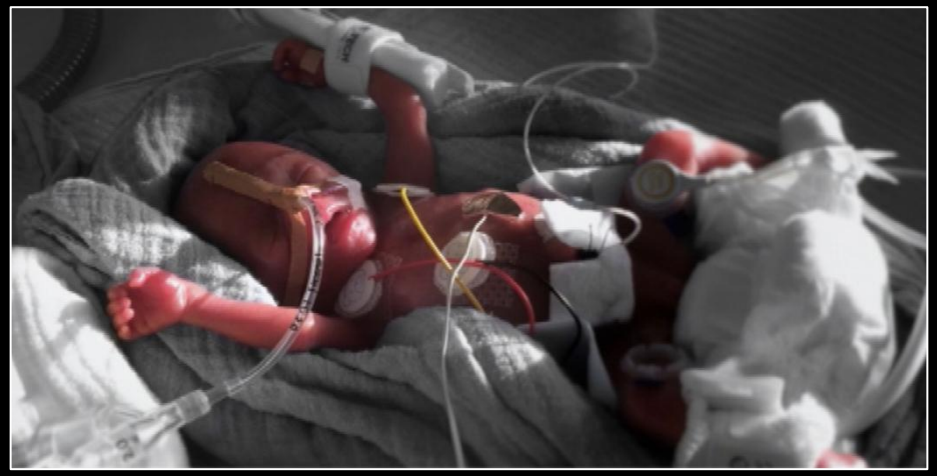
ANNUAL MEETING

of the Swiss Society of Neonatology

2025

Swiss recommendations for the perinatal care of extremely low gestational age neonates

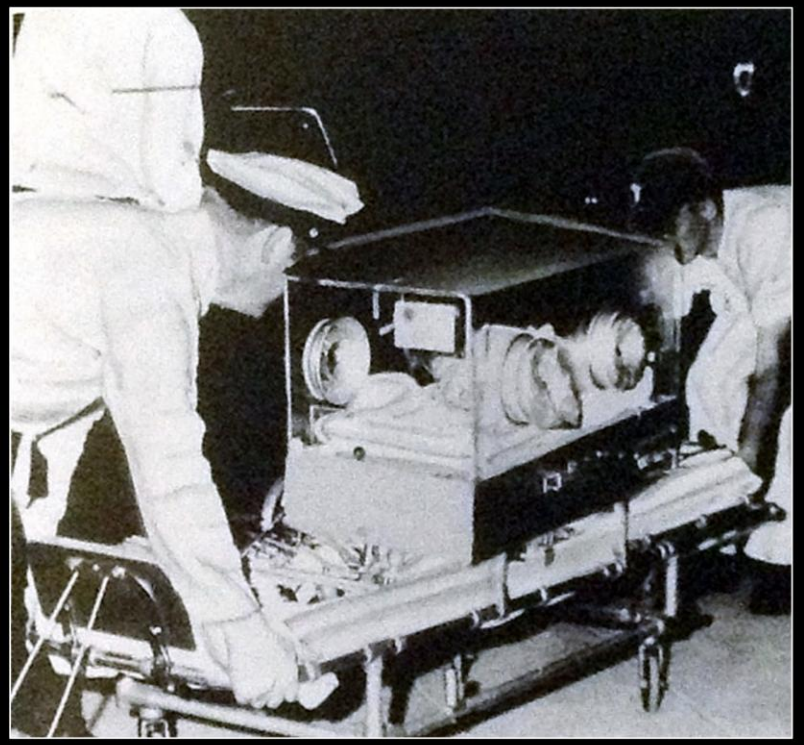


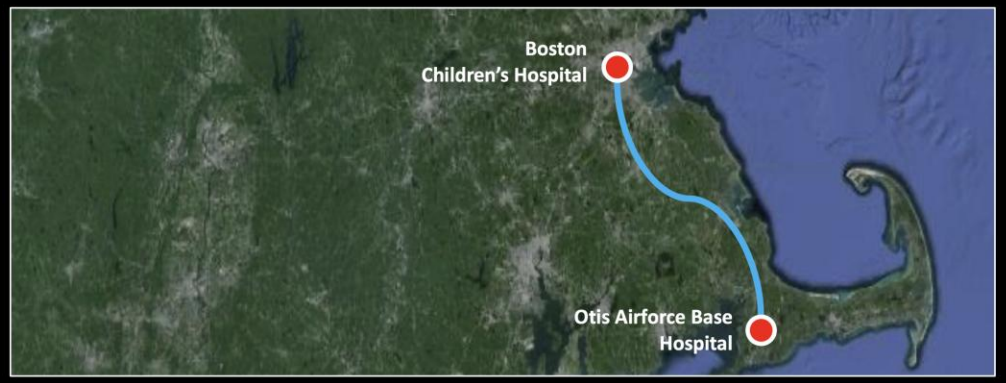
Prof.
Thomas M. Berger
Lucerne

Prof.
Jean-Claude Fauchère
Zurich

Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary Comments: Historical Context



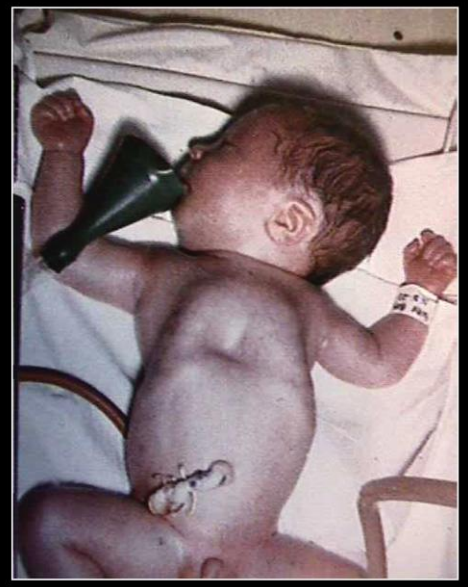


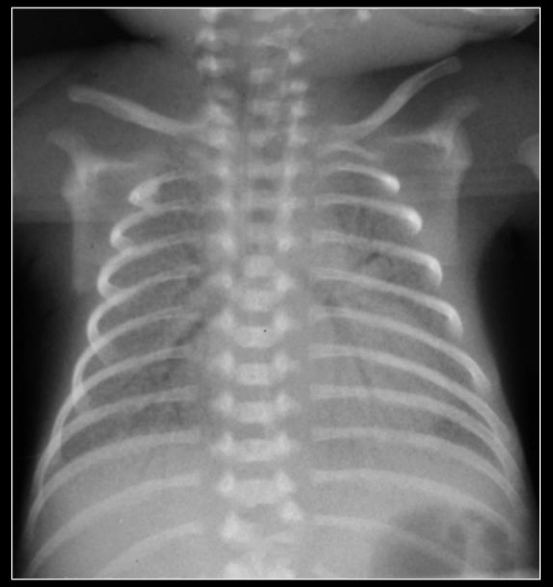
Otis Airforce Base Hospital (1963)

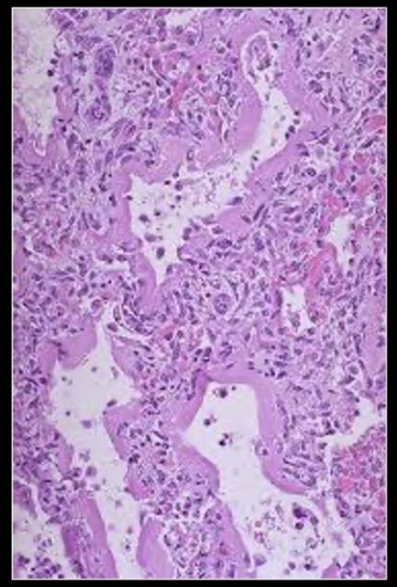
- Caesarean section
- BW 2110 g, GA 34 weeks
- Severe respiratory distress
- Transferred to Boston Children's Hospital

Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary Comments: Historical Context







Boston Children's Hospital
Diagnosis: Hyaline membrane disease
Treatment: hyperbaric oxygen

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Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary Comments: Historical Context

The Boston Globe
MORNING EDITION
THURSDAY, AUGUST 8, 1963

BABY SPED TO BOSTON

Has Trouble Breathing; Kennedy Stands by Here

By DOUGLAS S. CROCKET

Infant Arrives at Children's Medical Center

Whole World Taken By Littlest Kennedy

By GLORIA NEGRI

They Helped —And Hoped

'He's a Kennedy --He'll Make It'

