



SAVING LIVES AT BIRTH

epitel

Mark Lehmkuhle - CEO
lehmkuhle@epitel.com



Epilog

MEDICAL-GRADE EEG MONITORING ANYWHERE

epitel

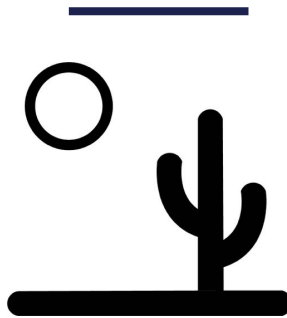
DIAGNOSING BRAIN INJURY IS TIME-SENSITIVE

1 in 1000

NEONATES REQUIRE LIFE-SAVING
RESUSCITATION¹

Hypoxic-ischemic encephalopathy
is #1 killer of neonates worldwide²

6-hour window of therapeutic
opportunity³



NEUROLOGY DESERTS

85% of births in US are in
community & rural hospitals⁴

20 states with less than 10
neurologists per 10,000
neurology patients⁵



LIFE-THREATENING

>50% neonates suspect of brain injury
transported to tertiary hospitals⁶

Therapeutic hypothermia carries its
own risk of mortality⁷

⁷ Polderman KH, and Herold I., 2009. Crit Care Med. 37(3):1101-20.

¹ Marcin JP, et. al., 2016. Pediatr Res.79(1-2):169-76.

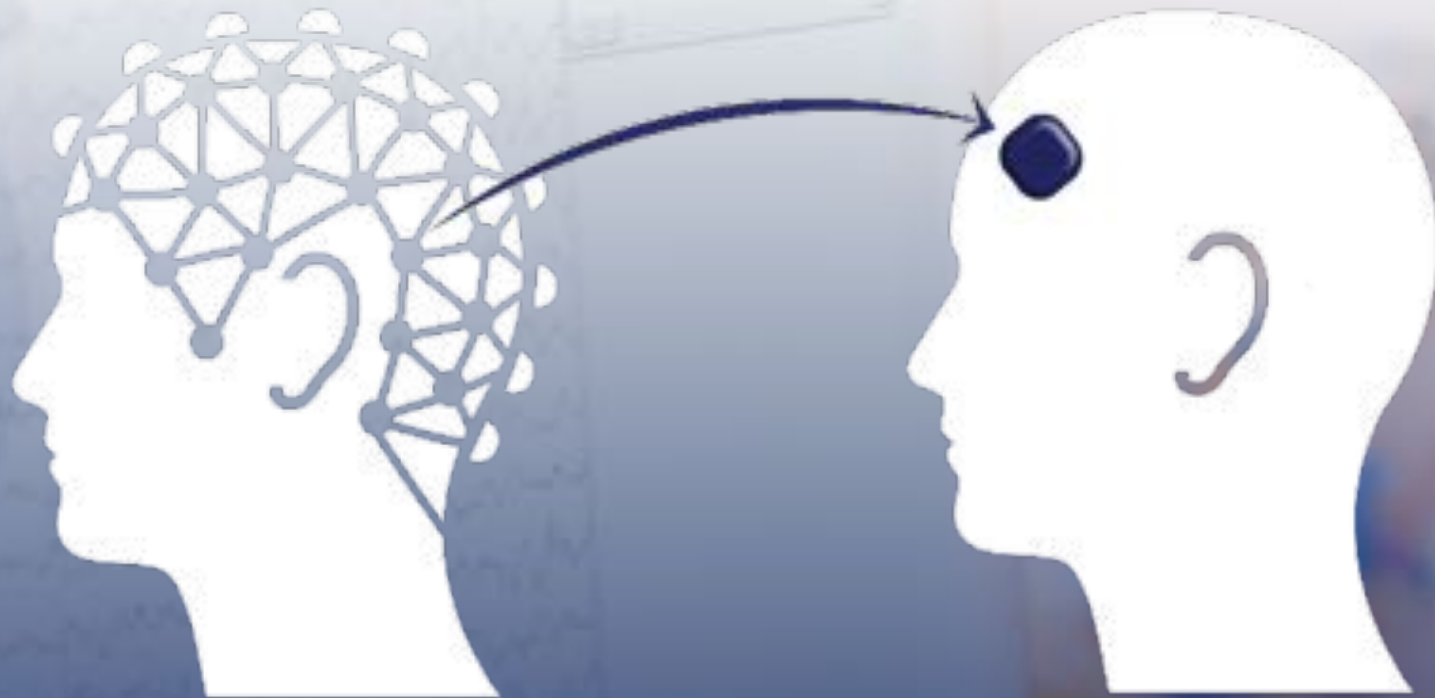
² Lawn JE et. al., 2007. Health Res Policy Syst 5:4.

