Advances in neonatal care at
The Institute of Neonatology

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Preterm birth

Incidence of preterm birth:

- 10% (15.000.000) globally
- 7% (4.000) in Serbia

- Family: unexpected event, shock, source of prolonged stress
- Medical professionals: great challenge, long term task
Institute of Neonatology

- 20 – 25% preterm babies (850 – 950)
- 84% - LBW (< 2500 g)
- 38% - VLBW (< 1500 g)
- 70% - NICU
- 44% - MV
- 6012 d MV
- 111 d iNO
- 388 d HFVO
- 45 d – length of stay
• Development of perinatal medicine and neonatal intensive care

• New technologies and medications

• Decrease in perinatal and neonatal mortality

• The incidence of developmental impairment remains unchanged
Preterm born children at school age (20-25 %)

- Neurosensory, neurodevelopmental deficit
- Increased risk for attention disorder
- ↓ IQ
- Difficulties in social and/or emotional functioning and autoregulation
- ↑ needs for additional help at school
Possible negative impact of NICU environment on the developing brain
New morbidity

- Neurodevelopmental delay or disfunction in preterm infants being treated at neonatal intensive care unit, in the absence of any brain damage.


These disfunctions are tightly connected with the early sensory experiences and stressors from the NICU enviroment, to whom the immature, developing brain was exposed before time, due to preterm birth.
Brain development

28 wk gestation

40 wk gestation
Multi-country Workshop on Development of Accreditation Standards for Maternity Wards and Neonatal Departments
15 – 16 September 2014, Belgrade
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Key stressors of NICU environment

• Light
• Noise
• Inadequate positioning
• Pain
• Interrupted sleep
• Mother/infant separation
How can we help?

- Family Centered Care
- Developmental Care
- Kangaroo Mother Care
Partnership with Parents for Better Outcome

- Open door policy
- NIDCAP© education and implementation
- Kangaroo Mother Care (late, intermittent)

(Ministry of Health, Committee for New Technologies, 2010.)
Family Centered Care
Family Centered Care

• Based on partnership between the family and medical professionals
• Promotes active parents’ participation in their baby’s care
• Increases parents’ competences
• Helps bonding and attachment
• Decreases parents’ stress and anxiety
Newborn Individualized Developmental Care and Assessment Program (NIDCAP®)

- ↓ length of hospital stay
- ↓ d on MV
- ↓ d on supplemental oxygen
- ↓ incidence of HIC
- Earlier onset of breastfeeding
- Better weight gain
- Better neurodevelopmental outcome at 3, 6 and 9 m

NIDCAP©

- CLD - mild
- ↓ NEC
- Better outcome for the whole family
- Better neurodevelopmental outcome


Improvement of Short- and Long-Term Outcomes for Very Low Birth Weight Infants: Edmonton NIDCAP Trial

K.L. Peters et al., 2009
NIDCAP®
Newborn Individualized Developmental Care and Assessment Program

• Protocol based, certified, high quality developmental program

• Synactive developmental theory – Prof. H. Als

• Mentoring caregivers
• Changing hospitals
• Supporting families
• Offering better outcome
NIDCAP®

- Individualized
- Family oriented
- Partnership based
- Supports development

- Modification of NICU environment (minimal handling, light, noise, pain, family)
- Behavioral assessment of the baby (weaknesses, strengths)
- Individual care plan and approach
- Team work (sharing the care plan with the baby’s family and caregivers)
- Encouraging the parents, enhancing their parental competencies
• 2007. communication with NIDCAP© Training center, St Mary’s Hospital, London, UK
• 2008. NIDCAP© Trainer’s visit (study day, short, medium and long-term goals)
• 2008. NIDCAP© team (6 members)
• 2010. the majority of the tasks were completed (2 trainees)
• 8th centre in Europe - NIDCAP© education and implementation

• 2 NIDCAP© professionals
• Practical skills (12 wk education)
  St Mary’s Hospital, Imperial College, London, UK
  6 trainees

• Baby Massage
  IAIM (International Association of Infant Massage)
  10 trainees
• Member of EFCNI (European Foundation for the Care of Newborn Infants)

• Project “A Big Hug for Little Giants” (Baby Massage)

• Brochures, leaflets for the parents
Kangaroo Mother Care

- KMC, Skin-to-skin contact
  well known, worldwide accepted method of care for LBW babies
- 98% NICU in USA
- WHO Guidelines
COMMITTEE REPORT

Towards universal Kangaroo Mother Care: recommendations and report from the First European conference and Seventh International Workshop on Kangaroo Mother Care


1. Uppsala University, Uppsala, Sweden
2. Case Western Reserve University, Cleveland, OH, USA
3. University of Cape Town, Cape Town, South Africa
4. Institute for Maternal and Child Health IRCCS Burlo Garofolo, Trieste, Italy
5. Kangaroo Foundation, Bogotá, Colombia
6. Neonatology Department, IRCCS Burlo, Trieste, Italy
7. University of Nigeria, Abua, Nigeria
8. Jose Fabella Memorial Hospital, Manila, Philippines
9. Hospital 12 de Octubre, Madrid, Spain
10. Pontificia Universidad Javeriana, Bogotá, Colombia
11. University Hospital, Brest, France
12. Karolinska Institute, Stockholm, Sweden

Keywords
Implementation, Guideline, Kangaroo Mother Care

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Abstract
The hallmark of Kangaroo Mother Care (KMC) is the kangaroo position: the infant is cared for skin-to-skin vertically between the mother’s breasts and below her clothes, 24 h/day, with father/substitute(s) participating as KMC providers. Intermittent KMC (for short periods once or a few times per day, for a variable number of days) is commonly employed in high-tech neonatal intensive care units. These two modalities should be regarded as a progressive adaptation of the mother-infant dyad, ideally towards continuous KMC, starting gradually and progressively with intermittent KMC. The other components in KMC are exclusive breastfeeding (ideally) and early discharge in kangaroo position with strict follow-up. Current evidence allows the following general statements about KMC in affluent and low-income settings: KMC enhances bonding and attachment; reduces maternal postpartum depression symptoms; enhances infant physiologic stability and reduces pain, increases parental sensitivity to infant cues; contributes to the establishment and longer duration of breastfeeding; and has positive effects on infant development and infant-parent interaction. Therefore, intrauterine and postnatal care in all types of
Conclusions

• All intrapartum and postnatal care should adhere to a paradigm of non-separation of infants and their mothers/families.

• Preterm/LBW infants should be regarded as extero-gestational foetuses needing skin-to-skin contact to promote maturation.

• KMC should begin as soon as possible after birth and continue as often and for as long as appropriate (depending on circumstances).
• 2010. 2 rooms for KMC
• 8. am – 8. pm
• Late, intermittent, 2hr
• 2013. 386 families/2158 SSC
Main challenges

• The beginning

• Level of knowledge (Family centered care, Developmental care, KMC)

• The size of the hospital (160/22 beds; 6 wards, 100-120 babies/d, staff)

• Keeping all of this high enough on the priority list

• Fund raising (education)
Lessons learned

• FCC, DC are about relationships, attitude and they bring a new culture. Although bringing a lot of benefits for the baby and her/his family, these changes are not easy for medical professionals;

• Knowledge is essential in the process and education should be available;

• Suitable guidelines and protocols could be helpful;

• KMC showed up to be non demanding in terms of education, equipment and implementation, yet bringing immediate results: At The Institute, KMC was a turning point.