

MIPHARMA

“Pharma Supply Chain
Challenges and Solutions”

Connect23
LEGIC
Zurich Sep 28th



Testing



David Keen



New Zealand Born and Educated

Logistics Career spanning 28 years

Founder – MiPharma Global, ReverseMi, MiGlobal, Tohunga

Keen Traveller

Rugby enthusiast

Babson College and Washington University Collaborator

Proud Father

MiPharma

IN NUMBERS

3190
PHARMA
SHIPMENTS
PER MONTH

92
COUNTRIES

109 TIME
SHIPMENTS
PER DAY



MIPHARMA SOLUTIONS

VISIBILITY



PASSIVE PACKAGING

COMPLIANCE

ACTIVE PACKAGING

TRANSPARENCY



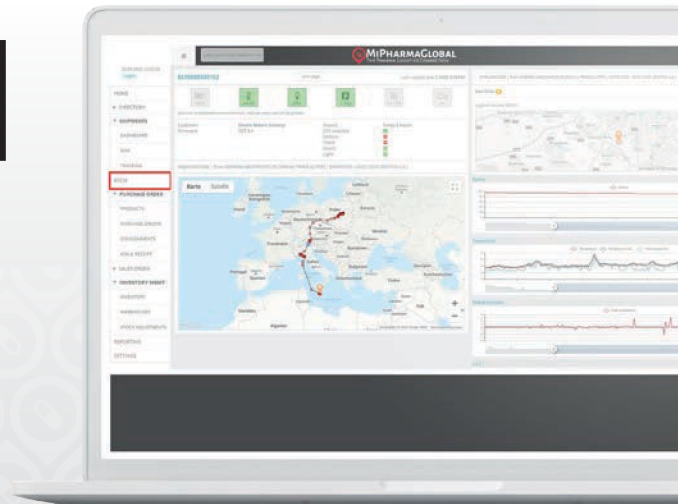
PASSIVE PACKAGING & IOT SUPPORT



DATA LOGGERS

The answer to complete transparency

All versions are available for purchase and RTCM also for rental.



RTCM



- Multiple Use
- Temp range -30 to +85 degrees
- Less than 2g of lithium
- Weight = 190 grams
- Geo Fencing capabilities
- Real time location, temperature, humidity, shock, and tilt

RTCM



- Multiple Use
- Temp range -20 to +60 degrees
- Non lithium
- Weight = 100 g
- Connectivity—Global Cellular Coverage
- Real time, location, temperature, humidity, and shock

USB



- Single or Multiple use
- Temp Range -30 to +70 degrees,
- Validated
- 6 unique temp alarms
- Temp PDF reporting

USB



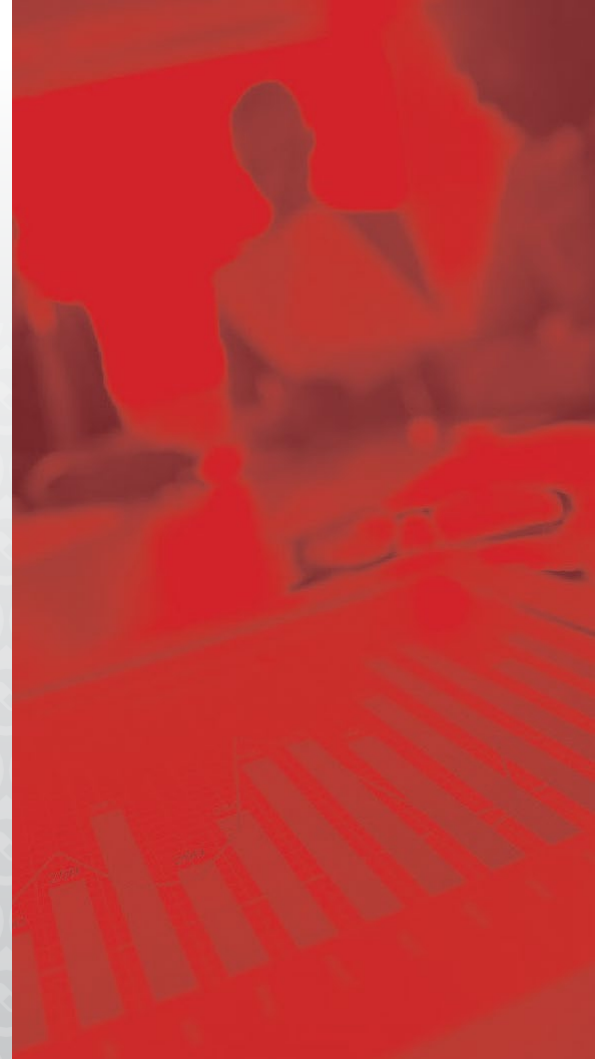
- Single or Multiple use
- Temp Range -30 to +70 degrees
- Validated
- Temp PDF/CSV Reporting