³ Kattwinkel J, et. al., 2011. Circulation. 124(15):e406.

⁴ <https://www.aha.org/statistics/fast-facts-us-hospitals>

⁵ Rao A, Manteau-Rao M., et. al., 2017. Alzheimer's and Dementia. 13(7),Supplement, 509.

⁶ Fishe JN, et. al., 2018. Prehosp Emerg Care. 22(1):41-49.



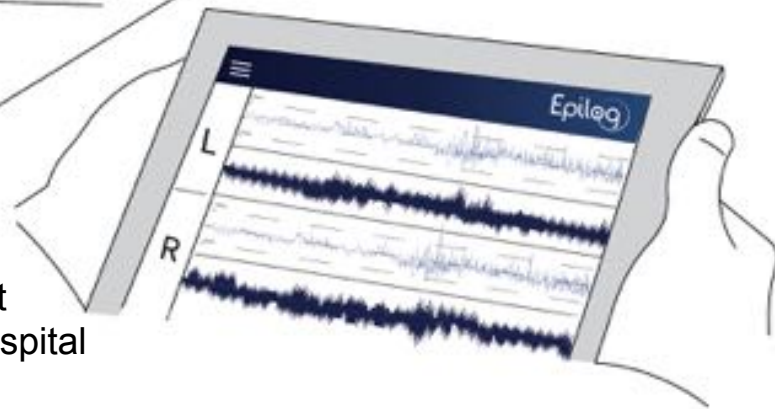
**EEG is the Gold Standard, but
is only available in the NICU**

**Epilog monitors EEG & aEEG
anywhere and at any time**



Delivery Room in
Community
Hospital

Neonatologist
In Tertiary Hospital



epitel

MEET THE TEAM

100% grant funded to-date

\$5.0M preclinical grants

\$2.8M clinical grants



MARK LEHMKUHLE

Founder, CEO/CTO

23+ years neural engineering,
epilepsy, signal processing



JEAN WHEELER

COO

5 FDA clearances; 10+ years
med device startups



MICHAEL ELWOOD

Director of Engineering

22+ years low-power
miniature medical
electronics



MITCHELL FRANKEL

Signal Processing Engineer

12+ years neural and biorobotic
engineering - biomedical device
development and testing



COMPREHENSIVE VALUE



Community Hospitals

Reduced misdiagnosis & delayed diagnosis

Reduce unnecessary transport

Eliminate unnecessary hypothermia



Neonatologist

Improved patient care and workflow

Reimbursement

Satisfaction



Payers

Reduced cost of morbidity & mortality

Tele-EEG



Community Hospital

← Clinical Symptoms Only

Seizures & Background EEG →

NICU



natus.



REVENUE MODEL

REIMBURSABLE

CPT 99184 (6.04 RVU)

