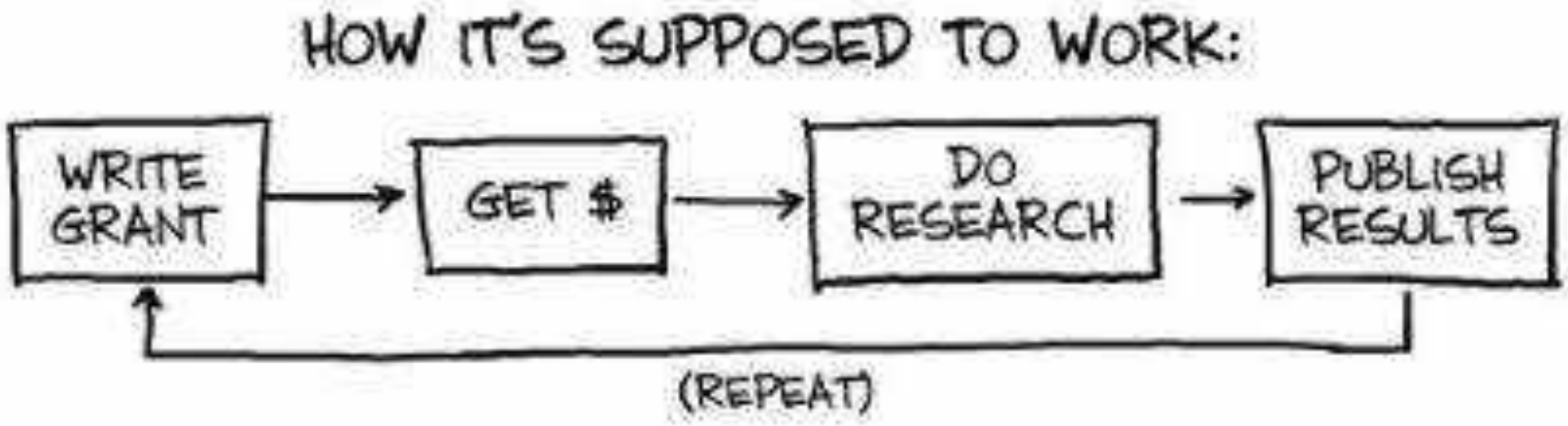
THE UNIVERSITY OF BRITISH COLUMBIA

Integrated Knowledge Translation

Co-Developing the First Integrated Knowledge Translation Guiding Principles for Conducting and Disseminating Research in Partnership with SCI Stakeholders

Dr. Heather L. Gainforth
@hgainforth

We are stuck on repeat



WWW.PHDCOMICS.COM

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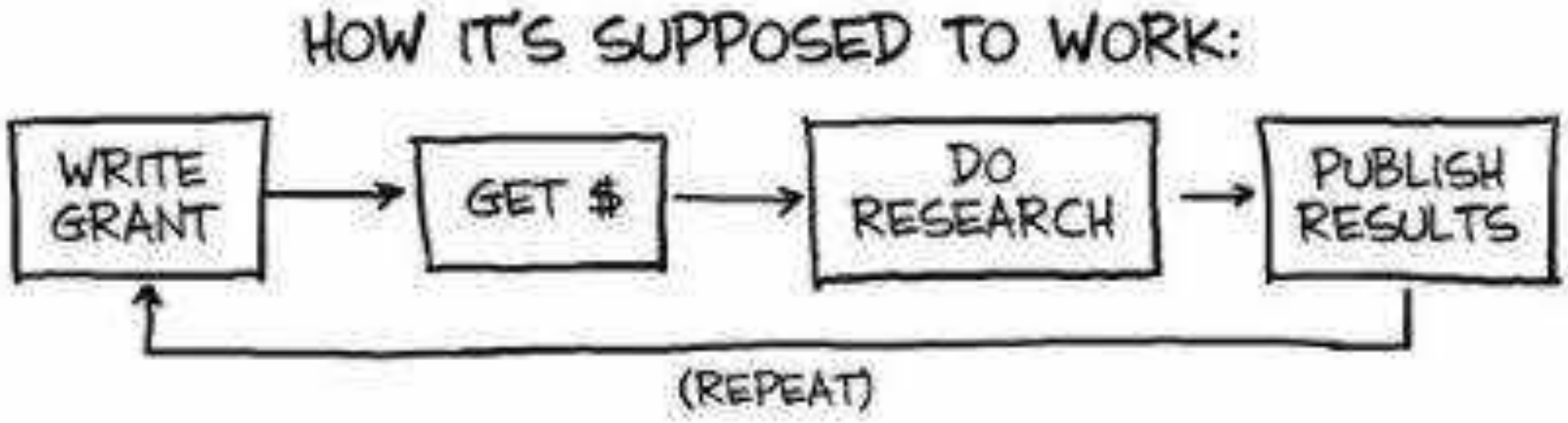

We are sacrificing real world impact.