MiPharma

EXECUTIVE SUMMARY

PROBLEM

- The spend on the Global Pharma Supply Chain is over \$ 80 billion a year, this includes money spent on logistics, packaging and other supply chain functions. A staggering \$35 billion of Pharma product is lost by temperature failure during the supply chain.
- The effect of temperature is seen in the rate of oxidation or hydrolysis: for every 10°C increase in temperature there is generally an exponential increase in the rate of reaction. (Drug stability can also be affected by low temperatures, especially liquid preparations liable to freezing.) If the drug storage temperature is too high or low, it is likely to affect the chemical stability of the product, resulting in degradation and formation of impurities. It can produce harmful effects during administration.



MiPharma

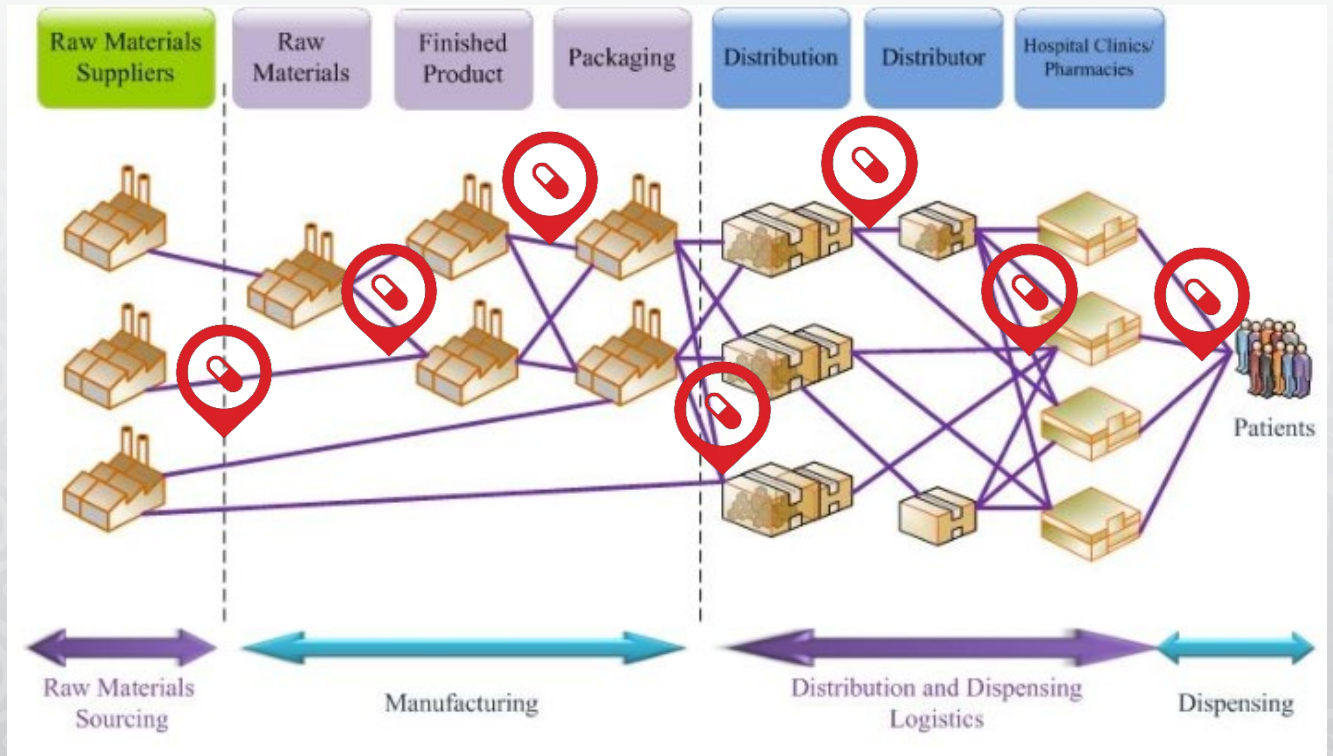
EXECUTIVE SUMMARY

Solution

- To create a passive temperature-controlled package with complete Transparency to all parties involved in the supply chain.
- To start using predicative analysis through AI and data banking to isolate hot points or potential issues in the supply chain
- Pharmaceutical temperature Controlled Range
 - Dry Ice (Cryogenic) = 14%
 - - 5 to 20 degrees = 21%
 - + 2-8 degrees = 39%
 - + 15-25 degrees = 26%



Pharma Supply Chain Complexity





SMARTBOX Features

First reusable passive transport system in the market with complete IoT functionality and PCM coolants!

