"I have the honor of contributing to this round table on behalf of my fellow Primary Care Pediatricians in Europe and I must admit it gives me a déjà vu sensation. ©

A decade ago I was invited by the Croatian Paediatric Society and its president, Professor Julije Mestrovic to the Croatian National Congress in Pozega to deliver a similar presentation on behalf of the then “new” ECPCP and as a member of the UNEPSA-EAP committee on Challenges and Goals of Paediatrics in the 21st Century, in which I had the privilege of work with Professor Jossip Grguric from Croatia.

After a tumultuous history ranging from Romans fighting Britons, Franks, Gauls, Dalmatians and Huns, going thru two millennia of war and culminating in a disastrous 20th century, modern 21st century Europe is in the process of undergoing transformations in which traditions, cultures and administrative systems are being forged into common denominators for the mutual benefit of the continent. One of the important issues involved is the organization of the health care systems, and EPA-UNEPSA, from its very beginning, has been pivotal in seeking ways to achieve an optimal standard of paediatric care.

Everybody - the public, hospitals, physicians, health planners, pharmaceutical manufacturers, employers and governments - want health services of the highest quality, and that mean not just "absence of disease", but a state of complete physical, mental and social wellbeing. An ideal health care system should assure we all get:

- Optimal access to needed health-care services,
- High quality of health care and its outcomes,
- Appropriate resources to sustain & maintain health care (macroeconomic efficiency)
- Services provided in a cost-efficient/cost-effective manner (microeconomic efficiency)

The key element in attaining and maintaining high quality health services is a strong well-developed primary care-oriented system with an integrative "STEEEP" approach to care – an acronym first used by the USA Committee on Quality of Health Care: Safe, Timely, Efficient, Effective, Equitable and Patient-Centered. Putting Primary Care at the front has been also the slogan and motto of WHO policy for the last 40 years, since the Alma Ata declaration.

Good primary care systems have far better health outcomes, lower mortality rates, and higher satisfaction among consumers, all for lower cost. They are associated with improved population health outcomes, especially all-cause mortality in adults and premature or "avoidable" mortality from major respiratory and cardiovascular diseases. This relationship is

significant even after controlling for determinants of population health at the macro-level (GDP, number of physicians per one thousand population, percentage of elderly) and micro-level (average number of ambulatory care visits, income per capita, alcohol and tobacco consumption).

'Primary Care Health Service' is neither a faceless mega-structure run by robots nor a superhuman task performed by a superhero. It's a job for dedicated health professionals performing their tasks in the front line, like soldiers in a trench warfare. And - as any soldier will tell you - victory is influenced by the quality of the equipment, the length and depth of the logistics and the intelligence of the "generals", but depends mainly and most importantly in the fitness, endurance and bravery of the plain frontline soldier.

The issues of Primary Care involve all Europeans, from birth to old age, but we are discussing the care of children and adolescents. Who is taking care of them in the 53 European countries of Europe?

Pediatric care in the Continent is provided variously with three main systems co-existing:

- An exclusively paediatrician based
- A combined system with care provided by both pediatricians and general practitioners
- An almost exclusively GP / family doctor system, with most primary pediatric care provided by general practitioners (the standard in most North Europe).

Once upon a time it was much more homogeneous. A late 19th Century / early 20th Century family doctor was a general physician, a factotum that treated all ailments and diseases. But when medical knowledge began increasing exponentially, most doctors did not have the knowledge to deal with specific situations. Thus disciplines began branching and Paediatrics emerged as a distinct specialty, with children being treated by these general paediatricians.

General Pediatricians sounds an oxymoron. They are both and simultaneously Generalists and Specialists. As generalists they treat a wide range of humans with various distinctive problems, from birth to adulthood. As specialists, they deal with a specific group of Humanity with unique concerns mainly related to age. Some may say: "so are Geriatricians", and actually infants and elderly patients have much in common. Both are confined to bed/trolleys speak an unintelligible jargon understood only by their caretakers, eat mashed food and need vitamin supplementation, and are mostly hairless, toothless and incontinent……
But on a more serious vein, geriatrics aims and emphasizes the maintenance and palliation of its patients; focusing in treatment of the 3 Big "Is" (Incontinence, Immobility and Impaired intellect). Pediatricians have a much more optimistic goal and set their goal on the three big "P": prevention, protection and promotion of health.
And there is another crucial difference: the training needed to master the profession.