After Visiting Baby

President leaves Children's Hospital

King Names FBI Agent

Powers to Head N.H. Sweeps

By EDWARD G. McGRATH

Kennedy Baby Dies At Boston Hospital; President at Hand

By The Associated Press

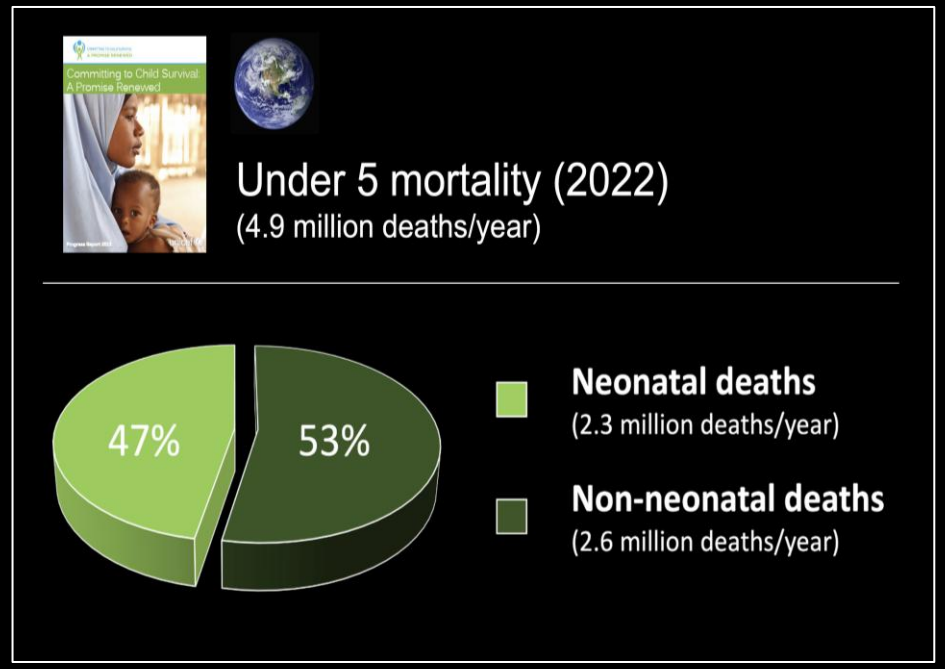
BOSTON, Friday, Aug. 9— The new baby boy of President and Mrs. Kennedy died

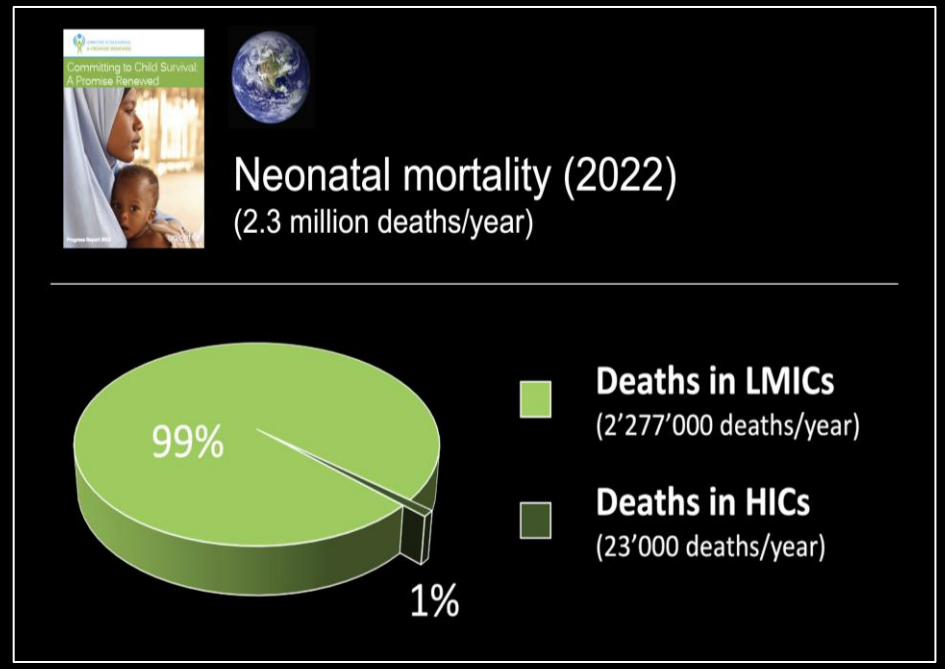
Friday, Aug. 9, 1963

HEADLINES

Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary Comments: Global Perspective





Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary Comments: Global Perspective

Rundu State Hospital (2015)

- Vaginal delivery
- BW 1600 g, GA 33 weeks
- Severe respiratory distress

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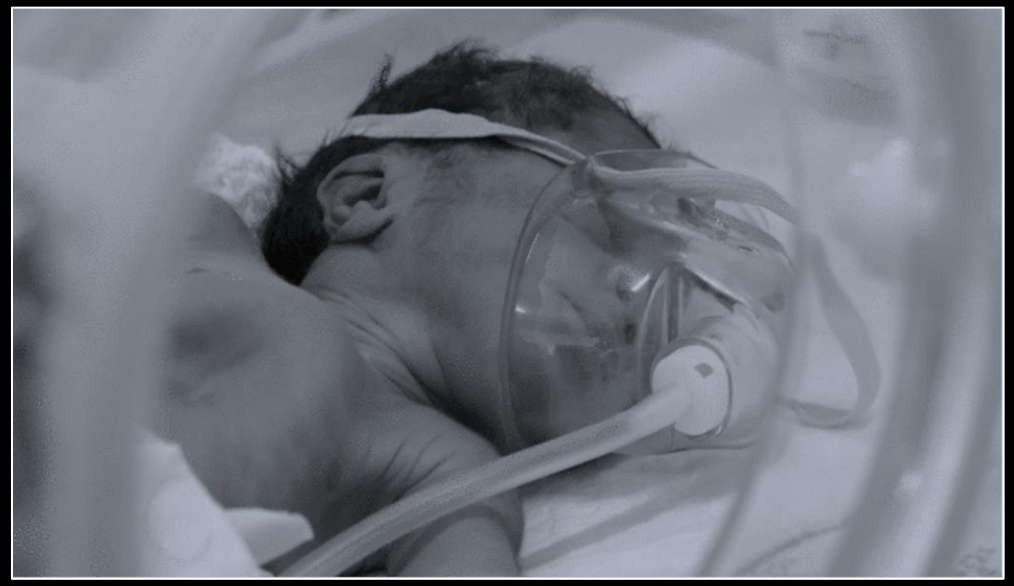
Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary Comments: Global Perspective



Died on DOL 4

No headlines…!

« Finally, the authors of these recommendations acknowledge that, globally, the availability of resources and, therefore, the quality of neonatal care continue to differ enormously, leading to wide gaps regarding the definition of what is considered to be the limit of viability. The authors agree that privileged countries should recognize these inequalities and support efforts to diminish the existing gaps. »

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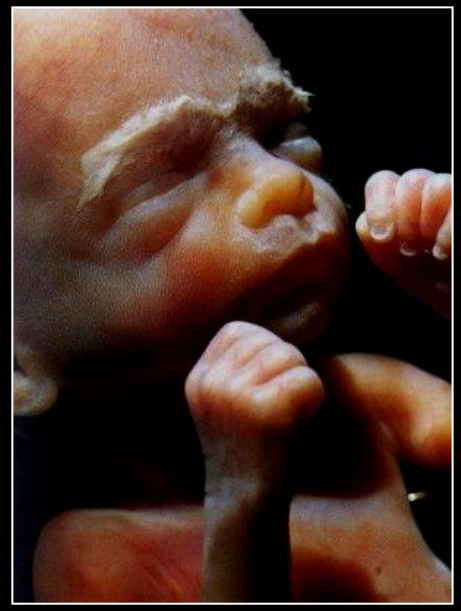
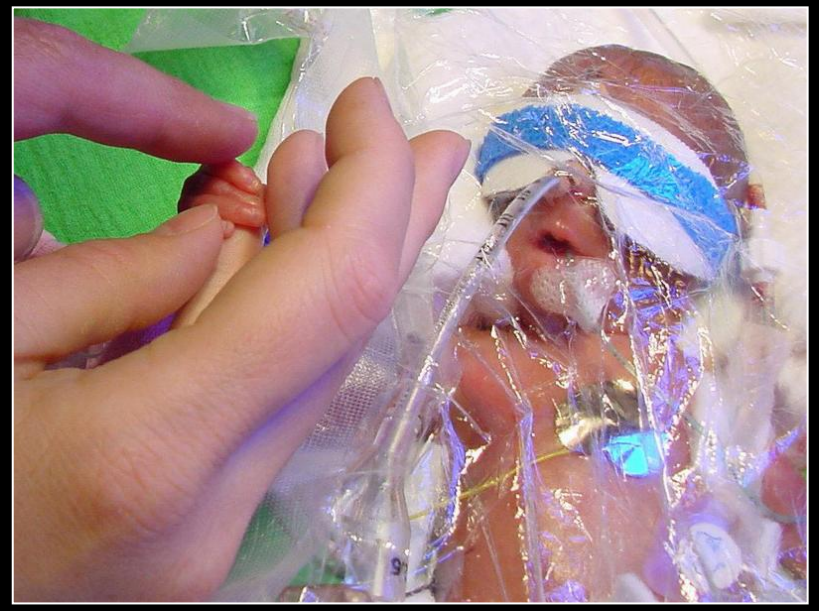
2025

Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary comments: Limit of Viability?



