

International scientific achievements of Professor Erich Saling*

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It is indeed honor to give some personal thanks of one of the “greats” in clinical medicine, to our friend and teacher Professor Erich Saling (**Figs. 1 and 2**). It is equally exciting to speak about Saling’s rich and dynamic international scientific profile.

Erich Saling has done so many contributions to perinatal medicine that I do not know where to start with reviewing them. In true sense Erich Saling’s life was characterized by series of successes approving the truth of aphorism saying that the man is born to succeed not to fail.

The generation alive today is privileged to live in a remarkable age. Not only has interstellar space been spectacularly opened up to human exploration but, through a continuing medical and technological development of no less importance, “intrauterine space”, the world in which we spend our prenatal life from conception to birth, has become increasingly accessible to science.

The importance of perinatal medicine is growing rapidly and is making great and varied scientific progress as illustrated by 3 Textbooks of Perinatal Medicine edited by me and Frank Chervenak.

More and more evidence now indicates that prenatal life is a major determinant of adult health and disease.

So for instance the increasing realization that two modern epidemics – obesity and diabetes – as well as premature death from cardiovascular disease, may have their origins in environmental factors experienced during intrauterine life have given our discipline a much greater importance than anyone ever dreamed possible.



Fig. 1. Professor Erich Saling (1925–2021).

Therefore, I believe that patients, families, colleagues and governments are ready to recognize that a major revolution is now taking place. The prevention of diseases as well as the promotion of health should begin in utero.

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Much is already said about Saling's scientific contribution. I would like to present his international achievements because more than any other field of human activities science and medicine are international because their very nature is global. Most of Saling's contributions have global value and soon after this discovery do increase knowledge at each corner of the World.

In 1961 he developed fetal blood analysis from the scalp of the fetus during labor and impressively this was the first direct approach to the human fetus. It was the crystallization-point of perinatal medicine. The original publication "A new approach in examining the fetus during labour" *Arch Gynaekol* 1962;197:108 was classified as Citation Classic by the Institute of Scientific Information in 1984.

Before that he had done the first catheterization of the aorta of the newborn immediately after delivery in 1958, he had developed a method of rapid transfusion of placental blood in cases of early cord ligation and, in 1959, a two-catheter-technique of blood exchange in the newborn. In 1960, he performed the first blood gas analysis from the central circulation to determine the effectiveness of resuscitation methods in the newborn, and in 1961 he, together with Damschke, introduced a rapid method to measure the blood O₂ saturation in microsamples.

This was the beginning of an innovative and very fruitful phase with ever new developments in the field of perinatal medicine.

Since the first European congress of Perinatal Medicine in Berlin in 1968, more than anybody else in history of modern obstetrics Saling has made it manifest that perinatal medicine is now global area of study.

Thanks to his genius initial ideas the bonds that link perinatologists together transcend geographic, political, religious and lingual differences resulting in globalization that optimizes perinatal care. Undoubtedly perinatal medicine is among the most challenges and beautiful areas of study and practice. It deals with events before birth when the fetus is a patient and during the immediate neonatal period. It is however at a stage when we can only recognize clinical syndromes rather than distinct disease entities caused by specific pathological mechanisms.

This is true of each of the five conditions: premature labor/delivery, premature rupture of membranes,

small for gestational age, congenital anomalies and preeclampsia.

The biggest challenge is to define the pathophysiological mechanisms underlying our great obstetric syndromes at the molecular and cellular levels.

They must be identified early enough to allow intervention to prevent not only the clinical manifestation of disease but the long-term handicap it causes.

On account of great increases in knowledge about the molecular bases of pathogenesis and the course of illnesses, new therapeutic approaches will be found almost per-force. Much more attention will be devoted to the subject of individual diagnostics and possibly personalized treatment, that is, treatments tailored to individual people, or better, a group of people with a similar clinical picture and a similar genetic background, than we can imagine today. But whether society will be in a position and have the will to pay for these therapies, is an open question.

It is well recognized that there is no collective creativity. The idea is born in one head but the team will put it into the practice. Erich Saling was fortunate enough to have from the beginning of his long journey excellent support from his closest coworkers like Joachim Dudenhausen, Birgit Arabin, etc.

For them as well as for many of us all over the World, he was true scientific leader and in this explosive accumulation of new knowledge resulting from scientific discoveries, the role of true leaders is particularly important.

Perinatal policy leaders should make decisions about allocation of healthcare resources for fetal neonatal and pregnant patients on the basis of the requirements of justice. Leaders should also support the development and implementation of well-founded perinatal medicine as the means for eliminating to the greatest extent possible national, regional and international variation in the processes and outcomes of perinatal care. It is clear that international collaborative research and global perinatal education are essential components of these efforts.