- ▶ Global positioning
- ▶ Authorization application for closing/opening
- ▶ Outside / inside temperature reading
- ▶ Light detection
- ▶ Shock / Tilt
- ▶ Real time Location / Geofencing
- ▶ Automated data analysis and alerts
- ▶ Humidity
- ▶ Atmospheric pressure
- ▶ Lithium IATA compliant
- ▶ Robust design

LEGIC





Benefits

Reusable System

- ▶ You increase the **sustainability** of your business.
- ▶ Increase your **profitability**
- ▶ **No equipment management or storage required**, just in time delivery

PCM

- ▶ Offer **increased safety** to maintain required temperature thresholds.
- ▶ **Simplify SOP's** and reduce errors by using all season pack-outs with PCM
- ▶ Use the PCM directly and don't wait until your frozen plates have the right temperature
- ▶ Keep things simple by using **one box design for temperatures** 2-8°C, 15-25°C.

IoT

- ▶ **Prevent or detect theft** with authorized access only
- ▶ No more downloading of USB-data loggers. **Automated and live data.**
- ▶ **Simplified decision making** based on live data at one click instead of comparing endless numbers.
- ▶ Find and **eliminate the weak points in your supply chain** and make each hand-over point visible.
- ▶ Identify problematic routes.
- ▶ **Live access** to the status of all shipments.

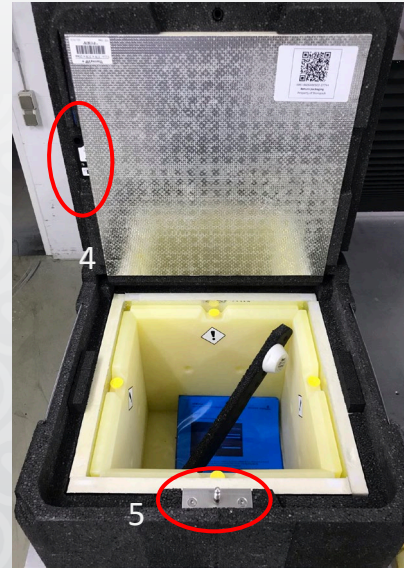
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IoT - SMARTBOX

1. Data Tag
2. Bluetooth/key card locking device
3. QR code to identify box and log milestones



4. Real time data logger with tail
5. Locking device

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OPENING A BOX

- 1) SCAN QR-Code => MPG-Portal opens
- 2) Activate opening (Bluetooth signal)
- 3) Hold mobile on the lock (Wake-up the lock)
- 4) Lock opens for 5s. Box can be opened by hand. After 5s the lock closes automatically.



IMEI 8606400502-39161

Return packaging

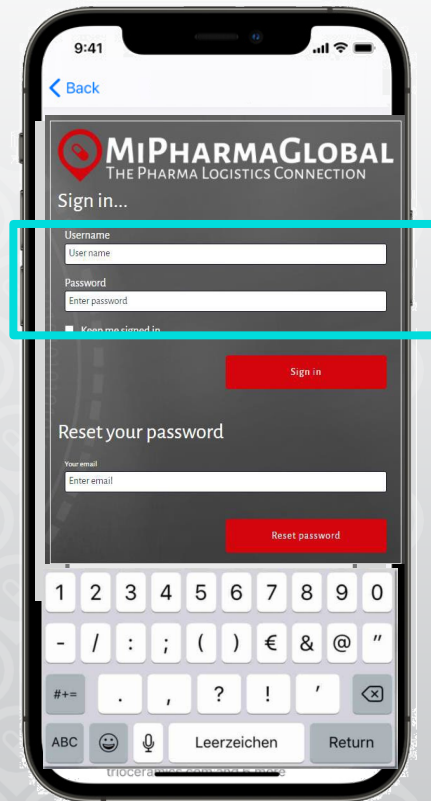
Redirection to the MPG page, exactly to the shipment and the associated **IMEI** of the box

