

Symposium on training and education
Chairs: Berthold Koletzko, Hilary Hoey

**Who should train
paediatricians and where?**

Shimon Barak
ISRAEL - ECPCP

I was invited by the organizers to try and answer the question "who should train paediatricians and where?" an almost impossible task to perform.

It's like asking "who should train musicians and where". The answer depends on the instrument, the ensemble, the music, the audience and many other variables

Even if you pinpoint yourself to one instrument there are still dozens of styles and genres to choose.



To answer the question "Who should train paediatricians and where" we have to:

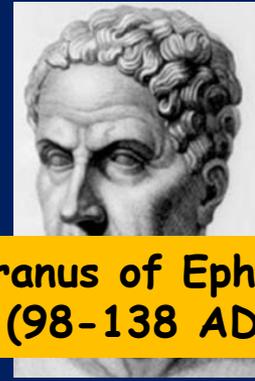
1. Define Pediatrician / Pediatrics
2. Define the goal of training and the scope needed
3. Identity of the optimal teacher for the task and pick the ideal site of training



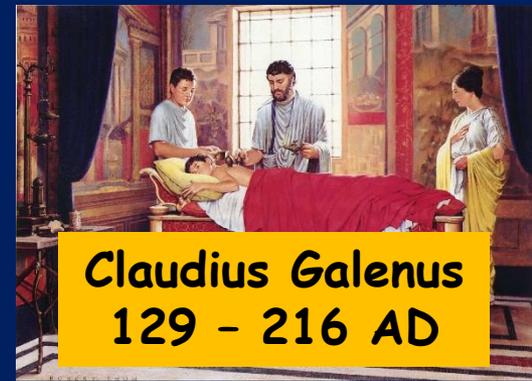
**Medical Papyri
Circa 1800 BCE**



**Hippocrates
ca. 460-370 BCE**



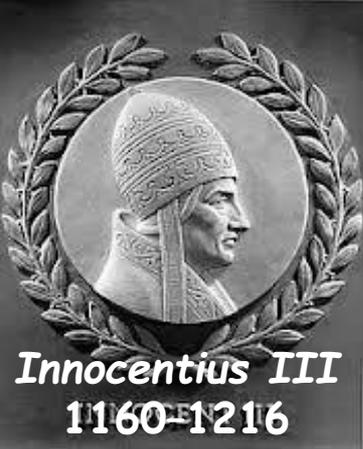
**Soranus of Ephesus
(98-138 AD)**



**Claudius Galenus
129 - 216 AD**

Doctors have cared for patients of all ages, including both the young and the old, with little specialization, since antiquity. The Ebers Papyrus discusses pediatric topics like nutrition and the cure for worms. Hippocrates mentions asthma, cephalhematoma, clubfoot, diarrhea, hydrocephalus, and many more diseases of childhood. Soranus of Ephesus - the first ever to write a book on birth and the care of newborns, invented the fingernail test to check the fat content and quality of breast milk and Galen described otitis media, pneumonia and intestinal prolapse.

Many doctors in the Middle ages dealt with childhood diseases. Avicenna mentions in the 10th century convulsions, meningitis, tetanus, umbilical abscess and more. But until the 12th century the main "interest" aroused by children health was related to birth, congenital malformations and "oddities".