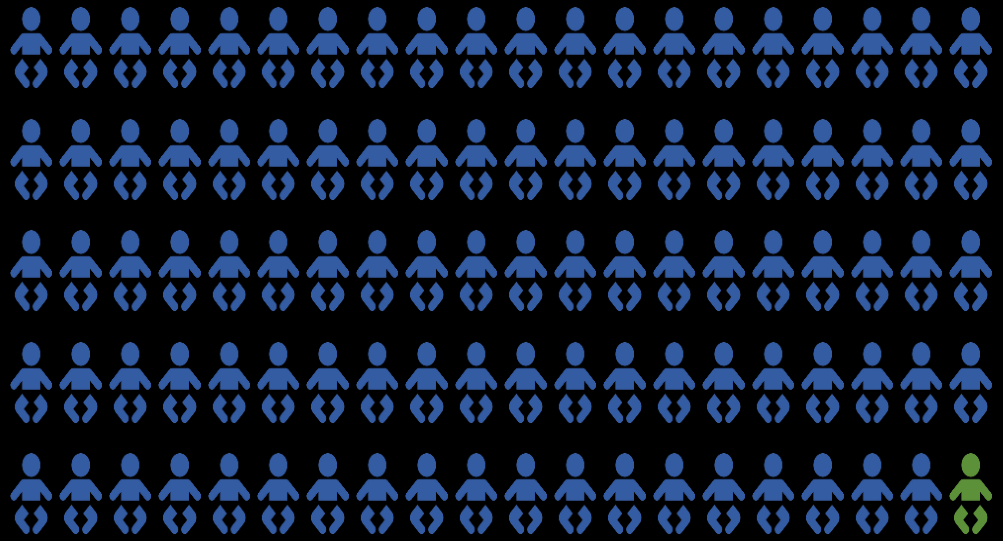


“How small is too small?” or “How much is too much?”

ANNUAL MEETING
of the Swiss Society of Neonatology
2025

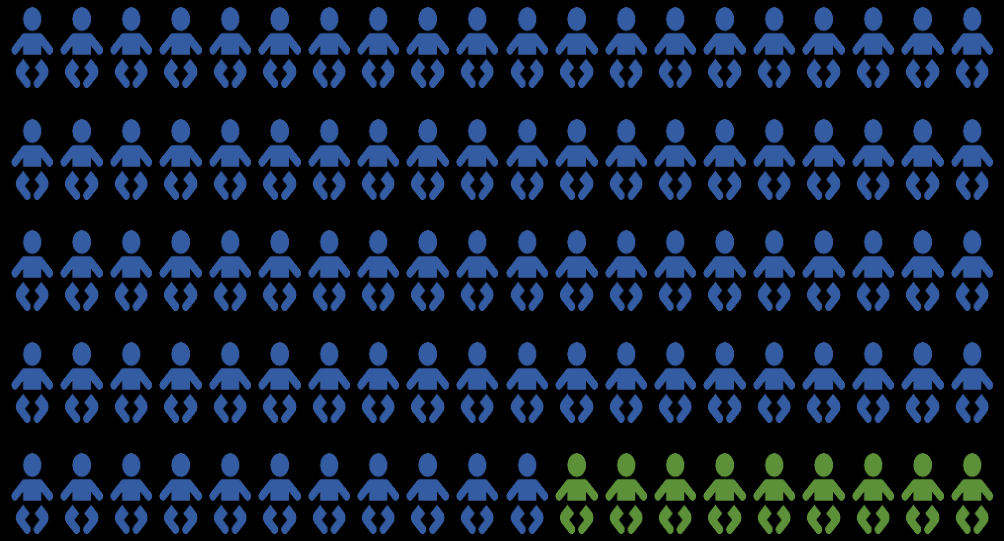
Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary comments: Limit of Viability?



Chances of survival 1%
Risk of death 99%

OR



Chances of survival 10%
Risk of death 90%

ANNUAL MEETING
of the Swiss Society of Neonatology
2025

Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary comments: Research

Extremely preterm infants: factors in decision-making – NRP 67

Attitudes and values among neonatal health care providers in Swiss level III NICUs and Swiss society regarding decision-making in extremely preterm infants

Jean-Claude Fauchère, Manya Hendriks, Sabine Klein, Thomas M. Berger, Ruth Baumann-Hölzle, and Hans Ulrich Bucher

FNSNF
SWISS NATIONAL SCIENCE FOUNDATION

National Research Programme Portrait (NRP 67)
End of Life

ANNUAL MEETING

of the Swiss Society of Neonatology

2025

Swiss recommendations for the perinatal care of extremely low gestational age neonates

Preliminary comments: Previous Versions

Informations / Hinweise Vol. 13 No. 2 2002 34

Empfehlungen zur Betreuung von Frühgeborenen an der Grenze der Lebensfähigkeit (Gestationsalter 22–26 SSW)

Zusammenfassung

Die Betreuung von Feten und Frühgeborenen an der Grenze der Lebensfähigkeit (22–26 Schwangerschaftswochen) muss multidisziplinär durch ein erfahrenes perinatologisches Team erfolgen. Dabei ist zu berücksichtigen, dass sowohl die eingeschränkte Präzision der Bestimmung des Gestationsalters als auch die biologische Variabilität das Vorgehen im individuellen Fall entscheidend beeinflussen können.

Die zu treffenden Entscheidungen sind komplex und von weitreichender Bedeutung. Sie werden in einem kontinuierlichen Dialog zwischen allen Beteiligten (Ärzte, Pflegepersonal und Eltern) erarbeitet und haben zum Ziel, die Massnahmen zu ergreifen, die im Interesse des Kindes als die besten erachtet werden.

Die Kenntnis aktueller, nach Gestationsalter abgestufter Mortalitäts- und Morbiditätsstatistiken und die Anwendung anerkannter ethischer Grundprinzipien bilden dabei die Basis für ein verantwortungsvolles Vorgehen. Die Kommunikation zwischen den beteiligten Entscheidungsträgern spielt eine zentrale Rolle.

Aufgrund der aktuell verfügbaren Daten über Mortalität und Langzeitmorbidität soll sich die Betreuung von Frühgeborenen mit einem Gestationsalter < 24 SSW in der Regel auf Palliativmassnahmen beschränken.

Bei Frühgeborenen mit einem Gestationsalter ≥ 24 SSW muss ein erfahrenes Neonatologie-Team im Gebärsaal entscheiden, ob der Einsatz intensivmedizinischer Massnahmen sinnvoll ist. Eine vorläufige intensivmedizinische Unterstützung (*provisional intensive care*) ermöglicht oft zu einem späteren Zeitpunkt eine umfassendere Beurteilung des kindlichen Zustandes, so dass eine Entscheidung bezüglich Fortsetzen oder Abbruch der intensivmedizinischen Massnahmen besser begründet werden kann.

Solange aufgrund engmaschiger Beurteilungen berechtigte Hoffnung darauf besteht, dass das Frühgeborene mit einer akzeptablen Lebensqualität überleben wird und die derzeit notwendigen Therapien zumutbar sind, werden die ergriffenen Massnahmen fortgesetzt.

Müssen das betreuende Team und die Eltern jedoch erkennen, dass das durch die Therapie zugemutete Leiden, gemessen am zu erwartenden Gewinn unverhältnismässig geworden ist, verlieren die intensivmedizinischen Massnahmen ihren Sinn und andere Aspekte der Betreuung (z.B. Einsatz von Opiaten zur Linderung von Schmerzen und Leiden) werden prioritär (*redirection of care*). Wird auf lebenserhaltende Interventionen verzichtet (primär oder sekundär), sollte alles getan werden, um dem Kind ein menschenwürdiges Sterben zu ermöglichen (*comfort care*) und die Eltern in der Sterbebegleitung zu unterstützen.

Einleitung

Diese Empfehlungen beziehen sich auf die Betreuung von Frühgeborenen mit einem Gestationsalter zwischen 22 und 26 Schwangerschaftswochen (SSW). Sie richten sich an Ärzte, Hebammen, Kinderkrankenschwestern und Mitglieder anderer Berufsgruppen, die bei der Betreuung von sehr unreifen Frühgeborenen mitwirken (zur sprachlichen Vereinfachung wird im folgenden Text bei Personenangaben nur die männliche Form gebraucht). Sie wurden im Auftrag der Schweizerischen Gesellschaft für Neonatologie durch eine Kommission von erfahrenen Spezialisten ausgearbeitet und von der Schweizerischen Gesellschaft für Gynäkologie und Geburtshilfe (SGGG), der Schweizerischen Gesellschaft für Pädiatrie (SGP) und der Schweizerischen Gesellschaft für Neonatologie (SGN) genehmigt.

Die Zentrale Ethikkommission (ZEK) der Schweizerischen Akademie der Medizinischen Wissenschaften (SAMW) unterstützt diese Empfehlungen.