Geriatrics is actually a branch of Internal Medicine dealing with elderly patients and the treatment of their chronic diseases and disabilities. In principle the diseases are the same and you may call Geriatrics by other name "Medicine of the Elderly Adult". Pediatrics, on the other hand, is neither Medicine of the little nor of the Young Adult. Pediatrics is a distinct discipline and the training and curriculum to master it is special and unique, emphasizing 5 important points

1. 1. Distinct applications of medical basic sciences (anatomy, physiology, pathology, pharmacology, etc.)
2. 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. 3. The need and importance of being acquainted and recognize the wide spectra of possible variations of the Normal.
4. 4. Special legal and ethical considerations and issues related with patients being minors (guardianship, privacy, legal responsibility, informed consent, etc.). And finally
5. 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.

I am an old Pediatrician (more than 40 years). My generation learned the profession from teachers that, even if having a secondary angle of interest, were mainly General Pediatricians with vast knowledge in all aspects of Child health. They were multitaskers that combined in most cases their primary care practice with work in hospitals. Some, like Prof. Radovan Markovic, the founder of Croatian Pediatrics, engaged in parallel professional activities in public health and chaired University affiliated hospital departments. All this changed slowly but steadily beginning in the early 1950s' when pediatrics began a process of branching into sub-specialties, first in cardiology, then followed rapidly by many others and reaching today more than 30 disciplines, 20 clinical and 12 surgical. Sub-specialization is a blessed trend that has undoubtedly advanced research and teaching, widened the horizons of pediatrics and improved health care of children and adolescents. But this was accomplished at the expense of General Paediatrics, that simultaneously began a process of devaluation which transformed it from being the core and essence of child care into a mere preamble or prelude towards "professionalism". 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".

When specialist clinics opened up in hospitals they began the distinctive quality of centralizing patients with similar diseases or symptomatology. For research purposes, a pool of such patients is a gold pot. It's easier, for example, to evaluate and gather data on asthmatics from the charts of the pulmonologist clinic than from a general practice. The Medical and Pharma Industry, being the main source of funds for research, preferred to invest where results are

better and quicker. More grants and funds mean more research. More research means more papers. Whoever publishes more, climbs higher on the academic ladder, specialists conquered the top academic settings, became Chiefs of Pediatrics in University-affiliated hospital departments and today it's rare to find a Full Professor in Paediatrics who practices exclusively General Paediatrics. Sub specialization became a tsunami wave with aftershock repercussions.

The first wave was the devaluation in status, both in the eyes of the public and the establishment. Suddenly being a paediatrician with postgraduate training in the field was not enough. Look at this slide taken from a lecture by Prof. Laszlo Kalabay, from the Semmelweis University. A Primary care physician is defined by him as a physician from whatever discipline working in a primary care setting. A secondary care physician as somebody who has undergone higher postgraduate training but works predominantly in a hospital setting and a specialist as a physician who has undergone postgraduate training. What about Primary care paediatricians that combine both?

The second hit was the vanishing act of general paediatrics from hospitals. When the chief of Pediatrics at the top does not believe in General Pediatrics, the young bright resident is discouraged from seeking a future in the discipline. This causes 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.

Shiny tertiary centers look prettier, are mentioned more often in the news and have nicer walls to hang plaques to thank benefactors and look much nicer than crowded primary care clinics. And so, although only one in 1000 sick person needs hospitalization in a tertiary academic medical center, they rank high in the esteem and repartition of grants and budgets.

The setup of primary care really becomes less appealing. In the last decades we witness a steady and constant rise in the number of patients seeking treatment in the primary care setup and a proportional increase in the patient load – partly as the result of the explosion of knowledge in the internet and media and its influence on the parents. Few children seek care from subspecialists but almost all see a general pediatrician each year.

