





#### LEARNING ACROSS BORDERS

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European Academy of Paediatrics

Paediatric Section of U.E.M.S. Union Européenne des Médecins Spécialister

## **Strategic Paediatric Alliance**

#### 1

A CONSENSUS ON THE IMPROVEMENT OF COMMUNITY AND PRIMARY CARE SERVICES FOR CHILDREN, ADOLESCENTS AND THEIR FAMILIES IN EUROPE

A joint statement by the

European Paediatric Association/Union of National European Paediatric Societies and Associations (EPA UNEPSA)

**European Academy of Paediatrics (EAP)** 

European Confederation of Primary Care Paediatricians (ECPCP)

#### Intended readership

Professional groups involved with the planning and delivery of primary/community services for children and families. Particularly for those experts involved with future strategies and their respective partners in the resource distribution parts of health systems, namely those people with policy/planning/commissioning roles. This paper is also relevant for those involved with workforce planning, training and assessment and service quality improvement.

#### Foreword

This joint statement has been prepared in response to increasing concerns about the quality of services provided for children and families in community settings across Europe. These concerns are driven by three main factors - variations in outcomes, which include both morbidity and mortality, inequities of provision, both within and between nations and the difficulties with recruitment, training and retention of an appropriately trained and competent workforce, which includes paediatricians, family doctors, general practitioners, children's nurses and other professional groups.

This paper intends to be equally relevant to improve GP-based, paediatrician based and mixed systems of primary/community care in Europe. The long-standing categorical debate, often accompanied by entrenched positions, about whether General Practitioner or Primary-Care Paediatrician based primary-care offers the best way forward, is unhelpful, as both options have strengths and weaknesses and applications. In addition some countries have mixed models of primary/community care and not merely the two categories as the debate might suggest.

Whilst it may be self-evident that better trained clinicians will offer higher quality care, this should be considered in the context of limited resources (both financial and workforce) and the requirement to create best value within the overall health economy. This will include a debate about the proportion of resources to tackle the determinants of health, in order to promote well-being outside the health service to reduce health service demand, as well as the resources to manage ill-health and long term conditions within a health service.

#### Purpose

The purpose of this paper is to ensure that any future changes to the organisation or provision of services, benefit children, young people and their families. At the very least any future changes should improve health, improve the outcomes of services, improve the experience of services, reduce unnecessary variations and inequalities and be sustainable. Additionally services should be safe, provided as close to home, enable children and young people to participate in their own health care and balance prevention with provision.

This paper outlines the issues that need to be considered when discussing a strategy to improve primary/community based services for children and families. The intention is not to describe one single model that is equally appropriate across Europe, but rather to provide policymakers and practitioners a framework to enable appropriate evidence-based decision-making for the benefit of children and families.

#### Principles

Article 24 of the UN Convention on the Rights of the Child enshrines the rights of children to both health and health care. In terms of health service delivery the Convention can be distilled into five fundamental principles (see Council of Europe Child Friendly Health Care,). These include the participation of children and families in individual decision-making, participation in service improvement and participation in policy related matters, protection from all forms of hazards that have the potential to cause harm, promotion of assets that have the potential to create health and well-being and finally access to high-quality provision based on pathways, which integrates prevention at every level.

To ensure good outcomes all the component parts of a pathway, which contribute to the 'patient journey' through services, should be in place and working well together - this is integrated care in practice. These component parts should all be based on best evidence, delivered by competent providers, in the right place and at the right time. This simple system should then be accompanied by meaningful measures which enable the providers to learn and improve their system through incremental innovation.

#### Introduction

The terms primary, secondary and tertiary care are now outdated and it can be argued that they have now become potential obstacles to improving communication, cooperation and integration of care between different teams who provide care for families. The terms are probably best substituted by community, hospital and specialist centre care, which merely describes where the care is provided. Planning and provision based on pathways enables the component parts to be clearly identified and then the teams involved to work together in a network, to create integrated care from the perspective of children and families.

This paper only considers those services provided outside hospital or specialist centres, meaning those based in community settings.

Community delivered care includes:

- Urgent and emergency care with referral systems for potentially life-threatening conditions which includes medical, surgical and psychiatric conditions.
- The management of undifferentiated concerns presenting to the 'first contact practitioner' effectively triage and initial management.
- The provision of "preventative" services which range from health surveillance, the delivery of screening programmes and immunisation.

- Caring for vulnerable children including safeguarding roles.
- Some public health programmes delivered at the community level such as injury prevention.
- Care for children with long-term conditions which include medical, psychological, social and practical care; sometimes called 'chronic care'.
- Some "tertiary (specialist) care" which does not require the high tech environment of a specialist care centre.

What is very evident from experience is that the health care system must be seen as a "whole", because, when making changes in one part of the system there are often unexpected consequences in other parts of the system. Increasingly the term "integration" is being used to describe how all parts of the system should work together.

Governments often do not recognize the large returns on investment by making child and adolescent health a priority area for investment. However those involved with providing services should also recognise that resources are limited and must be used wisely to achieve the maximum benefit for children and families and society as a whole.

The improvements required in community-based services will be different in nations across Europe, so each nation should review their provision and consider the issues highlighted in this paper, before making any substantial changes.

#### Variations in primary care

There are significant variations across Europe in the way that primary and community child health services are financed, organised, delivered, quality assured and improved. There is often little quantitative evidence to support one system more than another, but there are often strong opinions advocating one option over another. While some examples of best practice have been published and replicated, lack of health services research currently limits the spread and adoption of effective improvements. This work is too often limited by poor access to relevant data and information from existing health service information systems, many of which have often been designed to support business functions rather than quality assurance and improvement functions.

The variations that must be considered when planning or improving future services include:

 The age of transition from paediatric/child health services to adult services. Currently this transfer from paediatric primary care to general practitioner care may range from 5 to 18 years. In some countries the transition may be up to 24 years for those young people who may otherwise become "lost in transition" namely those with rare long-term conditions, significant mental health problems and ongoing disabilities, particularly where there are poorly developed adult services for this age group. The age of transition significantly alters both the numbers and competencies required of the workforce involved.

- All care should be as evidence-based as possible and the access to and the quality of care across Europe should not depend upon how the health system is organised or financed.
- Evidence-based care should be delivered by a competent workforce working in teams that collaborate to provide a responsive and comprehensive service for the local population they serve.
- Different nations in Europe organise care in different ways and this is particularly relevant for the care of children with long-term conditions, those with mental health conditions and those where there are safeguarding (child abuse) concerns. As a number of long-term conditions become more prevalent the workforce must evolve to maintain their competence with relevant continuous professional development (CPD) and continuous medical education (CME) over their working lives.
- Services may be delivered from an office, health centre or polyclinic, with some services also being provided in preschool settings, primary and secondary schools or colleges. Services should be provided as close to home as possible in appropriate environments for the care being delivered.
- Some primary care services operate "office hours" whereas others provide 24/7 services. If a 24/7 service is not available then alternative "out of hours" services will then be required to ensure that hospital emergency departments are used appropriately when community services are unavailable. The challenge is how to maintain a consistent high quality paediatric service 24/7 throughout the year.
- In some health systems preventive care is provided within a "public health service" organised separately from primary care, likewise in some systems all "specialist care" is provided only in hospital settings. It is essential to plan services using a "whole system approach".

One specific issue is the overlap of competencies between different professional groups. For example, the role of primary care paediatricians compared to family doctors in providing health care to children and young people. Each have both a unique skill set and also a common skill set and the challenge for future provision is to ensure children and young people have access to the right mix of competencies, in the right place and at the right time and that individuals work in teams, who then collaborate within integrated networks, all striving to continuously improve the care they provide and outcomes they achieve. All professional groups including family doctors and general practitioners require appropriate paediatric training to be competent in their clinical work.

#### Changing morbidity

Mortality throughout childhood has dramatically reduced, especially for the younger age groups, over the last century. There has been a shift from infectious diseases in younger children to the new chronic/long-term conditions/morbidities in older children as more children now survive acute illness and injury and are surviving longer, sometimes with ongoing disabilities.

Changes in society have resulted in increased numbers of children with obesity, mental health problems and there is increasing recognition of all forms of child maltreatment, particularly neglect.

Risk-taking behaviour during adolescence may pose a threat to health particularly alcohol, substance misuse and sexually transmitted diseases. Death and other consequences of accidents are still a significant problem in many countries of Europe. It is essential that the local workforce is competent in all these clinical areas

Migration within Europe and migration to Europe is having a significant impact on baseline numbers within populations for which health services are planned. Additionally some migrants have significant health problems associated with their countries of origin and new morbidities associated with the difficulties they experience when integrating into new cultures.

Throughout Europe inequalities between and within nations continue to increase, particularly in times of austerity. There is great historic diversity in both welfare support for families, employment opportunities and levels of investment in health care between different nations. Regardless of political system social solidarity is increasingly being eroded by weakened regulation which no longer guarantees human rights to health. These concerns are particularly relevant to migrants and children of refugees who experience difficulties accessing high quality health care in many countries.

#### Changing use, expectations and technology

Expectations of health services are ever increasing and consultation rates are generally rising rather than falling over time. Access to information via the Internet often increases uncertainty and anxiety, thus increasing consultation rates particularly within the first contact, urgent and emergency care part of the health care system.

Despite the "digital age" a significant number of records, predominantly in Eastern Europe, are still paper-based and where electronic records exist, they rarely work seamlessly to support communication between community, hospital and specialist centres, nor between health, education and social care; neither do they often provide data-based information that supports quality improvement.

The potential for "e-consultation" using e-mail, texts, videoconference and other social media has yet to be fully explored, although the potential for electronic monitoring of everything from calorie intake, physiological measurements and other behaviour is rapidly expanding with the development of smart phones and wireless devices. Using this technology will be important part in improving the quality of care particularly for long-term conditions where significant lifestyle changes are essential.

#### A skilled workforce

The dilemmas behind the guaranteeing a competent team to manage the full range of problems presenting in community settings and primary care are considerable. First, there must be clarity about what care is expected to be provided, then the roles of different professional groups within "primary care" have to be clearly defined in terms of their competencies (based on knowledge, attitudes and skills).

There has never been agreement on the question of "which professional group does what", nor the training or assessment required to become and remain competence. Therefore, in some nations paediatricians are responsible for all the community delivered care, whereas in some other nations preventative services are delivered by nurses (including children's nurses and public health nurses), undifferentiated concerns managed by family doctors and nurse practitioners, specialist care by paediatricians and mental health from a variety of professions within mental health providers of services.

The workforce challenge is to ensure appropriate access to a range of professionals who work together efficiently and effectively in a team and who can comprehensively meet the range of needs within their local population. The health team for children and families may include paediatricians, general practitioners, family physicians, children's nurses, psychologists and psychiatrists, physiotherapists and many others. The interfaces between other agencies for example education and social care and adult services will require further definition of roles and responsibilities and agreement on how the teams work together.

The total workforce must be competent both clinically and culturally to cover their local population and additionally be able to assure and improve their services using appropriate improvement science methodologies.

In many places the current total workforce capacity is insufficient to provide a comprehensive service for a variety of reasons. Sometimes it is insufficient numbers in training to replace retirements, sometimes inadequate resources, sometimes inadequate training, sometimes a lack of system design and leadership.

In specific countries there has been a proactive policy decision to replace primary care paediatricians with general practitioners/family doctors, whereas in others a passive strategy to train inadequate numbers of paediatricians thus resulting in substitution by default. A similar dilemma is the balance between paediatricians providing mental health care and the professional groups within child and adolescent mental health services. Increasingly paediatricians are being expected to provide more mental health provision, sometimes without the necessary training and support to do so. It is essential that children and families have access to well-trained and competent doctors to meet all their medical needs. It is intended that this paper enables discussions that will create clarity about roles and responsibilities so that, in turn, better workforce planning follows. Any proposed change to primary/community provision of services must be evaluated from a whole system perspective, for example, substitution of well-trained paediatricians by less well-trained general practitioners may result in lower quality care and more onward referrals resulting in higher overall costs within the system over time. On the other hand, when there are insufficient numbers of paediatricians or general practitioners, their roles and responsibilities should be reviewed to discover whether some of their duties could be delegated to other professional groups, providing they are equally competent, to deliver that element of their role and quality of care will not suffer.

A particular issue for paediatrics and child health is the large proportion of women within the medical and nursing workforce. Enabling parents to balance child rearing and professional responsibilities is a priority if their professional skills are to be retained throughout their working lives. Rarely is there a sustainable workforce plan covering recruitment, retention, ongoing training and retirement for each professional group involved. The concept of "portfolio careers" requires further exploration so, for example, when night time work becomes too arduous alternatives should be available.

#### Conclusions

The traditional pyramid of public health, primary, secondary and tertiary care is no longer fit for the 21st century and the planning of services for children and families should be child and family focused so based on pathways of care, delivered by teams collaborating networks; with the place of delivery being as close to home as is safe and sustainable to achieve.