Simple Opening application

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User has to log in once





Data Visibility

MIPHARMAGLOBAL THE PHARMA LOGISTICS CONNECTION

server time: 06/22/2021 19:44:43
local time: 06/22/2021 21:44:43
Login: dkeene

jobref search term

860640050237744 print page Last update: 2022-04-19, 11:23

0% 29.4C 1420tx 0.98g 96.88% 43.250k

click icon to deactivate connected chart. inactive charts will not be printed

Subscription start: 2021-08-01 Report: GPS enabled: Every hour
Subscription end: 2022-07-31 Motion: Tilted: Every 30 minutes
Firmware: TBLTE 3.53 Shock: Light:

Asset Shipment: MFGU1 | Shipment: SMPGEA00128485 | 11/16/2021 - 12/15/2021 view shipment

Map Satellite

Geo Sites

Asset Shipment: MFGU1 | Shipment: SMPGEA00128485 | 11/16/2021 - 12/15/2021

Tag: 803A9

Tag: 803B8

Tag: 803BE

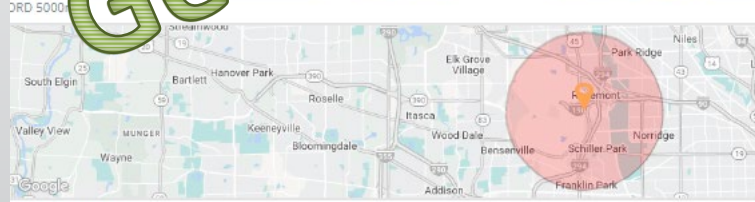
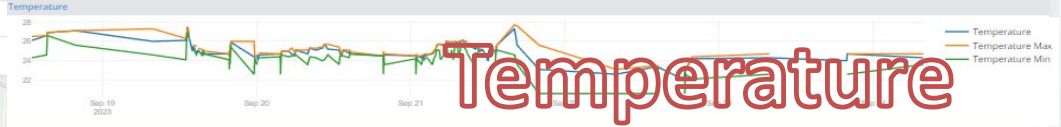
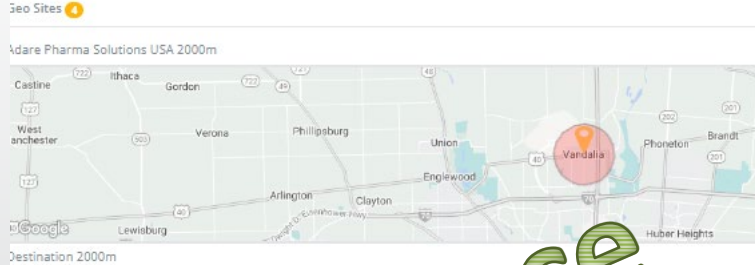
Battery

Temperature

XYZ



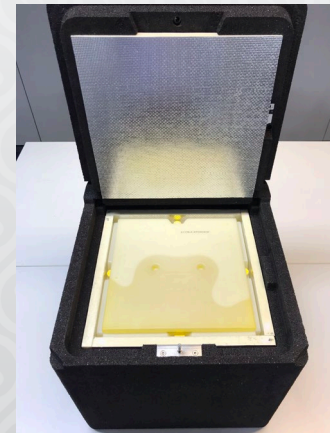
Data Alerts





TECHINICAL DATA SHEET

	STO312 - VIP	STO381 - VIP
External dimensions in mm	507 x 504 x 488	575 x 575 x 560
Loading capacity in mm	286 x 286 x 286	355 x 355 x 355
Payload in l	23,4	44,7
Duration 2-8°C	120h	120h
Duration 15-25°C	120h	120h
Duration deep frozen	Tbd	Tbd
Weight with 6 PCM Plates	21 Kg	31 Kg





USE Cases

- Clinical Trials
- Narcotics
- Medical Cannabis
- Vaccines
- Anti-doping
- Gene & Cell Therapy



A close-up photograph of a bumblebee with black and yellow stripes, perched on a vibrant purple flower. The background is a soft, out-of-focus green, suggesting a natural outdoor setting. The bee is positioned in the upper center of the frame, facing right.