In our great enthusiasm we should not forget important fact of life! A fact of life is that close to 1.5 billion people in the world live in extreme poverty, a situation which is particularly stark in the developing world, where 80% of them live.

Poverty has a woman's face; on the world's 1.3 billion poorest, only 30% are male.

Furthermore, for 90% of the pregnancies and deliveries in our world, the reality is very different. Poverty is one of the most influential factors for illness, and illness – in a vicious cycle – can lead to poverty. Education has proven to be a critical strategy to break this cycle.

Big Question is How Can We Change?

Fortunately, there are ways in which our actions can help these women in the long run. It is described in recent special issue of *Journal of Perinatal Medicine*, edited by Kurjak and Dudenhausen, 2022.

One is research. The development of research partnerships between developing and industrialized countries will not only help to combat the global inequity of health but will also be of enormous mutual benefit for all.

Pregnancy, childbirth and being a newborn are not diseases – they are special periods in human life when the risk of death or disability can be very high. This must be understood clearly by all: from medical, nursing and mid-wifery schools, from research funding bodies to industry and governments. Not understanding or knowing well the normal can lead to abuse of technology and iatrogenic complications.

The last 50 years have seen the founding of many national and international societies of perinatal medicine based on these principles, including the International Academy of Perinatal Medicine (IAPM), which was formed in 2005.

IAPM is an independent, non-profit institution with 50 permanent fellows from all over the world and owes its existence to the preparatory work done by the World Association for Perinatal Medicine. I am proud to succeed late Erich but not replace him as a president, because Erich Saling is not replaceable.

Obviously, global problems can be solved by global efforts. Even a modest personal contribution to this global tragedy will be our moral duty.

This will help to promote the idea that today's men and women are able to find mutual support, understanding and encouragement in diversity as the best way to grow as people in a more equitable and supportive society, where no one is excluded.

The IAPM should be responsible for research, education, standards. It has the potential of being a leading influence in the world of perinatal medicine.

We represent the best the World has to offer in Perinatal Medicine. Let us work together to make the World of Perinatal Medicine a better place.



Fig. 2. Prof. Erich Saling together with the members of the International Academy of Perinatal Medicine (2012, Paris, France).

An advantage of the Academy is the continuous availability of its leading and acting experts. This is a compensatory potential compared with societies where relatively frequent change of leading experts is common after only short intervals, in particular within their boards. Therefore it is a good solution to have both; namely different societies with their specific character, and above them a kind of super-ordinated intellectual common home.

As Heraclitus of Ephesus said, “There is nothing permanent except change”.

Never in mankind’s history have we commanded so much knowledge about the reproductive process. The current information about maternal and infant medicine is quite simply overwhelming.

As with the Platonic Academy and the majority of those that followed during the Classical Era, one of the core objectives of the IAPM is to create a mechanism to promote dialogue, generate rational, free and unbiased thinking, and also produce ideas and agreements for the improvement of the future of perinatal medicine.

We hope that the collective talent and energy of our Fellows will be used to ensure that our two patients – mother and fetus – are given all the benefits that they deserve, which we now have every chance to achieve more than ever before.

The Saling-Institute exemplary more than any other place has contributed to a new field of medicine with basic elaborations such as creating the very first direct approach to the fetus before birth, for example by introduction of fetal blood analysis during labor.

A number of important further contributions followed such as of measures for the prevention of prema-

ture birth one of the insufficiently solved problems in Perinatal Medicine.

Also of historic significance are the foundations of very first national and international societies in this field of medicine.

It should be apparent that a continuation of the activities of such an institution with high potential should maintain as far as only possible its scientific and practical activities. The rate of premature births in Germany and in many other countries are unnecessarily high. Suitable activities must therefore be continued by an institution such as this.

A further task should be to continue the existing valuable counselling service especially in cases with problems of premature birth and recurrent abortions, also giving help about available prophylactic measures and of suitable places to find the best care.

Furthermore, the Saling-Institute also stays in contact with politicians and healthcare providers, informing them about valuable preventive measures for pregnant women, and convincing them to improve public healthcare accordingly.

Another aim for the future would be to take into account the historic evolutions in this new field of medicine.

I think it is not overstating the fact, and I believe that I speak for everyone here, when I say that Erich Saling’s scientific contribution and pioneering work in perinatal medicine and above all education of so many of us the beauty of perinatal medicine, have made him a legend in his own lifetime.

Erich Saling was my close friend and this will stay as it is.

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