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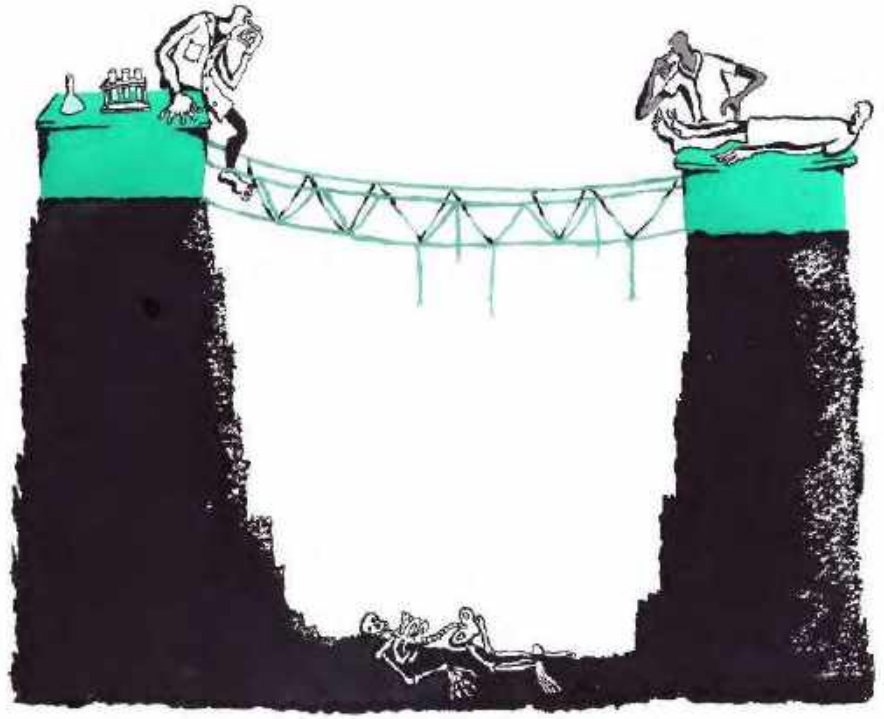
Knowledge Translation Gap

- 17 to 20 year gap between discovery and implementation
- Wastes resources and time devoted to conducting research
- Interventions and resources become inaccessible to the SCI population

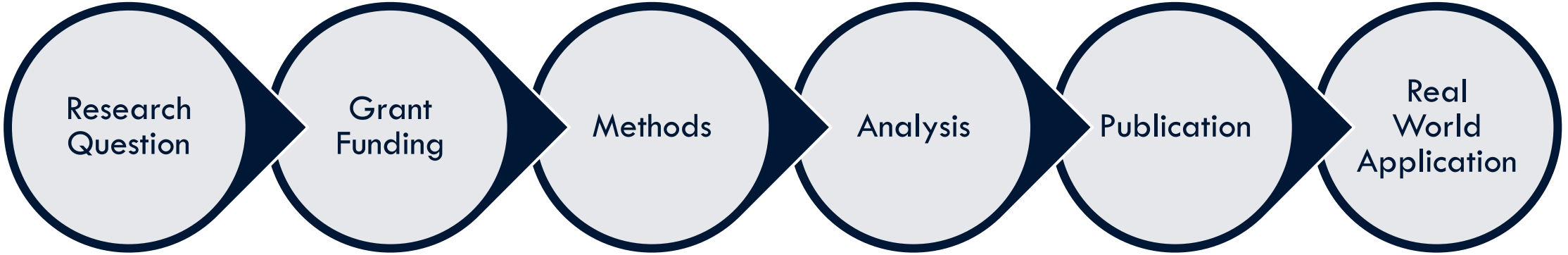


Valley of Death

(Morris, Wooding, & Grant, 2011; Graham & Tetroe, 2007)

Integrated Knowledge Translation (IKT)

"HOW CAN I HELP?"