The U.S. Preventive Services Task Force estimates that an average child visits his/her pediatrician 4 and a half times a year for acute diseases. A primary care physician with a standard volume of 2,500 patients will therefore have 11.500 visits a year, around 40 a day. Calculating 15 minutes for each visit (to meet recommended care standards for routine health maintenance education) it means 600 minutes = 9.9 hours a day every working day of the year not counting time spent in counseling patients about routine health maintenance guidelines.

Primary care physicians working so many hours and seeing so many patients per day are "burned out" by their monotonous Sisyphean tasks. They show signs of attrition, discontent and dissatisfaction and feel they can do little to improve their working habitat. On top of it salaries are not proportional or correlated with the amount of work, and primary pediatricians find themselves overworked, deprived of prestige and academic status and lacking any incentive to keep on doing their job. Therefore they desert the rows and when countries

cannot fill the ranks of primary care by pediatricians they opt for the cheaper and most available alternative: the GP.

I presented to you earlier the three systems of Pediatric Primary Care in Europe.

When Katz et al published their landmark study in 2002 based on 1999 data, 35% of the European countries had a paediatric primary care system run by pediatricians; 47% had mixed systems and only 17% a GPs based system.

Ten years later Van Esso et al found only 24% of countries with a paediatrician based system, 14 countries had changed from a pediatric to a GP system and some countries enlarged the variation of the spectrum of primary pediatric care systems by developing multidisciplinary teams offering complex child health care by nurse practitioners, psychologists, and pediatricians (e.g., Sweden).

A 15% drop in primary paediatricians and a 10% drop in combined practice.

Broadly speaking, Europe is becoming a continent where primary paediatric caretakers are scarce and at danger of becoming an endangered species or even extinct.

Why? Is it a matter of quality? Money? Dissatisfaction? Is the GP/FD system really able to provide equal or better care for European children?

Let’s evaluate this from three angles and parameters:

1. 1. Objective Evidence based facts – or in other words "well healthcare indicators"
2. 2. Economic cost benefit considerations
3. 3. The thoughts and feelings of the patients

Objective standards by which the professional community measures success, estimates of the degree of fulfillment of the doctor's professional duties related to the optimum: did he/she make the right diagnosis as early as possible and gave the proper treatment according to the state of the art and evidence based medicine.

These were established supposedly to improve quality.

Many standards have raised high expectations but few have demonstrated evidence of substantial and sustained impact on patient care and outcomes and although of the outmost importance, have to do sometimes more with business management than medical care and management of the individual patient.

Classic parameters like Infant Mortality Rate are excellent indicators, but mainly in the developing world where figures are high and children die in infancy because birth complications, diarrhea, malaria, pneumonia, malnutrition and disease. Infant Mortality Rate is almost worthless in the Western world where most pediatric mortality and morbidity is affected by complex causes like inborn congenital syndromes, accidents, child abuse and in teenagers even suicide.

The primary care physician caring for children cannot be just a ‘gatekeeper’ with a "re-active" role. We expect him/her to have a "pro-active role" in the prevention and early detection of disease states, either in a preemptive (primary) form by evading the occurrence (e.g.

immunizations, patient education) or secondarily by attempting to slow/halt the progression of disease (screening, referral to subspecialists). Katz et al showed clear disadvantages for results regarding mental health, immunizations, preventive measures of health and infant mortality rate for countries using GPs and family physicians and having a low income per capita.

A more recent meta-analysis review by Maria Aparicio Rodrigo et al examining 54 studies (out of 1150 papers preselected) found that pediatricians show more appropriate pharmacology prescription patterns for illnesses being treated (URTI, OM, Asthma); achieve higher vaccination rates, have better knowledge of vaccines and fewer doubts about vaccine safety; their knowledge and implementation of different screening tests are better; they prescribe psychoactive drugs more cautiously and more in line with current practice guidelines; their evaluation and treatment of obesity and lipid disorders follow criteria more consistently with current clinical practice guidelines; and they perform fewer diagnostic test, show a more suitable use of the test and request fewer referrals to specialists They are more efficient in dealing with other preventive activities. Other words: Pediatricians are better implementers of WELL HEALTHCARE INDICATORS