LEGIC



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THE PHARMA LOGISTICS CONNECTION

Cross Industry Pollination



**“Alone we can do so little;
together we can do so much”**

Helen Keller

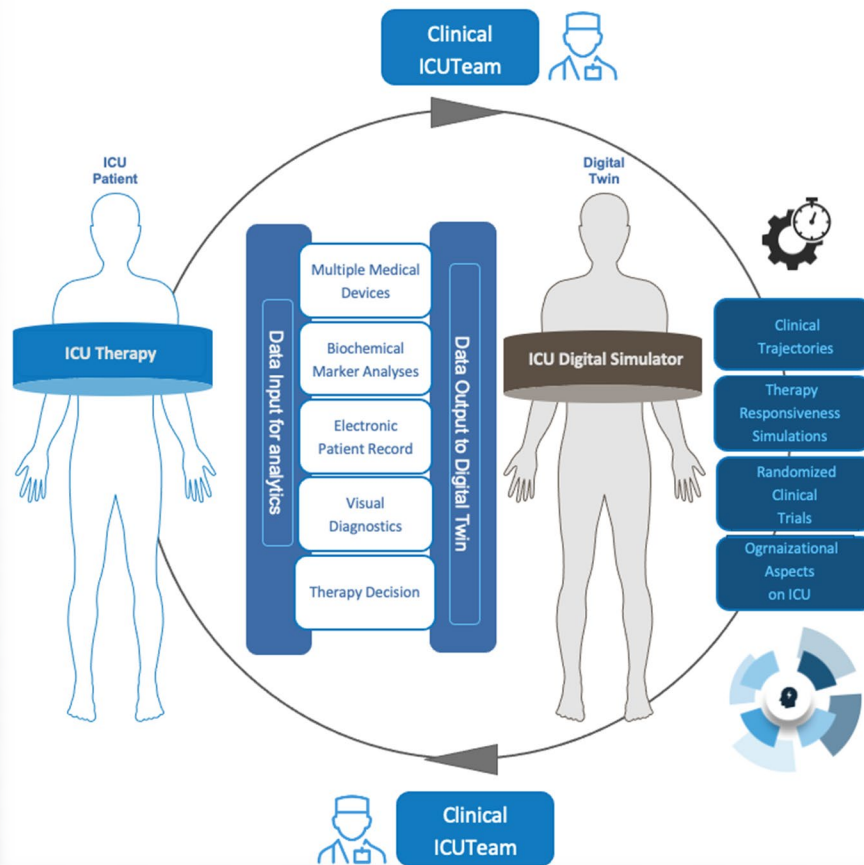
Collaboration drives new technology and end products

- Rapid Technology implementation is only possible through cross-industry collaboration
- The lightspeed change in healthcare technology, induces rapid change of technology implementation in other sectors
- Technology can be the catalyst if we TRUST in it
- Predictable data analytics creating a digital twin
- Increase predictability, transparency and traceability

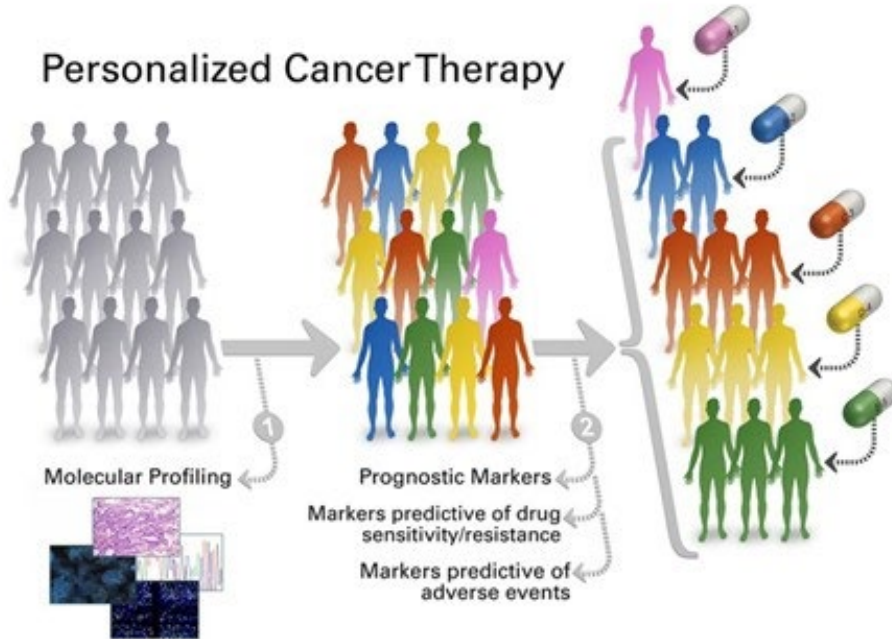


The “digital twin” of the ICU patient

Preparing for the future.
Patient digital modelling or twin



Personalized Cancer Therapy



A vein-to-vein solution in the supply chain, where even greater transparency is demanded.

**Technology as such is not the limiting factor but
its the reluctance to share and collaborate to
implement technologies**



MI PHARMA GLOBAL

THE PHARMA LOGISTICS CONNECTION

THANK YOU

www.mipharmaglobal.com

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