Integrated Knowledge Translation (IKT)

- Meaningful engagement of the right research users throughout the SCI research process at the right time

- Meaningful engagement: Contributing and influencing a personal or socially meaningful research or dissemination goal and feeling a sense of responsibility to others

Consensus Panel

Tokenism

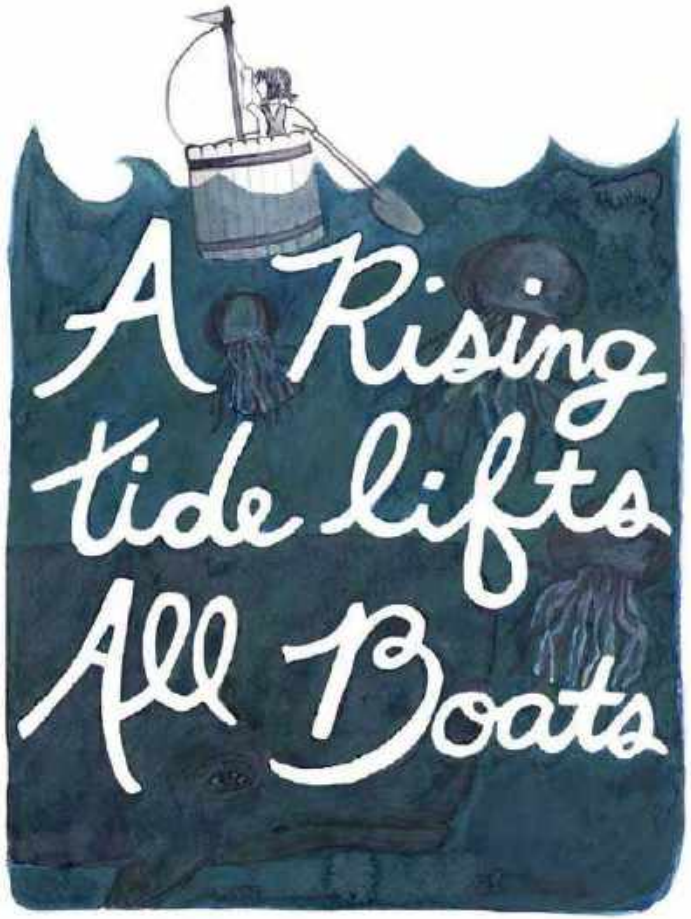
When a person with SCI or organization is asked to endorse, and therefore legitimize, research programs over which they have little real control.

How can we build capacity for IKT?

“Nothing about us without us”

Over the next five years

Develop and implement the first **integrated knowledge translation guiding principles** for conducting and disseminating research in partnership with the spinal cord injury community.



Our Consensus Panel

A team of multidisciplinary SCI researchers, clinicians, organizations and research users with IKT experience.

Consensus Panel

Knowledge-to-Action Framework

- Developed to provide conceptual clarity regarding the key aspects of KT

- Two interacting phases:

    1. Knowledge Creation

    2. Action Cycle

(Graham et al., 2006)

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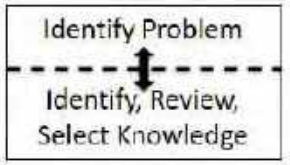

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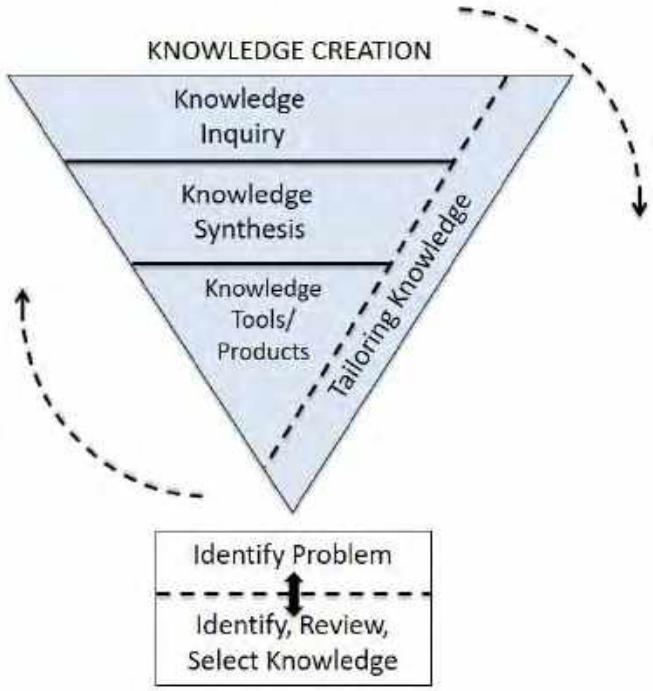

