Diagnostic process

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Diagnosis:

Identification of a condition, disease, disorder, or problem by **systematic analysis** of the history, **examination** of the signs and symptoms, **evaluation** of test results, and **investigation** of the probable causes.

Hippocratic oath

(I will remember that there is art to medicine as well
as science, and that warmth, sympathy, and understanding
may outweigh the surgeon's knife or the chemist's drug)

Triple diagnosis

- – In generating diagnostic hypothesis, it is essential to think in **physical**, **social** and **psychological** terms.
- – This is not to suggest that all disease have physical, social and psychological components in equal measures, it's just a reminder that the three aspects should always be considered at each consultation as appropriate.
- – Example: teenager with acne vulgaris.

02

Methods to reach diagnosis

Methods to reach diagnosis

Inductive method of problem solving	Hypothetico-deductive problem solving
Starts with facts and details and moves to a general conclusion.	Starts with a conclusion and then explains the facts and details.
Observation → pattern → hypothesis→ Theory.	Theory → hypothesis → observation → confirmation.
"Bottom-up" logic (more specific →general).	"top-down" logic (general → more specific).

Inductive method of problem solving

- – a comprehensive history has to be taken from every patient followed by a complete physical examination, backed up by a number of investigations, many of which are a routine nature.

- – Mainly used by medical students for learning purposes. (not in actual clinical practice) unless the patient has vague symptoms and serious underlying cause cannot be excluded

Inductive method of problem-solving

- Need to take a comprehensive history system review
- Complete physical examination
- Investigations

- Diagnosis

- May not be used by all practitioners.
- Time-consuming.
- Unfocused.

Hypothetico-deductive problem solving.

- – by **educated guessing** and **testing (Multiple hypothesis-guided, problem oriented enquiry)**
- – This method is efficient as it enable doctors to solve problems with maximum time- and cost-effectiveness and minimal disturbances to the patient.
- – 1- Pre-diagnostic interpretation: the doctor begins to asses the patient's problems in terms of broad categorizations rather than specific diagnostic entities.
- – 2- Ask particular questions in an attempt to find support for, and to discriminate between the diagnostic possibilities he has previously generated.
- – 3- Selective and discriminating approach to physical examination to provide confirmatory evidence in favor of one or more diagnostic probabilities.

03

Hypothetico-deductive diagnosis and history taking

Appendix 1

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Cognitive skills in history taking

(Hypothetico-deductive method)

Patient's Interview

Chief Complaint

Duration | File information

The differential diagnosis is based on

1. Probability
2. Seriousness
3. Treatability
4. Novelty

(At least seven differential diagnoses arranged from most likely to the least likely).

♦ History

Taking a proper history is the single most important step.
An ideal history must cover all of the following:

a. SOCRATES (for all complaints)

- **S**ite (can be ignored in certain situations such as dizziness)
- **O**nset
- **T**iming, Duration, Frequency
- **C**haracter
- **R**adiation
- **E**xacerbation and Relieving factors
- **S**everity

- **A**ssociated symptoms: pertinent clues for each one of probability, seriousness, treatability and novelty.

b. 4 Ds:

√ Disease
- Previous similar attacks: including Dx and Mx
- Past medical/ surgical history

√ Drugs
- For the current disease
- Any other drugs/Herbs
- Allergy
- Vaccines
- Addiction

√ Diet
- Appetite
- Any specific diet
- Current weight and significant changes
- Certain diseases; celiac…
- Hydration

√ Dokhan (Smoking)

Marital status
- Level of education
- Job
- Alcohol consumption
- Financial status
- Insurance
- Psychological status
- Sexual activity
- Social history
- Family history and genetics
- Life cycle: (teenage until menopause)

Whole patient medicine

c. Patient centered medicine

➔ABC
- Anxiety
- Beliefs
- Concerns

➔FEFI
- Function
- Expectations (Cause of the problem AND management)
- Feelings
- Ideas

Why is the patient coming today? (An essential question in each consultation**)**

♦ **Physical Examination**
- **General appearance**; mouth breathing, paleness, jaundiced, distressed…
- **Vital signs**

ℵ Temperature
ℵ Respiratory rate
ℵ Heart rate
ℵ Blood pressure

- **Focused physical examination**: related to the DDx list

♦ **Management plan: RAPRIOP**

Reassurance
Advice
Prescription
Referral
Investigations
Observation
Prevention

♦ Patient- doctor interaction: explaining the DDx; the cause, course and available management options, and sharing all these info with the patient.

