

Presidential Induction Speech – 2022

Perinatal excellence through an evidence-based approach to premature labour, delivery, and baby

Dr. L.P.C. Saman Kumara¹
MBBS MD MRCP DCH



Let me take this opportunity to thank the PSSSL for the trust vested in me to bear this huge responsibility as the first neonatologist to become the President of this prestigious professional organization, the PSSSL.

Story of the president

Before I say anything about my plans for this year let me tell you a few words about myself.

5 decades ago, I was born down south, in a district hospital called “Walana” at Weligama in Matara district.

During that era, neonatal mortality was so high (more than 4 times higher than now) and apparently, there had been 5 deliveries on the same day, according to my mother, unfortunately, all babies died except one baby and, that was me.

Due to the high neonatal mortality in the hospital, a distantly related grandmother had strongly objected to bathing me in the hospital, because she suspected some germ in the hospital water supply and had taken me to her place for bathing which probably saved my life.

I was born as the youngest child of 4 children. Both my parents are no more with us but I was able to save my father’s life even before I became a medical student in 1989 along with my brother putting our lives in absolute danger.

I managed to save my mother’s life several times by chasing deadly situations but 4 years ago death was faster than me.

I have two elder sisters and a brother. They all are in the audience today and they were the pillars of my strength after my parents.

I spent my whole childhood in a beautiful village called Kokmaduwa. Probably I spent most of my time in the paddy field in front of my home especially when it was flooded like a sea. I studied in the village school (Kokmaduwa Kanishta Vidyalaya) up to O/L and then Thelijjawila Central College for A/L. I managed to get my O/L science teacher and A/L Botany teacher in the audience today. Dear teachers, thank you for your presence here today.

I studied medicine at the University of Ruhuna, Faculty of Medicine Karapitiya, and passed out in 1997

All my roommates and some more of my batch mates are here in the audience today.

We all graduated in 1998. Thank you my friends for gracing the occasion.

I found my life partner, Ramani, at the GELT in 1990, and we married in 1998, she is a lawyer but luckily she practices law only in courts and never at home. Therefore we are still together.

I have two daughters, the elder daughter is studying psychology in Canada. My younger daughter is studying biology for A/L and wants to follow me.

I started my carrier as a medical officer from Teaching Hospital Karapitiya and started studying for MD in paediatrics.

I am here today as a consultant in a paediatric subspecialty due to a unique person. She was my role model from my medical student time. She is non-other than Dr. Pushpa Punchihewa. Thank you, dear madam, for accepting my invitation and for your presence here today as my guest of honor. I was trained under her as a 3rd-year medical student, HO, SHO, Registrar without any interruptions.

Dr. Punchihewa used to take second opinions for occasional difficult cases from another eminent paediatrician at LRH whom I had not met/seen at all during that time. He is Dr. E.A.N. Fonseka, “a mobile diagnostic machine”. There was nothing he could not diagnose. He was a trainer with a very high demand for PG training in paediatrics during our era. I was lucky to be trained under him at LRH for the second half of my training.

2004 was a landmark year in paediatrics, because, for the first time in Sri Lanka, paediatric subspecialties were offered and I was the first trainee in neonatology, there were no neonatologists to train me.

My first trainer was Dr. Medha Weerasekara at Sri Jaywardenepura General Hospital and then Dr. Sri Lal de

Silva at Lady Ridgeway Hospital. They were my primary school teachers in neonatology. They enormously contributed to my training. Especially Dr. Sri Lal de Silva helped me a lot with my foreign training. Both of them are here in the audience and thank you sir/madam for your presence here today.

I was trained in the UK for 2 years at 2 level 3 NICUs. First at the Royal Wolverhampton Hospital and the at the City hospital Birmingham. At the end of 2 years, I was offered a permanent job but I said goodbye to them and returned to SL as the first neonatologist in the country and worked 1 year in DGH Badulla and then 11 years up to now at Castle Street Hospital for Women.

During the last decade, I was able to introduce a few advanced novel therapies to the country for the first time. Therapeutic hypothermia/total body cooling for Hypoxic Ischemic Encephalopathy. In 2016, Inhaled Nitric Oxide(iNO) therapy for Persistent Pulmonary Hypertension in 2017, and Pasteurized Human donor breast milk in 2019 are the main 3 interventions that I have introduced to the country.