Als Grundlage dienten unter anderem Empfehlungen europäischer, amerikanischer und kanadischer Fachgruppen[1–4] sowie die relevanten medizinisch-ethischen Richtlinien der Schweizerischen Akademie der Medizinischen Wissenschaften[5,6].

Hintergrund

Berechnung des Gestationsalters und biologische Variabilität

In der *International Classification of Disease* (10th revision) wird das Gestationsalter als das postmenstruelle Alter definiert und in Wochen und Tagen angegeben. Die Zeitperiode von zum Beispiel 25 Wochen und 0 Tagen (25 0/7 SSW) bis zu 25 Wo-

PAEDIATRICA

2001 (Peadiatrica)

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Original article

Trends and centre-to-centre variability in survival rates of very preterm infants (<32 weeks) over a 10-year-period in Switzerland

Thomas M Berger,[1] Martina A Steurer,[2] Andreas Woerner,[3] Philipp Meyer-Schiffer,[4] Mark Adams[4], for the Swiss Neonatal Network

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Received 10 September 2011 Accepted 14 December 2011

Published Online First 12 January 2012

ABSTRACT

Background The publication of Swiss guidelines for the care of infants at the limit of viability (22–25 completed weeks) was followed by increased survival rates in the more mature infants (25 completed weeks). At the same time, considerable centre-to-centre (CTC) differences were noted.

Objectives To examine the trend of survival rates of borderline viable infants over a 10-year-period and to further explore CTC differences.

Design Population-based, retrospective cohort study.

Setting All nine level III neonatal intensive care units (NICUs) and affiliated paediatric hospitals in Switzerland.

Patients 6532 preterm infants with a gestational age (GA) <32 weeks born alive between 1 January 2000 and 31 December 2009.

Main outcome measures Trends of GA-specific delivery room and NICU mortality rates and survival rates to hospital discharge were assessed. For CTC comparisons, centre-specific risk-adjusted ORs for survival were calculated in three GA groups: A: 23 0/7 to 25 6/7 weeks (n=976), B: 26 0/7 to 28 6/7 weeks (n=1943) and C: 29 0/7 to 31 6/7 weeks (n=3399).

Results Survival rates of infants with a GA of 25 completed weeks which had improved from 42% in 2000/2001 to 60% in 2009/2004 remained unchanged at 63% over the next 5 years (2005–2009). Statistically significant CTC differences have persisted and are not restricted to borderline viable infants.

Conclusions In Switzerland, survival rates of infants born at the limit of viability have remained unchanged over the second half of the current decade. Risk-adjusted CTC outcome variability cannot be explained by differences in baseline demographics or centre case loads.

What is already known on this topic

- Following the publication of Swiss recommendations for the care of borderline viable infants survival rates of infants at 25 completed weeks improved.
- In Switzerland, considerable centre-to-centre differences in survival rates of borderline viable infants have been noted in earlier studies.

What this study adds

- Since 2004, survival of live born extremely preterm infants with a GA of 24 and 25 completed weeks has not changed significantly.
- In Switzerland, considerable centre-to-centre differences in survival rates continue to persist and extend beyond the borderline viable preterm infant population.

Many national perinatal societies have published recommendations to support ethical decision making in the care of borderline viable infants.[1–10] The publication of the Swiss recommendations for the care of infants born at the limit of viability (22–25 completed weeks) in the year 2002 was followed by an increase in survival rates in the more mature extremely preterm infants (25 completed weeks) without increasing the rate of short-term complications. At the same time, significant centre-to-centre (CTC) differences in survival rates persisted despite the availability of national guidelines.[10] Because there were no significant differences in baseline population demographics between centres, it seemed likely that the observed differences were at least in part due to variations in ethical decision making.[10] In addition, other factors that have been linked to outcome, such as unit size (ie, case load) and organizational characteristics (eg, referral patterns, proportion of outborn infants and staffing) may also have played a role.

In this present study, we had two aims: first, we wanted to assess whether survival rates of extremely preterm infants have continued to improve in Switzerland. Second, we wanted to

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Arch Dis Child Fetal Neonatal Ed 2012;97:F323–F328. doi:10.1136/fnnonatal-2011-301008 F323

Centre-to-centre variability

Empfehlungen PAEDIATRICA Vol. 23 Nr. 1 2012

Perinatale Betreuung an der Grenze der Lebensfähigkeit zwischen 22 und 26 vollendeten Schwangerschaftswochen

Revision der Schweizer Empfehlungen aus dem Jahre 2002

T. M. Berger*, V. Bernet*, S. El Alama***, J.-C. Fauchère*, I. Hösli**, O. Irion**, C. Kind*, B. Latal***, M. Nelle*, R. E. Pfister*, D. Surbek**, A. C. Truttmann*, J. Wisser**, R. Zimmermann**

Einleitung

Die ersten Empfehlungen zur Betreuung von Frühgeborenen an der Grenze der Lebensfähigkeit in der Schweiz wurden im Jahre 2002 veröffentlicht[1]. Als Grundlage dienten damals unter anderem Empfehlungen europäischer[2, 3] und kanadischer Fachgruppen[4], sowie die relevanten medizinisch-ethischen Richtlinien der Schweizerischen Akademie der Medizinischen Wissenschaften (SAMW)[5, 6]. Revidierte Empfehlungen aus Nordamerika und Europa[7–10], neue Empfehlungen aus weiteren Ländern[11–13] und neue Daten zu Mortalität und Morbidität[14–17], insbesondere auch aus der Schweiz[18, 19], haben Anlass dazu gegeben, die Empfehlungen für die Schweiz zu überarbeiten.

Nationale Empfehlungen sind notwendig, da ethische Entscheidungsfindungen nicht allein auf allseits anerkannten ethischen Prinzipien basieren, sondern durch gesellschaftliche, ökonomische und legale Überlegungen mit beeinflusst werden. Qualitativ gute Daten zu erzielbaren Langzeitresultaten sind ebenfalls wichtig und die verfügbaren Studien belegen, dass die Resultate zwischen verschiedenen Ländern erheblich variieren[18–20]. Aus diesen Gründen ist davon auszugehen, dass Empfehlungen aus anderen Ländern nicht ohne weiteres auf die Schweiz übertragbar sind. Eine Akzeptanz der Empfehlungen ist aber anzustreben, um die Behandlungsvariabilität zwischen den Zentren, die Schwangere mit hohem Risiko für eine Frühgeburt und Frühgeborene an der Grenze der Lebensfähigkeit in der Schweiz betreuen, zu minimieren.

Die vorliegenden Empfehlungen wurden durch eine Kommission von erfahrenen Spezialisten ausgearbeitet. Die vorgeschlagenen Änderungs- und Ergänzungsvorschläge wurden an fünf Workshops in den Jahren 2009 und 2010 ausführlich diskutiert. Die neuen Empfehlungen wurden von allen Mitgliedern der Arbeitsgruppe gutgeheissen und 2011 von der Schweizerischen Gesellschaft für Gynäkologie und Geburtshilfe (SGGG), der Akademie für fetomaternale Medizin (AFMM), dem Schweizerischen Hebammenverband (SHV), der Schweizerischen Gesellschaft für Pädiatrie (SGP), der Schweizerischen Gesellschaft für Neonatologie (SGN) und der Schweizerischen Gesellschaft für Entwicklungspädiatrie (SGEP) genehmigt. Wie bereits im Jahre 2002 unterstützt die Zentrale Ethikkommission (ZEK) der SAMW die neuen Empfehlungen. Die Empfehlungen wurden im Swiss Medical Weekly in englischer Sprache publiziert[20] und können über www.smw.ch oder via PubMed online gelesen oder als PDF heruntergeladen werden (open access). An dieser Stelle sollen lediglich die wesentlichen Neuerungen hervorgehoben und eine deutsche Version der Zusammenfassung präsentiert werden.

Was ist neu?