Noting that all of the above is taking into consideration patient's concerns and worries.

This is the ideal approach to Family Medicine patients

Appendix 2

A.

History

- Taking a proper history is the single most important step, and it must cover all of the following:

1. SOCRATES (for all complaints)

- **S**ite(can be ignored in certain situations such as dizziness)
- **O**nset
- **C**haracter
- **R**adiation
- **A**ssociated symptoms: pertinent clues for each one of probability, seriousness, treatability and novelty.
- **T**iming, Duration, Frequency
- **E**xacerbation and relieving factors
- **S**everity

2. The 4Ds:

1. Disease:

-Previous similar attacks : including Dx and Mx.

-Past medical \ surgical history.

2. Drugs:

- For the current disease.
- Any other drugs \Herbs .
- Allergy.

-Addiction.

3. Diet:

- Appetite
- Any specific diet
- Current weight and significant changes
- Certain diseases: celiac…
- Hydration

4.Dokhan(smoking):

- Marital status
- Level of education
- Job
- Alcohol consumption
- Financial status
- Insurance
- Psychological status
- Sexual history
- Family history and genetics Life cycle (teenage until menopause)

3. Patient-centred medicine:

(ABC):
A. Anxiety **B.** Beliefs **C.** Concerns

(FEFI):
F. Function **E.** Expectations
F. Feelings **I.** Ideas

*Why is the patient coming today? (An essential question in each consultation

B. Physical examination

- – **General appearance:**

mouth breathing , paleness , jaundiced, distressed ……

- – **Vital signs:**

Temperature – Respiratory rate – Heart rate – Blood pressure

- – **Focused physical examination:**

related to the DDx list

04

Generating and ranking appropriate diagnostic possibilities

Diagnostic probabilities

01 Probability

02 Seriousness

03 Treatability

04 Novelty

1. Probability:

"What is the most likely cause of my patient's symptoms?"

frequency of occurrence – pattern of disease in the individual

2. Seriousness:

Always consider that a life-threatening condition **may** be responsible for the presenting symptoms.

Conditions you must not miss?

1. Fever + rigors + hypotension = septicemia

2. Fever + vomiting + headache = meningitis

3. Headache + vomiting + altered consciousness = subarachnoid hemorrhage (SAH)

3. Treatability:

The more treatable a condition, the more important it is to be included in the list of differential diagnosis and the higher it's ranking is likely to be.

4. Novelty:

Very rare, but memorable, conditions tend to be disproportionately included in lists of differential diagnosis.

Differential diagnosis list

Differential diagnosis list consists of **two** categories:

1. The **most likely** diagnoses - based on **probability** (up to **5** possibilities)

2. The **most serious** diagnoses - based on **seriousness** or **treatability** or in rare cases **novelty**. (up to **2** possibilities only)

05

Other tools that can help in establishing a differential diagnosis:

The concept of diagnostic model

“Prompt”

- Probability
- Red flag
- Often missed
- Masquerades
- Patient wants to
- Tell me something

Red flags

- Weight loss.
- Vomiting.
- Altered cognition.
- Fever **>38 C.**
- Dizziness ,**And/or** syncope.
- And pallor.

“Pitfalls”

- Abscess (hidden).
- Addison disease.
- Allergies.
- Candida infection.
- Chronic fatigue syndrome.
- Celiac disease.
- Domestic abuse.
- Endometriosis.
- Fecal impaction.
- Foreign bodies.

Masquerades

- Depression.
- Diabetes mellitus.
- Drugs.
- Anaemia.
- Thyroid and other endocrine disorders.
- Spinal dysfunction.
- Urinary tract infection (UTI).

Some practical tips to assist in generating DDx:

- Clarify presenting symptoms.
- Checklists.

Checklists :

- **Surgical sieve.**
- Systems approach.
- Anatomical approach.

Surgical sieve

“VITAMIN CDEF”

- V: vascular
- I: infective/inflammatory
- T: traumatic
- A: autoimmune
- M: metabolic
- I: iatrogenic/idiopathic
- N: neoplastic
- C: congenital
- D: degenerative/developmental
- E: endocrine/environmental

Keep in mind

- **Uncommon manifestations** of **common conditions** are **more common than common manifestations** of **uncommon diseases.**
- **Simple** conditions are caused by **simple** problems.
- Diverse symptoms and signs are commonly caused by a single disease or entity.