Primary care is no longer a single service delivered by a sole practitioner. The new complexities of children's conditions, coupled with the impact on their families, should be recognised and defined in order to build a competent local team, or a multi-disciplinary group, to manage the presenting problems within a local population. The future community team would integrate traditional primary care roles with secondary care roles that can be safely moved out of hospital settings and other services, such as child mental health where there is no dependence on hospital facilities.

This change from "solo practitioner" to team working will require local leadership, commitment and management by senior clinicians, which could be a community-based paediatrician, otherwise a family doctor or nurse. It is essential that the leader/coordinator has the necessary expertise and support from other members of the team for this role. It is essential that the leader/coordinator has the necessary expertise and support from other members of the team for this role. It is essential that the leader/coordinator has the necessary expertise and support from other members of the team for the team for the team for this role.

Children live in families and their health often depends on the health and well-being of their parents; this is particularly true for the most vulnerable in society and therefore community services for children cannot be seen in complete isolation from adult services for parents. This is essential for child mistreatment and safeguarding services and is often true for child mental health problems, which may be a reflection of family dysfunction, such as domestic violence and adult mental health problems.

At present there are no data to support one single model of primary care or community service provision that is equally efficient, effective and equitable in all circumstances. To create equity of outcomes will require differentiated models of service delivery in different places, for example urban versus rural, deprived versus affluent, stable versus migrant communities.

Developing a competent team of professionals with the necessary knowledge and skills appropriate for local circumstances is essential for improving the quality of care of care and outcomes for children and families. The team structure must fit with local circumstances and the existing workforce and should be supported by accredited training programmes and continuous professional development for all clinicians providing first-line care to children in community settings.

To achieve the concept of a "competent local team" it is essential to define what needs to be done, the competencies required and the best model of service delivery. Existing workforce capacity can then be reviewed in the light of these priorities and planning for future workforce numbers and training/retraining can be started.

The most frequent model of service delivery in European countries is primary care paediatricians working as first contact physicians in community settings, with secondary care paediatricians working in hospital settings; other countries use general practitioners and nurses for first contact care or a mix of paediatricians and general practitioners. However, some countries recognise that not all "secondary care" is best delivered from hospital settings and have developed secondary care paediatricians working in community settings. These paediatricians may either be based in the community or "outre-ach" into the community from a hospital base.

Future models of care should enable a greater integration between traditional primary and secondary care to enable more presently hospital based care, particularly for those children with long-term conditions, to be delivered in community settings when it is not dependent on a hospital setting and safe to do so.

For those countries it would be expected that paediatricians would become an integral part of a local community team in order to provide clinical care, of an equivalent or higher quality than is currently offered in hospital settings. They would also be able to contribute to the leadership, education and training of other members of the team and local service improvement and thereby raise the overall paediatric competence of the community-based team.

New models of service delivery require active ongoing research and evaluation in order to determine what works best, in which circumstances and to inform improvement priorities.

The leadership capacity required to review existing community provision, engage with stakeholders and propose new ways of working should not be underestimated, but without such proactive leadership and planning many services for children will fragment and fail to meet their needs in the future. Community/primary care is the bedrock of health service provision and if provided well could significantly reduce unnecessary and often relatively expensive consultations in hospital and specialist centres.

#### Recommendations

Each nation in Europe faces a different set of challenges to enable improvement of their primary/community care for children and families. These recommendations are therefore not universal but are intended to create a framework for discussion prior to deciding local or national priorities and action. Systems where there is good evidence that they are currently working well should not be substantially altered, accepting the fact that there is always room for incremental improvement.

#### Investment, priority and quality

Any reconfiguration/transformation of services currently described as "primary" or "community" care must offer better quality of care for children and families in the future than currently exists. Generally investments in services for children and families have greater long term benefits for society than equivalent investments in adult or elderly care.

- The quality of care including access, experience/satisfaction and outcomes should not be substantially different depending on cultural factors such as ethnicity, ability to pay, gender or the financial systems operating in any nation.
- Quality of care also includes the safety perspective. Safety covers making the right decisions first time, avoiding "near misses" and adverse events and learning from them when they do occur.
- Quality of care is hugely dependent on the quality of the workforce. It is essential that any future workforce configurations both preserve and enhance the quality of care provided by the range of professionals within the team.
- Investment in "improvement science" and research throughout health services to enable the system to evolve in the right direction is vital.

#### Whole system impact

The impact of any changes in primary/community services must:

- Be considered in the wider context of provision of health services for children and families i.e. public health services, community services, hospital services and specialist care in order to mitigate any negative or unexpected consequences.
- Consider the impact on services provided by other agencies for children and families, for example, social care and education.

• Include the views of all relevant stakeholders, including children and families, those providing services, those planning services and those responsible for quality and regulation of services.

#### Service needs assessment

Provision should be based on well-defined local needs (defined as the ability to benefit from services), which includes knowledge about:

- age/structure of the local population clearly defining the ages of children included or excluded,
- the mortality and morbidity within the local population,
- a comparison with local health service capacity to meet the identified needs.

#### Evidence-based (what works)

Services must be based on the highest levels of evidence balancing effectiveness, efficiency, equity (in relationship to both access and outcomes) and safety to create whole system value. Evidence includes:

- clinical decision-making,
- service and workforce configurations and
- policy development and decision-making.

Where clear evidence does not exist, the knowledge and experience of various stakeholders must be sought and included in the decision-making process.

#### **Competent workforce**

- The competence and capacity of professionals providing future services in community settings is of the highest priority.
- Workforce numbers
- Training sufficient numbers entering training programs to replace lifetime loss in that profession.
- Retention ensuring a living wage, good working conditions and access to continuing professional development.
- Retirement reducing the causes for early retirement and creating opportunities for portfolio careers.
- Workforce capacity

- Part-time working enabling part-time working rather than loss from the workforce.
- Sabbaticals enabling retraining, where appropriate, in order to keep pace with changing morbidity.
- Childcare responsibilities -enabling parents with children to maintain their competencies during periods of absence.
- Workforce competence
- Professional and cultural,
- Improvement science and research
- Leadership
- Practical value for children and families

#### Skill mix within community based teams

In many countries paediatricians provide traditional primary care for children and there is potential to further expand their roles to cover the new morbidities. Where GPs provide primary care there is potential to include other professional groups to widen the competence of the team, in order to improve the quality of care and reduce unnecessary referrals to specialists. For example, inclusion of paedia-tricians would reduce hospital referrals and expanding the role of primary care nurses and including children's nurses in the team will enable better quality of care, particularly for children with long term conditions.

Nations should therefore review the professional mix of community teams working with families to ensure the maximum number of children can be managed safely in community settings, without resort to unnecessary hospital care. Acute and emergency care of children and adolescents must be provided by competent clinicians and available 24 hours a day. When the first contact person is not medically trained they should work to evidence based guidelines and be supervised by well-trained clinicians, preferably paediatricians.

#### General training and competency assessment

Competence requires excellent initial training, ongoing professional development and continuous application of learning based on innovation and improvement. Training must include:

- Knowledge relevant to expected roles in community settings.
- Skills to apply knowledge in practice.
- Assessment to demonstrate competence in the real world.

Following on from needs assessment the roles and responsibilities of different professional groups should be defined and training programmes for those involved reviewed to ensure that the team is competent to manage the range of condition/morbidities within the population/community.

#### **Professional training**

Structured and accountable training programmes are strongly advocated for all practitioners/clinicians/doctors providing primary/community care for children and families, so this will include therapists, nurses and doctors. This training must be comprehensive and cover all aspects of care for which they are responsible. The training and assessment for specific roles should be equivalent regardless of which professional group the individual clinician belongs, so they are equally competent to deliver that element of care for neonates, infants, children and adolescents.

When paediatricians are the first contact provider they would be responsible for provision of comprehensive and continuing care throughout infancy, childhood and adolescence (<19 years) and possibly longer for those people with complex health needs. They should be actively supported by adult health teams when parental health issues adversely affect the health of their children.

When family doctors and nurses provide primary/community health care for children and young people (<19 years) and families they should be effectively supported through an active collaboration with paediatricians and other professional groups with more expertise in order to provide a comprehensive local service for children and families in their area.

All competencies must be maintained and where necessary developed further, as roles evolve and change throughout working lives, to enable the development of high quality teams dedicated to constant improvement in experience and are outcomes.

#### Appropriate setting

Future services should be delivered in convenient child and family settings either at home or as close to home as is safe and sustainable, within available local resources.

- Child friendly, for example, access to safe play, information to improve participation in decision-making.
- Clinical settings must be fit for purpose.
- Clinicians should have access to appropriate investigations and support services.
- There should be administrative and informatics support for service delivery.

#### Protection, promotion and prevention

The health and well-being of children depends on both protection from hazards and promotion of assets in their lives to achieve the best life course outcomes.

- The impact of living conditions, lifestyles and the health of parents and other key caregivers must be considered and addressed simultaneously when redesigning health services.
- Prevention of secondary disability from a primary condition must be integrated throughout service delivery.
- Services must be designed to be safe and not cause additional harm, such as injuries or infections, when treating patients.

#### Timeliness of referral and access to services

Children are constantly growing and developing and early access to effective interventions has a disproportionate benefit because children take their health gains with them. Children with acute conditions may deteriorate rapidly. For many conditions outcomes improve with earlier intervention.

- Review access to urgent and emergency services in office and out of office working hours.
- Review access to effective teams for disabled children and those with long term conditions.
- Review provision of child and adolescent mental health services, particularly those young people aged 16-24 years.

#### Learning through improvement

Any changes in provision should be accompanied by a robust and proportionate process of evaluation to enable "learning from the process of change". All healthcare systems must be able to demonstrate their quality and value and where this evidence does not currently exist, this capacity should be built into new forms of provision.

- Review the structure and capacity for health services improvement and where needed embed improvement science within service provision.
- Integrate innovation and improvement into service delivery at all levels, particularly within networks.
- Ensure that staff have access to appropriate continuing professional development to develop or maintain their improvement science competence.
- Invest in national and pan-European structures to encourage "learning across borders" in order to implement best practice.
- Review the capacity of current information systems to provide relevant information which will drive quality improvement.

#### Overall

Our collective aspiration is that children of families have easy and equitable access to effective health services, all parts of which closely collaborate to ensure the best possible experience and outcomes. This vision requires services to be based on the highest quality of evidence, delivered by competent teams who constantly strive for improvement and are supported by a health care system in which there is alignment and synergy between all the stakeholders.

At a practical level, each local community will have a team of professionals who work predominantly with children and their families; they will all have clear roles and responsibilities and function as a team to provide a comprehensive service to meet the identified needs, in ways that are most suitable for their local communities.

Achieving change in established systems always proves challenging and requires leadership, change management and improvement science all working together, but often what works best are examples of good practice to inspire and emulate.

The European Academy of Paediatrics (EAP), European Confederation of Primary Care Paediatricians (ECPCP) and European Paediatric Association, the Union of National European Paediatric Societies and Associations (EPA-UNEPSA) are all committed to work with policymakers, service planners, other professional groups and users of services to explore all options and disseminate best practice for the benefit of children and families.

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### 2

WHO INDICATORS FOR PEDIATRIC CARE ASSESSMENT IN EUROPEAN COUNTRIES: LESSONS LEARNED

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WHO Collaborating Centre for Maternal and Child Health, IRCCS Burlo Garofolo, Trieste Italy <u>marzia.lazzerini@burlo.trieste.it</u> According to the World Health Organisation (WHO) vision, "every woman, newborn and child should receive quality health services throughout the continuum of their life course and care". For facilitating the accomplishment of this objective, WHO developed a series of tools to assess and improve quality of hospital care for mothers, newborns and children (1,2).

In the last fifteen years the WHO quality assessment and improvement tools (1,2) have been widely used in the WHO European Region, based on request from countries and on the existence of bilateral agreements between Ministries of Health (MoH) and WHO. These country assessments showed that substandard case management, even for common child conditions such as fever, cough and diarrhoea, was a frequent problem (3-6). Such situation had multiple causes, such as the lack of national evidenced based guidelines, lack of systems to ensure appropriate continuous medical education, lack of systems to ensure translation of knowledge into practice, counterproductive mechanisms for financing hospitals, language barriers, and others.

In particular in countries of the former Soviet Union, despite hospital case-fatality rates were low, it was observed that inappropriate practices were frequent. The most frequent inappropriate practices were unnecessary and lengthy hospital stays, over-investigation, overdiagnosis, overtreatment, overuse of intravenous drugs, and inappropriate monitoring (3,6). This implied increased cost for the health system and for the community, together with increased risk for patients (eg side effects of drugs, no-socomial infections).

While experience in hospital assessment was increasing, it was felt that the lack of a unified quantitative method for measuring case management prevented accurately measuring quality of care across different facilities, and monitoring progresses over timer. Starting from this background, in 2012 we developed a list of 10 key quantitative indicators of hospital inappropriate case management (Box 1), using as standards of care the WHO recommendations on Hospital Care for Children (7). For each indicator a precise and clear case definition was developed. Standards operating procedures for data collection were developed, together with predefined data collection tools.