Im Vergleich zur Version aus dem Jahre 2002 enthalten die neuen Empfehlungen evidenzbasierte Informationen über geburtsmedizinische Massnahmen, insbesondere zur fetalen Lungenreifung und zum Stellenwert der Sectio-Entbindung. In den alten Empfehlungen basierten die vorgeschlagenen Vorgehensweisen in erster Linie auf dem Gestationsalter. In den revidierten Empfehlungen werden neben dem Gestationsalter zusätzliche, pränatal erhebare Faktoren, die einen erheblichen Einfluss auf die Prognose haben, miberücksichtigt (Tabelle). Die Grauzone wird enger definiert, ihre Grenzen aber werden weniger absolut gesehen, um eine individualisierte Vorgehensweise an der

Gestationsalter (SSW)	Geschlecht	Geburtsgewicht	Einling	LRI	Überlebensrate[2]	Überleben ohne sehr schwere Behinderung[1, 3]	Überleben ohne schwere Behinderung[1, 3]
24 0/7–24 6/7	m	600 g	nein	nein	27%	15%	7%
24 0/7–24 6/7	w	600 g	nein	nein	36%	24%	14%
24 0/7–24 6/7	w	800 g	nein	nein	63%	48%	34%
24 0/7–24 6/7	w	800 g	ja	nein	67%	53%	39%
24 0/7–24 6/7	w	800 g	ja	ja	82%	71%	57%

Tabelle: Einfluss von pränatal erueirbaren Zusatzfaktoren (Geschlecht, Lungenreifungsinduktion (LRI), Einling/Mehrling, Geburtsgewicht) auf Wahrscheinlichkeit eines Überlebens ohne schwere oder sehr schwere Behinderung (nach Tyson et al. [21])

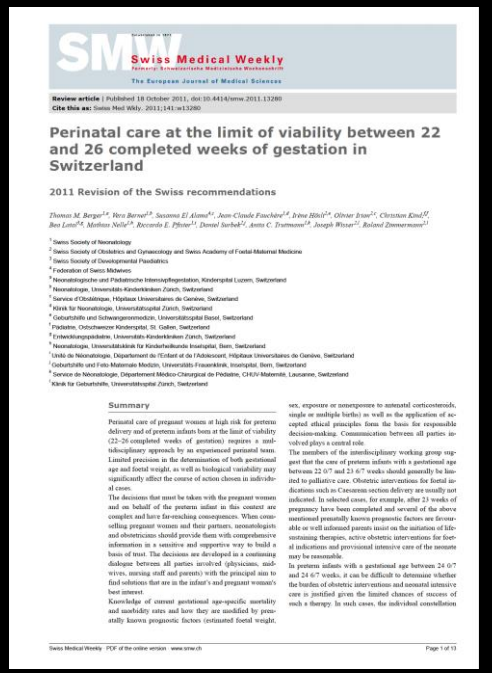
1) in Prozent aller Lebendgeborenen (n = 4444)
2) sehr schwere Behinderung (profound impairment) im Alter von 18–22 Monaten:
3) schwere Behinderung (severe impairment) im Alter von 18–22 Monaten:

- Bayley score < 50 (nicht testbar)
- level 5 für GMF (gross motor function)
- PDI und/oder MDI ≤ 70
- mittelschwere bis schwere CP
- bilaterale Blindheit
- bilaterale Schwerhörigkeit, die Hörgeräte erforderlich macht

Diese Schätzungen basieren auf standardisierten Untersuchungen von ehemaligen Frühgeborenen im Alter von 18–22 Monaten, die zwischen 1998 und 2003 in einem Neonatal Research Network Zentrum der NICHD mit einem Gestationsalter von 22–25 SSW und einem Geburtsgewicht zwischen 401 und 1000 g geboren wurden. Outborns und Frühgeborene mit schweren angeborenen Fehlbildungen wurden ausgeschlossen.

10

2011 (Paediatrica)



Swiss Medical Weekly

The European Journal of Medical Sciences

Review article | Published 18 October 2011, doi:10.4414/smw.2011.13280
Cite this as: Swiss Med Wkly. 2011;141:w13280

Perinatal care at the limit of viability between 22 and 26 completed weeks of gestation in Switzerland

2011 Revision of the Swiss recommendations

Thomas M. Berger[1,2], Vera Bernet[1,3], Susanna El Alama[4,5], Jean-Claude Fauchère[1,6], Irène Hösli[7,8], Olivier Irion[9], Christian Kind[10], Bea Latal[11,6], Mathias Nelle[12], Riccarda E. Pfister[13], Daniel Surbek[14], Anita C. Truttmann[15], Joseph Wisser[16], Roland Zimmermann[17]

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[2] Swiss Society of Obstetrics and Gynaecology and Swiss Academy of Foetal-Maternal Medicine
[3] Swiss Society of Developmental Paediatrics
[4] Federation of Swiss Midwives
[5] Neonatologische und Pädiatrische Intensivpflegestation, Kinderspital Luzern, Switzerland
[6] Neonatologie, Universitäts-Kinderkliniken Zürich, Switzerland
[7] Service d'Obstétrique, Hôpitaux Universitaires de Genève, Switzerland
[8] Klinik für Neonatologie, Universitätsspital Zürich, Switzerland
[9] Geburtshilfe und Schwangerenmedizin, Universitätsspital Basel, Switzerland
[10] Pädiatrie, Ostschweizer Kinderspital, St. Gallen, Switzerland
[11] Entwicklungspädiatrie, Universitäts-Kinderkliniken Zürich, Switzerland
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Summary

Perinatal care of pregnant women at high risk for preterm delivery and of preterm infants born at the limit of viability (22–26 completed weeks of gestation) requires a multidisciplinary approach by an experienced perinatal team. Limited precision in the determination of both gestational age and foetal weight, as well as biological variability may significantly affect the course of action chosen in individual cases.

The decisions that must be taken with the pregnant woman and on behalf of the preterm infant in this context are complex and have far-reaching consequences. When counselling pregnant women and their partners, neonatologists and obstetricians should provide them with comprehensive information in a sensitive and supportive way to build a basis of trust. The decisions are developed in a continuing dialogue between all parties involved (physicians, midwives, nursing staff and parents) with the principal aim to find solutions that are in the infant's and pregnant woman's best interest.

Knowledge of current gestational age-specific mortality and morbidity rates and how they are modified by prenatally known prognostic factors (estimated foetal weight, sex, exposure or nonexposure to antenatal corticosteroids, single or multiple births) as well as the application of accepted ethical principles form the basis for responsible decision-making. Communication between all parties involved plays a central role.

The members of the interdisciplinary working group suggest that the care of preterm infants with a gestational age between 22 0/7 and 23 6/7 weeks should generally be limited to palliative care. Obstetric interventions for foetal indications such as Caesarean-section delivery are usually not indicated. In selected cases, for example, after 23 weeks of pregnancy have been completed and several of the above mentioned prenatally known prognostic factors are favourable or well informed parents insist on the initiation of life-sustaining therapies, active obstetric interventions for foetal indications and provisional intensive care of the neonate may be reasonable.

In preterm infants with a gestational age between 24 0/7 and 24 6/7 weeks, it can be difficult to determine whether the burden of obstetric interventions and neonatal intensive care is justified given the limited chances of success of such a therapy. In such cases, the individual constellation

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2011 (Swiss Med Wkly)

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Development of New Recommendations

SWISS RECOMMENDATIONS FOR THE PERINATAL CARE OF EXTREMELY LOW GESTATIONAL AGE NEONATES (ELGANs)

Revision of the 2011 Swiss guidelines

Authors (in alphabetical order):
* Adams M,
* Berger TM,
Diebold C,
Dinten B,
* Fauchère JC,
Gubler D,
Hendriks M,
* Hodel M,
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Editorial responsibility:
Berger TM, Fauchère JC

Consultation
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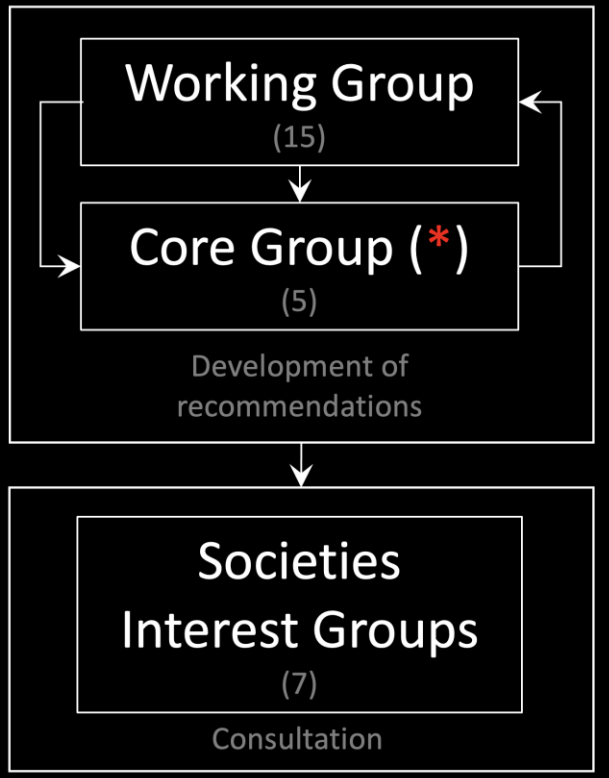
- Swiss Society of Gynaecology and Obstetrics (SSGO) represented by the Swiss Academy for Feotomaternal Medicine (AFMM) (contact: Hodel, M)
- Swiss Society of Paediatrics (SSP) (contact: Bachmann, I)
- Swiss Society for Developmental Paediatrics (SSDP) (contact: Natalucci, G)
- Paediatric Palliative Care Network Switzerland (PPCN CH) (contact: Gubler, D)
- Swiss Federation of Midwives (contacts: Steiner A, Diebold C)
- Parent representatives from Né Trop Tôt (contact: Nguyen, L) and Frühchen Schweiz (contact: Hediger, D)



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What is new?