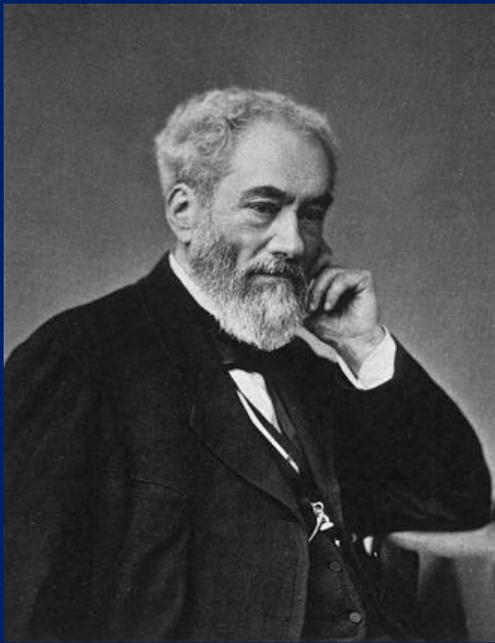


**Hospital of Santo Spirito
Rome.**



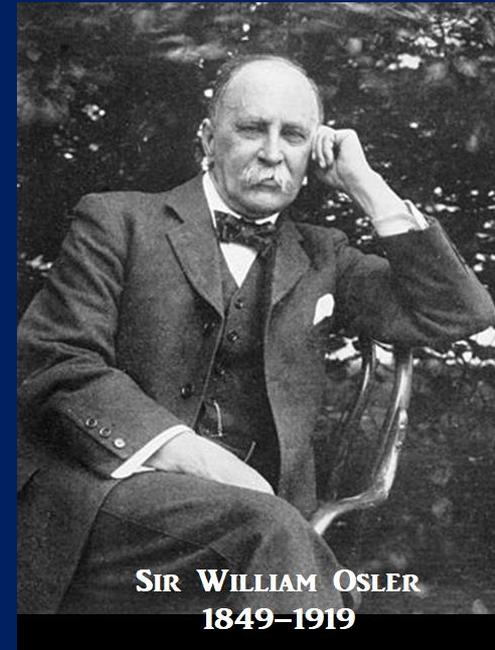
**Ospedale degli Innocenti,
Florence**

Although an hospital was founded in Rome in 1198 by Pope Innocentius the III, its purpose (as that of the 15th century Florentine Hospital of the Innocents) was to protect and uphold orphan children. And while textbooks on Diseases of children have been printed from shortly after Guttenberg's invention up to the 19th century doctors devoted to children diseases were a rarity and the term pediatrics and pediatrician didn't exist at all.



Within the history of medicine, the term 'paediatrics' was first used and recorded (as 'pädiatrik') in mid 19th cent. German literature and as 'paediatric' in 1855 by **Professor Robley Dunglison** (1788-1869) the "Father of American Physiology", personal physician to USA Presidents Thomas Jefferson, James Madison and James Monroe.

And the term pediatrician we owe to Sir William Osler, the famous Canadian doctor, who in an article on systolic brain murmurs of children, 141 years ago, used it for the first time ever to differentiate physicians "specially connected with pediatrics" from other physicians and drawing attention to the creation of a "special" discipline.



SIR WILLIAM OSLER
1849-1919

What's so special about Pediatricians?

Pediatricians: health professionals that are both and simultaneously **GENERALISTS & SPECIALISTS**

As **GENERALISTS**, treating a wide range of humans with various distinctive problems

As **SPECIALISTS**, dealing with a specific group of Humanity with unique concerns mainly related to age.



THE
DISEASE



THE
FAMILY

THE
CHILD

THEIR
NEEDS
EXPECTATIONS
FEARS &
BELIEFS

Prevention
Protection
Promotion
Primum non
nocere

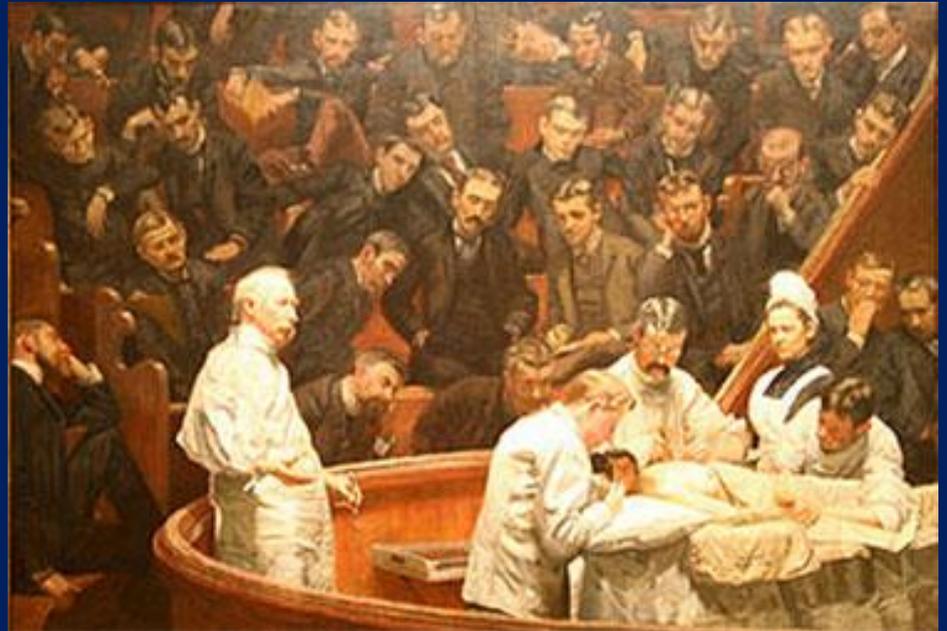
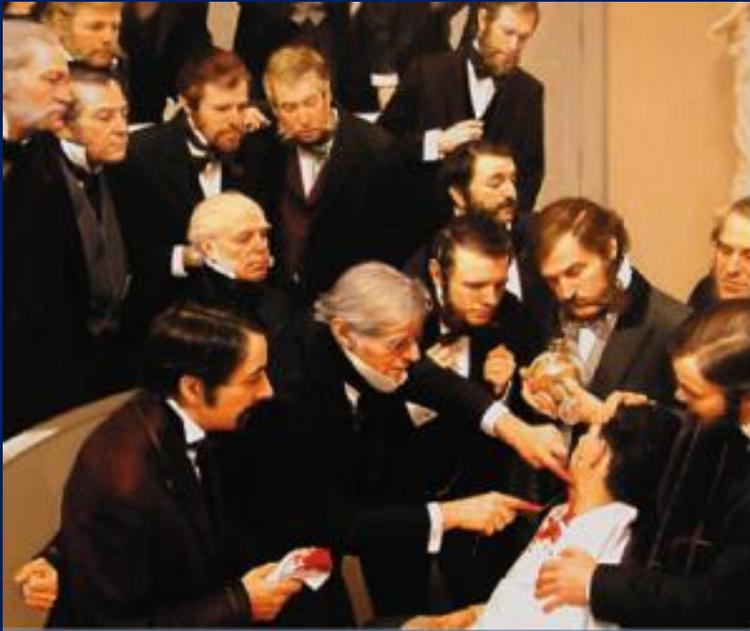
A VISION
AND
PERSPECTIVE
OF THE
PATIENT'S
FUTURE LIFE
AND HEALTH