Economic cost benefit considerations is a tricky question on the verge of unethical. How much would you value the life of a citizen? Most of us will answer instinctively: the sky is the limit. But actually the cost of the life of a citizen is limited and can be calculated by dividing the Health care budget by the number of people. In the USA, GDP is 21.43 trillion and they spend 17% on health. That means that the price/cost of the life of an American citizen is worth a little bit over 11.612 dollars per person. Israel's GDP is 395 billion and the state spends 7.5% on health into its 9,378,290 citizens, a price tag of 3150 US Dollars. And yet Israel has a life expectancy among the 10 highest in the World while USA is in the 40th place.

When balancing the budget, the employer – be it the government or the medical insurance companies - appraises the performance in a cost-benefit manner that "counts the dimes": every expenditure is taken into account and balanced with the results (the cost of diagnostic procedures, laboratory tests, salaries, therapeutics, even the legal fees in case of malpractice suits and the cost of rehabilitation if needed). By these standards primary care by pediatricians has been shown to be cost-effective and according to the USA National Medical Expenditures Survey saves almost 50 percent of the expenses in primary care. The paper from Spain recently quoted showed that Family Doctors prescribe more antibiotics than Pediatricians and pediatricians were more likely to adhere to clinical guidelines, therefore saving money.

On the Subjective patient feeling

Very few of us meet the standards of our profession as posed in TV shows but fortunately patients evaluate their doctor's performance in other forms, objectively based on when and how accurate was the diagnosis, how efficient the treatment and whether recuperation was fast and uneventful.

In this aspect, as already said, GPs take more time to get the right diagnosis, use much more laboratory tests and imaging studies, tend to overprescribe antibiotics and perform less well than paediatricians.

The UK – where GPs deliver paediatric primary care –is fifth from the bottom among 27 European countries for infant mortality. The rate stalled in the UK between 2013 and 2018 at 3.9 per 1000 live births. In England and Wales, the rate is more than twice as high in the most deprived areas (5 per 1000) compared with the least deprived areas (2.7 per 1000).
A pilot study in 2006 by CEMACH investigating paediatric mortality in the UK found that even though deaths may not ultimately been preventable there was an unacceptable number of avoidable factors involved. An important message was that "children must be seen by healthcare personnel who have had the appropriate training to provide proper and timely care" end quote by Pat Hamilton, past president of the Royal college of Paediatrics and child health.

Subjectively, a physician performance is evaluated by and influenced by the empathy showed by the doctor, the trust the patient has towards the doctor, the time & effort spent by the doctor in diagnosing, treating and following up the patient and the availability of the doctor when needed.
This aspect ranks very high in questionnaires: continuity of care, geographical proximity, the degree of acquaintance (they want a physician who not only knows their medical history but who also knows them as a person) and relationship with their physician are regarded above all else, tending to overlook inadequate service. Studies in Spain and the USA show adolescents have more confidence in pediatricians than in GPs and in Israel, when parents were given the choice between pediatricians and Family Physician most preferred the pediatricians.

So by almost all parameters pediatricians are better. But neither papers nor presentations will change national policies and in a situation in which Primary care physicians’ work many hours, see many patients per day and are "burned out" by their monotonous Sisyphean tasks, more and more will desert, more countries will find themselves with not enough paediatricians to fill the ranks and a day will came in which all Europe will abandon primary care performed by paediatricians.

Can the wheel be turned around? How can we promise optimal care for our children in the Primary Care setting in the future?