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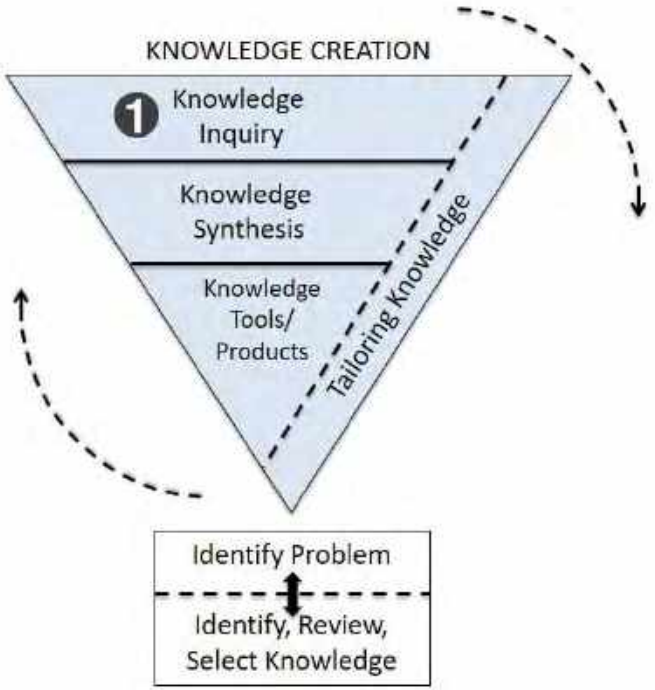

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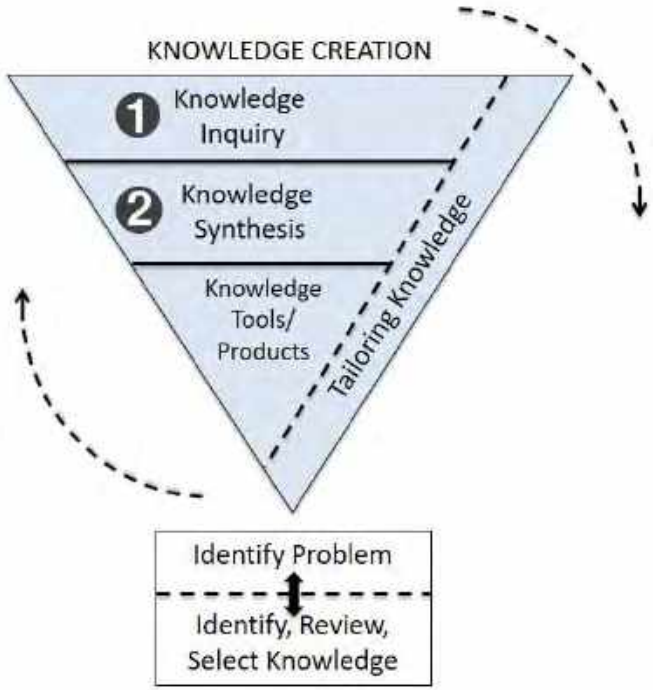

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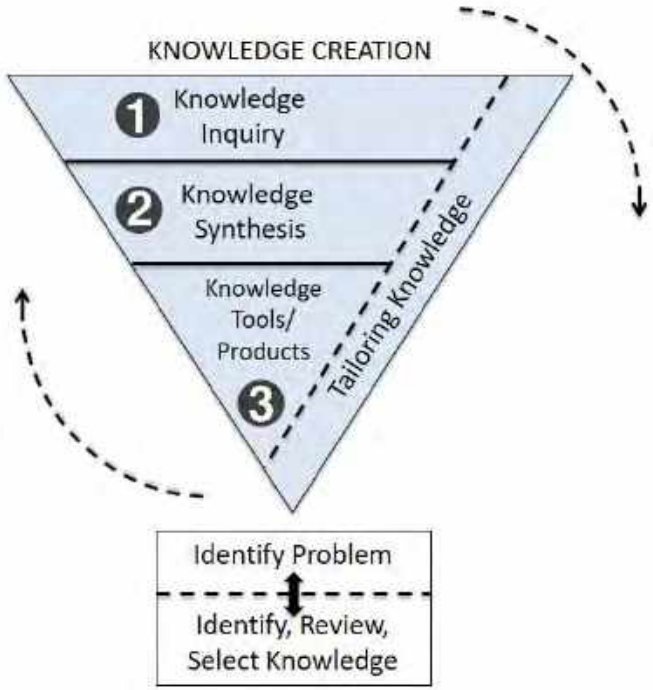