No risk assessment based on GA alone, except…

« The care of preterm infants with a gestational age below 23 0/7 (as confirmed by first trimester ultrasound scan) should be limited to comfort-focused palliative care. »

Swiss recommendations for the perinatal care of extremely low gestational age neonates

What is new?

Individualised risk assessment by experienced interdisciplinary team

Non-modifiable risk factors

- Foetal growth restriction
- Foetal sex
- Plurality
- Foetal malformations
- Chorioamnionitis

Modifiable risk factors

- Antenatal corticosteroids
- $MgSO_4$
- Location of birth
- Initial stabilisation

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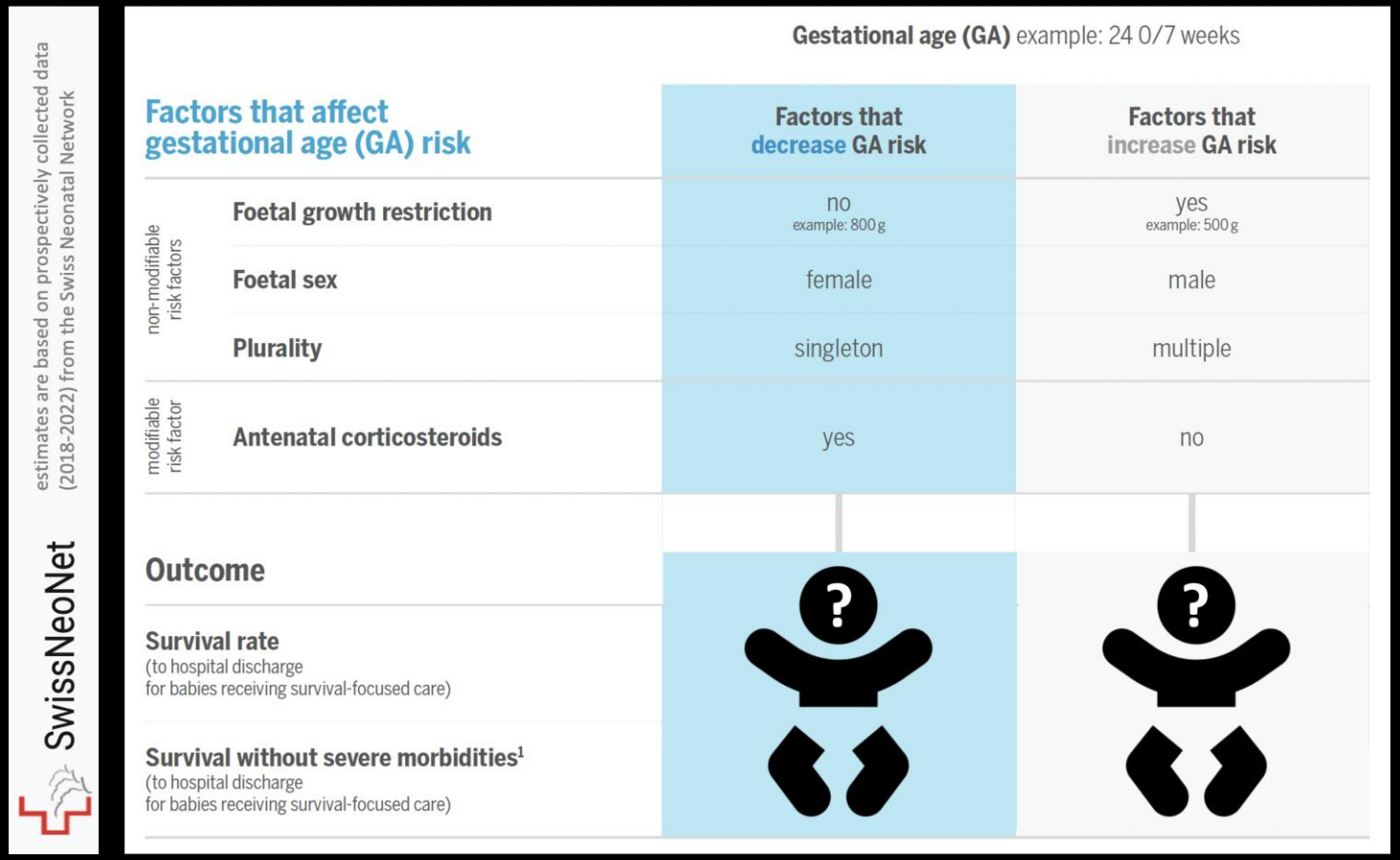

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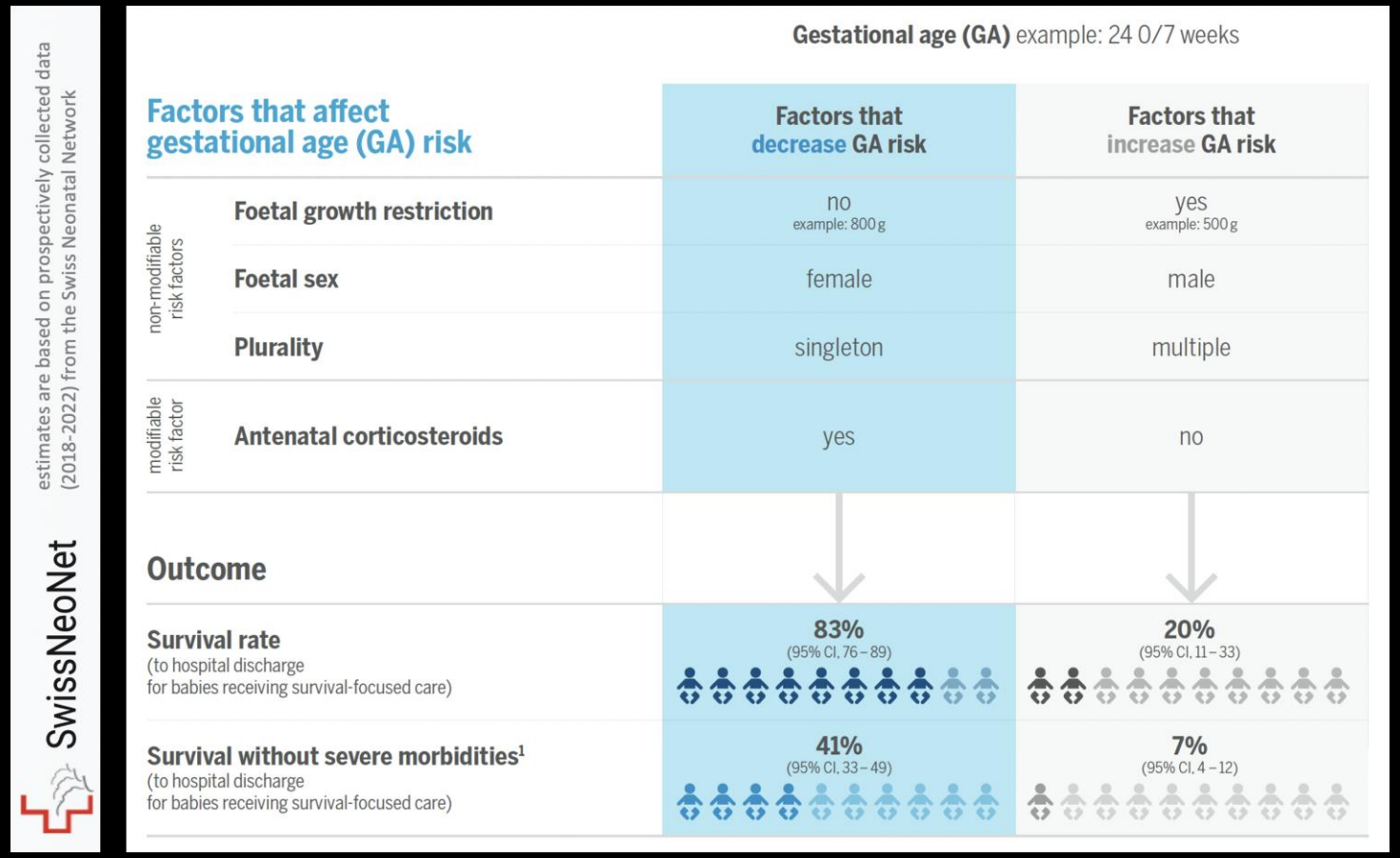

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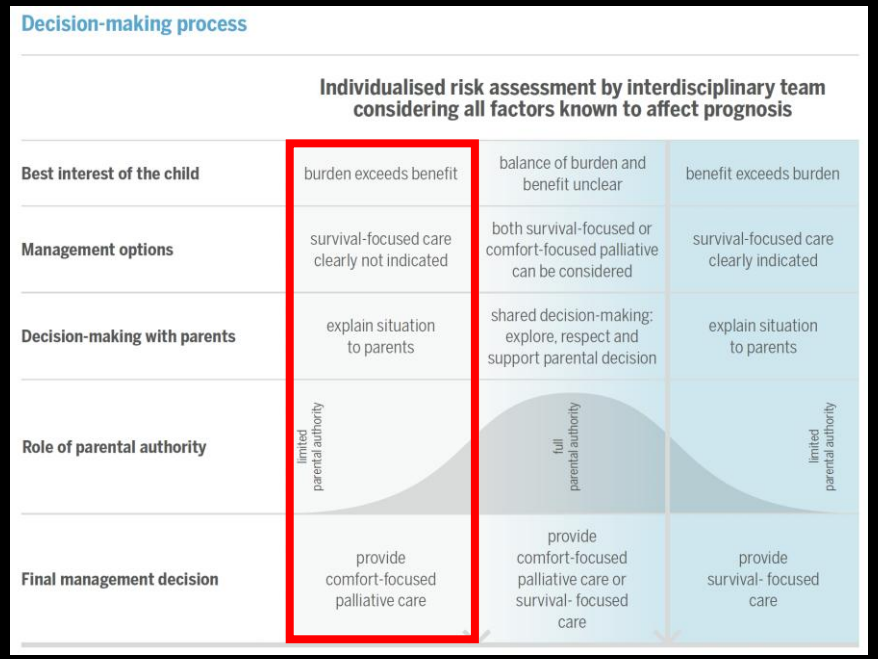
What is new?