The first baby to receive such treatment in Sri Lankawas dying with severe hypoxia on day 5 when the machine arrived at CSHW from Spain. Mr. Nilanga Dala, the Diyawadana Nilame of Sri Daladamaligawa is in this audience today, thank you sir for donating this historical first lifesaving machine and Prof. Uday Devaskar, senior professor in neonatology Los Angeles-USA, thank you sir for donating the first cooling machine and the first human milk pasteurizer to Sri Lanka.

And then today you have elected me as the 21st president of the prestigious organization, the PSSSL.

That’s the end of my short story, but the beginning of my actual speech.

History of Neonatology

Did you ever know that war, famine, and poultry contributed to the birth of neonatology to this world? In France, in 1870 there was a rapid reduction of the population due to war and a massive shortage of food. They wanted more people to join the war. They started looking at the ways of expanding their population and realized that many newborn babies were dying. Neonatal Mortality Rate(NMR) was 100 -200 per 1000 live births

They wanted to save more babies. A French obstetrician, Dr. Etienne Stephane observed that these babies died due to hypothermia and at the same time accidentally observed some kind of heating chambers for poultry in the Paris Zoo. He then designed a

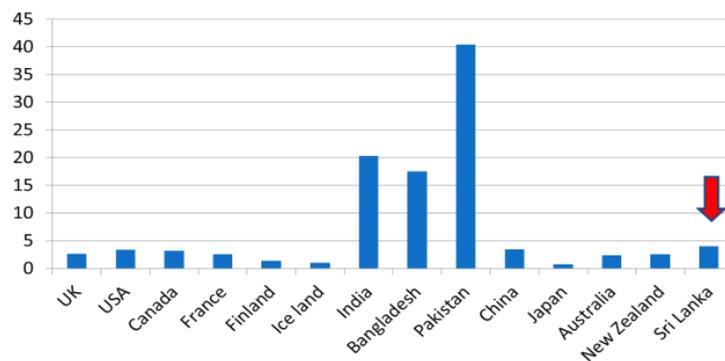
wooden heating chamber for newborn babies and that evolved to warm air incubators by 1880.

Proper neonatal care was initiated by an obstetrician in 1870, Pieer Constant Buddin. He introduced 5 steps in caring for newborn babies. These 5 steps are still the top-level steps in modern neonatal care.

The wooden incubator was advanced by Dr. Couney in the year 1900. But unfortunately, it was not approved for use in the USA or Europe.

He then went on to demonstrate this incubator with babies inside for 25 cents in various trade shows. It took nearly another 5 decades for the USA to accept for widespread use.

Global Scenario of Neonatal Mortality Rate (2021)

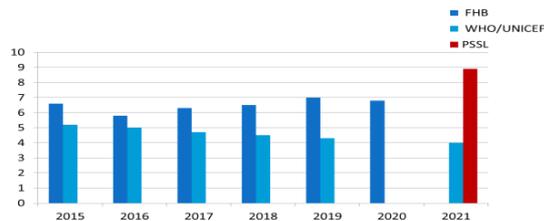


Source: World Health Organization

Modern neonatal care began only in 1950. It was initiated by Dr. Luois Gluck and he is considered the father of modern neonatal care. He designed the first modern NICU in 1950. Since then there was a massive improvement in neonatal care and global neonatal mortality steadily declined. The NMR was nearly 36 per thousand live births in 1990 and now it's approximately 18. By 2021 the NMR in most of the developed countries varied between <1- 5. It remains still very high (18-40) in

neighboring countries like India, Pakistan, and Bangladesh. We, in Sri Lanka, are fortunate to have a good health care system and as a result, our NMR is the best in the region.

Situation in Sri Lanka/ Neonatal Mortality Rate (2015-2021)



Source: Dr. L.P.C. Saman Kumara¹, *Perinatal Society of Sri Lanka*

With available data, it shows that our NMR has declined from 40 in 1960 to 5-6 in 2020. But we have some concerns about these numbers. According to Family Health Bureau data our NMR is around 6-7 and according to WHO/UNICEF data, it's around 4-5.