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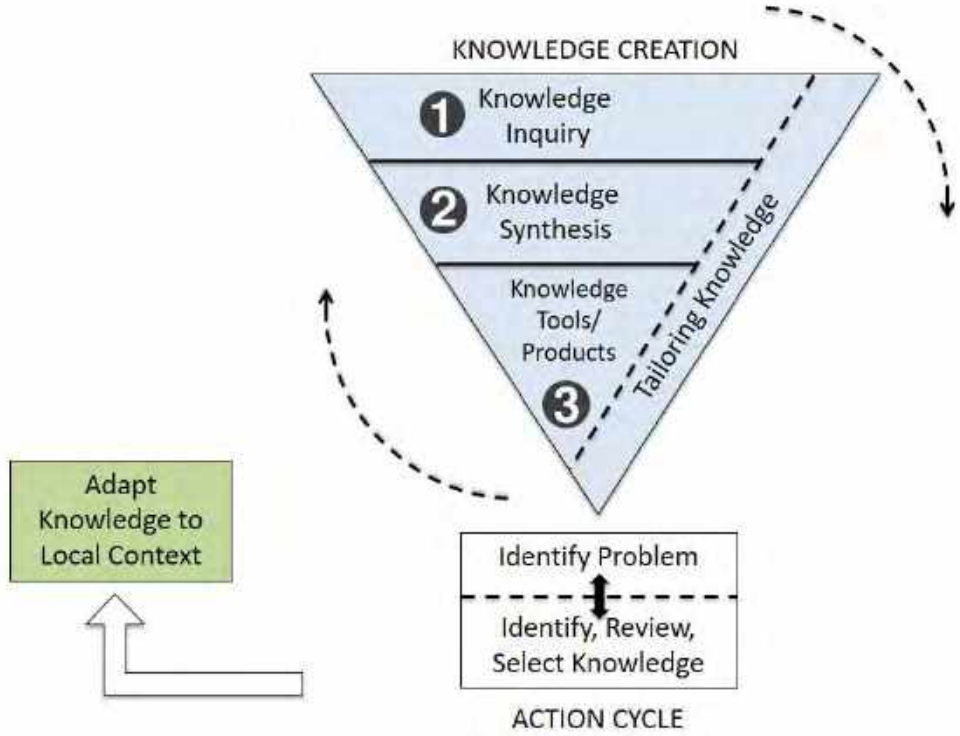

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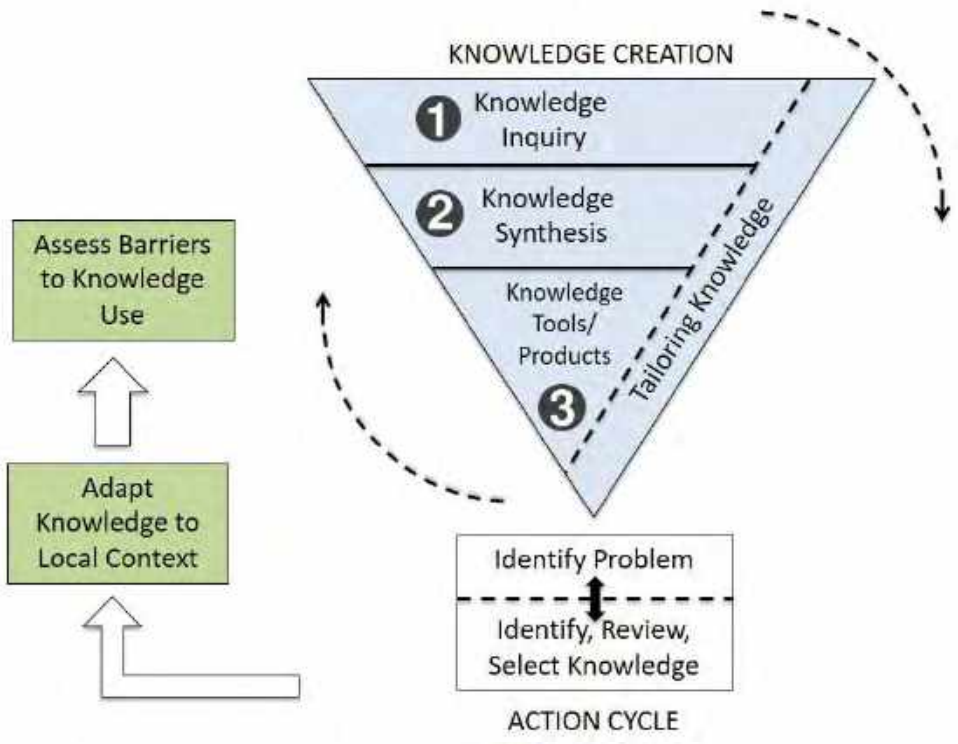

