Community Medicine
Medical Research
Surveillance

Dr's Summary with Student own hand notes.

Written by : Mousa Al-Neimat

What is surveillance?

"Systematic ongoing collection, collation, and analysis of data and the timely dissemination of information to those who need to know so that action can be taken."

World Health Organization

"The ongoing systematic collection, analysis, and interpretation of health data, essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know."

التنفيذ
(المقصود)
تنفيذ
الـ (plans

U.S. Centers for Disease Control and Prevention

Surveillance: general objectives

- To follow trends in the health status of a population over time.

- To establish health care and public health priorities

- To ensure those with greatest need are prioritized.

- To detect and respond to epidemics

- To evaluate the effectiveness of programmes and services

Surveillance

- Surveillance can often produce information which is more timely than information gathered by other methods, such as surveys. It can also allow you to monitor trends more easily.

(handwritten notes in margin) Cause it is timly dissaminated to ppl who need to Know.

(handwritten Arabic note) تمثل الحاضر

Types of surveillance

- Surveillance can be classified into the following types:

- ***Passive surveillance:*** a system in which data generated without solicitation, intervention or contact by the health agency carrying out the surveillance. Other agencies initiate reporting.

- The data collator awaits its reporting , as with the British system of notifiable disease reporting

Types of surveillance

- ***Active surveillance*** – the organization conducting surveillance initiates procedures to obtain reports *opposite to passive*
- The data collator checks that the reporting agency is indeed collecting the source data , and doing so as completely as the collection mechanism allows

Types of Surveillance

1. **Passive Surveillance:**

    - The health authority **does not actively search** for data.
    - **Reports come voluntarily** from hospitals or doctors (e.g., notifiable disease reports).
    - It's **cheaper and easier**, but may **miss some cases**.

      advantage   *disadvantage*

2. **Active Surveillance:**

    - The health authority **actively collects** the data.
    - Staff may **contact hospitals, labs, or clinics** to get complete reports.
    - It's **more accurate and complete**, but **costs more** and needs more effort.

      advantage,   *disadvantage*

Passive surveillance: a system in which data generated without solicitation,"

".intervention or contact by the health agency carrying out the surveillance &

Data Collutors.

- التحليل:

- "Passive surveillance" = المراقبة السلبية.

- "a system in which data generated without solicitation, intervention or contact"

= نظام تُجمع فيه البيانات دون أن تطلبها أو تتدخل فيها الجهة الصحية.

- "by the health agency carrying out the surveillance" = أي أن الجهة الصحية

المسؤولة عن المراقبة لا تقوم بالبحث أو الاتصال لجمع البيانات.

Other agincies doing the reports and data collecting and analysis

Data collectors minotor Data collection and anylyse and interpret and give him the result to the agency.

Active surveillance - the organization conducting surveillance initiates procedures

"to obtain reports ~~op to pasine~~

- التحليل:

  - "Active surveillance" = المراقبة النشطة.

  - "the organization conducting surveillance initiates procedures to obtain reports" = الجهة المسؤولة تقوم بالمبادرة لإجراء خطوات للحصول على التقارير.

  - ~~(هناك خطأ مطبعي في "op to pasine" يبدو أنه غير مهم أو خطأ في النسخ).~~

The data collator checks that the reporting agency is indeed collecting the source

data, and doing so as completely as the collection mechanism allows".

- التحليل:

  - "The data collator checks" = جامع البيانات يتأكد.

  - "that the reporting agency is indeed collecting the source data" = أن الجهة المبلغة تجمع البيانات الأصلية فعلاً.

  - "and doing so as completely as the collection mechanism allows" = وبأكبر قدر ممكن من الاكتمال حسب الطريقة المتبعة في جمع البيانات.

data collator checks the data collecting procedures.

Types of surveillance

- **Negative surveillance:** where the data collator presses the collector to report even the absence of cases.
- This is the typically required for uncommon disorders so that the collator can be sure that a 'nil report' truly reflects zero incidence over the period and not simply a failure to report.
- Paediatric surveillance units around the world use negative reporting schemes.

النص الأصلي وتحليله

"Negative surveillance: where the data collator presses the collector to report even the absence of cases."

- التحليل:

- "Negative surveillance" = المراقبة السلبية الإيجابية أو المراقبة السلبية التي تتطلب الإبلاغ عن عدم وجود حالات.
- "where the data collator presses the collector to report even the absence of cases" = جامع البيانات يضغط على الجهة المبلغة لإرسال تقرير حتى لو لم توجد أي حالات.
- المعنى: الهدف هو التأكد من أن غياب الحالات ليس بسبب عدم الإبلاغ.

"This is typically required for uncommon disorders so that the collator can be sure that a 'nil report' truly reflects zero incidence over the period and not simply a failure to report."