The 10 indicators were later field-tested in four countries within the European Region: Kyrgyzstan (2012), Ukraine (2013), Republic of Moldova (2013), and Kosovo (2014). From this experience a number of lessons emerged. First, the use of quantitative indicators confirmed, in an accountable and quantitative way, that substandard case management was a common problem across different countries. Despite some variations were noted among countries, a review of over one thousand hospitalised cases across forty hospitals carried forward between year 2012 and 2014 revealed an average prevalence in inappropriate hospitalisation, incorrect diagnosis, incorrect treatment and unnecessary painful procedures of 51%, 56%, 74% and 75% respectively.

Secondly, huge heterogeneity in case management was observed among different hospitals, even within the same country. This is an important observation, since the identification of "champion" hospi-

tals (ie hospital performing better than others), can facilitate the local development of solutions for improving quality of care. Experience has showed that local "champions" can be successfully used as driver for changing behaviours within a country. The creation of a network among paediatric hospitals, where "champion" model hospitals can interact with other facilities with a peer-to peer relationship resulted in increased motivation of staff, improved team dynamics, spreading of good practices, and tangible improvements in quality of care (8).



Since year 2012 the indicators (Box 1) have been used to monitor performance over time in different countries, such as in Kyrgyzstan, Kosovo, and in the Russian Federation. They have also been used in a controlled cluster randomised trial (8). This experience has showed that the indicators provide an accountable way of monitoring key paediatric hospital practices over time, and as such they can be effectively used for assessing and improving hospital quality of care.

In year 2015 the 10 indicators were included in the new edition of the WHO Quality Assessment and Quality improvement Tool (1). Country can use these indicators to measure hospital performance on paediatric case management, and to quantitatively track progress over time.

Box 1. The 10 indicators of inappropriate case management

- 1) Hospitalization –Unnecessary
- 2) Diagnosis- Incorrect
- 3) Treatment- Incorrect
- 4) Diagnosis and treatment Inconsistent
- 5) latrogenic risk- Increased
- 6) Pain- Unnecessary

#### 7) Monitoring- inadequate

- 8) Nutritional status- Not assessed
- 9) Use of IV fluids- Incorrect
- 10) Combined indicators: unnecessary hospitalization, increased iatrogenic risk and unnecessary painful procedures

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3

### EPA – UNEPSA EUROPAEDIATRICS CONGRESS 2017

Summary of a session on school health set up in collaboration with the World Health Organization Regional Office for Europe

Introductory speeches:

Dr. Martin Weber, WHO Regional Office for Europe, Copenhagen, Denmark

The first part of the session was dedicated to four presentations: a first one displaying some data on school health in Europe gathered by WHO, showing the diversity of the situation across European countries (MW); then a presentation on the successful introduction in schools of courses on resuscitation techniques (ABC approach) for teachers and pupils themselves (JM); then some general comments on the situation of school medicine in Eastern European and central Asian countries, as well as data about health and behaviour of school adolescents collected in a project financially supported by the Russian Government (LNB); and finally a look at the changes having occurred during the last 30 years in the school health system of French speaking schools of Switzerland and what lessons can be drawn (PAM).

#### Other short presentations

The session went on then with a very interesting and lively series of short presentations on the state of school medicine & health by EPA/UNEPSA national presidents and official representatives of various European countries: by Prof. Szabo Laslo (Hungary); Prof. Bogdanovic Radovan (Serbia); Dr. Daniela Rajka (Romania); Prof. Bertold Koletzko (Germany); Dr. Yeva Movsesyan (Armenia); and Prof. Jan Janda (Czech Republic).

#### Discussion

All contributions allowed for exchanges on the numerous challenges which school health services and staff currently face. These are summarized below in a few statements:

- It is was suggested to use in the future the term of school health or school health & medicine instead of school medicine alone
- School health professionals should not be too much driven in the future by the detection of diseases but more by the emergence of new health needs in the field of life style, mental health, substance abuse, sexual and reproductive health or eating disorders/obesity

• Along the same line, school health professionals should restrict screening procedures to those for which we have evidence of their effective potential impact on the current and future health of the pupils

• School health services should strive to improve the pupils' health literacy and access to health services

• An approach driven by prevention and health promotion needs an intersectoral approach, e.g. a close collaboration between the teaching staff and the health team, the respect of their respective roles, responsibilities and professional cultures

• School health staff, in collaboration with the educational sector, should aim to work not only on the individual pupils' health but more globally at the level of the whole institution, for instance on the climate of the school (e.g. through WHO European Network of Health Promoting Schools) is an effecti-

ve, evidence-based approach to improving the health, the health behavior and the well-being of the pupils, and even their academic performance.

• The issue of the rights of the pupils (e.g. UN Convention on the Rights of the Child) should be put high on the agenda: how does the school ensure the fair participation of the pupils in the life of their school? Do we make sure that they agree with and accept the procedures that are proposed to them? How to make sure that some screening programs do not simply label them as "abnormal" while they are just marginally below or above certain cut-off, and how does this lead to individual help for improvement?

• Finally, decision-makers should provide school health professionals with adequate and updated training; they should as well make sure that the working conditions that they are offered make the profession attractive

At the end of the meeting, it was agreed that such exchange sessions are extremely useful and it was suggested to run similar sessions in the future.

Prof. Pierre-André Michaud, University of Lausanne, Switzerland, WHO-CC

Acknowledgements: PA Michaud thanks Prof. Prof. Leyla Namazova-Baranova, Prof. Julije Mestrovic, Dr. Olga Komarova and Dr. Martin Weber, for their helpful inputs in the preparation of the summary

Prof. Julije Mestrovic, University of Split, Croatia, EPA/UNEPSA vice-president

Prof. Leyla Namazova-Baranova, National Scientific center of children's health, Moscow, Russia, EPA/UNEPSA President

Prof. Pierre-André Michaud, University hospital of Lausanne, Switzerland, WHO Collaborating Center





### 4

## **OBITUARY:**

## PROF. GHERARD GAEDICKE

Our friend and Treasurer of EPA/UNEPSA (2004 - 2010), who has died at the age of 72, made his name as general and sub-specialty paediatrician and as a the director of two different university children's hospitals in Germany and Austria.

Gerhard Gaedicke's broad clinical experience and his reputation of being able to lead university children's hospitals in difficult times and situations as well as his empathy for teaching and training of young people caught the attention and admiration of many European paediatricians.

Professor Gaedicke was born in Villach, Austria, and studied medicine in Hamburg, Germany. He became a paediatrician with two subspecialties in Neonatology/Paediatric Intensive care and Paediatric Hematology and Oncology at the university children's hospital in Ulm, Germany. In 1993 he was appointed Professor and Chair of the "Otto-Heubner-Centrum fuer Kinder-und Jugendmedizin" of the Humboldt University in Berlin and was the Director of General Paediatrics at the Charité Hospital. In 2009 he retired from clinical and managerial work and directed for 2 years the new curriculum of the Berlin Model for Medical Students. In 2012 he was appointed Head of the Paediatric Department of the University of Innsbruck in Austria and retired in March 2017.

It is highly unfortunate that he could not enjoy retirement together with his wife Angela and his daughters.

Professor Gaedicke published more than 150 articles cited in Pubmed reflecting his interest and research in paediatrics among which the following topics were prominent: vaccination, immune thrombocytopenia, Kawasaki syndrome and childhood cancer. He had built an outstanding network of internationally renowned clinicians and scientists and was amongst many others also a good friend and collaborator with Tomisaku Kawasaki.

In 2004 Gerhard joined our Council. He became a very thoughtful member and successful treasurer who during his six-year term guided EPA/UNEPSA to the positive balance of its finances which almost tripled.

We shall remember Gerhard as a very friendly, calm, accurate and charismatic colleague.

Leyla Namazova-Baranova,

President of EPA/UNEPSA, on behalf of all Council Members





## THIS I THINK.....

An EPA/UNEPSA project in memoriam of Gerhard Gaedicke

#### Evolution of the doctor-patient relationship, between science and humanity

#### Armido Rubino, Prof. Emeritus of Pediatrics,

#### "Federico II" University, Naples

I learned about the passing away of Gerhard Gaedicke while I was browsing through articles that appeared in pediatric journals during the first half of the last century.

What and how many differences with the pediatric publications of today! It's thrilling to see, yet once again, the extraordinary progress that has been made by current scientific publications in terms of new knowledge. However, in reflecting on the differences between the past and present, one cannot but notice a glaring paradox in relation to studies involving the quality of the interaction between pediatricians and the families of their patients. On one hand, phenomenal advances have been made in diagnosis and care since what today seems almost primitive in terms of scientific knowledge, particularly regarding treatment – the possibilities of diagnosis and cure of pediatric disorders have reached levels that were once unimaginable. On the other hand, in parallel, it is generally felt that the quality of the relationship between patients (the families of the young patients in the case of pediatrics) and doctors (including pediatricians) has progressively deteriorated.

Paradoxically, the increasing extraordinary advances made in diagnostics and treatment has been accompanied by a crisis in the relationship between families and pediatricians, albeit of different degrees in relation to geographic regions and organizational context (from primary to secondary and tertiary care).

This situation has been attributed to various causes: the primacy of technology over the simplicity of the interhuman relationship, the increase in the number of referral doctors per patient, the constraints of organizational systems, distortions in the mass media, the not always positive effects of digital communication, interference (often only apparent but often real) of the industrial sector (the pharmaceutical and medicine manufacturing industries), and paradoxically, the expectations of families, sometimes excessive. Obviously, these factors differ among countries and depend on the type of organizational system. In addition, recent decades have seen an increase in medical litigation between families and doctors (including pediatricians). This has led to "defensive medicine" (in our case "defensive pediatrics") in various degrees depending on national and/or organizational systems. The doctor/ patient relationship (in this case, the pediatrician-patient-family relationship) becomes at risk of being damaged, to different extents and ways depending on the national and organizational contexts.

Faced with such paradoxes, scientific associations and formative structures (in particular, those in the pediatric field for what concerns the treatment and management of individuals from infancy to adolescence) are called upon to address the problem of the doctor-patient relationship with approaches tailored to the different levels of pediatric training, starting at pre-graduate level. Particularly in

this field, there is increasing need for strong professional figures, full of science, culture and "humanity", figures like Gerhard Gaedicke.



# Pediatric Intensive Care Units (PICU) can become the "neutral" backbone of highly specialized pediatric centres

#### Nikolaus Neu,

#### University Children's Hospital, Innsbruck, Austria

It think that PICUs are - in principle - a politically and economically "dangerous" territory which means that they may be a conflict area for competing pediatric subspecialties. This is particularly true for university hospitals like mine, where the PICU had been embedded into an eventful and not always smooth history. My own children's hospital had to cope with a variety of short-term and very short-term directorships for more than ten years,, including arbitrary establishments and de-establishments of various pediatric subspecialty units and departments.

To keep the PICU out of the resulting instability and to make it somehow neutral (like certain zones controlled by troops of the United Nations) it was unsuccessfully transformed into a so-called core facility. However, the first and seemingly most important question of the new opinion makers in the steering committees was: "Who will be the boss of such a facility"? The answer was fast and sounded simple: "It must be the respective director of the children's hospital". Hence, from the beginning of this millennium the PICU was confronted with a variety of directors who had entirely different characters and aims. And some of them obviously must have believed that though all patients were equal, their own patients were more equal than others. The behavior of the steering committees resembled the cuius regio eius religio-principle installed after the peace of Augsburg in 1555, meaning that the religion of the ruler was to dictate the religion of those ruled.

How could our PICU survive under such circumstances? In fact, it did survive, namely because of the passion of the PICU-team including both pediatricians and nurses who – in close cooperation with anesthesiologists and other specialists - established tertiary level standards and technologies including extracorporeal membrane oxygenation (ECMO). Is it surprising that our PICU-team, which is always a priori skeptical of bosses and self-appointed consultants who are not really familiar with intensive care medicine, became even more skeptical and wary?

In 2012 Gerhard Gaedicke became head of the department and had to take over a PICU that had become the small Gaulish village that was treating such "visitors" like roman invaders. But it just took a few days when his daily morning ward rounds were not regarded as a useless and time-consuming event keeping people away from working, but rather as the presence of a highly competent and dedicated person who stood behind our team. And a few weeks later, the previously designated "difficult" PICU-team routinely asked Gerhard to extend his daily morning rounds by a cup of coffee. Despite his tight schedules, he mostly answered yes. It was neither the beauty of the Alps that brought Gerhard to Innsbruck nor the fact that he and Radvan Urbanek had been asked to rebuild the ill-fated structure of our hospital already one year before he was appointed head of department. I conclude that it was his passion for the challenges of child health care services. The PICU-doctors and nurses will always remember him not only as a dedicated director, but also as great friend.

