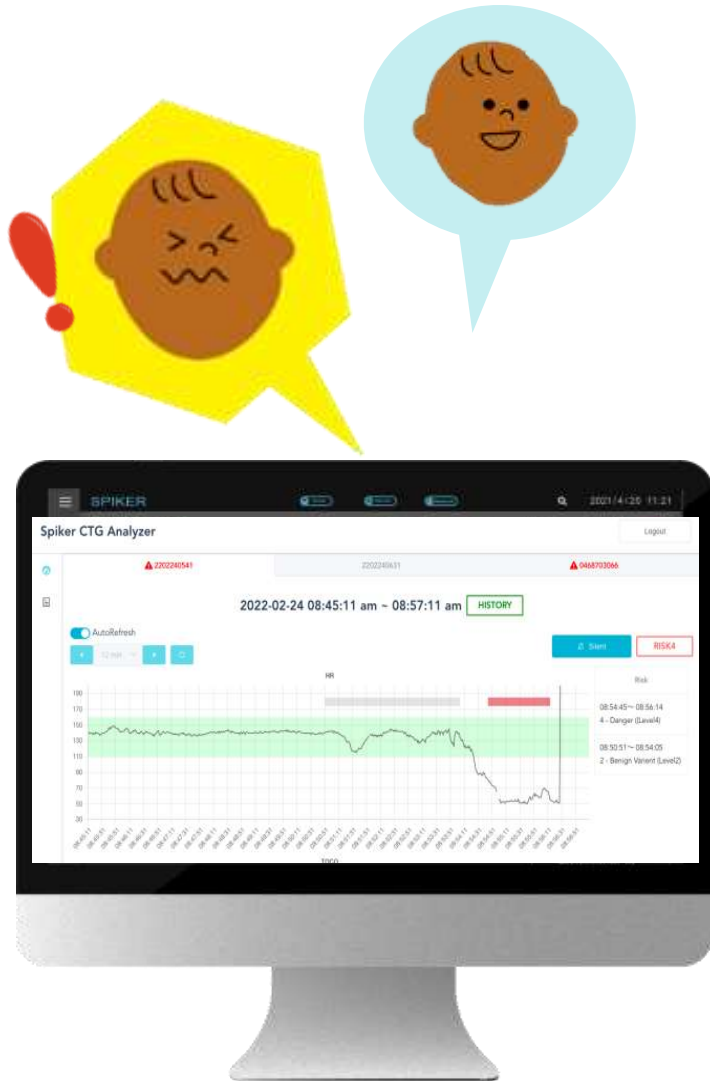
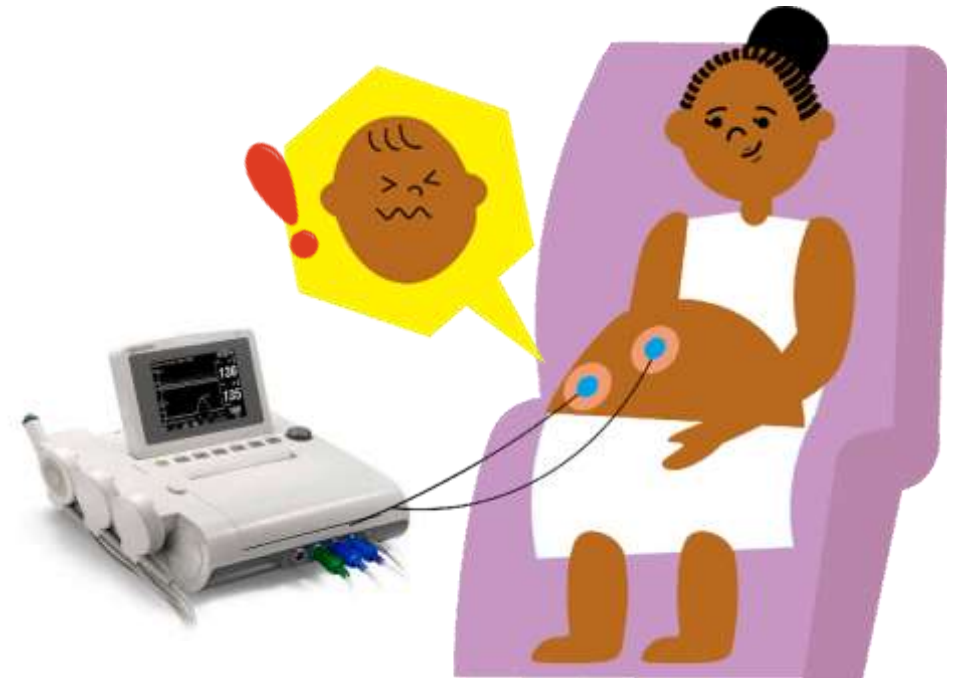