Decision-making process and parental authority



Trajectory A

- Burden clearly exceeds benefit
- Survival-focused care clearly not indicated
- Limited parental authority
- Provide comfort-focused palliative care

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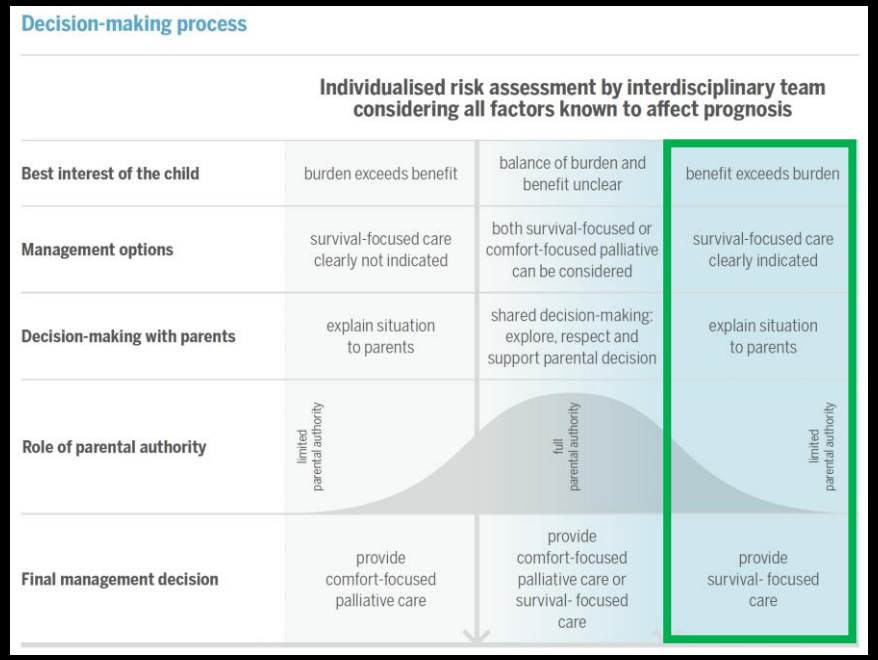
What is new?

Decision-making process and parental authority



Trajectory C

- Benefit clearly exceeds burden
- Survival-focused care clearly indicated
- Limited parental authority
- Provide survival-focused care

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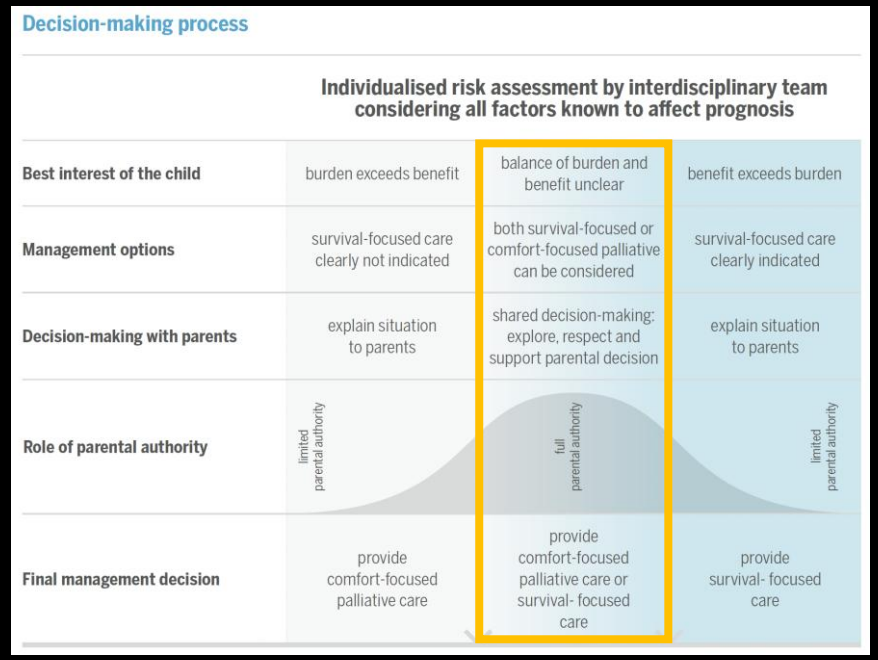
What is new?

Decision-making process and parental authority



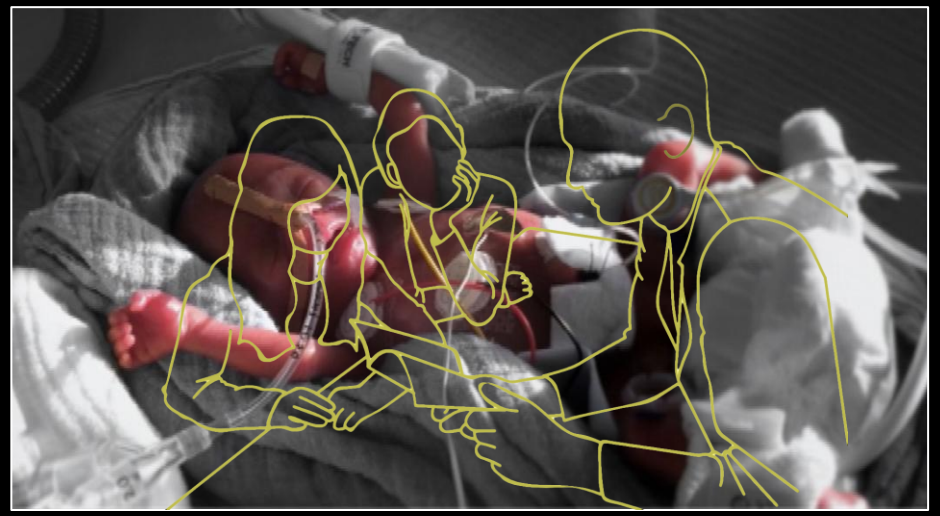
Trajectory B

- Balance of burden and benefit unclear
- Both survival-focused or comfort-focused palliative care can be considered
- Full parental authority
- Provide comfort-focused palliative or survival-focused care

Swiss recommendations for the perinatal care of extremely low gestational age neonates

What is new?

Shared decision-making (SDM)



- Interdisciplinary approach (*one voice*)
- Senior staff: experience & competence
- Knowledge of current national & local outcome data (Outcome Calculator)
- SDM process requires time and effort
- Active role of parents - bidirectional exchange
- Exploration of parental values & perspectives
- Accept and support parental decision

Swiss recommendations for the perinatal care of extremely low gestational age neonates

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What is new?

Obstetrical aspects

Comfort-focused palliative care

- No foetal surveillance
- No obstetrical interventions (e.g., Caesarean section) for foetal indications

Survival-focused care

- Consultation at a level III perinatal centre (< 22 0/7 weeks)
- Referral to a level III perinatal centre (≥ 22 0/7 SSW) to optimise modifiable risk factors (e.g., ANC, tocolysis, ABx following PPROM, cervical cerclage, foetal monitoring, mode of delivery, delayed cord clamping)

Swiss recommendations for the perinatal care of extremely low gestational age neonates

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What is new?

Neonatal aspects

Comfort-focused palliative care

- Inform parents that infant might show signs of life
- Do not separate infant from parents
- Minimise potential suffering (i.e., provide warmth, skin-to-skin contact, swaddling, opiates if needed)
- Also applies to the care of infants following redirection of care

Survival-focused care

- Delivery must be attended by an experienced neonatology team
- No *a priori* exclusion of interventions considered to be effective in more mature infants (e.g., lung protective respiratory support, vascular access, continuous monitoring, cardiovascular support, parenteral nutrition)

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What is new?