These questions have to be addressed and answered by each country according to its Health system but I will try to express my opinion by presenting a schematic answer divided into three:

Countries having Primary Care performed by pediatricians should help these practitioners

perform their duties properly and fulfill the expected goals of quality health parameters while regaining self-esteem and prestige. This could be achieved by developing practices in which more time is dedicated to each patient, getting better reimbursement and more satisfaction from work, getting help in performing non-medical tasks, either by improved technological devices or by delegating some of the work to non paediatric and even non-medical personnel. Satisfaction from work has much to do with intellectual challenge, breaking the monotony of daily practice and raising both the self-esteem and the way the professional establishment sees primary paediatricians. A key ingredient would be the mingling of the primary paediatrician with both the hospital and academic worlds. For example: revive General paediatrics in the hospital setting. In the USA there has been such a revival of General Academic Pediatrics and at present 119 out of 199 accredited departments for pediatric residency have General Academic Paediatric divisions that shoulder a large share of educational responsibilities and provide considerable outpatient and inpatient clinical care. In a similar setting in Europe we could witness the integration of community attending paediatricians in the staff of general pediatrics departments, a step beneficiary for both sides. Ambulatory paediatricians could add their knowledge, experience and point of view on general and ambulatory pediatrics and undoubtedly improve the training of future pediatricians by exposing them to these primary caretakers while on the other hand the hospital would attract potential instructors and lecturers that were until now afar from academic activities and thus form a new (or renewed) nucleus of generalists able to coach on the intricacies of general paediatrics.
Another tool would be the involvement of primary care paediatricians in research and teaching in the ambulatory setting. For example the institution of pediatric research nets to conduct collaborative practice-based research that would eventually enhance primary care practice.

In countries with mixed practice, instead of presenting the patient the alternative of either a paediatrician or a Family Doctor, an effort should be made to build a combined practice. Since 1967 the USA introduced the Team Work Patient Centered Medical Homes (PCMH), a model that has been shown to allow better access to health care, increase satisfaction with care, and improve health while decreasing health care costs by 5.6% (in the USA it saves 67 billion dollars per year on a National level with part of the sum going towards payment reform, an important ingredient in the implementation of the model). Most European countries have already patient centered care of adult patients. To adapt to the shortage of paediatricians a specially tailored 'child and adolescent patient-centered practice' could be established under paediatric management and direction, consisting of a multi-disciplinary professional staff including non paediatric physicians (GPs), physician assistants, nurses, dieticians, secretaries, physiotherapists, behavioral health specialists, social workers, health educators, dieticians and laboratory facilities. This team could provide excellent and cost-effective care and if adequately trained with the use of information technologies, can also reduce physicians’ load.

Each patient would have an ongoing relationship with a personal paediatrician that would provide first contact as well as continuous and comprehensive care. Besides being the anchor of the practice, the paediatrician will provide all the patient’s health care needs and arrange care with other qualified professionals (including coordination with specialists, hospitals, etc.). The mixed practice could be aged limited in the edges of age - e.g. birth to 3 years – were care should be exclusively by paediatricians and in addition children and adolescents being cared by Family doctors or GPs should have easy and rapid access to a paediatrician for second opinion, consultations and treatment of complicated cases.
Another tool could be the institution of a "regional paediatrician office", in charge of preventive medicine, health of the well-baby, kindergarten and school medicine and probably connected to the regional hospital in which the children of the region are hospitalized and thus able to follow up these children if and when hospitalized. Of course quality of health care can be promised only if the Family Medicine residents get a proper period of training in paediatrics before beginning to work in the field.

In countries that have abandoned primary care delivered by paediatricians, we as Pediatricians should try and influence the Governments to train the GPs practicing Primary Care in the field of Pediatrics. The USA health system has a program ongoing for the last 50 years, combining residencies in Internal Medicine and Pediatrics and allowing these residents to be became board certified in both specialties in only 4 years. The majority of these Ped-Med physicians opt for a career in primary care. They are far better trained than the Family Doctor as they get two full years of Pediatric training and are more proficient at treating and diagnosing complex diseases, including critical care. An alternative would be a compulsory one year of paediatrics based on a syllabus written and delivered by paediatricians for every GP

In conclusion

Primary Pediatric Care is in danger, mainly due to increased tendency on sub specialism, on the fact that Governments & Public Health prefer GPs and the practitioners show Signs of attrition, discontent and dissatisfaction.

The future may look grim

But fortunately there is a strong dedicated EPA UNEPSA team ready to take the necessary steps

And a courageous ECPCP organization ready to help and fight along for a brighter future