- If all else fails, refer to books, journals or consult colleagues.

C. Management plan

RAPRIOP acronym

- – **R**eassurance and explanations
- – **A**dvice
- – **P**rescription
- – **R**eferral
- – **I**nvestigation
- – **O**bservation
- – **P**revention

06

Patient-centered diagnosis vs. Disease-centered diagnosis

(ABC):

A. Anxiety **B.** Beliefs **C.** Concerns

(FEFI):

F. Function **E.** Expectations

F. Feelings **I.** Ideas

Disease-centered medicine	Patient-centered medicine
The patient's role is **passive**.	The patient's role is **active**.
Patients are the **recepient** of treatment.	Patients are **partners** in the treatment plan.
Physicians **dominate** the conversation.	Physicians **collaborate** with the patient.
Patients **may or may not** adhere to the treatment plan.	Patients are **more likely to** adhere to the treatment plan.

Patient centered medicine

- Emphasizes on patient **autonomy**.
- Shift from hospital care to **community**.
- Increased attention to **prevention** and patient education
- Medical care costs.
- The **whole person** medicine.
- Enhancing doctor patient relationship.
- Care of the family life cycle.
- Search for the patient **beliefs , ideas , concerns , expectation** and effect of these.
- Being **interested** and **wanting to know** , to be a good doctor you have to care about people.
- A good strategy is to **listen** and **demonstrate empathy**.

Patient-doctor interaction

- Explaining the DDx ; the cause, course and available management options, and sharing all these info with the patient.

- Noting that all of the above is taking into consideration patient's concerns and worries.

07

Difficulties that medical students face in making diagnoses

1. **Improper** history taking and physical examination.
2. Poor **communication**.
3. **Uncooperative** patient.
4. Lack of **experience**.
5. Maintaining a **focus** on a particular diagnosis.

Some common errors:

- Unwarranted **fixation** on a hypothesis (focusing on a particular hypothesis, twisting all data in an attempt to fit it).
- **Premature closure** of hypothesis generation.
- **Rule out syndrome** (consequence of poorly focused history taking).
- Generation of very **unlikely** hypothesis (novelties).

08

Summary

To summarize:

Chief complaint - duration - previous information

probability - seriousness - treatability - novelty

differential diagnosis

—end.

thank you.

Patient-Centred Medicine

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Fifth year medical students, JU
Family medicine

- The concept of “patient-centered medicine” is relatively new, it was introduced in 1970 by Balint and her colleagues.

- They came out with this new concept and compared it to “illness- centered medicine”.

- “patient-centered medicine” is the type of medicine that tries to merge the conventional understanding and facts about a specific disease with the patient’s own experience.

- *It will guarantee better and more satisfactory outcomes; since patients will be involved in making sense of their health problem as well as making decisions about their management, which will make them feel valued and understood.

The interactive components of the patient centered medicine:

1. Exploring both the disease and the illness experience.

-) this involves: 1- Differential diagnosis 2-Dimensions of illness (ideas, feelings, expectations, and effects on function)

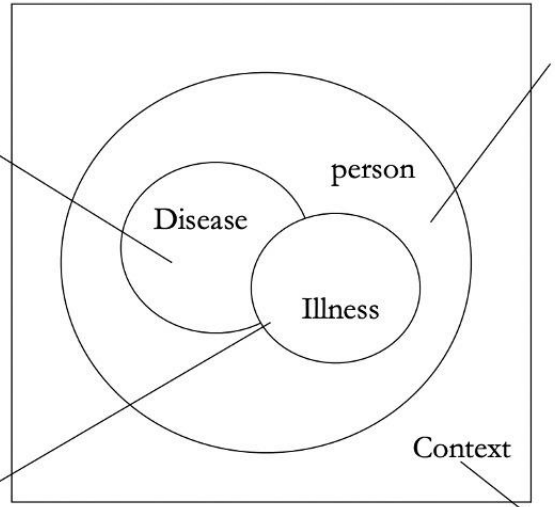
> "Disease, then, is something an organ has; illness is something a man has."
> – Eric J. Cassell, 1978

2. Understanding the whole person

-)this includes: 1-The "person" (life history and personal and developmental issues). 2-The context (the family and anyone else involved in or affected by the patient's illness; the physical environment)

Patient Centered Medicine

*Signs
*Symptoms
Investigations



e.g *stage in life cycle
* Family of origin

e.g. -Four dimensions of illness:
- Feelings
- Ideas
- Function
- Expectations

Understanding the whole person

e.g.- family system
- culture
- work
- school
- health care system

3. Finding common ground regarding management.

-)The patient and the doctor should discuss together the goals of treatment, problems and priorities, the role of each of them in the management.