Appendix I: Recent outcome data

Gestational age (weeks)	Switzerland 2019-2023 SNN[10] (N = 710)	USA 2013-2018 NICHD[67] (N = 4635)	Japan 2008-2012 NDNJ[69] (N = 1839)	Sweden 2004-2007 Express[68] (N = 501)	France 2011 EPIPAGE 2[66] (N = 641)	Norway 2013-2014 NEPS2[71] (N = 191)	UK 2006 EPICure 2[70] (N = 1454)	Netherlands 2018-2020 EPI-DAF[72] (N = 568)
Denominator	**All liveborn infants**							
22 0/7 - 22 6/7	100%	81%	54%	90%	100%	82%	98%	-
23 0/7 - 23 6/7	73%	51%	27%	48%	99%	71%	81%	-
24 0/7 - 24 6/7	37%	30%	15%	33%	69%	44%	60%	58%
25 0/7 - 25 6/7	18%	21%	-	19%	41%	16%	34%	31%

Gestational age (weeks)	Switzerland 2019-2023 SNN[10] (N = 533)	USA 2013-2018 NICHD[67] (N = 4117)	Japan 2008-2012 NDNJ[69] (N = 1796)	Sweden 2004-2007 Express[68] (N = 432)	France 2011 EPIPAGE 2[66] (N = 405)	Norway 2013-2014 NEPS2[71] (N = 168)	UK 2006 EPICure 2[70] (N = 1265)	Netherlands 2018-2020 EPI-DAF[72] (N = 485)
Denominator	**Infants receiving survival-focused care**			**Infants admitted to a neonatal intensive care unit**				
22 0/7 - 22 6/7	100%	70%	49%	74%	100%	40%	84%	-
23 0/7 - 23 6/7	42%	44%	25%	35%	86%	65%	70%	-
24 0/7 - 24 6/7	31%	29%	15%	27%	49%	42%	53%	46%
25 0/7 - 25 6/7	17%	20%	-	17%	36%	14%	31%	25%

All liveborn infants
23 0/7 - 23 6/7 weeks (CH): MR 73%

Infants receiving survival-focused care
23 0/7 - 23 6/7 weeks (CH): MR 42%

Importance of denominator used

Swiss recommendations for the perinatal care of extremely low gestational age neonates

What is new?

Appendix I: Recent outcome data

Gestational age 23 0/7 - 23 6/7 weeks	Mortality rates	Survival with severe[a] impairment	Survival with moderate[b] impairment	Survival without severe or moderate impairment
Denominator	All liveborn infants	Survivors at follow-up		
SNN[10]	90%	29%	21%	50%
EXPRESS[94]	50%	22%	35%	43%
EPIPAGE 2[93]	99%	-	-	-

Gestational age 24 0/7 - 24 6/7 weeks	Mortality rates	Survival with severe[a] impairment	Survival with moderate[b] impairment	Survival without severe or moderate impairment
Denominator	All liveborn infants	Survivors at follow-up		
SNN[10]	50%	11%	26%	63%
EXPRESS[94]	35%	19%	21%	60%
EPIPAGE 2[93]	69%	34%		66%

Mortality and impairment rates

Switzerland (2013-2017) vs Sweden & France

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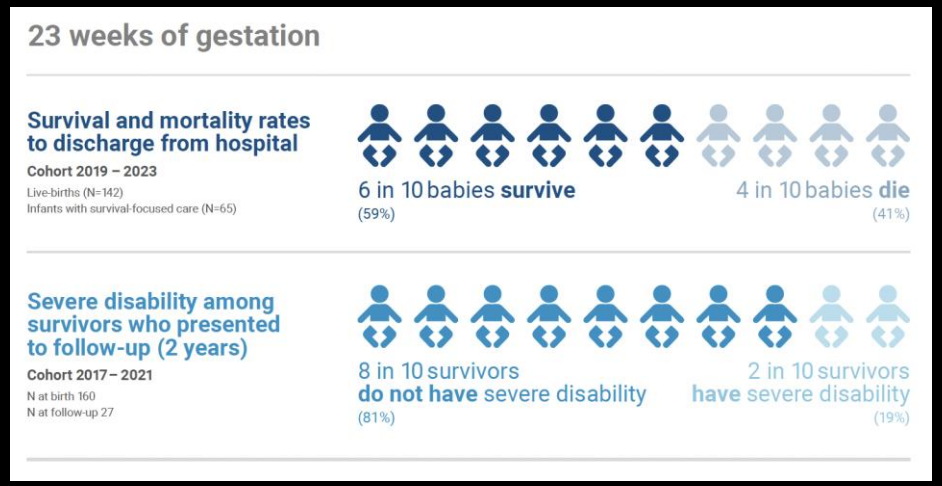
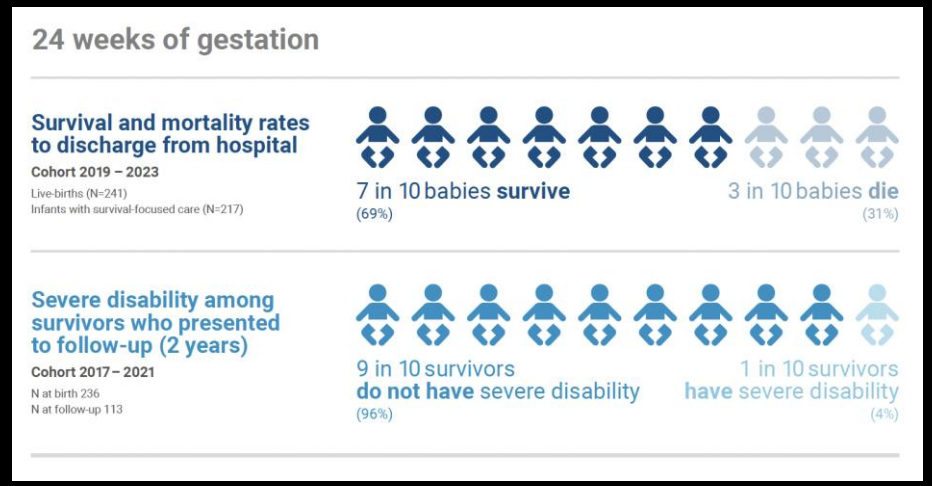
What is new?

Appendix II: Visual aids





Avoid message framing

(mention both chances of survival and risk of mortality)

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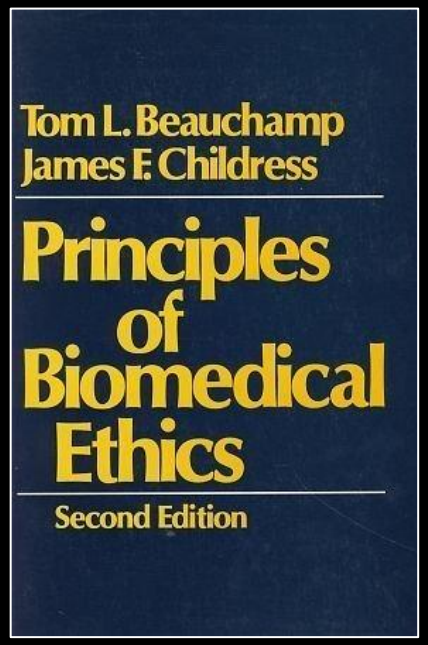
What is new?

Appendix III: Ethical decision-making and SDM



Patient autonomy
- parental authority

Beneficence

Nonmaleficence

Justice
- global view

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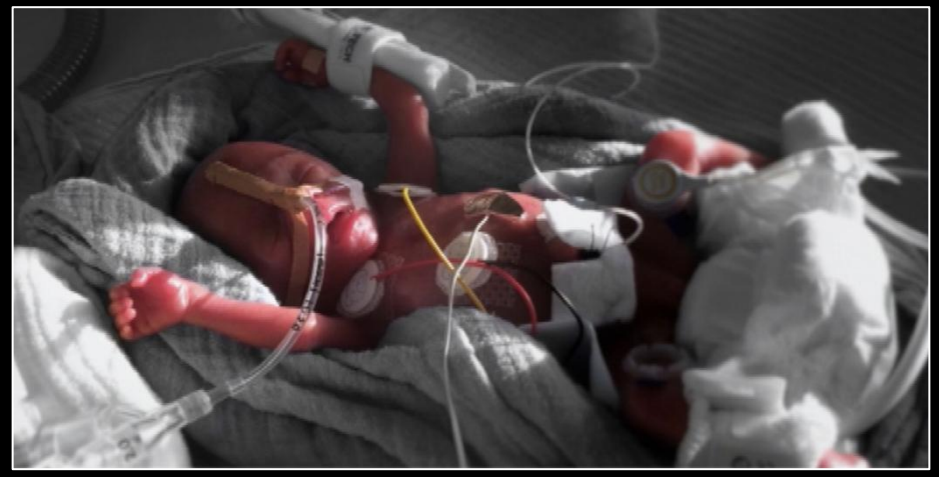
THANK YOU FOR YOUR ATTENTION!



ANY QUESTIONS?