In conclusion, I think that a PICU should become an independent unit with its own rights and duties, but it should always be fully integrated into the whole structure of the hospital. The service organization, individual relationships and management structures require excellent leadership, governance and empathy.



## Our motto should not be only scientific competence but also emPathy, Patience and Passion (PaPaPa)

#### Kaja Julge,

#### Children's Clinic of Tartu University, Estonia

Working as a paediatrician and a lecturer at the University Children's Clinic in Estonia gives me the great privilege to spend time with children and their families, as well as with students and scientists. The performance of multiple tasks at one time is not always easy but I really enjoy the variability of different tasks because concentrating intensively on one task means that I may recover from the other two to avoid a burn out.

As an allergologist I treat severely ill young patients with asthma, anaphylaxis, atopic dermatitis, multiple food allergies, and other diseases. However, I also see children with very mild skin problems such as some red dry spots on an otherwise completely normal skin. According to my opinion these children are totally healthy but the parents would like to see that their child's skin looks perfect. Sometimes it is really problematic for me to explain to the parents that putting cream on the skin is the best thing they can do, and that expanding the diagnostic procedure to a series of allergy tests will not make the skin look better. At these moments of different health beliefs I usually start thinking that overanxious parents and perfectionists make their own life and the life of paediatricians unnecessarily complicated. How to tell a mother that she wants an unjustified service and that I have many more important things to do than looking at a single red spot on the child's back which may disappear by next morning? What gives me the strength to remain calm, patient and friendly?

I think that all sick children have a right for the right diagnosis and the best treatment according to the possibilities of their national health care service system. This includes psychosocial care for all health problems, no matter how severe they are. Paediatricians must never forget that parents experience any health problem of their child as a sincere threat and as one of the greatest catastrophes in their life.

Sometimes paediatricians may get exhausted because of the overwhelming work load and lack of time, as well as because of economic pressure, worshipping of advanced technologies and inadequate competition in their surrounding academic society. Thus, the life of a university paediatrician can be made even more difficult if children and their parents show up with very mild health problems. In addition, there are frustrating moments in academic life, for example if students are not so studious and sedulous as you expected them to be. I think that empathy, patience and passion are as important as paediatric competence when treating all children. Every hectic work day I try to remember the crucial role of these values, and I also try to spread this credo to my colleagues, students and patients.



#### An EPA/UNEPSA project in memoriam of Gerhard Gaedicke

#### There is a need to avoid fragmentation of child health care

#### Andreas Gerber-Grote

#### School of Health Professions, Zurich University of Applied Sciences, Winterthur, Switzerland

I believe that many different health professions contribute to the health and well-being of sick children and that fragmentation of child health care must be avoided. Yet, in our daily lives as physicians we often prescribe physiotherapy, occupational therapy, dietary services and other kinds of care and services that other health professions know better. In many European countries these health professions have undergone a ground-breaking development into academia over the last 10 to 30 years. They are no longer mere recipients of orders by physicians what kind of therapy to apply, but they have acquired a thorough knowledge of their respective fields and are well trained in evidence-based care and the design and evaluation of scientific trials.

During my own clinical work I observed a gap between clinical care and occupational therapy or physiotherapy. Many physicians did not esteem the work performed by physiotherapists and the respective outcomes in terms of improved health. With regard to physiotherapy this situation was aggravated by the multitude of concepts and approaches, e.g. the controversy of Bobath versus Vojta. These debates were more ideological than evidence-based. Yet, also the physiotherapists contributed to this situation as they were not trained to communicate inter-professionally and academically.

In my current position as director of the School of Health Professions at Zurich University of Applied Sciences (ZHAW) I have been learning through personal encounters, presentations, and publications from both occupational therapists and physiotherapists how much they are able to contribute to child health.

Access to playgrounds as a salutogenic factor in child health: a European initiative

Researchers with a background in occupational therapy from Sweden, Ireland and Switzerland have been researching the role of play in child health and well-being. They concluded that play should have a more important role in children's health promotion. Playground design needs to be inclusive for all children so that children with disabilities can actually access and participate in play with other children on the playground. Children acquire important physical, cognitive, social and emotional skills in outdoor play. In 2014, a European initiative was launched: the Ludi (Latin: ludus = play) European Cooperation in Science and Technology (= COST) Action-play for children with disabilities. Awareness needs to be raised that playgrounds could be constructed in ways that would make them much more inclusive.

Family-centred physiotherapy as a new model to treat preterm infants

Healthy term born infants show complex, variable and fluent movements allowing them to develop a wide movement repertoire and good environmental adaptability. Movements of preterm infants, in particular with a gestational age below 32 weeks, frequently appear less complex, monotonous and rather abrupt. Their sensory motor development is influenced by a reduced movement repertoire and diminished adaptability, thus leading to a high risk of developing neurodevelopmental disorders. There is limited evidence on the effectiveness of traditional infant physiotherapy. Yet, in a Dutch trial the novel program "Coping with and Caring for Infants with special Needs" (COPCA) which focuses on family-centred interventions, caregiver coaching, self-produced motor behaviour and trial-and-error experiences by means of play was associated with a positive effect on motor development.

In conclusion, child health is not only assured by paediatricians but by many other health professions. Therefore, there is a need to avoid fragmentation of care. Child health care should offer new ways of communication and cooperation—such as multidisciplinary practices—to fill the gaps between different experts when discussing therapeutic options and planning therapeutic regimens. Decisions on how to care for sick children can be taken conjointly to increase quality in health care and to achieve the goal of a child friendly environment. In essence, being open to communicating with other professions who equally contribute to the health of children may be enriching for paediatricians and beneficial to the well-being of their patients. In the long run, it will definitely pay out though we will have to push new modes of reimbursement.

Special thanks to my colleagues Schirin Akhbari, Institute of Physiotherapy, and Christina Schulze, Institute of Occupational Therapy, at the School of Health Professions, ZHAW, Winterthur, Switzerland, for input to this editorial.



#### Pursuing moral integrity in leading professional and scientific organizations: the gridlock of pediatric meetings.

#### Massimo Pettoello-Mantovani

#### Prof. of Pediatrics, University of Foggia, Italy

Values and ethics are central to any organization; those active in the area of science and education are no exception. At a first look, the concepts of values and ethics seem to be self-explanatory, however, what exactly do we mean by values and ethics with regard to pediatric congresses? Both terms are extremely broad, and it is therefore important for anyone to recognize their essence, particularly for those that are identified as strategic leaders, decision makers and often role models in child health care services. Pursuing the goals and mission of pediatric organizations within the frame of moral integrity should be felt as an inalienable obligation by their leaders. Their role requires essential requirements, including 1. the understanding of the distinctive nature of ethics in science, 2. the awareness of the forces which influence the ethical behavior of individuals in organizations and 3. a clear vision of the actions that strategic leaders can take to build ethical climates in their organizations.

When I first met Gerhard Gaedicke at a scientific meeting, he was the Treasurer of the European Paediatric Association, the Union of National European Paediatric Societies and Associations (EPA/U-NEPSA). It was a typical Italian sunny day of autumn 2008 and we had the chance to talk extensively about a very broad spectrum of topics related to science and professional life. It became clear to me that if values can be defined as those things that are important to or valued by someone, and if that someone can be an individual or, collectively, an organization, Gerhard's personality represented such essential values both as a human being and as an official board member of a scientific organization.

Historically seen, scientific pediatric meetings and congresses developed as an opportunity for pediatricians to share their knowledge with other colleagues and to learn advancements in various areas of child health care, thus becoming an integral part of continuous medical education for all pediatric health scientists and clinicians. It was responsibility of the leaders of the various national and international European scientific organizations to convene the colleagues, who travelled often at their own expenses, to join these meetings, and to guarantee for the quality of the speakers and topics discussed. Nowadays, the nature of many congresses have changed, and I have witnessed not only the increasing number of meetings but also the fact that many of these conferences have been organized by Professional Congress Organizers (PCO) without having an academic organization as an imperatively necessary academic and scientific basis. I think that the commingling between personal interests, individual prestige and business has grown to an unbearable extent. In addition, the surrender of the scientific and cultural mission and autonomy of pediatric organization to PCOs by means of "Faustian" types of financial profit generating contracts has put business and finances into the centre of many congresses. Therefore, I think that this unbearable situation must be changed and that the improvement of child health must be put into the centre of all pediatric congresses. It will be the responsibility of the leading European pediatricians who are board members of scientific organizations to add more value and ethics to pediatric congresses. This was the conclusion of our talk.

In fact, it had been one of the crucial topics for Gerhard, who fought such trends within EPA/UNEPSA raising among the board members considerable concern about the importance of preserving the value of scientific meetings, and to avoid their progressive transformation into a merely profit making enterprise. Medical congresses have not only become larger, but also more luxurious and expensive, and, as a result, their cost-benefit ratio may be decreasing for individual pediatricians and for society. Gerhard Gaedicke helped EPA/UNEPSA to get rid of the risks of such unethical congresses, and I regard him with gratitude and as a benefactor of an organization, that can continue to advocate transparently for the interests of children, with the support of its 50 member National European Societies of Pediatrics.

To summarize, how do values relate to ethics, and what do we mean by ethics of pediatric societies? Individually or organizationally, if we accept that values determine what is right and what is wrong, evidently what is right or wrong is what we mean by ethics. To behave ethically is to behave in a manner consistent with what is right or moral and I think that among others, this is a most important legacy of Gerhard Gaedicke. His example will assist us to resolve the difficulty in deciding whether or not behavior is ethical by determining what is right or wrong in leading scientific organizations. This I think.



#### An EPA/UNEPSA project in memoriam of Gerhard Gaedicke

#### The treatment of a disease is a science and the treatment of a patient is an art

#### **Jochen Ehrich**

#### Emeritus Professor of Hannover Medical School, Hannover, Germany

I believe that the treatment of a disease is a science and that the treatment of a patient is an art.

Understanding the roots, causes, effects and long term consequences of childhood diseases requires a life long learning of paediatricians in order to treat the diseases of young patients. In addition, understanding the health beliefs, sorrows and suffering of young patients requires curiosity and compassion of care givers and includes also a life long learning from children and adolescents through child friendly communication, empathy and creative atmosphere.

After 40 years of caring for transplanted children in a university children's hospital I had the chance to stay for the first time for three weeks with 31 transplanted adolescents in a rehabilitation camp situated at 1000m altitude in the beautiful Alp mountains. The patients had been transplanted for more than 2 years. My diagnostic aims were to look at the patients from a closer distance. I tried to be not only their physician but also a person who wants to learn what their life and coping strategies looked like. I was not so much interested in what their laboratory values looked like. In other words, instead of focussing on the deficits of these patients I wanted to identify the patients' strengths. My therapeutic concept aimed at offering salutogenesis and empowerment during my three weeks long 24h service.

In fact my "round the clock service" offered new ways of identifying hitherto unknown interactions among the patients, as well as between the patients and me. It was me who developed new sensors for my own and the patients' feelings. I came to the conclusion that I had learned during three weeks more about transplanted patients than I had learned during 40 years clinical in- or out-patient hospital care. When asking the patients how they felt after transplantation, one half of adolescents answered: "We are healthy and normal". The other half objected to this statement and said: "No, we are chronically ill." One patient said to me: "Jochen, it's life after transplantation - but not as you paediatricians often imagine it is." The awareness of the different perceptions of the transplanted children helped me to better handle their care and to stimulate them in participating in decision making.

So why did I come to the conclusion that treating patients is an art? What is art and what distinguishes it from all other things? Art is anything that is well made by humans. The paediatrician, like the artist, is supposed to develop special and sensitive sensors for the non-verbal, subconscious feelings and beliefs of patients and their families.

Paediatricians should undergo a special training in the art and value of communication to improve quality of care. Practicing communication and teaching participation of children in medicine needs

time, reduction of tension and the will of all to create a special atmosphere. Therefore, offering enough time for child friendly communication should have priority in child health care services.



#### The priority: Broadening the boundaries of pediatrics and turning basic science into cures

#### Natale G De Santo, MD

#### Professor Emeritus at the University of Campania Luigi Vanvitelli, Naples, Italy,

Frequently people speak about The two cultures (humanistic and scientific) introduced in 1959 by Sir Charles P. Snow (1) and/or beyond two cultures. Many also support a difference in creativity between artists and scientists. Indeed Karl Polanyi, Nobel Prize winner for the dynamics of chemical processes supported the notion of a link between art and science because of the similarity of objectives and even more by (a subtle but evident) similarity of methods. Both artists and scientists try to shape the world around them and to give an answer to its problems. Furthermore, both scientists and artists are driven by a unique compelling need for discovery.