THE TRAINING OF PEDIATRICIANS

Five cardinal issues

1. Distinct applications of medical basic sciences (anatomy, physiology, pathology, pharmacology, etc.)
2. Relative importance of subjects that have only minor importance in the practice of Adult Medicine (Genetics, Congenital defects, Inborn Errors of Metabolism, Vaccinology)
3. The need and importance of being acquainted and recognize the wide spectra of possible variations of the Normal.
4. Special legal and ethical considerations and issues related with patients being minors (guardianship, privacy, legal responsibility, informed consent, etc.).
5. The important role pediatricians have as advisors for parents and patients in matters concerning physical health, developmental pace, mode of behavior, etc. Their involvement becoming sometimes a partial partnership as they share responsibility for all these, therefore demanding pedagogical and psychological qualities as well as moral standards of behavior as persons, parents and professionals

The classical site of the training: MEDICINE



By the professor's cathedra, absorbing the wisdom
of the University & the Hospital

The classical site of the training: CLINICAL MEDICINE & PEDIATRICS



By the docent side and the patient's side bed,
watching and learning the intricancies of the
profession

WHAT STANDS BEHIND THE PRINCIPAL CHANGES AND METAMORPHOSIS OF THE PEDIATRIC PRACTICE

19th Century: Recognition of children as a particular population benefit from medical practice

First half 20th century: Introduction of public health programs and better nutrition to reduce childhood mortality.