**Create A World Full of Healthy Newborns**

# spiker's Alert-Monitor leads earlier medical intervention by midwives



**Quick Care !**



# Our Team

22 specialists from 6 countries !  
AI engineers, analysts, software, hardware, Doctors and Midwives



# Shortage of medical personnel

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In African nations, patients far exceed the number of doctors and nurses available

Currently, countries are experiencing a dire shortage of medical personnel who can monitor and properly care for a fetus's well-being

## African nations

**1.3** medical  
personnel/1,000 people



**0.3** doctors/1,000  
people



**0.9** nurses/1,000  
people

## SDG targets

**4.5** medical  
personnel/1,000 people



**1.3** doctors/1,000  
people



**3.2** nurses/1,000  
people

## Japan

**13.7** medical  
personnel/1,000 people



**2.4** doctors/1,000  
people



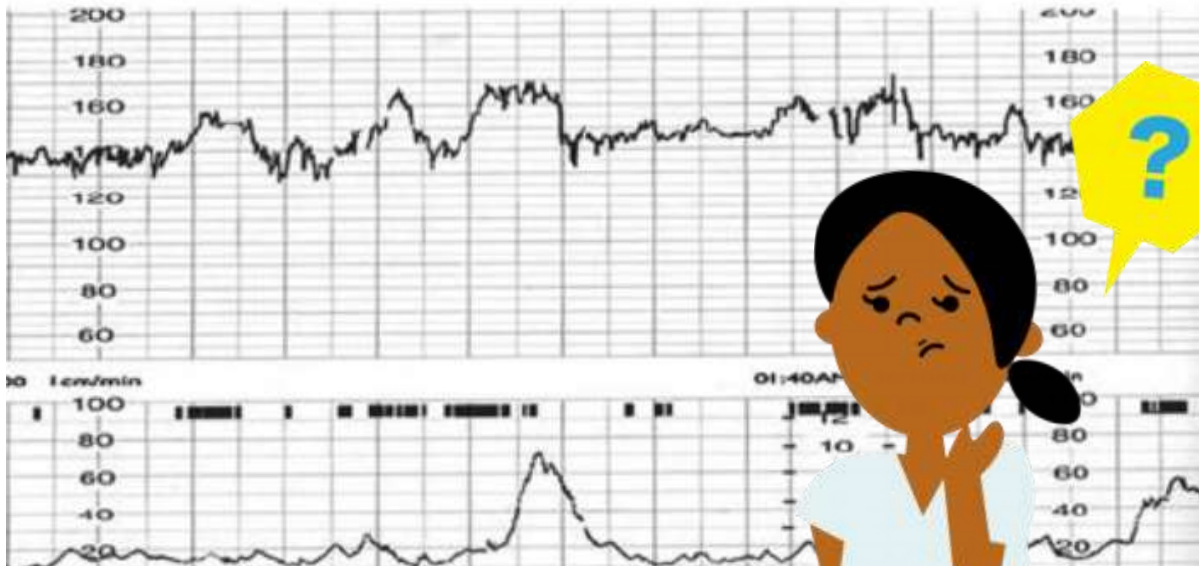
**11.3** nurses/1,000  
people



# Difficulty in Interpreting Live Patient Data

## Properly understanding data requires medical knowledge and many years of education

Developing nations face a shortage of medical personnel possessing such expertise, and Pregnancy cannot use at home in Developed nations



In Japan, patient situation is assessed and classified into five levels:

- Level 1 : Active surveillance
- Level 2 : Active surveillance & Notice to Doctor
- Level 3 : Doctor brought in + Prep. of OR
- Level 4 : Transfer to operation room
- Level 5 : Emergency caesarian section

《圖1-2》 胎動異常分類

胎動異常	胎動	胎動	胎動	胎動	胎動	胎動	胎動
胎動異常	胎動	胎動	胎動	胎動	胎動	胎動	胎動
胎動	胎動	胎動	胎動	胎動	胎動	胎動	胎動
胎動	胎動	胎動	胎動	胎動	胎動	胎動	胎動