Rita Levi Montalcini (2) wrote that pieces of art are available to everyone immediately after the authors sign the imprimatur. Scientific discoveries, after publication, are subjected to analysis, criticism, control, opposition and total or partial rebuttal. These processes turn them into a collective work. She mentions a letter of Einstein to Karl Popper where the discoverer of relativity points out that his knowledge about matter, space, energy and time was due neither to experiments nor to calculations. Rather it was driven by his own capacity to keep a childish attitude of astonishment when confronted with those topics.

"Only stupor knows" wrote the Father of Oriental Church Gregory of Nissa (3). That means that the route to knowledge is not addition of notion to notion. It also means that when trespassing on the unknown borders of the world (flammantia moenia mundi of the Romans) you need to be capable of astonishment.

What is important for sick children? How can we decide the new directions having reached the actual cross-point? How can we develop long-lasting plans? Probably we should concentrate on potentiating the university school of pediatrics. Who is a great professor? A man who holds 3 talents: being a good physician and teacher. However, just a few possess all three talents, many of them just one (4). Who is a great professor of pediatrics? A physician scientist who does not only teach with charisma, but has the capability to communicate with the sick child. This is something which cannot be completely taught and requires personal gifts. So we need to attract the best physicians to become pediatricians. Once they are entering university and hospital such creative people explore the complexity and the fertility of the boundaries of pediatrics with other disciplines. In these boundaries pediatrics can grow and open new avenues. In addition, we need to give our own contribution to translational medicine. Many basic discoveries remain in journals housed in the shelves of libraries and are not turned into the cures that sick children need. Our current approach to science failed to achieve this goal. It is not a question of money. It failed notwithstanding the investments (5). The final option is to help voluntarism grow. As Jacques Attali says, (6) "it might shorten the transition to hyperdemocracy, the appropriate indicator for controlled of globalization".

However, Attali's suggestion needs time. So only one possibility is left, that is to prepare for a new cadre of pediatricians prepared according to new standards. For example, we might adopt the standard of the great conductor, Daniel Barenboim. He enrolled Antonio Pappano (a British conductor) after a brief piano audition." Barenboim was certainly impressed by the energy, the generosity, the technique, but above all, he told me of the impression of living not with the music but inside the music. He liked me as a pianist" (7). The Barenboim standard is valid for every profession, for every job, and it seems appropriate to solve all the problems of pediatrics in the years to come.

We might also be willing to adopt the method to perfection envisaged by Valentino Braitenberg (1926-2011), director of the Department of Structure and Function of Natural Nerve Nets at the Max Plank Institute for Biocybernetics in Tübingen. In II cervello e le idee (The brain and the ideas) he describes a violinist in training who meets a Maestro after having previously studied with 11 teachers. From each of his previous teachers he had unfortunately been taught defects in the technique of execution. The Maestro corrected the errors and turned the violinist into a great artist by imposing intensity in training. The Maestro never said to the pupil "you are wrong" but just "you play as they have traditionally taught us". The pupil finally reached harmony, the final condition (8).

Fiona Godlee, the Editor in Chief of British Medical Journal, wrote that "if we really want to transform the quality and safety of health care, we can't just do more of what we do now. Even doing it more efficiently won't be enough. We have to do different things and we have to do things differently" (9). This statement might also be valid for pediatrics at present times.

We have to imagine new paths, trace the routes and walk them. The solution is seemingly simple: we need great mentors, the best physicians and appropriate clinical settings. But it is not so easy at all. Probably the last two examples, Sir Antonio Pappano and Valentino Braitenberg reconcile me with the statement of Jochen Ehrich in his article on The treatment of a disease is a science and the treatment of a patient is an art" in this EPA Newsletter.

Let us inject new blood into the academy.

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6

INTERNATIONAL POLICY STATEMENT FOR UNIVERSAL USE OF KANGAROO MOTHER CARE FOR PRETERM AND LOW BIRTHWEIGHT INFANTS

This International Joint Statement was reviewed and endorsed by the Council of International Neonatal Nurses (COINN), the International Confederation of Midwives (ICM), the International Federation of Gynecology and Obstetrics (FIGO), and the International Pediatric Association (IPA), and was developed by the KMC Acceleration Partnership (KAP) with support from the American Academy of Pediatrics (AAP), the American College of Nurse-Midwives (ACNM), and the American Congress of Obstetricians and Gynecologists (ACOG).

#### Background

Complications of prematurity and low birth weight (LBW) are now the leading cause of neonatal deaths worldwide.1 In November 2015, The World Health Organization (WHO) issued recommendations for the care of preterm infants, including Kangaroo Mother Care (KMC), defined as care of preterm infants carried skin-to-skin with the mother and exclusive breastfeeding or feeding with breastmilk. Although the WHO preterm guidelines apply to all settings, much of the evidence base for the recommendations comes from studies in health care facilities in low and middle income countries (LMIC).

It should be noted, however, that some evidence also exists for the benefits of KMC in preterm and low birthweight infants in high income countries, and upon review of the evidence, we agree that KMC provides benefits to preterm and low birthweight infants in high, middle, and low income settings.

WHO Recommendations on Kangaroo Mother Care, 2015

- Kangaroo mother care is recommended for the routine care of newborns weighing 2000 g or less at birth, and should be initiated in health-care facilities as soon as the newborns are clinically stable.
- Newborns weighing 2000 g or less at birth should be provided as close to continuous Kangaroo mother care as possible.
- Intermittent Kangaroo mother care, rather than conventional care, is recommended for newborns weighing 2000 g or less at birth, if continuous Kangaroo mother care is not possible.

#### The Evidence

Mortality analyses from a 2014 Cochrane review (11 RCTs) and 2016 meta-analysis by Boundy (16 studies) found a 33% and 23% reduction in mortality at latest follow-up when comparing KMC to conventional neonatal care. In both mortality analyses, all but 2 of the studies included were in LMIC.34

For outcomes other than mortality, the Cochrane review found overall significant reductions in hypothermia, nosocomial infection, sepsis, and length of hospital stay, as well as increases in breastfeeding, attachment, and measures of infant growth, including gain in weight, length, and head circumference. Analyses for non-mortality outcomes largely consisted of RCTs from LMIC.

The 2016 Boundy review found overall significant reductions in neonatal sepsis, hypothermia, hypoglycemia, pain measures, respiratory rate, and hospital readmissions, with increases in exclusive breastfeeding, oxygen saturation, temperature, and head circumference. Analyses for non-mortality outcomes consisted of a mix of studies from LMIC and HIC, and looking at HIC only, the Boundy review found that KMC significantly increased the likelihood of exclusive breastfeeding as compared to conventional care.

With this review of evidence and the WHO recommendations in mind, we agree on the following principles:

• KMC (intermittent and continuous) offers benefits to preterm/LBW infants in all settings. The margin of benefit for morbidity and mortality gains, however, will vary by setting. The challenges to implementation will also vary by setting.

• The extent of investment in KMC programs should be guided by the evidence of benefit that KMC can offer in a given setting.

• KMC is an effective and efficient complementary aspect of investing in and developing more advanced neonatal care, including skilled nursing, appropriate staff: patient ratios, early detection and management of potentially serious bacterial infection, respiratory, and feeding disorders. Expanded skills of neonatal care must be developed in parallel to KMC services.

• The decision to invest in KMC programming and scale-up should be a careful consideration of quality, opportunity cost, financial cost, implementation barriers and the substantial evidence supporting efficiency and efficacy of KMC compared to incubator care.

#### **Commitment to Action**

Acceptance and promotion of KMC by professional associations is critical for its accelerated use to save newborn lives and improve outcomes globally. Professional associations can mobilize to:

• Accept and endorse KMC as an important component of care for all preterm newborns and disseminate this statement to all members of its organization.

• Advocate for governments to include KMC as an important component of care for all preterm newborns in health agendas and policies.

• Advocate for and support investment in further implementation research in low-resource settings.

• Advocate for the incorporation of KMC into pre-service and in-service curricula for all health workers who care for newborns to increase understanding of proper KMC implementation and to address health worker perceptions that may be barriers to its use.

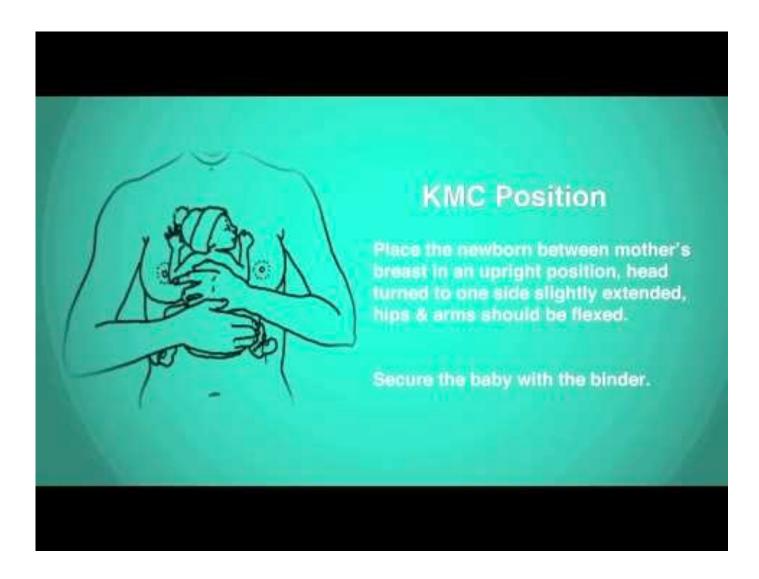
• Advocate for increased investments to improve service delivery infrastructure and capacity of human resources to increase utilization and coverage with KMC.

• Promote integration of KMC coverage and quality measures into standard medical documentation and routine HMIS.

• Work with providers to educate community leaders and families about the benefits of KMC and find mutually acceptable solutions to overcoming obstacles rooted in local cultural factors.

The listed professional associations support the Every Newborn Action Plan (ENAP) and its endorsement in 2014 as a World Health Assembly resolution. ENAP focuses on improving quality of maternal and newborn care, especially around the time of birth and care for small and sick newborns, including preterm infants, and specifically supports KMC as the standard of care for small babies. This joint statement affirms the commitment to the implementation efforts of the Every Newborn Action Plan (WHA67.10) as well as the new Global Strategy for Women's, Children's and Adolescents' Health, 2016-2030 (A69/A/CONF./2).

Organizations are encouraged to endorse this statement and disseminate it through their communication channels.



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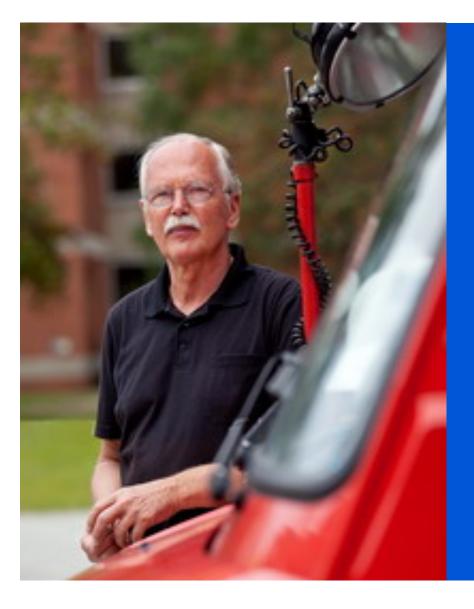
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### 7

### THE ROLE OF RETIRED PROFESSORS (EMERITI) OF PAEDIATRICS IN EUROPE

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The results of surveys of the European Paediatric Association on child health care in Europe implies that stakeholders seem aware that paediatric care cannot continue to be practiced as it is done today. There seems to be a general consensus among those affected and involved in paediatric care that something must be done about the situation. However, at both the national and regional levels, there remains a lack of consensus on how best to improve the quality of child care. Although the policy slogan, "better medical care for less money" is widely used, in many cases, this merely leads to a "catch 22 situation", making the slogan more of a description than a clear guide of how to resolve the dilemma.

In 2016 EPA/UNEPSA performed a survey which aimed at answering two questions: 1. Is the older generation of paediatric professors (emeriti) an under-utilized resource that could mitigate the present problems of child health care services in Europe? 2. Could retired paediatric professors thereby serve as a stand by option in countries with a crisis of child health care services?

The results of the analysis on rights and duties of an emeritus were very heterogeneous from country to country; and within countries, from university to university. The details of the survey were published in the Journal of Pediatrics in November 2016. Please look into PUBMED for "The role of retired pediatric professors in European child health care services" by Jochen Ehrich, Ndidi Nwaneri, Natale de Santo.

Our findings of the survey showed that retired professors tended to play a marginal role in the academic life of university children's hospitals of the majority of 28 representative European countries. This lack of integration contrasts with the potentials of retired professors of paediatrics concerning knowledge and experience in supporting child health care services and in developing strategies for coping with the crisis of child health care. In cases where the rules no longer match the reality, it is usually easier to change the rules first, in order to bring the reality closer to the ideal. We therefore concluded that medical organizations in Europe should discuss career pathways for senior academic paediatricians and subsequently the Council of Europe and the European Commission should start an initiative on empowering emeriti in paediatrics in Europe to act as promotors for the well-being of children.