4. Incorporating prevention and health promotion.

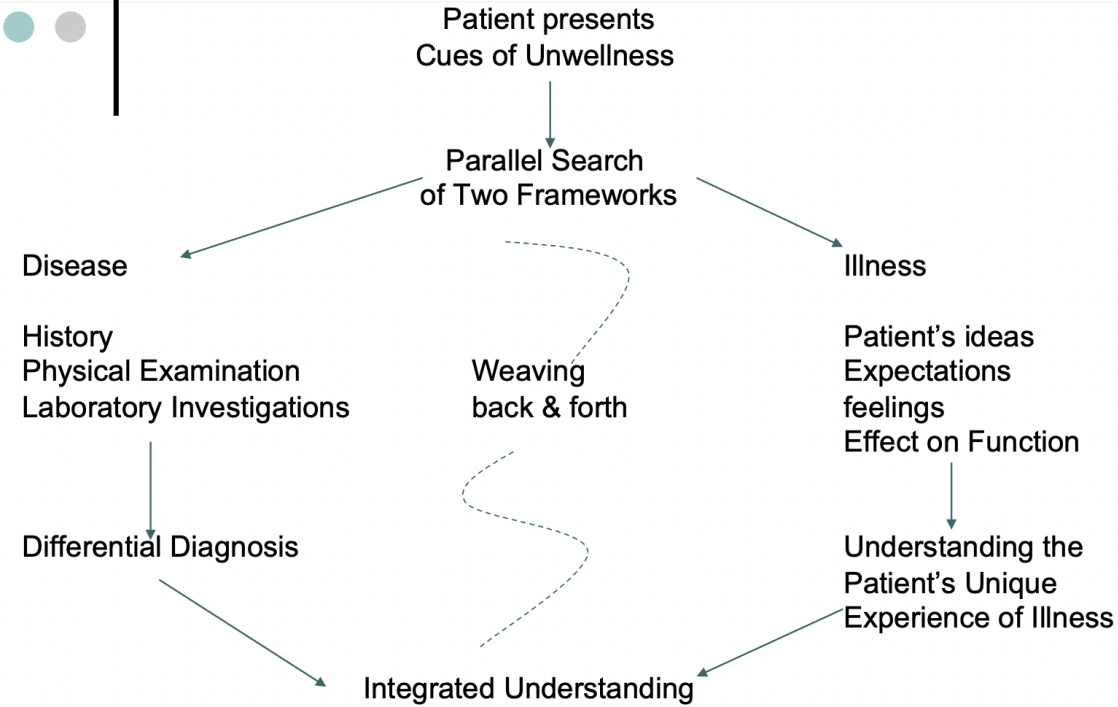
-)it focuses on health enhancement, risk reduction, early detection of the disease, improving the effect of a disease.

5. Enhancing the patient – doctor relationship.

-)It aims to establish Caring and healing relationship, sharing power between the patient and doctor, self-awareness, Transference and countertransference, Characteristics of the therapeutic relationship

6. Being realistic regarding: time, resources, team building.

The disease and the Illness Experience



Doctor: “what brings you in today?”

Patient: “I’ve had these severe headaches for the last few weeks. I am wondering if there is something I can do about them.

Doctor: “what do you think is causing the headaches?” “Have you any ideas or theories about why you might be having them?” do you think there is any relationship between the headaches and current events in your life?"

-the above questions should be asked to examine the patient’s ideas about the headaches.

- Patient-centred care is based on the idea that patients are active participants in developing a health strategy for themselves.
- In order to ensure the patient's involvement, the physician must ask questions that help him/her understand the patient's needs, perspectives, and expectations.
- This would imptove the patient's experience by making sure that they don't leave the doctor's office disappointed or feeling like their needs have not been met.
- To do that, the physician must ask open-ended questions and listen to the patient more.