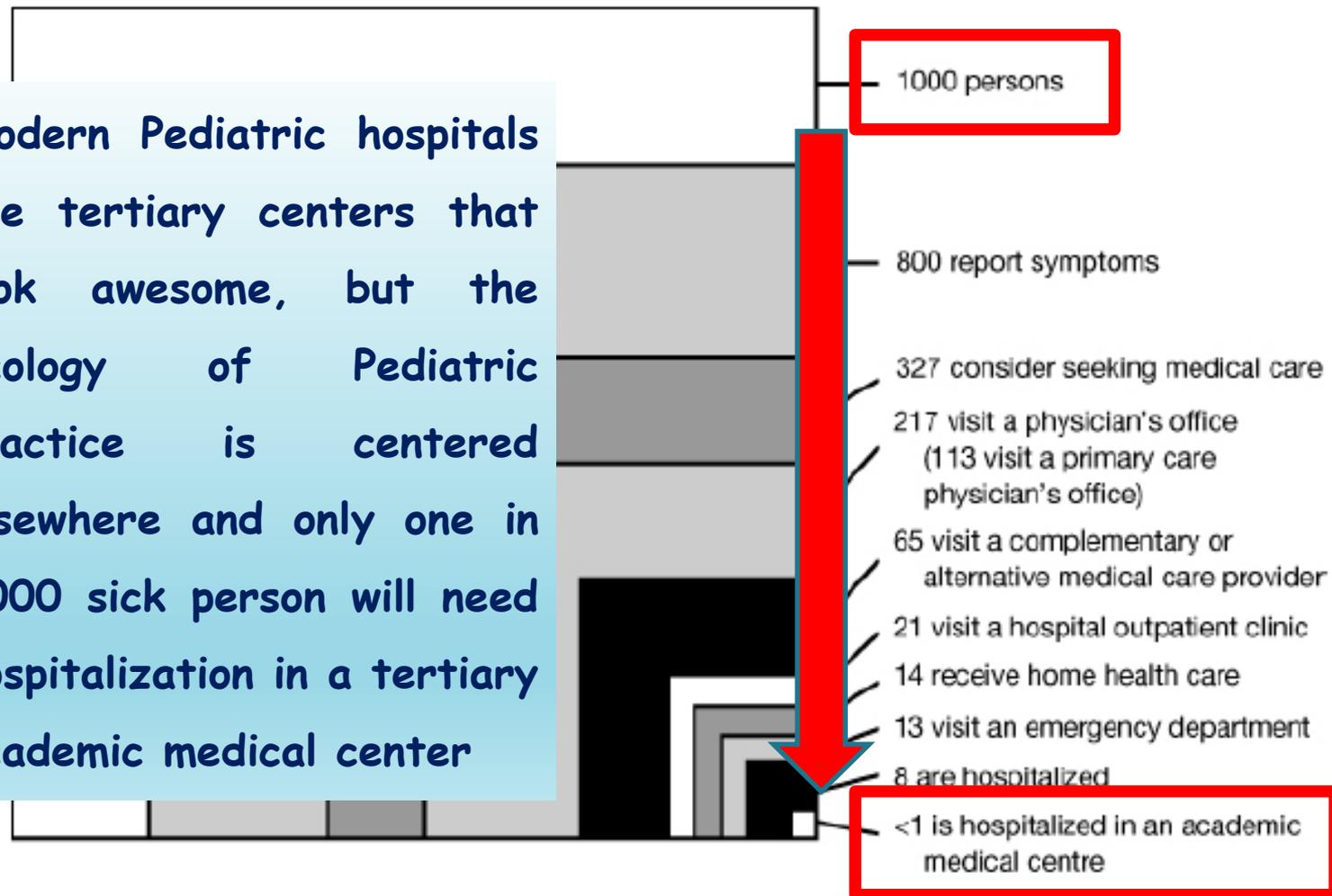
Most of the 20th Century: The development of vaccines and antibiotics

End 20th and beginning of the 21st Recognition of the "new morbidity"

Simultaneously: global dissemination of pediatric knowledge & practice

The ecology of medical care revisited (Green, 2001)

Modern Pediatric hospitals are tertiary centers that look awesome, but the ecology of Pediatric practice is centered elsewhere and only one in 1000 sick person will need hospitalization in a tertiary academic medical center



The Changing Face of Pediatrics: Where is Our Discipline Headed?

Russell W. Chesney, MD  

DOI: <https://doi.org/10.1016/j.jpeds.2005.08.035>

- The central question is whether academic pediatric centers can train residents to meet the child health needs of today and the future.
- Most children will never be admitted to a hospital for an acute illness during their childhood
- Most inpatients in pediatric hospitals will have complex chronic diseases that involve many different groups of pediatric medical and surgical subspecialists.
- The health care needs of children in this century will occur in an outpatient setting and will be aimed at the prevention of both childhood and adult diseases.