AFFORDABLE

\$200/USE

AVERAGE MARGIN

\$116/USE



Device Sales

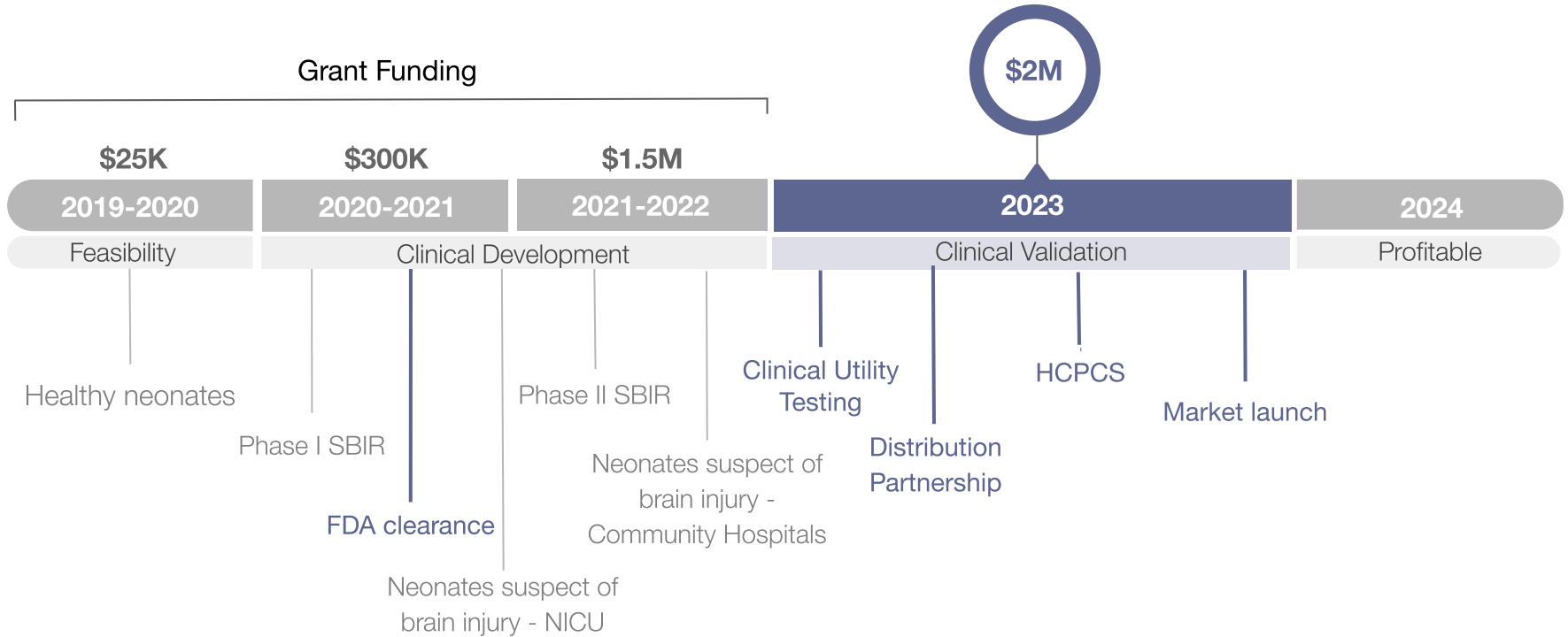
\$200/USE



Epilog Tablet

\$2200/year

DEVELOPMENT TIMELINE



SMART HEALTH ECONOMICS

Shift the balance of care to the community hospital

Neonates

Reduce mortality

Reduce lifetime of morbidity

Neonatologists

CPT 99184 - 6.04 RVU

Improved patient care and workflow

Payers

Save \$ on lifetime of morbidity

Save \$ on unnecessary care,
misdiagnosis, delayed diagnosis

Hospital Networks

Reduce unnecessary transport

Eliminate risk of unneeded
hypothermia



Timeline

2019 - Feasibility

2020 - Phase I SBIR

2022 - Phase II SBIR

2023 - Clinical Validation

2023 - Market Launch

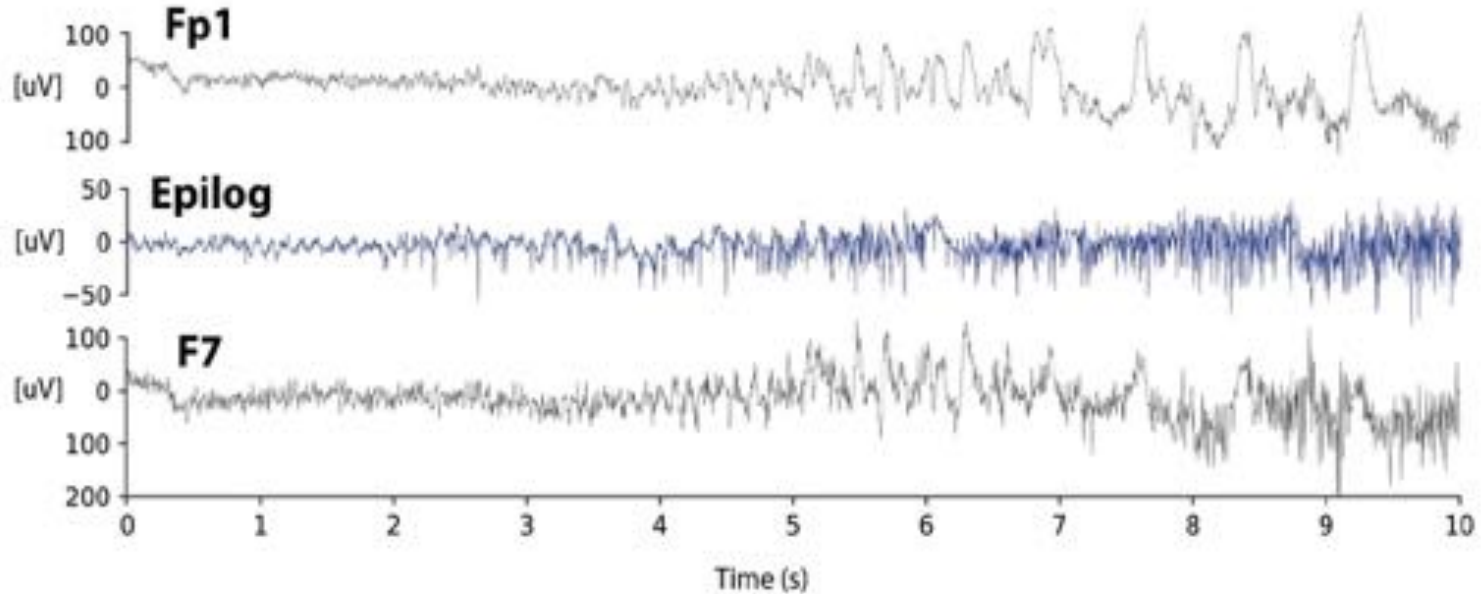
lehmkuhle@epitel.com





APPENDIX

EPILOG EEG



Data are 10 s snippet of the beginning of a focal onset seizure with motor impairment and intact awareness (ILAE 1A1) recorded from Epitel's single-channel Epilog in the EMU at the University of Colorado. Traces are EEG from an adult patient admitted for video-EEG monitoring as standard-of-care. Epilog was placed on the left forehead roughly between the Fp1 and F7 electrodes (shown for reference). The seizure was verified by epileptologists with full-montage review. Note the amplitude difference between Epilog and wired EEG as a result of the 18 mm Epilog electrode dipole, filtering, and resolution differences between modalities.

IP STRATEGY



Data

- Largest and Fastest Growing EEG Database
- Data provides greatest value
347 patient days and counting



Trade Secrets

- Seizure Detection
Algorithm Trade Secrets
- Epilog awesome sauce
 - AI based



Patent

- Patent Pending Recording
Technology
- Protects wearable
US20170215759A1



ideaship

Actively engaging with Ideaship to refine IP strategy

IP STRATEGY

Actively engaged with world-leading IP strategy experts to protect Eptel's core innovations



Joint Team of GTT Group and Panasonic IP America

GTT | GROUP *Owner and Manager*

World's Leading Patent Analysis and
Patent Transaction Firm

PIPCA *Strategic Partner*

Subsidiary of Panasonic IP Section,
World Largest Corporate IP Section

As an equity partner, Ideaship is providing:

- Directed Prosecution – Review current patent application
- Invention Harvesting / Innovation Catalog
- Filing of Foundational Patent
 - External patent counsel funded by Ideaship
- Patent Valuation Deck
- Patent Roadmap / Patent Strategy
- Venture Financing Network
- Global Strategic Corporate Network