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**
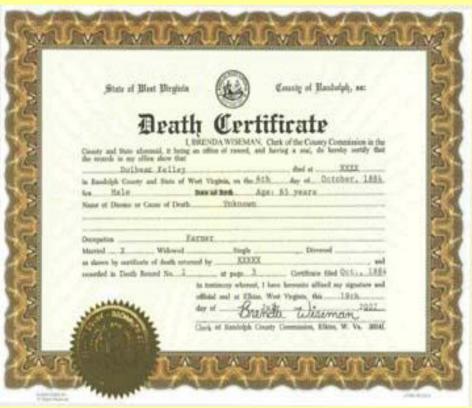- **Reduce morbidity and mortality**

Through:
Health programs such as
- Immunization program
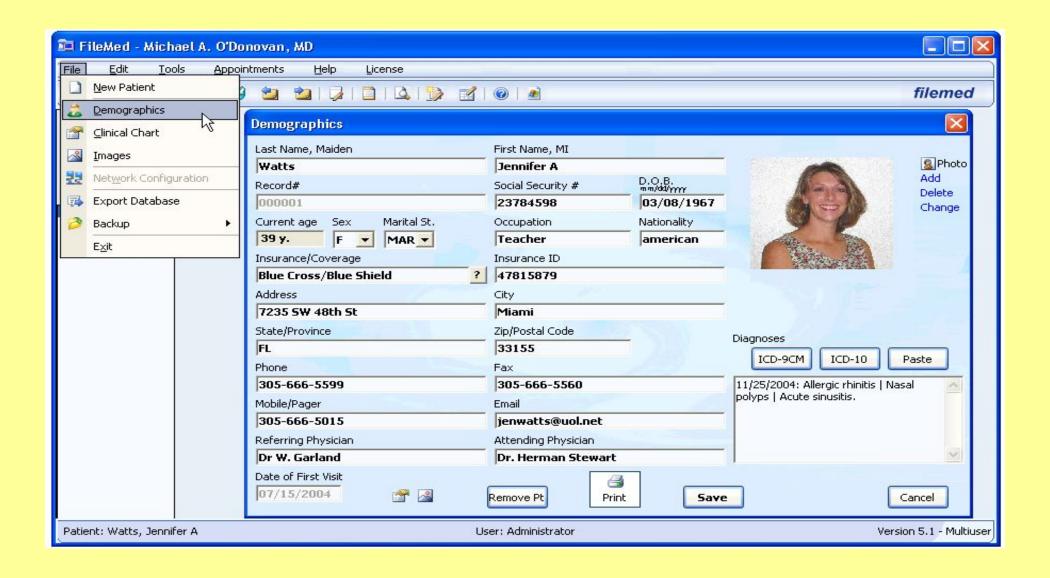- Infectious control program
- MCH program
- Geriatric health, etc.

Sources of Data
in
Epidemiology

Birth and Death Certificates

Patient Record

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	Test #1	Time on LifeOne (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 - 3500 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				Triglicerides 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

y

Population

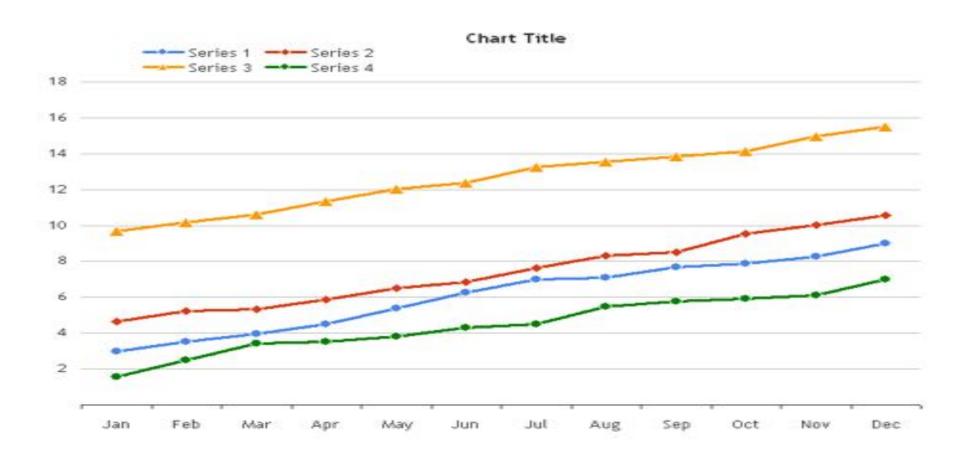_____

%

Proportion

RATIO

Indicator

مؤشر

All calculations are used as Indicators

Uses of Indicators

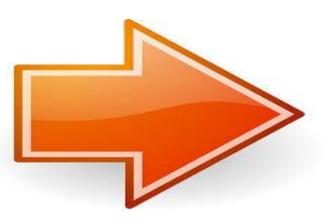1- **Simplify** information about complex phenomena in order to **improve communication**

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