PEDIATRICS®

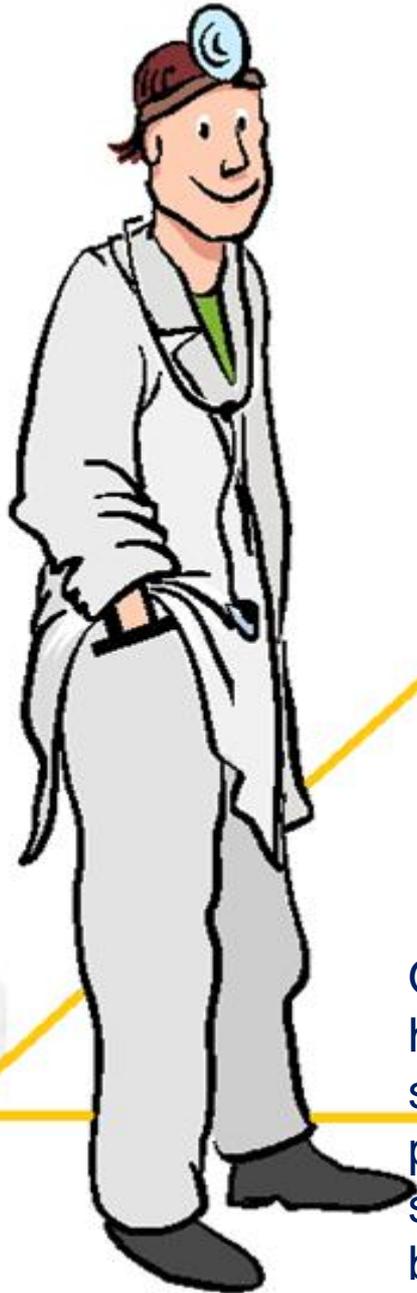
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Competency of Future Pediatricians Caring for Children With Behavioral and Mental Health Problems

Cori Green, JoAnna K. Leyenaar, Adam L. Turner and Laurel K. Leslie

Pediatrics July 2020, 146 (1) e20192884; DOI: <https://doi.org/10.1542/peds.2019-2884>

- There is an urgent need to prepare pediatricians to care for children with behavioral and mental health.
- Cross-sectional survey of applicants for the initial certifying examination in pediatrics with questions focused on
 - (1) who should be competent in B/MH skills
 - (2) institutional support around B/MH training
 - (3) perceived competence in 7 B/MH assessment skills and 9 treatment skills.
- **RESULTS:** Current and recent pediatric trainees do not report high levels of perceived competence in the assessment and treatment of children with B/MH conditions. The substantial variation across programs indicates that the pediatric community should create standards for B/MH training.



HOSPITALIST
PAEDIATRICIAN

SUB SPECIALIST
PAEDIATRICIAN

PAEDIATRICIAN

PRIMARY CARE
GENERAL
PEDIATRICIAN

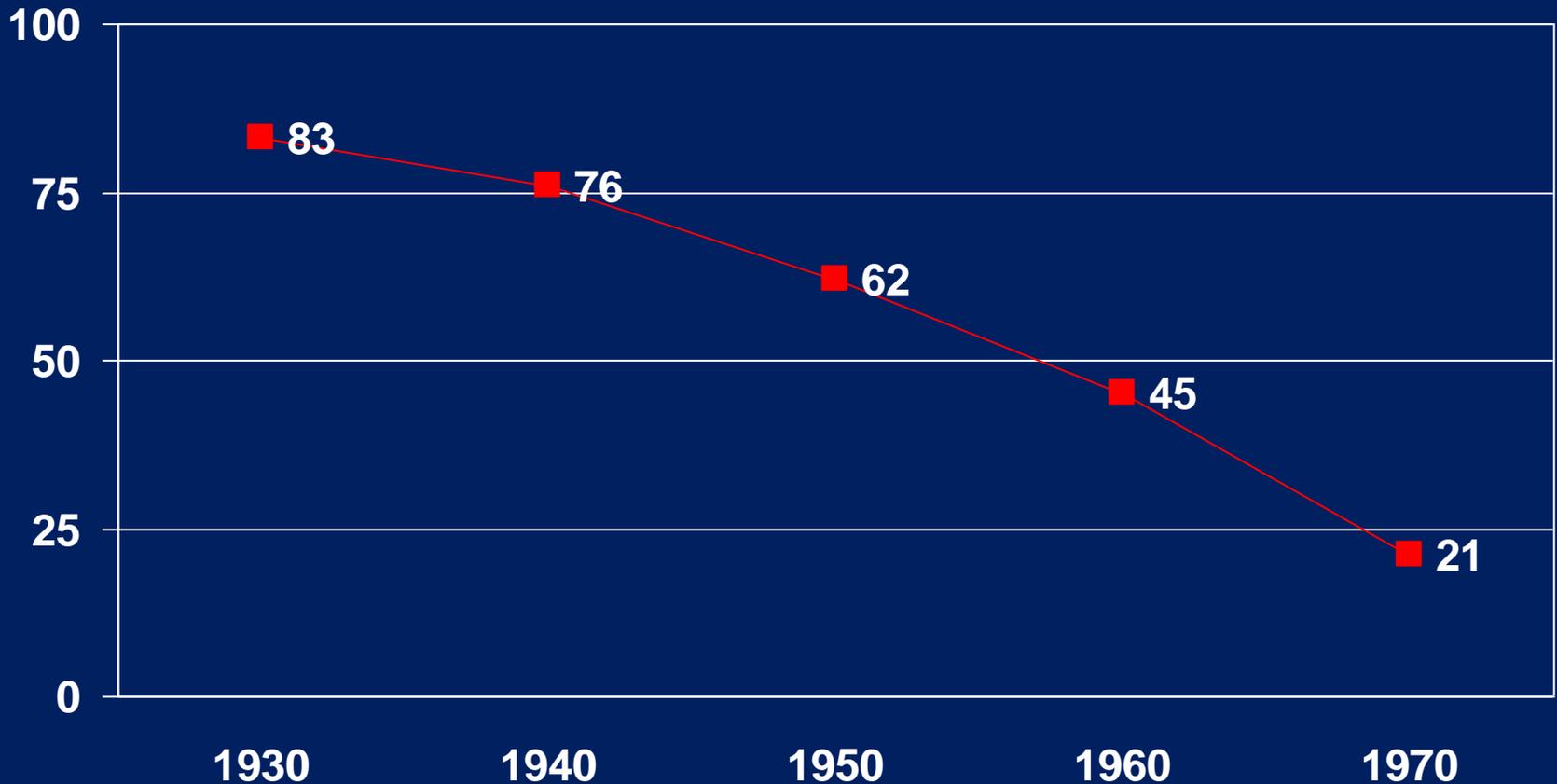
Once trained pediatricians could fulfill posts either in the hospital, the primary care or as specialists with the same and equal proficiency. Today's hospitals are planned and designed to train only hospitalists and specialist and primary care and community service have been left way back and behind.

