

Objectives

- Sources of data in epidemiology
- Understand methods of assessments of frequency of diseases
- Indicators

Epidemiology and Public Health

Epidemiology



Public Health

Study of health related

Problem to know:

- **Pattern** of its occurrence
- **Distribution** (time, person and place)
- **Determinants** (factors affecting risk factors and causes)

Through:

Epidemiologic methods and tools

Activity (actions) to

- Improve health
- Reduce morbidity and mortality

Through:

Health programs such as

- Immunization program
- Infectious control program
- MCH program
- Geriatric health, etc.

Sources of Data in Epidemiology

Birth and Death Certificates

 **Birth Certificate** 

This Certifies That

_____ (Name)
was born to _____ and _____
(Mother) (Father)

on _____ at _____
(Date) (Time)

weight _____ length _____
(Weight) (Length)

at _____
(Location)

in _____ (City) _____ (State)

(Signed) _____ (Signed)



 www.FreePrintableCertificates.net 

State of West Virginia  County of Randolph, ss:

Death Certificate

I, BRENDA WISEMAN, Clerk of the County Commission in the County and State aforesaid, in being an office of record, and having a seal, do hereby certify that the records in my office show that

Dullesse Kelley died at _____ XXXX
in Randolph County and State of West Virginia, on the 5th day of OCTOBER, 1888.
Sex Male ~~Female~~ Age: 63 years
Cause of Disease or Cause of Death Unknown

Occupation FARMER
Married Unmarried Single Divorced
as shown by certificate of death returned by XXXX, and recorded in Death Record No. _____ at page _____ Certificate filed Oct. 11, 1888

In testimony whereof, I have hereunto affixed my signature and official seal at Elkins, West Virginia, this 19th day of _____ 2007
Brenda Wiseman
Clerk of Randolph County Commission, Elkins, W. Va. 26041



Patient Record

FileMed - Michael A. O'Donovan, MD

File Edit Tools Appointments Help License

filemed

New Patient
Demographics
Clinical Chart
Images
Network Configuration
Export Database
Backup
Exit

Demographics

Last Name, Maiden	First Name, MI		
Watts	Jennifer A		
Record#	Social Security #	D.O.B. <small>mm/dd/yyyy</small>	
000001	23784598	03/08/1967	
Current age	Sex	Marital St.	Occupation
39 y.	F	MAR	Teacher
Insurance/Coverage	Insurance ID	Nationality	
Blue Cross/Blue Shield	47815879	american	
Address	City	Photo	
7235 SW 48th St	Miami		
State/Province	Zip/Postal Code	Add Delete Change	
FL	33155		
Phone	Fax	Diagnoses	
305-666-5599	305-666-5560	ICD-9CM ICD-10 Paste	
Mobile/Pager	Email	11/25/2004: Allergic rhinitis Nasal polyps Acute sinusitis.	
305-666-5015	jenwatts@uol.net		
Referring Physician	Attending Physician		
Dr W. Garland	Dr. Herman Stewart		
Date of First Visit			
07/15/2004			

Remove Pt Print Save Cancel

Patient: Watts, Jennifer A User: Administrator Version 5.1 - Multiuser

Questionnaire

A. About you and your teaching

1. *Your gender:* Male Female

2. *Your teaching experience:* < 1 year 1-5 years > 5 years

a) How long have you been teaching?

b) How long have you been in your current post?

3. *How much time do you spend in teaching and preparation in English Language at P7 in a typical week?* < 1 hour 1-5 hours 6-10 hours > 10 hours

a) Teaching

b) Preparation

4. *On professional development:* Yes No

a) Have you had any professional development in English Language in the last two years?

b) Are you satisfied with the number of professional development opportunities available to you in English Language?

5. *Please indicate your opinion about your pupils' motivation to learn, behaviour and lesson attendance (in general):* Very good Good Poor Very poor

a) Motivation to learn

b) Behaviour in class

c) Lesson attendance

6. *Please indicate how you use 5-14 National Assessments with your P7 pupils:* Always Sometimes Never

a) With individual pupils when you judge they have attained a level

b) With groups of pupils when you judge they have attained a level

c) With the whole class, when you judge most have attained a level, irrespective of time of year

d) With the whole class at set times each year

7. *If you use National Assessments with your P7 pupils, for what proportion of pupils would you say the test results and your own judgments coincide?* Fewer than half Over half The majority Almost all

a) Reading

b) Writing

Laboratory Results

Laboratory Results

Four AIDS patients with compromised immune function

Name	Age	Sex	Start	Time on LifeOne			
				Test #1	(Days)	Test #2	(Days)
Aispuro, F	24	M	09/28/02	11/09/02	42	01/06/03	100
Balcazar, M	26	M	10/03/02	11/08/02	36	01/09/03	98
Cano, D*	48	M	10/14/02	12/02/02	49	01/06/03	84
Jimenez, R	35	M	10/15/02	11/07/02	23	01/07/03	84
Average	33.25				38		92