Therefore, EPA/UNEPSA is supporting the recently founded EUROPEAN ASSOCIATION OF PROFES-SORS EMERITI (EAPE). Its registered office and its general secretariat are in Athens, Greece. The official languages of the Association are Greek and English. Any professor emeritus or retired professor of a European University who wishes to contribute to the realization of the purposes may become a member of EAPE.

#### The purposes of EAPE are:

(a) The creation and/or preservation of ties among academics and professors emeriti all over Europe.

(b) The collaboration of European professors emeriti in conducting research projects or in producing and publishing meritorious scientific work.

(c) The submission of proposals to the relevant European authorities with respect to the study of issues related to graduate and post graduate education or offering courses to the general public with a view to contributing to restructuring curricula or other sections of learning, where such needs exist.

(d) The exchange of knowledge and ideas stemming from various scientific fields, visual and performing arts.

(e) The active cooperation among European scientists across various academic fields via the organization of meetings, colloquia or conferences of interdisciplinary and intra-cultural interests and the creation of a "Think Tank".

(f) The moral, scientific, legal counseling and material support to colleagues and their families and also to every needy individual.

The purposes provided in the previous paragraph may be achieved:

(a) By issuing of research data, studies, conferences and congresses.

(b) By publishing the results of the above research efforts, studies, and congresses, and also by periodical publications of high scientific level.

(c) By submitting scientific opinions and proposals to European Universities, National Governments and European Authorities.

(d) By cooperating with natural and other legal entities pursuing the same or similar purposes.

Those European Emeriti of Paediatrics who are interested to become a member of EAPE should contact Professor Dennis Cokkinos, (<u>dcokkinos@bioacademy.gr</u>).



"I'm a Professor Emeritus before my time."



# I am what is called a professor emeritus—from the Latin e, 'out,' and meritus, 'so he ought to be.

(Stephen Leacock)

### 8

### THE BIRTH OF THE EUROPEAN SOCIETY OF PROFESSORS EMERITI

Dennis V. Cokkinos<sup>1</sup>, Dionysios Spinelli<sup>1</sup>, George Vasilikiotis<sup>2</sup>, Vincenzo Bonavita<sup>3</sup>, Luigi Santini<sup>4</sup>, Jochen Ehrich<sup>5</sup>, and Natale G. De Santo<sup>4</sup>

<sup>1</sup>University of Athens,<sup>2</sup>University of Thessaloniki, <sup>3</sup>University of Naples, Federico II. <sup>4</sup>Second University of Naples, <sup>5</sup>Children's Hospital, Hannover Medical School, Hannover, Germany At the recent Founding Conference of the European Association of Professors Emeriti (1) the constitution was approved which has the following incipit: "We believe that a University Professor is called to continue his vocation as an educator, counsellor and researcher for life. Especially in these difficult times, the Emeriti and retired Professors offer their aid to their still active colleagues and to Society in general on a voluntary and public benefit pro bono basis". Emeriti professors represent an acknowledged category of retired professors. As Derek J. de Solla price wrote in 1963 (2) "Any retiring scientist looking back at the end of his career upon a normal life span, will find that 80 to 90% of the scientific work has taken place before his very eyes". So these professors possess a precious capital of knowledge distilled through their lifelong criticism. Furthermore it is now known that teams made of young scientists (they provide innovation) and old scientists provide epochal ideas when directed by young people (3).

Two recent papers (4, 5) dealing with an inquiry in 20 countries of high, middle and low growth have demonstrate that clinical professors emeriti or pensioned continue to work hard, even when they do not have a genuine office of laboratory. More than 40% of them produced an impacted paper of a book and more than 50% continue teach at all levels. There are a few countries which do not nominate professors emeriti, in other their nominations does not foresees benefits (just a typically honorary title). Usually professors emeriti continue to work in the departments where they were active. In USA age is not an indicator for pensioning. Only ictus of heart infarction are. In France they are nominated for a limited but renewable period of time. In Germany professors emeriti of excellence in order to maintain the Human Capital of Age. In Italy at the Second University of Naples they can do research, whereas at the universities of Catanzaro, Chieti and Campus Biomedico they are not foreseen. In Greece at the universities of Athens and Thessaloniki emeritus are foreseen in the constitution of both universities and in both universities associations of professors emeriti have been structured and put in function. Due to their efforts and the representatives of 14 European Countries it was possible give birth to the European Society for Professor Emeriti.

However recent study of Ehrich et al (6) on retired professors of pediatrics in Europe has shown "that retired professors tend to play a marginal role in the academic life of university children's hospitals of the majority of 28 representative European countries. This lack of integration contrasts with the potentials of retired professors of pediatrics concerning knowledge and experience in supporting child health care services and in developing strategies for coping with the crisis of child health care. We conclude that the medical faculties should develop career pathways for senior academic pediatric cians6 and that the Council of Europe and the European Commission should start an initiative on empowering emeriti in pediatrics in Europe to act as promoters for the well-being of children".

As discussed by Dennis V.Cokkinos "University professors, who retire from their position is current times, whether designated emeriti or not, have still a lot to offer to their alma mater, their country and to our society in general". "The unity of old and young generation" said Dr. Prokopios Pavloupolos,

President of the Hellenic Republic, and Emeritus Professor of Law at the University of Athens – " is a prerequisite for the existence of Europe and for the fulfillment of her mission".

The Athens funding conference was preceded by another meeting in Naples where "The human capital of age" pointing to unity of the two cultures. It was attended was by presidents of Universities, deans, retired and emeriti professors, historians, historians of medicine and of science, philosophers, politicians, neurologists and neuro-radiologists, internists, gerontologists, nephrologists (they care for patients who become old when they are young), the Chief of the Jewish Community in Rome, the cardinal of Naples, the President of the Pontiff Academy of Science in Rom, physiologists and philosophers of science. There were talks of mathematicians, experts of Patriarch trees and of the life in the sea, and in space. Various speakers were present in Naples and Athens so there was tread of cultural continuity between the events.

Age is not synonymous with intellectual decadence if one is healthy and not afflicted by disease. As Rita levi Montalcini pointed out (7) creativity is not age dependent. She analyzed the late contributions of Michelangelo Buonarroti (1475-1564), Galileo Galilei (1564-1642), Bertrand Russel (1872-1970), David Ben Gurion(1866-1973), and Pablo Picasso (1881-1973).

On the other hand aging may be paradoxically associated with better mental health ("like wine and cheese one's mental health improved with age") as demonstrated by a recent study of Dilip J Jeste since old people get wiser depressions is not a rule unless a person is affected by a serious disease (8). Indeed, as demonstrated by recently in Science (9), aging does not prevent scientific break-throughs. In fact "the highest-impact work in a scientist's career is randomly distributed within her body of work. That is, the highest-impact work can be, with the same probability, anywhere in the sequence of papers published by a scientist—it could be the first publication, could appear mid-career, or could be a scientist's last publication. This random-impact rule holds for scientists in different disciplines, with different career lengths, working in different decades, and publishing solo or with teams and whether credit is assigned uniformly or unevenly among collaborators"(9).

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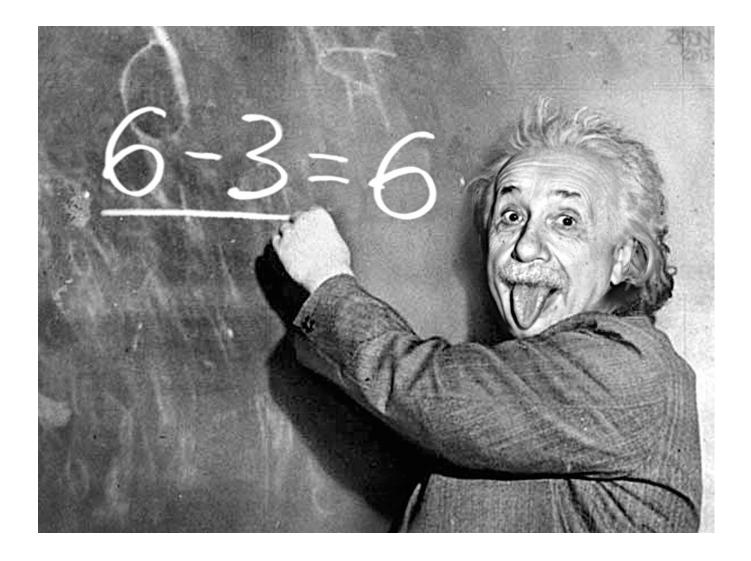
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9

# FROM RESEARCH TO PRACTICE IN THE INTERNATIONAL LITERATURE

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### **NEWS FROM COCHRANE LIBRARY:**

### VITAMIN D SUPPLEMENTATION FOR PREVENTING INFECTIONS IN CHILDREN UNDER FIVE YEARS OF AGE

Vitamin D is an important micronutrient for children because it has central role in growth. However, several studies have also implicated vitamin D deficiency as a potential risk factor for infections. The aim of this Cochrane systematic review was to investigate a role of supplementation with vitamin D for preventing infections.

Study features: Studies available until June 2016 were analyzed. Authors included 4 randomized controlled trials with total of 3198 children aged under 5 years. The main evaluated outcomes were mortality, pneumonia incidence, diarrhea incidence and number of hospitalizations.

Key findings: According to one low quality study there was no effect on death. Moderate quality evidence showed that there was no effect of vitamin D supplementation on incidence of first or only, confirmed or unconfirmed episode of pneumonia. One study investigated incidence of repeated pneumonia and found significant higher incidence in placebo group but without reflection on outcomes. Two studies investigated an incidence of first or only episode of diarrhea but the meta-analysis was not possible because studies used different statistical tests, although both of them showed similar incidence between intervention and placebo group. Only one study investigated an incidence of recurrent diarrhea episodes and there was no significant difference between groups. Two studies showed that there was no difference in hospital admissions between groups. None of the studies reported adverse effects. Authors' conclusion: According to one large study there were no benefits of vitamin D supplementation to prevent pneumonia or diarrhea in children under five years. More high quality trials in this field are needed.

Reference: Mohammad Y Yakoob, Rehana A Salam, Farhan R Khan and Zulfiqar A Bhutta Vitamin D supplementation for preventing infections in children under five years of age. 2016;11: CD008824.

#### Prophylactic drug management for febrile seizures in children

According the International League Against Epilepsy (ILAE) a febrile seizure is "a seizure occurring in childhood after one month of age associated with a febrile illness not caused by an infection of the central nervous system, without previous neonatal seizures or a previous unprovoked seizure, and not meeting the criteria for other acute symptomatic seizures". The aim of this Cochrane review was to investigate efficacy and safety of prophylactic use of antiepileptic and antipyretic drugs to treat children with febrile seizures.

Study features: Studies available until July 2016 were analyzed and 30 randomized controlled trials (RCTs) with 4256 patients were included in this review. The primary outcome was proportion of chil-

dren with recurrence of febrile or non-febrile seizures. In most studies the quality of evidence was moderate to poor.

Key findings: Comparing to placebo or no treatment there was no effects of prophylactic febrile seizures management with intermittent phenobarbitone, phenytoin, valproate, pyridoxine, ibuprofen or zinc sulfate compared with placebo or no treatment. There was also no effect of diclofenac versus placebo followed by ibuprofen, acetaminophen or placebo; nor for continuous phenobarbitone versus diazepam, intermittent rectal diazepam versus intermittent valproate, or oral diazepam versus clobazam. Authors found a significant reduction of recurrent febrile seizures with intermittent diazepam versus placebo or no treatment up to 36 months follow with no effects at 60 to 72 months. Comparing to placebo phenobarbitone was effective for reducing seizures at 6, 12 and 24 months but not at 18 or 72 month follow-up. Study which compared intermittent clobazam to placebo showed an extremely high recurrence rate in the control group and needs to be repeated. Adverse events were reported in 30% of children treated with phenobarbitone and 36% treated with benzodiazepine.

Authors' conclusion: Based on the available evidence from RCTs, continuous or intermittent treatment with zinc, antiepileptic or antipyretic drugs can not be recommended for children with febrile seizures. Parents should be informed about benign nature of the seizures, first aid and contact details of medical services.

Reference: Martin Offringa, Richard Newton, Martinus A Cozijnsen and Sarah J Nevitt. Prophylactic drug management for febrile seizures in children. 2017;2:CD003031.

#### Antibiotics for neonates born through meconium-stained amniotic fluid

Meconium aspiration syndrome is a respiratory disease in a neonate born through meconium-stained amniotic fluid. Meconium may be contaminated by bacteria that cause infections and death. The aim of this Cochrane systematic review was to assess efficacy and safety of antibiotics for prevention of infection morbidity, and mortality among asymptomatic infants who were born through meconium-stained amniotic fluid or had meconium aspiration syndrome.

Study features: Studies available until July 2016 were analyzed and 4 randomized controlled trials conducted in India and Taiwan with 695 patients were included in this review.