- التحليل:

- تستخدم هذه الطريقة عادة للحالات النادرة أو غير الشائعة.
- "nil report" = تقرير يشير إلى عدم وجود حالات.
- الهدف: التأكد أن التقرير فعلاً يعني صفر حالات خلال الفترة، وليس لأن الجهة المبلغة لم ترسل البيانات أو نسيت الإبلاغ.

"Paediatric surveillance units around the world use negative reporting schemes."

- التحليل:

- وحدات المراقبة للأطفال (Paediatric surveillance units) حول العالم تستخدم أنظمة الإبلاغ السلبي الإلزامي.
- الهدف: متابعة الحالات النادرة لدى الأطفال بدقة عالية.

Sentinel surveillance

- Instead of attempting to gather surveillance data from all health care workers, a sentinel surveillance system selects, either randomly or intentionally, a small group of health workers from whom to gather data.

- These health workers then receive greater attention from health authorities than would be possible with universal surveillance.

- Sentinel surveillance also requires more time and resources, but can often produce more detailed data on cases of illness because the health care workers have agreed to participate and may receive incentives.

- It may be the best type of surveillance if more intensive investigation of each case is necessary to collect the necessary data.

- For example, sentinel influenza surveillance in the Jordan collects nasopharyngeal swabs from each patient at selected sites to identify the type of influenza virus. Collection of such data from all health workers would not be possible.

Mortality surveillance

- Another type of surveillance is often done for deaths.
- In most countries, the health authorities require that each death in the population be reported or registered. These reports are then periodically counted up to calculate a death rate. Death registration systems are universal, albeit of widely differing quality and completeness.

- Why is death a common condition under surveillance?

Death is the final common outcome of severe disease. If you can only measure one condition to follow the health status of a population, death is probably the best. If the death rate in a population is normal, the health status of the population is probably not very bad.

Mortality Surveillance (مراقبة الوفيات)

"Another type of surveillance is often done for deaths."

- **التحليل:** نوع آخر من المراقبة يكون لمتابعة الوفيات.

"In most countries, the health authorities require that each death in the population be reported or registered. These reports are then periodically counted up to calculate a death rate. Death registration systems are universal, albeit of widely differing quality and completeness."
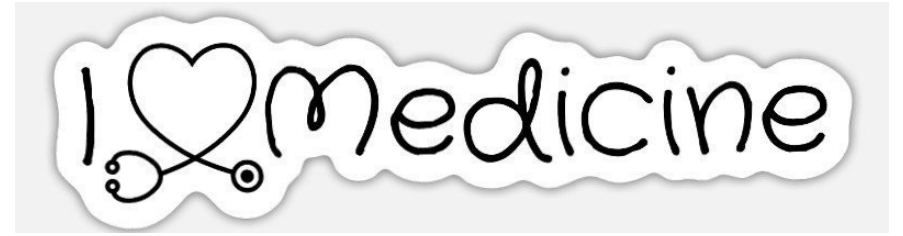
- **التحليل:**
  - في معظم البلدان، السلطات الصحية **تطلب تسجيل كل وفاة** في السكان.
  - هذه التقارير تُحصى بشكل دوري **لحساب معدل الوفيات.**
  - نظم تسجيل الوفيات موجودة **في كل مكان لكنها تختلف في الجودة والشمولية.**

"Why is death a common condition under surveillance? Death is the final common outcome of severe disease. If you can only measure one condition to follow the health status of a population, death is probably the best. If the death rate in a population is normal, the health status of the population is probably not very bad."

- **التحليل:**
  - سبب مراقبة الوفيات: الموت هو **النهاية النهائية للأمراض الشديدة.**
  - إذا أردنا قياس حالة صحية واحدة فقط لمتابعة صحة السكان، **الموت هو المؤشر الأفضل.**
  - إذا كان معدل الوفيات طبيعيًا، فإن **الوضع الصحي للسكان على الأغلب جيد.**

Sentinel Surveillance (المراقبة الحارسة أو الرصدية)

"Instead of attempting to gather surveillance data from all health care workers, a sentinel surveillance system selects, either randomly or intentionally, a small group of health workers from whom to gather data."

- **التحليل:** بدلاً من جمع البيانات من جميع العاملين في الرعاية الصحية، يقوم نظام المراقبة الحارسة باختيار مجموعة صغيرة من العاملين بشكل عشوائي أو متعمد لجمع البيانات منهم.

"These health workers then receive greater attention from health authorities than would be possible with universal surveillance."

- **التحليل:** هؤلاء العاملون يحصلون على **اهتمام أكبر من السلطات الصحية** مقارنةً بالمراقبة الشاملة (Universal Surveillance)، لأن التركيز على عدد صغير يسمح بمتابعة أفضل.

"Sentinel surveillance also requires more time and resources, but can often produce more detailed data on cases of illness because the health care workers have agreed to participate and may receive incentives."