In Professor Stephen Ludwig's words: "the process by which medicine spawned into subspecialties without strengthening the core is like a tree whose branches and flowers are robust but whose trunk is somewhat tenuous"

Stephen Ludwig, MD
Emeritus Professor CE of Pediatrics
Children's Hospital of Philadelphia



Percent of American Physicians in practice as General Practitioners, 1930-1970



We see the tendency witnessed worldwide of declining numbers of residents pursuing careers in the non-glamorous - not important and not attractive general medicine, especially primary care.

GENERALIST

Semi prepared for a wide variety of occurrences

Limited resources spread across a variety of options

Moderate success for many conditions; Limited failure for many conditions

Best approach with unknown future

GENERALISM
HAS
BECOME
A BAD
QUALITY

While
Specialists
have become
the preferred
type

SPECIALIST

Well prepared for one
or few occurrences

Resources consolidated
and united

High success for one
condition;
high failure for the rest

Best approach with a
known or high certain
future

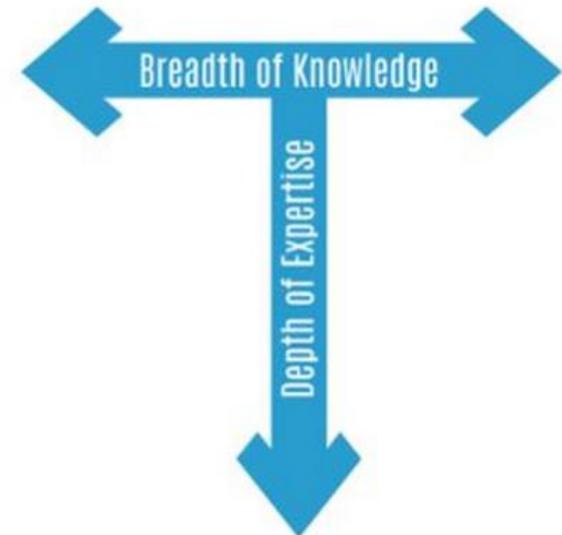
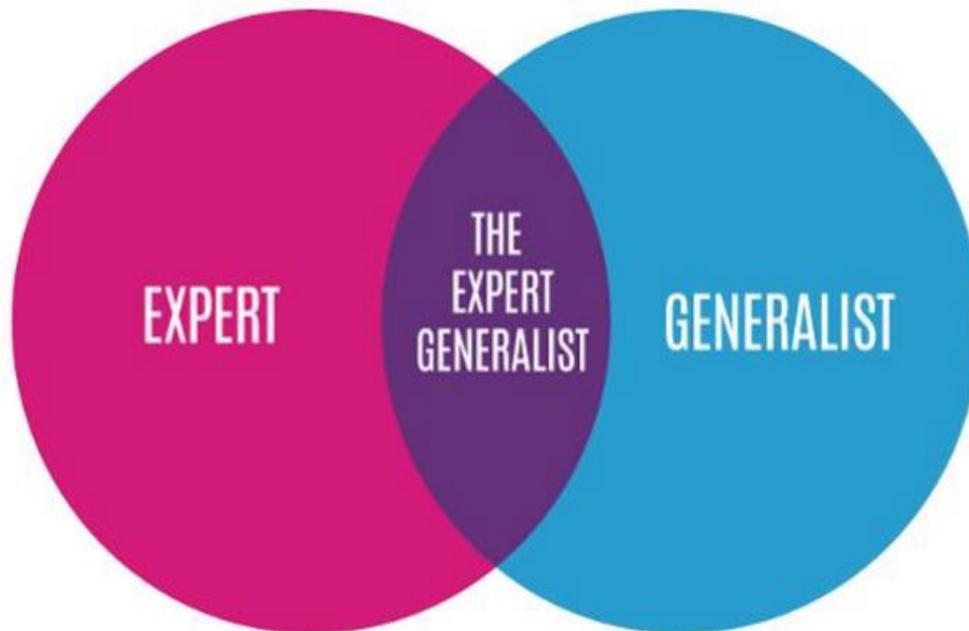
COULD WE COMBINE AND
MERGE BETWEEN THEM?
ISN'T IT AN OXYMORON?