Key findings: There was no significant differences in risk of culture-proven, confirmed sepsis in first 28 days, mean duration of hospital stay, pulmonary air leak syndrome, requirement for mechanical ventilation, time to clear chest radiograph, incidence or of respiratory failure, duration of respiratory distress or in mortality in symptomatic neonates with meconium aspiration syndrome. Compared to control group, neonates who received antibiotics needed significantly less oxygen therapy (according to two studies). Only one study analyzed efficacy and safety of antibiotic in asymptomatic infants who were born through meconium-stained amniotic fluid and showed that there was no significant difference in risk of culture-proven, confirmed sepsis and mortality comparing with control

group. Duration of mechanical ventilation and oxygen therapy were significantly longer in the antibiotics group. None of these studies included placebo group and full blinding of treating clinicians and this is main limitation of this review.

Authors' conclusion: The quality of evidence is low owing to the small number of included studies. There is limited low quality evidence of efficacy and safety of antibiotics in infants who were born through meconium-stained amniotic fluid or had meconium aspiration syndrome. None of these studies included a placebo arm and full blinding of treating clinicians. More high-quality trials are needed.

Reference: Lauren E Kelly, Sandesh Shivananda, Prashanth Murthy, Ravisha Srinivasjois, Prakeshkumar S Shah. Antibiotics for neonates born through meconium-stained amniotic fluid. 2017:6;CD006183.

#### Hyperbaric oxygen therapy for people with autism spectrum disorder (ASD)

Autism spectrum disorder (ASD) is a group of neurodevelopmental disorders characterized with social, communicational and behavioral difficulties combined with selective attention. The aim of this Cochrane systematic review was to determine whether hyperbaric oxygen therapy improves social communication problems, stereotypical and repetitive behaviors (core symptoms), challenging behaviors (noncore symptom), depression and anxiety and can it cause any adverse effects.

Study features: Literature published until December 2015 was searched. Only one study with 60 participants met inclusion criteria and was included in this review.

Key findings: Authors of included study reported no significant difference between hyperbaric oxygen therapy and placebo therapy in social interaction and communication, behavioral problems and cognitive function. Compared to control group the number of children with adverse events was significantly greater in the hyperbaric oxygen therapy group.

Authors' conclusion: According to current knowledge there is no evidence that hyperbaric oxygen therapy improves core symptoms and associated symptoms of ASD. Quality of this study was low. Future randomised controlled trials on this topic should be considered.

Reference: Tao Xiong, Hongju Chen, Rong Luo, Dezhi Mu. Hyperbaric oxygen therapy for people with autism spectrum disorder (ASD). 2016;10.CD010922.

# RECONSIDERING THE LACK OF UREA TOXICITY IN DIALYSIS PATIENTS

(Commentary on the article published by Ziad A. Massy, Christine Pietrement, and Fatouma Tour, in Seminars in Dialysis—Vol 29, No 5 (September–October) 2016)

The accumulation of substances having the propensity to dysregulate normal cellular functions is a hallmark of chronic kidney disease (CKD). The molecules that accumulate are known as uremic toxins. Urea is an old uremic toxin which has been used for many years as a global biomarker of CKD severity and dialysis adequacy. Old studies were not in favor of its role as a causal factor in the pathogenesis of complications associated with the uremic state. However, recent experimental and clinical evidence is compatible with both direct and indirect toxicity of urea, particularly via the deleterious actions of urea-derived carbamylated molecules.

#### Recent Evidence in Favor of a Direct Role of Urea as a Uremic Toxin:

Massy reports that several recent in vitro and in vivo studies have indicated a possible direct toxicity of urea. Trecherel et al. (1) published that urea was the most potent uremic toxin able to induce the expression of BAD, a proapoptotic member of the BCL2 family, in human aortic smooth muscle cells. These authors further observed that BAD was overexpressed in animal tissues and in cells exposed to uremic conditions. Urea-mediated sensitization of cells to the proapoptotic effect of oxidative stress, exerted by oxidized cholesterol for instance, may account for the increased apoptosis observed in the arterial wall of uremic patients (2).

Massy et reports that another argument for vascular toxicity of urea has been provided in a recent landmark study (3) which showed that treatment of 3T3-L1 adipocytes with disease-relevant concentrations of urea free of LPS or heavy metals, enhanced the production of reactive oxygen species (ROS), stimulated insulin resistance, and increased the expression of serum levels of adipokines, retinol binding protein 4, resistin, and O-linked beta-N-acetylglucosamine, thereby modifying insulin signaling. The author of the study reported by Massy demonstrated in experiments in vivo that (i) normal mice developed insulin resistance after urea infusion which was prevented by antioxidant SOD/ catalase mimetic treatment, and (ii) CKD mice displayed insulin resistance and glucose intolerance which were normalized by same treatment.

In a more recent report, Massy also reports that the same authors demonstrated that urea was also toxic for endothelial cells. High urea concentrations induced ROS production in primary human aortic endothelial cells, leading to activation of proinflammatory pathways, and inactivation of atherosclerosis-protective enzymes such as prostacyclin GI2 (PGI2) synthase (4). Moreover, they had demonstrated that in CKD mice, treatment with an SOD/catalase mimetic prevented aortic oxidative stress, reduced PGI2 synthase activity, activated NFkB, and increased proinflammatory proteins. Although the mechanisms involved in direct urea toxicity remain to be explored, these data point to an important

role of urea in the uremic syndrome, in addition to the numerous other substances which accumulate in the extracellular fluid space of CKD patients and give rise to insulin resistance and endothelial dysfunction via the induction of oxidative stress.

The review by Massy indicates that Urea has also been shown to exert toxic effects on the gastro-intestinal tract as Vaziri et al. (5) showed that incubation of human colonic epithelial cells with urea at clinically relevant concentrations led to disruption of enterocyte tight junction and barrier function.

Massy concludes that Taken together, these findings are supportive of a direct toxic effect of urea at the cellular level, as its concentration increases with the progression of CKD. Consequently, urea per se may participate at the pathogenesis of cardiovascular disease, insulin resistance, or intestinal disease which are important complications associated with CKD.

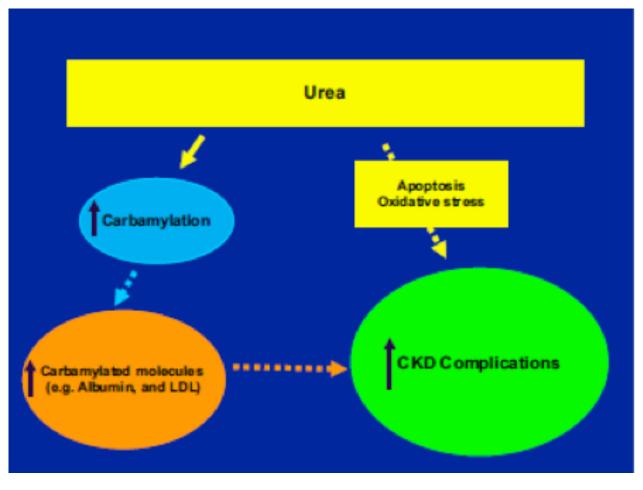
#### Recent Evidence in Favor of an Indirect Role of Urea as a Uremic Toxin:

Urea can also be indirectly toxic through its dissociation leading to carbamylation of proteins, a nonenzymatic posttranslational modification (PTM). Posttranslational modification processes comprise glycation, oxydation, cabonylation, and carbamylation. They are characterized by the formation of covalently bound adducts on proteins, called posttranslational modification-derived products (PTMDPs). These modifications are hallmarks of protein aging (6). Massy concludes his report on the eveidences in favor of an indirect role of Urea as a Uremic Toxin commenting that carbamylation

could be involved in the energetic waste often seen in CKD patients through a functional chronic deficit in free amino acids. Lastly, he observes that cLDL impairs glucose uptake by skeletal muscle

cells in rats, and therefore that carbamylation appears to contribute to insulin resistance seen in uremia.

Massy concludes his review commenting that all recent evidences point in the direction of reconsidering the role of Urea and its toxicity, although further studies are clearly needed to explore the potential relevance of urea-related CKD complications for patient management, in particular the place of new therapeutic strategies to prevent urea toxicity



Massy et al: Direct and indirect toxicity of Urea (CKD, Chronic Kidney Disease / LDL, Low-density lipoprotein.)

1) Trecherel E, Godin C, Louandre C, Benchitrit J, Poirot S, Maziere JC, et al.: Upregulation of BAD, a pro-apoptotic protein of the BCL2 family, in vascular smooth muscle cells exposed to uremic conditions. Biochem Biophys Res Commun 417:479–483, 2012

2) Shroff RC, McNair R, Figg N, Skepper J, Schugers L, Gupta A, et al.: Dialysis accelerates medial vascular calcification in part by triggering smooth muscle cell apoptosis. Circulation 118:1748–1757, 2008

3) D'Apolito M, Du X, Zong H, Catucci A, Maiuri L, Trivisano T, et al.: Urea-induced ROS generation causes insulin resistance in mice with chronic renal failure. J Clin Invest 120:203–213, 2010

4) D'Apolito M, Du X, Pisanelli D, Pettoello-Mantovani M, Giacco F, et al.: Urea-induced ROS cause endothelial dysfunction in chronic renal failure. Atherosclerosis 239:393–400, 2015

5) Vaziri ND, Yuan J, Norris K: Role of urea in intestinal barrier dysfunction and disruption of epithelial tight junction in CKD. Am J Nephrol 37:1–6, 2013

6) Jaisson S, Gillery P: Evaluation of nonenzymatic posttranslational modification-derived products as biomarkers of molecular aging of proteins. Clin Chem 56:1401–1412, 2010



### 10

### NUTRITION & LIFESTYLE IN PREGNANCY

A new MOOC on "Nutrition and lifestyle during pregnancy" has been launched. In an easily comprehensible format, in about 30 short video clips, it presents recommendations based on current scientific and DOHaD concepts to health care professionals, trainees and others interested in this field. Women who plan to have a child should keep an eye on their diets even before they become pregnant: This new LMU online course elucidates the impact of the expectant mother's nutrition and lifestyle on the health of the child.

What aspects of my lifestyle and behaviour should I keep a close eye on during pregnancy? What am I allowed to eat? What about physical exercise and sporting activities? The latest in LMU's roster of Massive Open Online Courses (MOOCs) provides answers to these and many other questions relating to diet and nutrition during pregnancy. "The course is intended primarily for doctors and midwives who are constantly confronted with questions like these, but medical students and other interested parties can also profit from it," says Dr. Brigitte Brands, who is closely involved in the project "Early Nutrition" and in the Early Nutrition eAcademy (ENeA), both of which have contributed to the development of the MOOC.

The aims of the new online course from LMU are (i) to inform participants about the very significant impact that early nutrition has on health in later life, and (ii) to enable them to advise expectant mothers and those who are planning to have a child on the steps to be taken during pregnancy in this regard. The course is made up of four modules that deal with popular misconceptions in relation to early nutrition, the novel nutritional demands that arise in association with pregnancy, as well as the latest research findings in the field of early nutrition, and their practical implications. The new LMU MOOC on "Nutrition & Lifestyle in Pregnancy" brings together the fruits of the latest research in the field. In addition to Professor Berthold Koletzko (Head of the Division of Metabolism and Nutrition at Dr. von Hauner's Children's Hospital, which is part of the LMU Medical Center) and Dr. Irene Alba (Consultant Physician at the Clinic of Gynecology and Obstetrics on LMU's Downtown Medical Campus), Professors Keith Godfrey (University of Southampton, UK), Lucilla Poston (King's College London) and Hildegard Przyrembel (German Federal Institute for Risk Assessment) have developed parts of the course content.

LMU has been providing Massive Open Online Courses (MOOCs) as a novel form of collaborative learning on the Coursera platform since 2103. In response to the level of demand, two of these MOOCs are also available in Chinese. The seminars are open to all those interested in the relevant field and are accessible worldwide – admission is open and free of charge.

#### https://www.youtube.com/watch?v=9LA7N5Qp8Mk&t=31s

Enjoy watching it, and please share this with your colleagues and friends.