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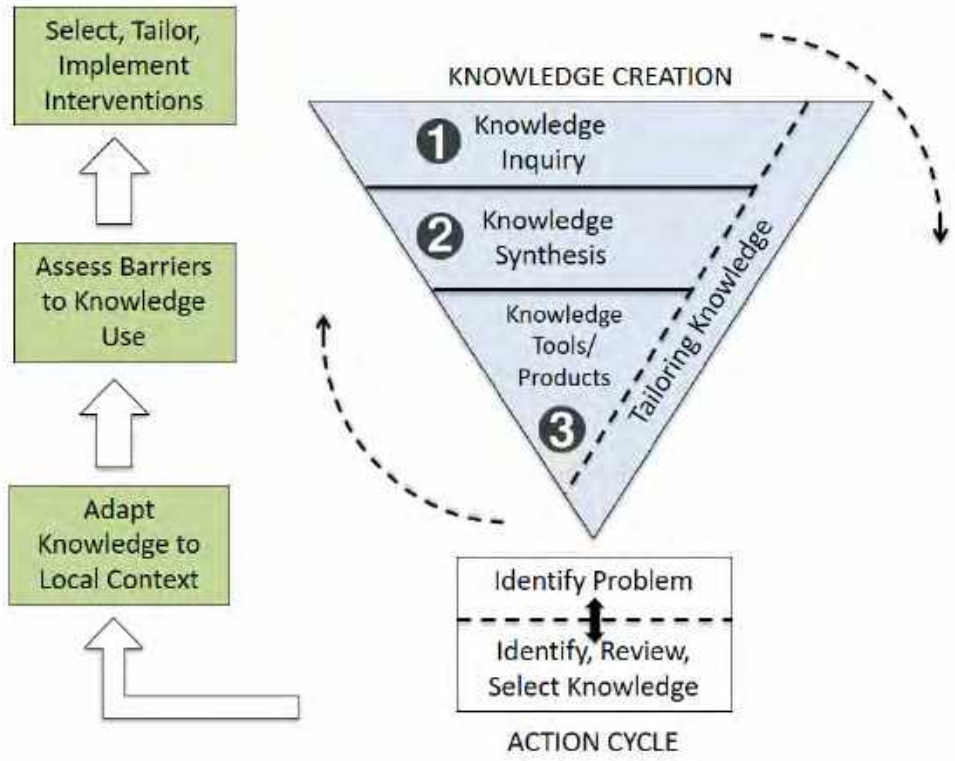