Name	Absolute Lymphocyte Count Range: 1,000 - 3,500 cells/ml				T-cells CD3+ Range: 740 - 2,400 cells/ml				CD4 (CD3+CD4+) Range: 440 - 1,600 cells/ml			
	Begin	Test #1	Test #2	Change	Begin	Test #1	Test #2	Change	Begin	Test #1	Test #2	Change
Aispuro, F	1,500	2,600	2,900	1,400	975	1,850	1,925	950	148	335	389	241
Balcazar, M	1,900	1,500	1,680	-220	1,300	1,100	1,200	-100	150	225	350	200
Cano, D*	1,200	1,500	1,400	200	840	626	1,050	210	117	575	156	39
Jimenez, R	1,300	2,500	1,700	400	885	1,750	1,200	315	151	385	345	194
Average	1,475	2,025	1,920	445	1,000	1,332	1,344	344	142	380	310	169
		IMPROVED BY 30.2%				IMPROVED BY 34.4%				IMPROVED BY 119.1%		

Name	CD8 (CD3+ CD8+) Reference Range: 170 - 940 cells/ml				CD4/CD8 Reference Range: 0.9 - 5.0 cells/ml				HIV-1 (RNA) Viral Load Reference Range: No detected copies/ml			
	Begin	Test #1	Test #2	Change	Begin	Test #1	Test #2	Change	Begin	Test #1	Test #2	Change
Aispuro, F	235	450	476	241	0.6	0.8	0.9	0.3	1,900	1,900	2,100	200
Balcazar, M	150	326	420	270	1.0	0.7	0.7	-0.3	67,400	4,010	2,500	-64,900
Cano, D*	168	189	189	21	0.7	3.0	1.0	0.3	2,900	75	250	-2,650
Jimenez, R	222	525	392	170	0.7	0.8	0.9	0.2	16,000	2,100	2,010	-13,990
Average	194	373	369	176	0.8	1.3	0.9	0.1	22,050	2,021	1,715	-20,335
		IMPROVED BY 90.6%				IMPROVED BY 15.6%				IMPROVED BY 92.2%		

Name	Glucose mg/dl				Cholesterol mg/dl				Triglycerides mg/dl			
	Begin	Test #1	Test #2	Change	Begin	Test #1	Test #2	Change	Begin	Test #1	Test #2	Change
Aispuro, F	86	82	98	12	174	176	170	-4	282	150	144	-138
Balcazar, M	95	85	78	-17	219	195	185	-34	199	138	140	-59
Cano, D*	149	107	105	-44	264	268	269	5	327	540	730	403
Jimenez, R	107	88	97	-10	268	164	177	-91	540	339	344	-196
Average	109	91	95	-15	231	201	200	-31	337	292	340	3
		IMPROVED BY 13.5%				IMPROVED BY 13.4%				REDUCED BY 0.7%		

*Patient Cano, D. stopped taking the formula after 23 days due to a misunderstanding of the protocol. His follow up lab work was done on day 38, and began taking the formula again.