# EPA/UNEPSA MEMBER AND AFFILIATED ASSOCIATIONS AND SOCIETIES 2016

#### Albania Albanian Paediatric Society

Armenia Armenian Association of Paediatrics

Austria Oesterrechische Gesellschaft fur Kinder-und Jugendheilkunde (OEGKJ)

Azerbaijan Azerbaijan Pediatric Society

Belgium Societe Belge de Pédiatrie/Belgische Vereiniging voor Kindergeneeskunde

Bosnia and Herzegovina Paediatric Society of Bosnia and Herzegovina

Bulgaria Bulgarian Paediatric Association

Croatia Croatian Paediatric Society

Cyprus Cypriot Paediatric Society

Czech Republic Czech National Paediatric Society

Denmark Dansk Paediatrisk Selskab

Estonia Estonian Paediatric Association

Finland Finnish Paediatric Society

France Société Française de Pédiatrie

Georgia Georgian Paediatric Association

#### Germany

Deutsche Gesellschaft für Kinder- und Jugendmedizin (DGKJ)

Greece Hellenic Paediatric Society

Hungary Hungarian Paediatric Association

Ireland Royal College of Physicians of Ireland/Faculty of Paediatrics

Israel Israeli Paediatric Association

Italy Società Italiana di Pediatria

Società Italiana di Ricerca Pediatria

Italian Federation of Pediatricians

Kazakhstan Pediatric Societies and Associations of Kazakhstan

Latvia Latvijas Pediatru Asociacija

Lithuania Lithuanian Paediatric Society

Luxembourg Société Luxembourgeoise de Pédiatrie

Macedonia Paediatric Society of Macedonia

Moldova Moldovan Paediatric Society

Montenegro Pediatric Societies and Associations of Montenegro

#### The Netherlands

Nederlandse Vereninging voor Kindergeneeskunde

Poland Polskie Towarzystwo Pediatryczne

Portugal Sociedade Portuguesa de Pediatria

Romania Societatea Romana de Pediatrie

Societatea Romana de Pediatrie Sociala

Russia The Union of Paediatricians of Russia

Public Academy of Pediatrics

Serbia and Montenegro Paediatric Association of Serbia and Montenegro

Slovakia Slovenska Paediatricka Spolocnost

Slovenia Slovenian Paediatric Society

Spain Asociación Española de Pediatría

Sweden Svenska Barnläkarföreningen

Turkey Türk Pediatri Kurumu

Türkiye Milli Pediatri Derneği

Turkmenistan Pediatric Societies and Associations of Turkmenistan

Ukraine Ukraine Paediatric Association

United Kingdom Royal College of Paediatrics and Child Health

#### Uzbekistan

Pediatric Societies and Associations of Uzbekistan

#### Kosovo

Pediatric Society of Kosovo (Affiliated National member)

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# PEDIATRIC CONGRESSES SAVE THE DATE

#### **OCTOBER 2017**

2017

#### MAYO CLINIC PEDIATRIC DAYS 2017

OCTOBER 9, 2017 - OCTOBER 10, 2017 CHICAGO , IL , UNITED STATES

# 2ND ANNUAL SUMMER PAEDIATRIC & NEONATAL INTENSIVE CARE WORK-SHOP 2017

OCTOBER 10, 2017 - OCTOBER 11, 2017 MARBELLA , SPAIN

ALOHA UPDATE: PEDIATRICS 2017 OCTOBER 14, 2017 - OCTOBER 20, 2017 KOLOA , UNITED STATES

#### EUROPEAN SOCIETY FOR PEDIATRIC DERMATOLOGY 2017

OCTOBER 19, 2017 - OCTOBER 21, 2017 MALLORCA , SPAIN

#### CANADIAN ASSOCIATION OF PAEDIA-TRIC HEALTH CENTRES ANNUAL CON-FERENCE 2017

OCTOBER 22, 2017 - OCTOBER 24, 2017 QUÉBEC , CANADA

#### 33RD ANNUAL FALL CONFERENCE ON PEDIATRIC EMERGENCIES 2017

OCTOBER 25, 2017 - OCTOBER 28, 2017 CAYMAN ISLANDS , CAYMAN ISLANDS

#### PORTUGUESE SOCIETY OF PEDIA-TRICS 18TH NATIONAL CONGRESS 2017

OCTOBER 25, 2017 - OCTOBER 27, 2017 PORTO , PORTUGAL

#### SICKKIDS 14TH ANNUAL PAEDIATRIC EMERGENCY MEDICINE CONFEREN-CE 2017

OCTOBER 26, 2017 - OCTOBER 27, 2017 TORONTO , ONTARIO , CANADA

#### CANADIAN ADHD RESOURCE ALLIAN-CE 13TH ANNUAL ADHD CONFEREN-CE & PRECONFERENCE EVENTS 2017 OCTOBER 27, 2017 - OCTOBER 29, 2017 QUEBEC , QUEBEC , CANADA

#### **NOVEMBER 2017**

#### MOHSEN ZIAI PEDIATRIC CONFEREN-CE 2017

NOVEMBER 3, 2017 - NOVEMBER 4, 2017 MCLEAN , UNITED STATES

#### 6TH GLOBAL CONGRESS FOR CON-SENSUS IN PAEDIATRICS AND CHILD HEALTH 2017

NOVEMBER 12, 2017 - NOVEMBER 15, 2017 COLOMBO , SRI LANKA

#### PAEDIATRIC SOCIETY OF NEW ZEA-LAND 69TH ANNUAL SCIENTIFIC MEE-TING 2017

NOVEMBER 14, 2017 - NOVEMBER 16, 2017 CHRISTCHURCH , NEW ZEALAND

2017 2018

#### MENINGITIS AND SEPTICAEMIA IN CHILDREN AND ADULTS 2017

NOVEMBER 14, 2017 - NOVEMBER 15, 2017 LONDON , UNITED KINGDOM

#### 61ST TURKISH NATIONAL CON-GRESS OF PEDIATRICS 2017

NOVEMBER 15, 2017 - NOVEMBER 19, 2017 BELEK , TURKEY

#### TWINS CONGRESS 2018 NOVEMBER 16, 2017 - NOVEMBER 18, 2017 MADRID , SPAIN , SPAIN

#### **3RD INTERNATIONAL PAEDIATRIC MEDICAL CONGRESS 2017** NOVEMBER 16, 2017 - NOVEMBER 18,

2017 DUBAI , UNITED ARAB EMIRATES

#### NEPHROLOGY DAY FOR GENERAL PAEDIATRICIANS 2017

NOVEMBER 17, 2017 - NOVEMBER 17, 2017 LONDON , UNITED KINGDOM

#### 19. DGPM — 28. DEUTSCHER KON-GRESS FÜR PERINATALE MEDIZIN

30 NOV 2017 - 02 DEC 2017 LOCATION: BERLIN, GERMANY EVENT WEBSITE <u>HTTP://WWW.DGPM2017.COM</u>

#### **DECEMBER 2017**

DECEMBER 2017 10TH WORLD CONGRESS OF THE WORLD SOCIETY FOR PEDIATRIC INFECTIOUS DISEASES 2017 DECEMBER 2, 2017 - DECEMBER 5, 2017 SHENZHEN , CHINA

#### INTERNATIONAL DEVELOPMENTAL PEDIATRIC ASSOCIATION CON-GRESS 2017

DECEMBER 7, 2017 - DECEMBER 10, 2017 MUMBAI , MAHARASHTRA , INDIA

#### 9TH ANNUAL CONFERENCE ON EMERGENCIES & CHALLENGES IN PEDIATRICS 2017

DECEMBER 15, 2017 - DECEMBER 16, 2017

NEW YORK , UNITED STATES

#### 20TH INTERNATIONAL CONFEREN-CE ON NEONATOLOGY AND PERINA-TOLOGY DECEMBER 04-06, 2017 MADRID, SPAIN

#### **JANUARY 2018**

#### INDIAN ACADEMY OF PEDIATRICS 55TH ANNUAL CONFERENCE 2018

JANUARY 4, 2018 - JANUARY 7, 2018 NAGPUR , INDIA

# 2018

#### PEDIATRIC INFECTIOUS DISEASES: A PRIMARY CARE AND HOSPITALIST AP-PROACH 2018

JANUARY 15, 2018 - JANUARY 19, 2018 SARASOTA , UNITED STATES

#### SEHA INTERNATIONAL PAEDIATRIC CON-FERENCE 2018

JANUARY 18, 2018 - JANUARY 20, 2018 ABU DHABI , UNITED ARAB EMIRATES

## 28TH CUBAN SOCIETY OF PEDIATRICS 2018

JANUARY 23, 2018 - JANUARY 26, 2018 HABANA , CUBA

#### 32ND ANNUAL SAN DIEGO INTERNATIO-NAL CONFERENCE ON CHILD & FAMILY MALTREATMENT 2018

JANUARY 28, 2018 - FEBRUARY 2, 2018 SAN DIEGO , UNITED STATES

#### ARAB HEALTH 11TH PEDIATRICS CON-FERENCE 2018

JANUARY 29, 2018 - FEBRUARY 1, 2018 DUBAI , UNITED ARAB EMIRATES

#### **FEBRUARY 2018**

#### 6TH UNIVERSITY HOSPITAL SHARJAH PEDIATRICS & NEONATAL INTERNATIO-NAL CONFERENCE 2018

FEBRUARY 8, 2018 - FEBRUARY 9, 2018 DUBAI , UNITED ARAB EMIRATES

#### PEDIATRIC EMERGENCY MEDICINE: EMERGENT AND URGENT CHALLENGES 2018

FEBRUARY 12, 2018 - FEBRUARY 16, 2018

#### SARASOTA, SARASOTA, UNITED STATES

# INTERNATIONAL PEDIATRIC SUMMIT 2018

FEBRUARY 22, 2018 - FEBRUARY 24, 2018 DUBAI , UNITED ARAB EMIRATES

#### ARAB PAEDIATRIC MEDICAL CON-GRESS 2018

FEBRUARY 22, 2018 - FEBRUARY 24, 2018 DUBAI , UNITED ARAB EMIRATES

#### 18TH ANNUAL WINTER CONFERENCE ON PEDIATRIC EMERGENCIES 2018

FEBRUARY 27, 2018 - MARCH 3, 2018 BEAVER CREEK , UNITED STATES

#### 15TH INTERNATIONAL CONFERENCE ON PEDIATRICS AND PEDIATRIC CAR-DIOLOGYBEAVER CREEK, UNITED STA-TES

FEBRUARY 27, 2018 - MARCH 3, 2018 FEBRUARY 19-20, 2018 PARIS, FRANCE

#### **MARCH 2018**

#### 5TH INTERNATIONAL CONFERENCE ON NUTRITION AND GROWTH 2018

MARCH 1, 2018 - MARCH 3, 2018 PARIS , FRANCE

#### PEDIATRIC EMERGENCY MEDICINE: AN EVIDENCE-BASED APPROACH 2018

MARCH 12, 2018 - MARCH 16, 2018 SARASOTA , SARASOTA , UNITED STATES

ADVANCED PEDIATRIC EMERGENCY ME-DICINE ASSEMBLY 2018 MARCH 13, 2018 - MARCH 15, 2018 ORLANDO , UNITED STATES

### **APRIL 2018**

2018

PHILIPPINE PEDIATRIC SOCIETY 55TH ANNUAL CONVENTION 2018

APRIL 8, 2018 - APRIL 11, 2018 PASAY , PHILIPPINES

**CURRENT CLINICAL PEDIATRICS 2018** 

APRIL 16, 2018 - APRIL 20, 2018 HILTON HEAD , UNITED STATES

JAPAN PEDIATRIC SOCIETY 121ST AN-NUAL MEETING 2018

APRIL 20, 2018 - APRIL 22, 2018 FUKUOKA , JAPAN

#### MAY 2018

TURKISH PAEDIATRIC ASSOCIATION – TURK PEDIATRI KURUMU 54TH NATIONAL TURKISH PAEDIATRIC CONGRESS MAY 6, 2018 – MAY 9, 2018 GIRNE, KKTC, CYPRUS

ESPGHAN: ANNUAL MEETING (EURO-PEAN SOCIETY OF PAEDIATRIC GA-STROENTEROLOGY HAEPATHOLOGY AND NUTRITION) MAY 8, 2018 - APRIL 12, 2018

GENEVA, SWITZERLAND

ITALIAN FEDERATION OF PEDIATRI-CIANS (FIMP) – INTERNATIONAL CON-GRESS OF PEDIATRICS: "CHILDREN'S" MAY 17, 2018 – MAY 19, 2018 BARI, ITALY

#### **SEPTEMBER 2018**

ESPE: 57 ANNUAL MEETING (european society of paediatric endocrinology) SEPTEMBER 27, 2018 – SEPTEMBER 29, 2018 ATHENS, GREECE **EPA-UNEPSA IS AFFILIATED WITH:** 



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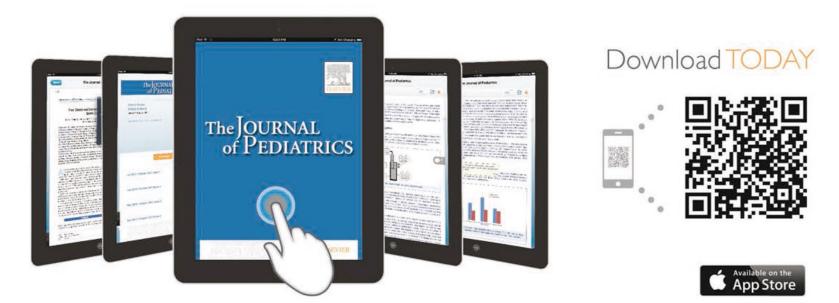
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