- **التحليل:**
  - هذا النوع يحتاج وقت وموارد أكثر.
  - لكنه غالبًا يوفر بيانات أكثر **تفصيلاً عن الحالات المرضية،** لأن العاملين وافقوا على المشاركة وقد يحصلون على حوافز.

"It may be the best type of surveillance if more intensive investigation of each case is necessary to collect the necessary data."

- **التحليل:** هذا النوع قد يكون **الأفضل عندما نحتاج تحقيقًا أعمق لكل حالة** لجمع البيانات المطلوبة بدقة.

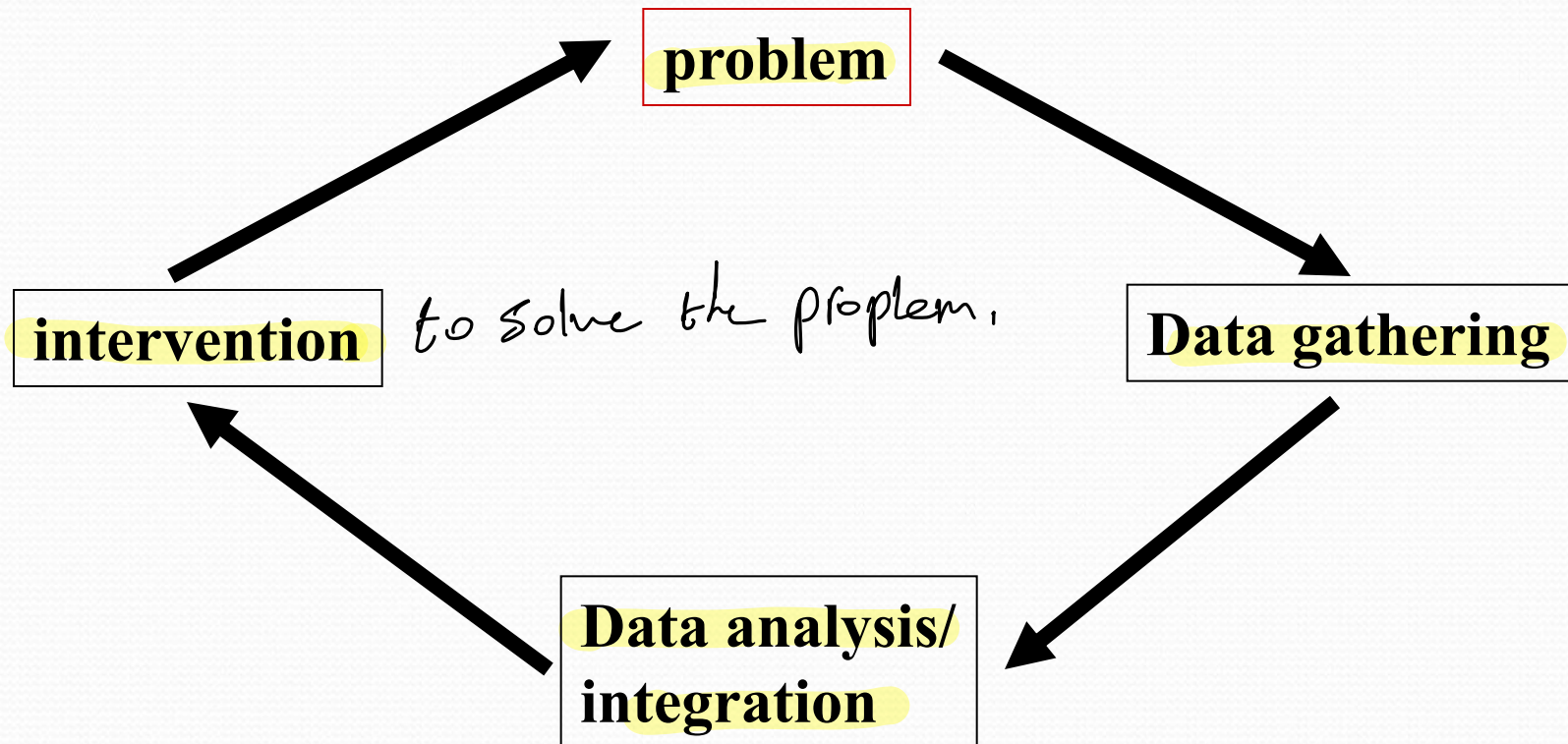"For example, sentinel influenza surveillance in Jordan collects nasopharyngeal swabs from each patient at selected sites to identify the type of influenza virus. Collection of such data from all health workers would not be possible."

- **التحليل:** مثال: في الأردن، **يتم جمع مسحات أنفية حلقية من كل مريض في مواقع مختارة** لتحديد نوع فيروس الإنفلونزا.

- لا يمكن جمع هذه البيانات من جميع العاملين في الرعاية الصحية، لذا يُستخدم هذا النظام.