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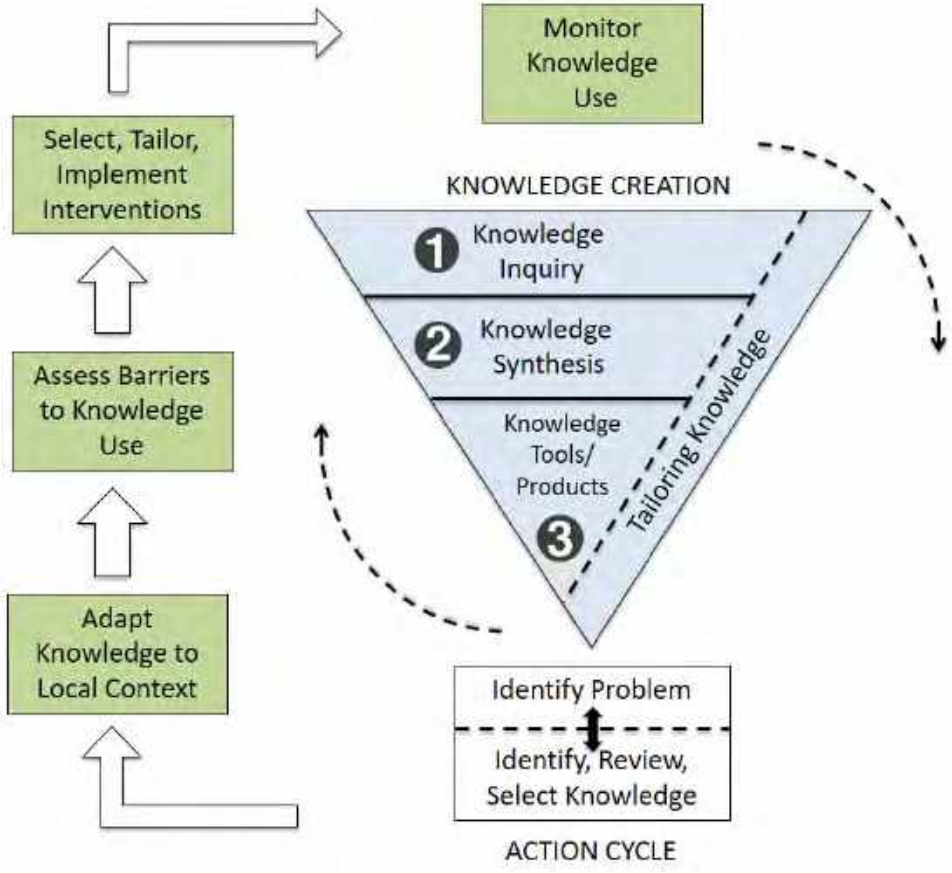

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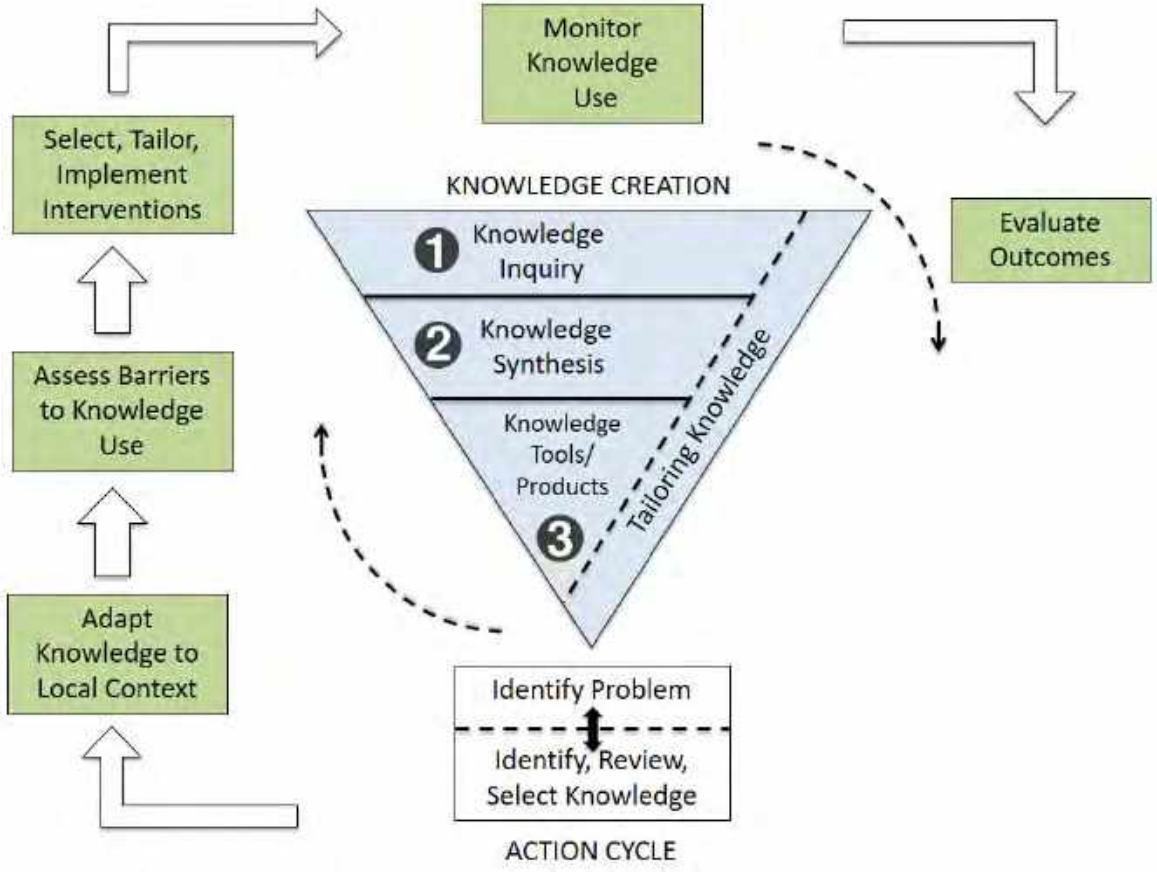