- For example, if the physician asks the patient about the reason for their visit and the patient's response is "I've had knee pain for 3 weeks", the doctor must then ask about the patient's ideas about what might be causing their pain, to see if they have any theories.

- In addition, the doctor must ask questions to elicit the patient's feelings regarding their pain, such as asking about any concerns they have regarding their pain and if there's anything particularly worrisome for them. (eg. Being afraid of having decreased mobility in the future and requiring help with simple day to day tasks)

- Questions about how the pain is affecting the patient's function and daily life must also be asked, such as asking if the pain is stopping them from participating in any activities.

- The patient's expectations from the visit must also be elicited by asking questions about what they think would heal the pain, if they have any particular management or test in mind, and what they think would help reassure them.

The Person and The Family Life Cycle

- The family life cycle is the emotional and intellectual stages a person passes through from childhood to retirement years as a member of a family.
- In each stage, the person might face challenges that make passing through the stage less smooth, such as financial problems or illnesses.
- The burden of illnesses might cause severe disruption to the family life cycle.
- When a member of the family is faced with an illness, the redistribution of the roles, rules, patterns of communication, and structure of the family will be influenced by how the family had previously coped with similar challenges.
- The physician must understand at what point the patient's family is in the life cycle and what stage each member has reached.

- The physician must explore the patient's current life circumstances and how they are affecting the symptoms they are experiencing.
- Certain challenges to the family system can exacerbate symptoms and hinder a patient's recovery.
- For example, if a patient is experiencing stress due to not being able to fulfill their role in the family, such as being unable to financially support their family or provide a home for them, then their symptoms will worsen and the treatment might not be as effective.

Culture

- The physician must always take the patient's culture into consideration, as the cultural norms and values influence how the patient experiences illness, seeks care, and accepts medical interventions.
- People in some cultures believe illness is the will of a higher power and may be more reluctant to receive health care.
- Culture also influences the beliefs on etiology and cure for diseases. For example, some cultures believe that epilepsy and hysteria are due to ghosts and spirits and will seek help from exorcists rather than doctors.
- When it comes to accepting a diagnosis, people from different cultures will react differently. For example, when it comes to mental illnesses, Chinese patients refuse to discuss them as they indicate lack of self control in their culture. Patients in India and Pakistan would refuse a diagnosis of mental illness because it reduces the chances of other family members of getting married.

Goals of a doctor visit

When a doctor and a patient meet, each has expectations and feelings about the encounter; if these are at odds or inappropriate, difficulties may arise.

For example:

First example:

The patient has a sore throat and expects to receive penicillin but instead is urged to gargle with salt water.

2

The patient is concerned about innocent palpitations but is found to have high blood pressure. The doctor launches into a treatment of the hypertension without explaining to the patient the benign nature of the cardiac symptoms.

Health promotion

- Health promotion is the process of enabling people to increase control over, and to improve, their health
- For example:
- Helping People Who Smoke Quit.
- Increasing Access to Healthy Foods and Physical Activity.
- Preventing Excessive Alcohol Use.
- Promoting Lifestyle Change and Disease Management.
- Promoting Women's Reproductive Health.
- Promoting Clinical Preventive Services.

As a result of health promotion, disease prevention can be met.

The foundations of Health Promotion and Disease Prevention

- 1. risk avoidance: Aims at ensuring that people at low risk for health problems remain at low risk by finding ways to avoid disease. Like education about healthy and safe habits (e.g. eating well, exercising regularly, not smoking)

- 2-Risk reduction Addresses moderate or high risk characteristics among individuals or segments of the population by finding ways to cure or control the prevalence of disease. immunization against infectious diseases such as covid19 vaccine

- 3-Early identification Aims at increasing the awareness of early signs of health problems and screening people at risk in order to detect the early onset of health problems. like breast cancerscreening.

Interview with patients

- a.Would you say that your main problem(s) was discussed
- b.Would you say that your doctor know that this was one of your reasons for coming in today?
- c.How well did the doctor understand the importance of your reason for coming in today?

- D. How satisfied were you with the discussion of your problem?
- E. What did the doctor say
- D. Did you agree with his opinion
- How well understood did you feel by this doctor today?
- H. How much would you say that this doctor cares about you as a person?
- I. Overall, do you feel the same, better, or worse after seeing the doctor today?

Thank you