《圖1-3》 胎動異常分類

胎動異常	胎動	胎動	胎動	胎動	胎動	胎動	胎動
胎動異常	胎動	胎動	胎動	胎動	胎動	胎動	胎動
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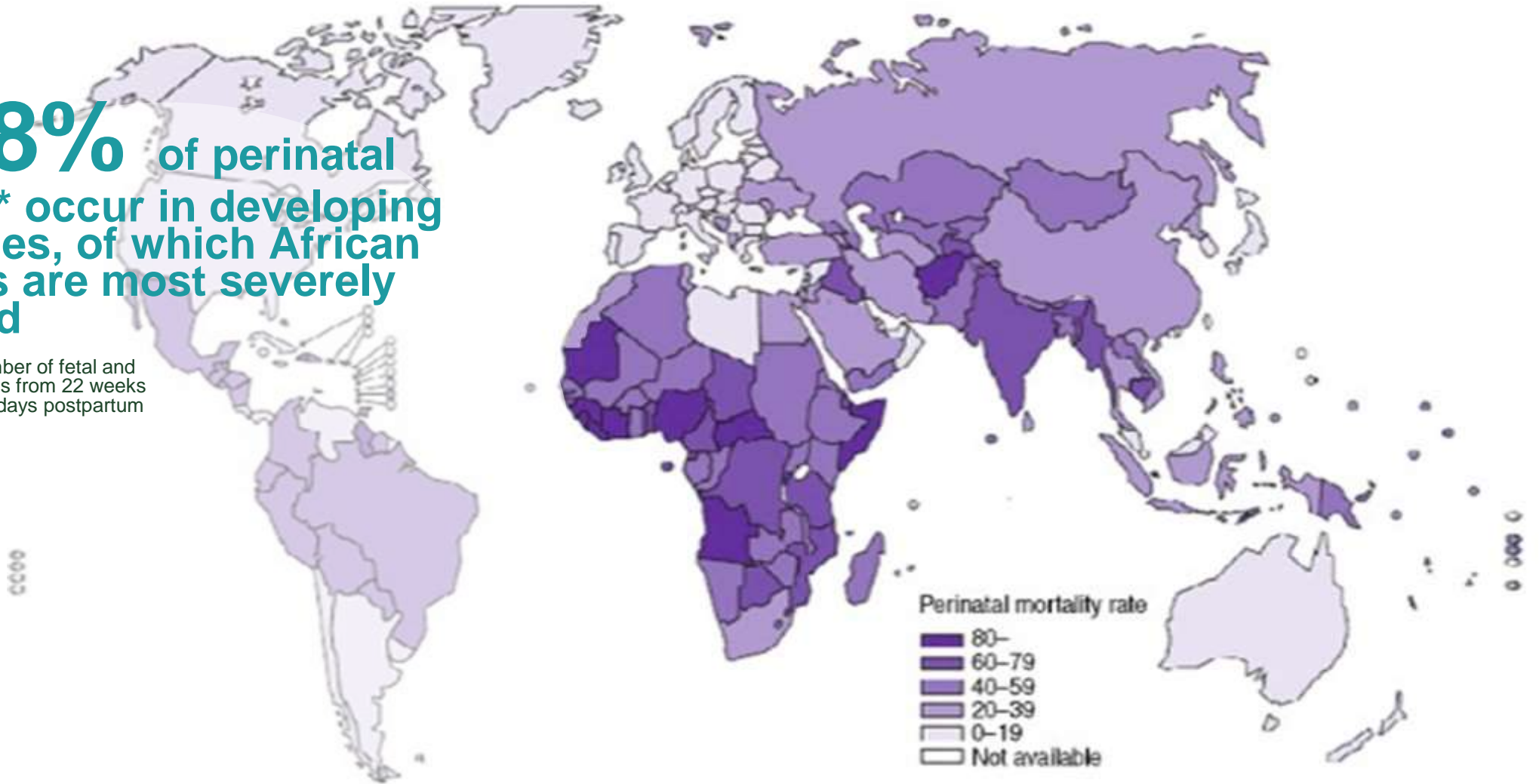
Source: Japanese Society of Obstetrics and Gynecology

# A Disappointing Reality

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**97.8%** of perinatal deaths\* occur in developing countries, of which African nations are most severely affected

\*the total number of fetal and neonatal deaths from 22 weeks gestation to 7 days postpartum