Orit Gadiesh (born 1951)

Strategist & chairperson of **BAIN & CO.**
Considered among the Big Three management
consultancies in the World.

Listed by **FORBES MAGAZINE** among the
world's 100 most powerful women since 2004.



Source: IBM model of the T-shaped professional

THE PEDIATRICIAN IN THE 21ST CENTURY

Well prepared for a
wide variety of
occurrences

Resources consolidated
across a variety
of options

High success for many conditions;
Limited failure

Best approach
known high certain
future

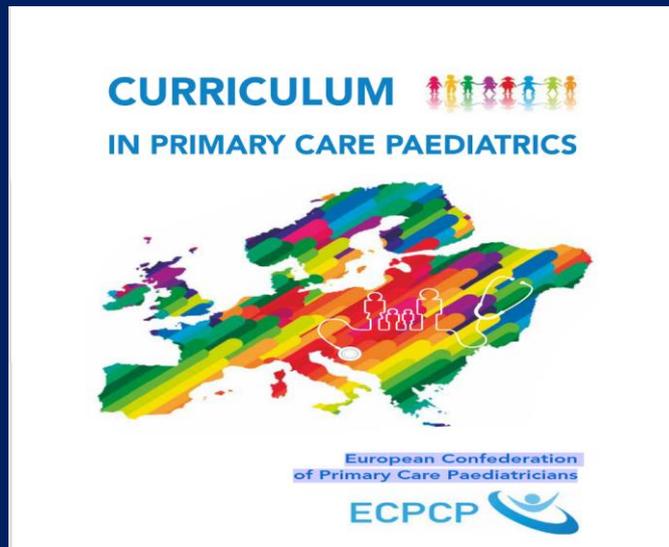
MY SUGGESTION FOR AN IDEAL TRAINING

GENERAL/PRIMARY CARE PEDIATRICS TAUGHT BY GENERAL & PRIMARY CARE PEDIATRICIANS IN AN AMBULATORY SETTING

THE
NEW MORBIDITIES

NORMAL
CHILD GROWTH AND
DEVELOPMENT

BASED ON



AND THEN

SUBSPECIALTY ELECTIVE ROTATIONS (e.g.
DERMATOLOGY, NEUROLOGY, PULMONOLOGY,
ENDOCRINOLOGY. ETC

RESCUCITATION, INTENSIVE CARE, BASIC LIFE
SUPPORT, EMERGENCY MEDICINE, NEONATOLOGY
AND ICU

CORE PEDIATRIC COMPETENCES TAUGHT IN AN
ACADEMIC UNIVERSITY BASED FACILITY
(HOSPITAL SETTING)