DATA collection
SHOULD
be taken seriously

**You SHOULD
KNOW**

What and Why

you are collecting

x

SAMPLE

y

Population







PrOpOrtIOn

RATIO

Indicator

مؤشر



**All calculations
are used as
Indicators**

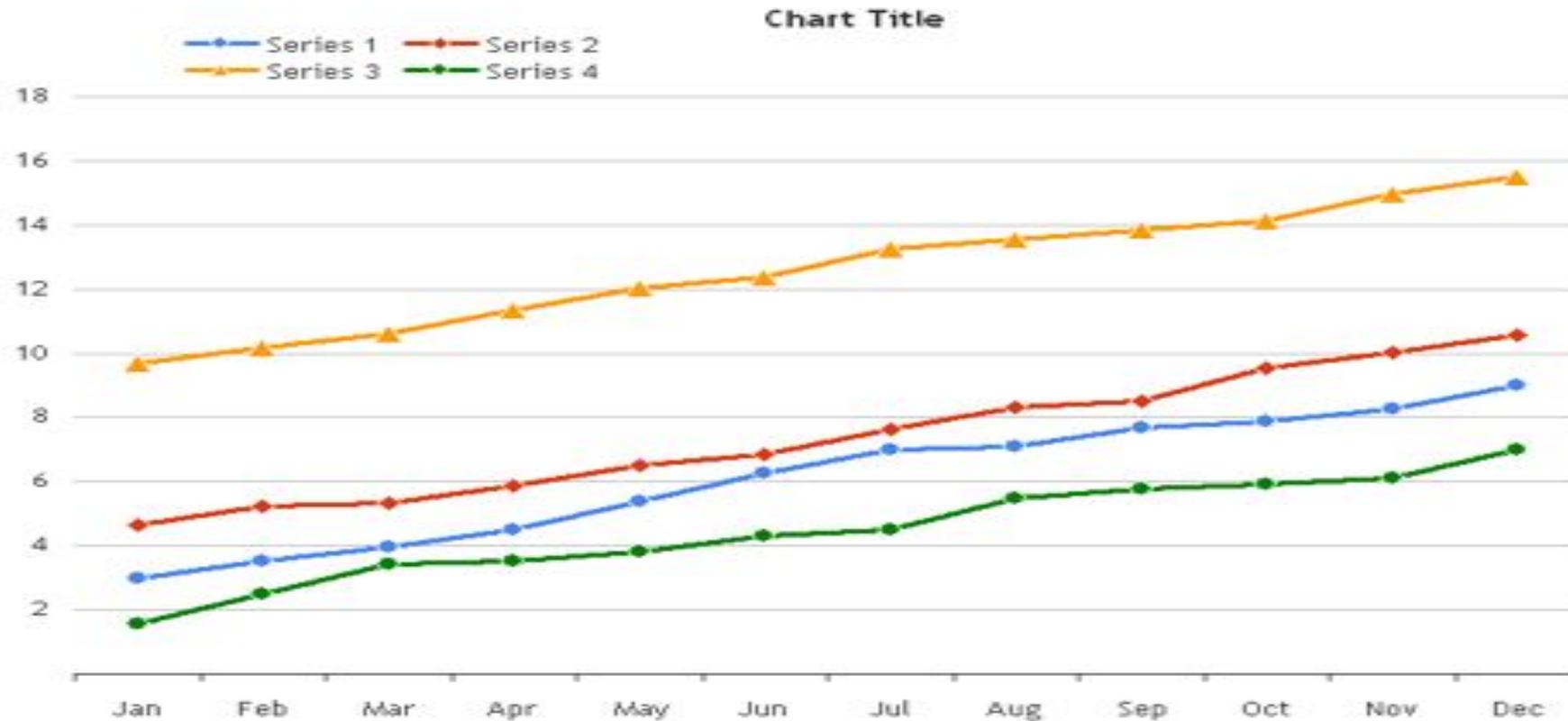
Uses of Indicators

1- **Simplify** information about complex phenomena in order to **improve communication**



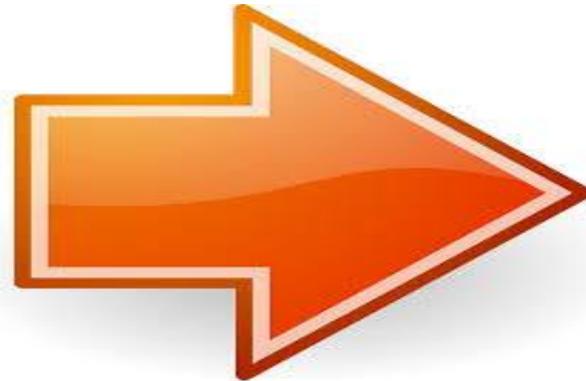
Uses of Indicators

2- Monitor **progress** over time



Uses of Indicators

3- **Indicate** (POINTS) that **something is good or wrong** is going on



Uses of Indicators

4- An indicator must be useful to its intended audience. It must **convey information that is meaningful to decision makers** and in a form which is easily understood



**Public and Decision Makers
are interested
in an answer to the question
of**

What are the **risks** ?

OR

What is the **probability**
that the event would
occur or happen

Epidemiology is

DATA

driven

WHAT IS **QUALITY DATA**

ACCURACY

- Data should be accurate for the intended use
- Variables should have consistent well communicated definitions

VALIDITY

- Data should measure what is intended to be measured

RELIABILITY

- Data should reflect stable and consistent data collection methods

TIMELINESS

- Data should be captured as quickly as possible after the event or activity and must be available for the intended use within a reasonable time period
 - Data must be available quickly and frequently enough to support information needs and to influence decisions

RELEVANCE

- Data should be relevant to the question for which it is addresses

COMPLETENESS

- Data should be checked for outliers and missing data

ALIGNMENT

- Alignment with other data sources should be identified, validated, and checked for accuracy between variables

OWNERSHIP

- A specific organization, agency, or individual should be identified as having primary ownership of the data