# Behind the Reality

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**85.2%** of pregnancy woman in developing countries cannot use the medical device for delivery

CTG (Cardiotocogram): a medical device used to determine fetal well-being, by measuring fetal heartbeat and uterine contraction



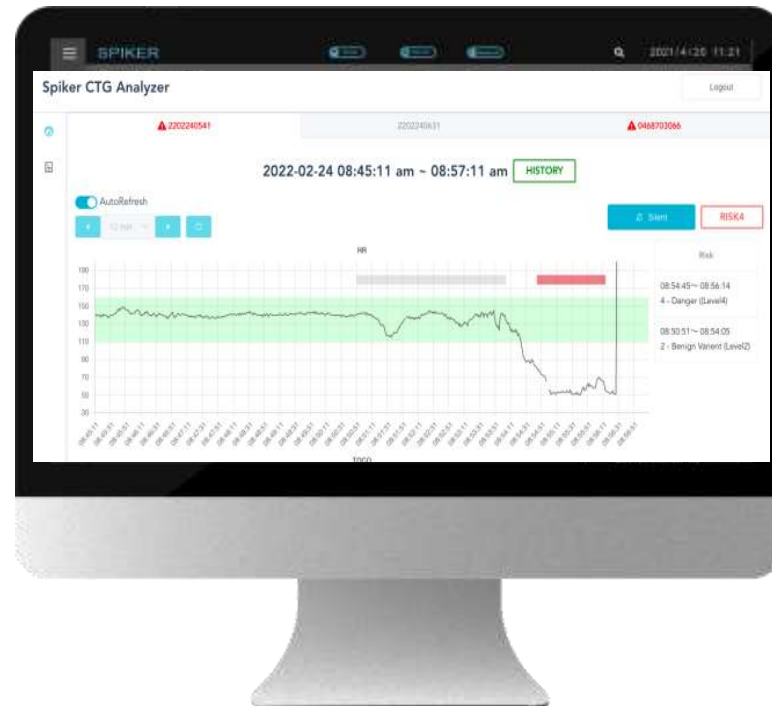
## Period of usage

- Prenatal care checkups  
(Two to three times, minimum of 40 minutes per measurement)
- From beginning of contractions to time of birth

# Product - Plug-in AI software

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spiker's Alert-Monitor  
leads earlier medical intervention by midwives





# Product - Plug-in Alert Monitor

Manufactured by spiker

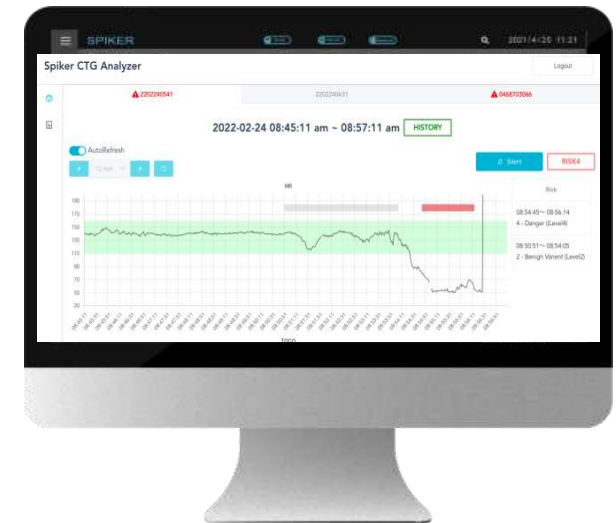
Obstetric  
Monitoring Device  
(CTG)

Communication Soft  
with spiker Edge AI  
Redbox

CTG Data Analysis  
AI Software



Cable



Acquisition of Fetal  
Heartbeats and Uterine  
Contractions

Transmitting Data of  
Fetal Heartbeats  
and Uterine  
Contractions

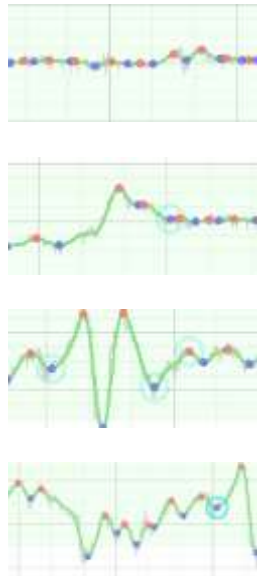
**The alert notifies when  
medical intervention is  
necessary!**