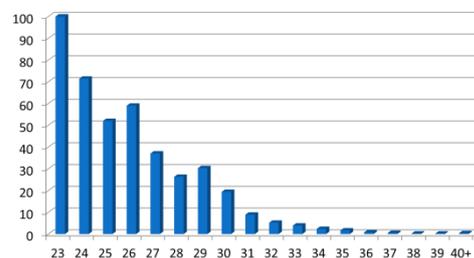
PSSL, last year conducted an island-wide survey on gestation-specific neonatal mortality. This showed our average NMR as 8.9. The main reason for this discrepancy is due to the under-reporting of extreme premature deaths. Deaths below 28 weeks gestation is not centrally reported by many hospitals even at present. It was the same situation at Castle Street Hospital for Women 11 years ago when I reported for duty.

Our survey sample represented more than 50% of actual data during the study time. We believe that even a NMR of 8.9 is still an underestimation as some neonatal deaths which took place in labour rooms were not reported for this data collection. When all less than 28 week gestation deaths are excluded from our data, the NMR is close to 6.2 which is tallying with FHB data. Therefore we are enjoying unrealistic happiness for neonatal mortality rates in our country.

When we analyzed the causes of mortality, the prematurity takes a major portion which is more than 30%. When, mortality versus

gestation is analyzed, more than 40% of deaths are seen in more mature babies. But what is important to understand is, the causes of deaths in this group are mainly due to lethal congenital abnormalities. Therefore those deaths are not really preventable. But in the more premature group, most deaths are preventable. They are healthy preterm babies.

Gestation specific neonatal mortality in Sri Lanka (2021)



Source: *Survey of Perinatal Society of Sri Lanka*

We realized that we lose nearly 100% of our 23 weeks babies and 71.4% of 24 weeks, 52% of 25 weeks, 59% of 26 weeks, 37% of 27 weeks, 26.3% of 28 weeks, 30.3% of 29 weeks babies. It's so painful to see that we are in 2022 and still losing more than a quarter of our 28 weeks babies. Therefore, my target for this year as the president of the PSSL is to address and initiate necessary interventions to reduce neonatal mortality due to prematurity.

I was lucky to share the experience with an eminent team from the United Kingdom. They have introduced a very successful intervention program to reduce mortality due to prematurity. This is called the "PERIPrem" project. "Perinatal Excellence in Reducing Injury in Premature birth"

PERIPrem interventions- a new approach to prematurity



This program has eleven interventions.

1. Birth at the right place
2. Ante-natal steroids
3. Magnesium Sulphate
4. Intrapartum antibiotics
5. Optimal cord clamping
6. Normothermia
7. Early maternal breast milk
8. Caffeine citrate
9. Probiotics
10. Volume guarantee ventilation
11. Prophylactic Hydrocortisone

Most of these interventions are simple and we are practicing at present. But all these should be used in a more organized manner with strict monitoring and auditing.

Maintaining normothermia for premature babies has always become a challenge in our setup.

The way we resuscitate our babies is very primitive. We still use the bag and mask resuscitation with 100% oxygen. This damages the baby's immature lungs in many ways and also makes the baby hypothermic due to the use of un-humidified, cold gas for resuscitation.

An unmatched gift for the nation from PSSL



My next target is to organize a fundraising campaign to donate 100 standard neonatal resuscitation machines to all the major hospitals in the country. This machine will give pressure-controlled breaths with blended humidified gas. The cost will be over Rs.110 million.

I am planning to have one workshop per province in the country to introduce this new resuscitation system and eleven interventions of the PERIPrem project.

In addition, I have already started a national-level CME program. We are having two virtual lectures every month in collaboration with Ceylon Association of Neonatologists. One for neonatologists, paediatricians, and trainees and the other one for neonatal junior doctors and neonatal nurses and midwives.

These lectures are well attended and there were more than 100 participants for each session. I am also planning to design an e-booklet on pregnancy, childbirth, and neonatal care.

These are my plans for the coming year. Finally, I would like to take this opportunity to thank Rev. Aludeniye Subodhi Thero, for your invaluable commitment to newborn care in this country, my parents, my wife and two daughters for helping and tolerating my busy life, my brother and two sisters, my extended family, my teachers, mentors,

supervisors, my patients, and their parents, my staff at CSHW, all the administrators in the MOH, all my friends, various donors and pharmaceutical companies helping with public activities of PSSL, last but not least all of you for coming today and gracing this occasion. I was inducted as the president because of your presence here today.

Thank you very much to all of you. Have a pleasant evening.

¹President-PSSL 2021/2022 & Consultant Neonatologist, Castle Street Hospital for Women