Important concepts in surveillance

The surveillance arc

problem

intervention   *to solve the problem.*   Data gathering
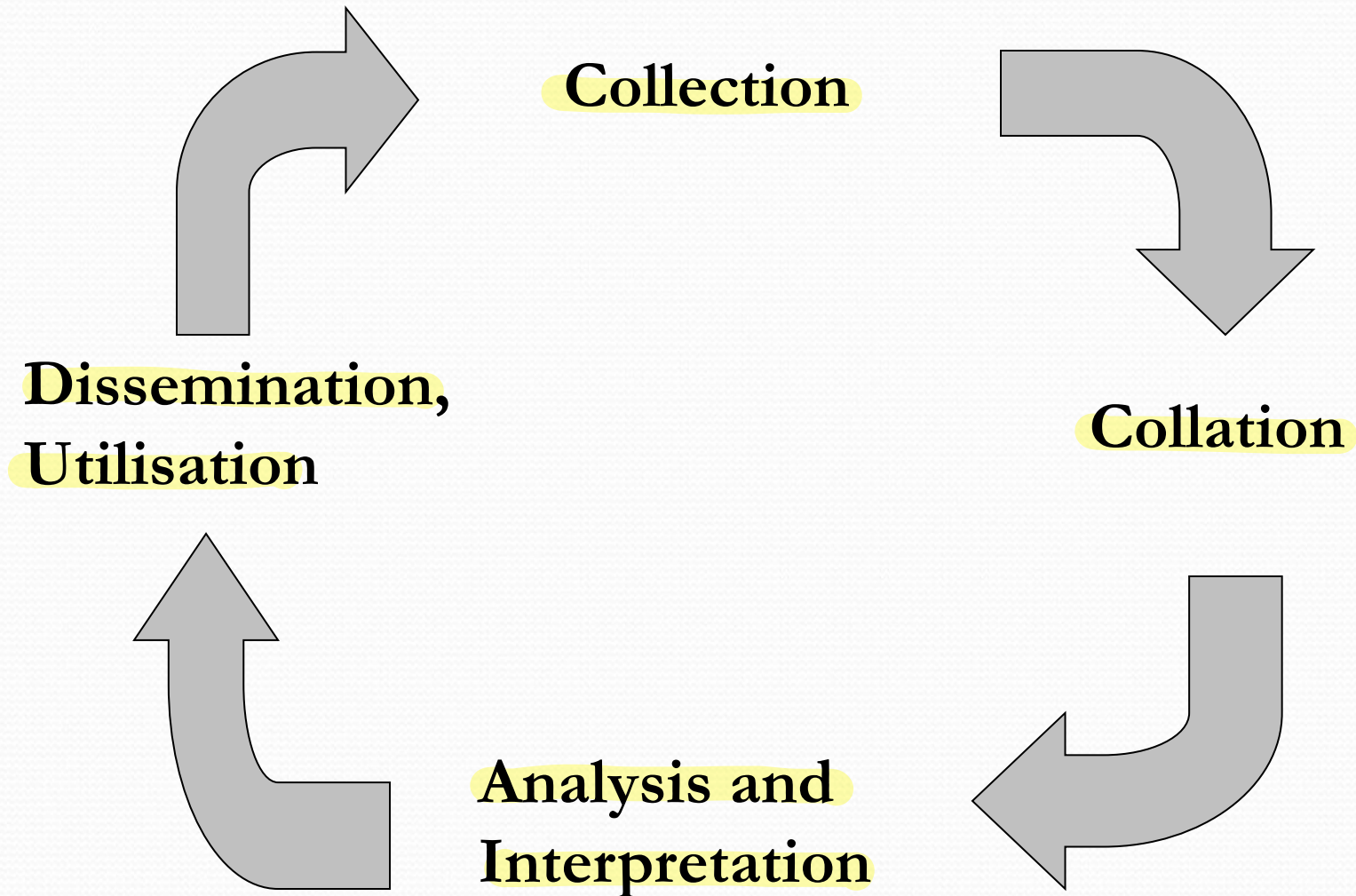
Data analysis/ integration

Steps involved in surveillance

There are four steps:

- Data collection (on each health care center alone).
- Data collation (collect data from different Data collectors and prepare them for being analysed).
- Data analysis
- Dissemination. → to people who need to know.
- Action may or may not flow from the last.

Flow of Surveillance Data

Collection

Collation

Analysis and Interpretation

Dissemination, Utilisation

In summary: surveillance can:

- Detect outbreaks
- Detect public health threats
- Detect infectious cases (case finding)
- Monitor trends in a target population
- Monitor exposed individuals for symptoms
- Monitor treated individuals for complications
- Direct public health interventions
- Evaluate public health interventions
- Generate hypotheses for further evaluation

إدعوا لنا بظهر الغيب...