**GENERAL/PRIMARY CARE PEDIATRICS TAUGHT BY
GENERAL & PRIMARY CARE PEDIATRICIANS IN AN
AMBULATORY SETTING**

**THE
NEW MORBIDITIES**

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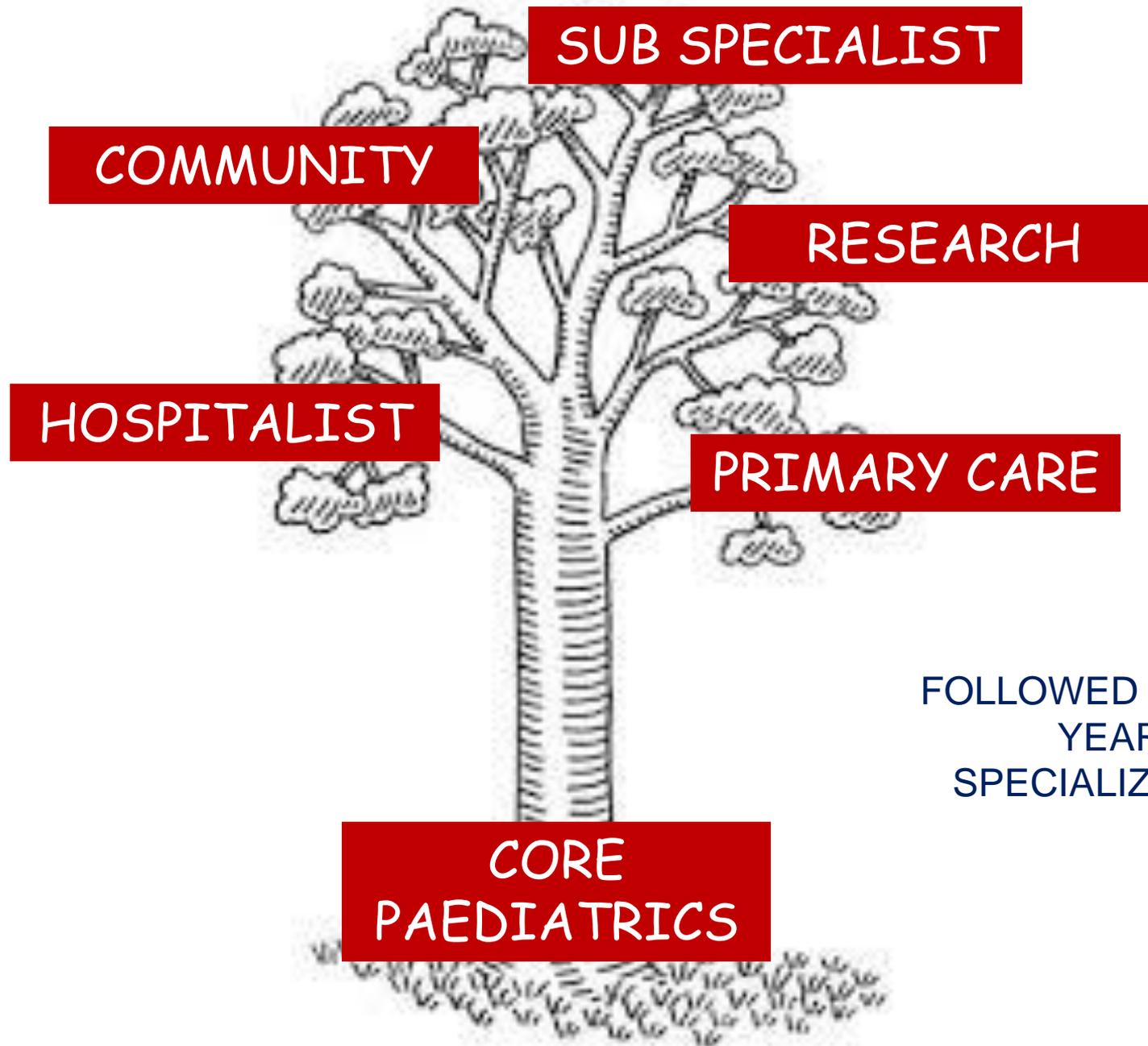
**RESCUCITATION, INTENSIVE CARE, BASIC LIFE
SUPPORT, EMERGENCY MEDICINE, NEONATOLOGY
AND ICU**

**CORE PEDIATRIC COMPETENCES TAUGHT IN AN
ACADEMIC UNIVERSITY BASED FACILITY
(HOSPITAL SETTING)**



CORE
PAEDIATRICS

OR START WITH A
COMMON TRUNK
OF CORE
PEDIATRICS OF 2-3
YEARS



SUB SPECIALIST

COMMUNITY

RESEARCH

HOSPITALIST

PRIMARY CARE

CORE
PAEDIATRICS

FOLLOWED BY A 2-4
YEAR
SPECIALIZATION

