	1.22%	786 - RESPIRATORY SYMPTOMS
1.15%	784 - HEAD AND NECK SYMPTOMS	1.21%	250 - DIABETES MELLITUS	1.32%	380 - DISORDERS OF EXTERNAL EAR	1.16%	372 - DISORDERS OF CONJUNCTIVA	0.34%	V67 - FOLLOW-UP EXAMINATION	1.05%	650 - NORMAL DELIVERY

## Question Five

Does seeing more patients correlate to higher board scores?

Correlations								
		Total Cases Entered	Total Pt Hrs	Total Level 1	Total Level 2	Total Level 3	Total Level 4	PANCE Final Score
Total Cases Entered	Pearson Correlation	1	.583**	.358*	.657**	.428**	-.078	.108
	Sig. (2-tailed)		.000	.017	.000	.004	.616	.486
	N	44	44	44	44	44	44	44
Total Pt Hrs	Pearson Correlation	.583**	1	.173	.374*	.207	.032	.104
	Sig. (2-tailed)	.000		.263	.012	.178	.835	.503
	N	44	44	44	44	44	44	44
Total Level 1	Pearson Correlation	.358*	.173	1	-.007	-.182	-.239	.066
	Sig. (2-tailed)	.017	.263		.964	.236	.118	.672
	N	44	44	44	44	44	44	44
Total Level 2	Pearson Correlation	.657**	.374*	-.007	1	.382*	-.353*	.057
	Sig. (2-tailed)	.000	.012	.964		.011	.019	.712
	N	44	44	44	44	44	44	44
Total Level 3	Pearson Correlation	.428**	.207	-.182	.382*	1	-.643**	.033
	Sig. (2-tailed)	.004	.178	.236	.011		.000	.831
	N	44	44	44	44	44	44	44
Total Level 4	Pearson Correlation	-.078	.032	-.239	-.353*	-.643**	1	-.008
	Sig. (2-tailed)	.616	.835	.118	.019	.000		.958
	N	44	44	44	44	44	44	44
PANCE Final Score	Pearson Correlation	.108	.104	.066	.057	.033	-.008	1
	Sig. (2-tailed)	.486	.503	.672	.712	.831	.958	
	N	44	44	44	44	44	44	44

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Correlations									
		Endo Elective	Endo Pt Hr	Endo Total Pt	Endo Level 1	Endo Level 2	Endo Level 3	Endo Level 4	PANCE Endocrine
Endo Elective	Pearson Correlation	1	.834**	.964**	.508**	.639**	.839**	.904**	.367*
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.014
	N	44	44	44	44	44	44	44	44
Endo Pt Hr	Pearson Correlation	.834**	1	.905**	.587**	.711**	.600**	.922**	.255
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.095
	N	44	44	44	44	44	44	44	44
Endo Total Pt	Pearson Correlation	.964**	.905**	1	.566**	.707**	.846**	.940**	.377*
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.012
	N	44	44	44	44	44	44	44	44
Endo Level 1	Pearson Correlation	.508**	.587**	.566**	1	.529**	.446**	.443**	.228
	Sig. (2-tailed)	.000	.000	.000		.000	.002	.003	.137
	N	44	44	44	44	44	44	44	44
Endo Level 2	Pearson Correlation	.639**	.711**	.707**	.529**	1	.722**	.522**	.385**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.010
	N	44	44	44	44	44	44	44	44
Endo Level 3	Pearson Correlation	.839**	.600**	.846**	.446**	.722**	1	.633**	.456**
	Sig. (2-tailed)	.000	.000	.000	.002	.000		.000	.002
	N	44	44	44	44	44	44	44	44
Endo Level 4	Pearson Correlation	.904**	.922**	.940**	.443**	.522**	.633**	1	.264
	Sig. (2-tailed)	.000	.000	.000	.003	.000	.000		.083
	N	44	44	44	44	44	44	44	44
PANCE Endocrine	Pearson Correlation	.367*	.255	.377*	.228	.385**	.456**	.264	1
	Sig. (2-tailed)	.014	.095	.012	.137	.010	.002	.083	
	N	44	44	44	44	44	44	44	44

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

# Conclusions

- Design a data retrieval system that meets your needs
- Data questions do not need to be complex
  - They may lead to more advanced questions
- Determine if the knowledge you are seeking meets a “need”
  - i.e. start with ARC-PA Standards
- **Most importantly**
  - don't let your time and energy go to waste
    - Create new ideas
    - Act on your findings

# Questions?

## Thank You!

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