# Detection of abnormal signals using AI

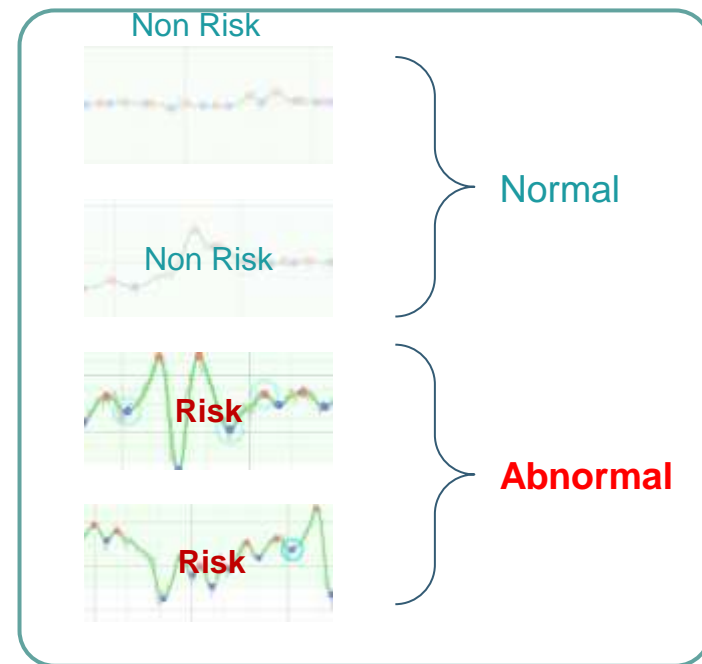
AI assists medical personnel in making a definitive diagnosis



Collection and maintenance of large amounts of training data



Machine learning models learn the characteristics of decoding patterns



Automatic reading of abnormal signals by AI



Definitive Diagnosis

# On-time Alert based on International Guideline



**Alert-CTG analysis tells us when medical intervention is necessary and the risk level, which will help medical professionals perform the standard actions required**

Interpretation	Actions Required (per FIGO guidelines)
<b>Level 1:</b> Features unlikely to be associated with fetal compromise when occurring in isolation	<b>Observe</b> If 2 or more features seen, may require further action
<b>Level 2:</b> Features MAY be associated with fetal compromise	<b>REQUIRES FURTHER ACTION</b>
<b>Level 3:</b> Features are LIKELY to be associated with fetal compromise	<b>IMMEDIATE MANAGEMENT OR URGENT DELIVERY</b>

# When Midwife should care?

Midwife's care is 10% of all Risks, and Doctor call should come from Midwife

Interpretation	Percentage of alerts seen in POC Trial (n = 7,157)	
<b>Level 1:</b> Features unlikely to be associated with fetal compromise when occurring in isolation	89.6%	
<b>Level 2:</b> Features MAY be associated with fetal compromise	10.0%	Midwife call & Medical Intervention
<b>Level 3:</b> Features are LIKELY to be associated with fetal compromise	0.00461%	Doctor call

# 1 year Clinical Trial shows an Effectiveness

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## Alerts Detect Fetal Hypoxia

Potential to avoid preventable deaths by achieving early medical intervention

	With Alert		Non Alert
<b>Average</b>	<b>7.37</b>	<b>&lt;</b>	<b>8.60</b>
25%	1.82	<	1.95
50%	4.78	<	5.56
<b>75%</b>	<b>10.48</b>	<b>&lt;</b>	<b>12.67</b>

2.5 minutes early Fetal hypoxia is detected



# How Alert-Monitor works?

Midwife starts a quick medical intervention and discussion by Alert



spiker AI recorded **Lv2 2 times**, so I changed the **maternal position**. Os uteri is still 4 cm. She is not yet ready for delivery. However, the **Lv3 alarm is currently sounding**. Doctor, please check this patient.



# Market Size - Estimated 3.6 billion USD

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## Current Market

For hospitals equipped with CTG,  
1 billion births per year

1.81 billion  
USD per  
year

## Addressable Market

For locations where CTG is not yet available, 50 million births per year

1.79 billion  
USD per year

# Installation Model - 4T1H

Only 4 Alert-Monitor + CTGs will save 2000 babies



- 4 Alert-Monitor to 2,000 birth/year Hospital
- Realize earlier medical intervention without an additional recruit
- Training Provided



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