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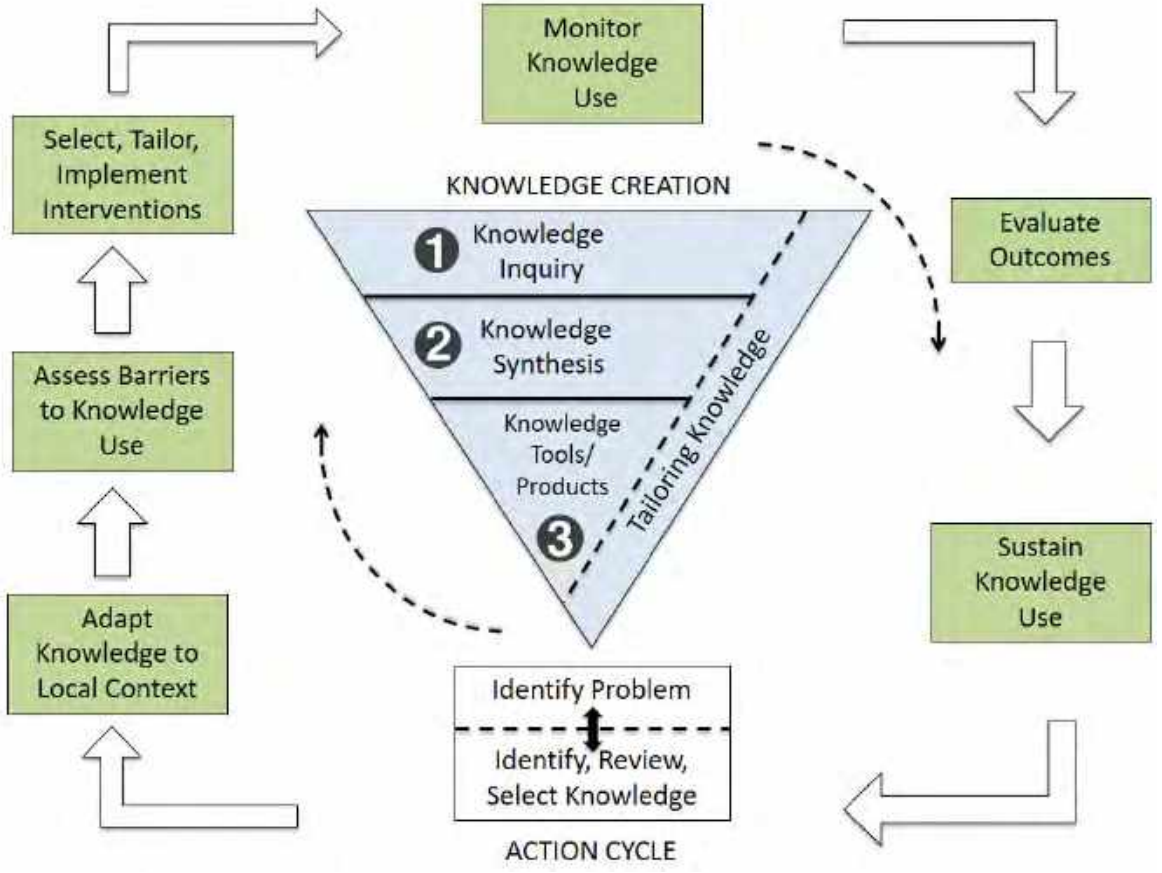


(Graham et al., 2006)

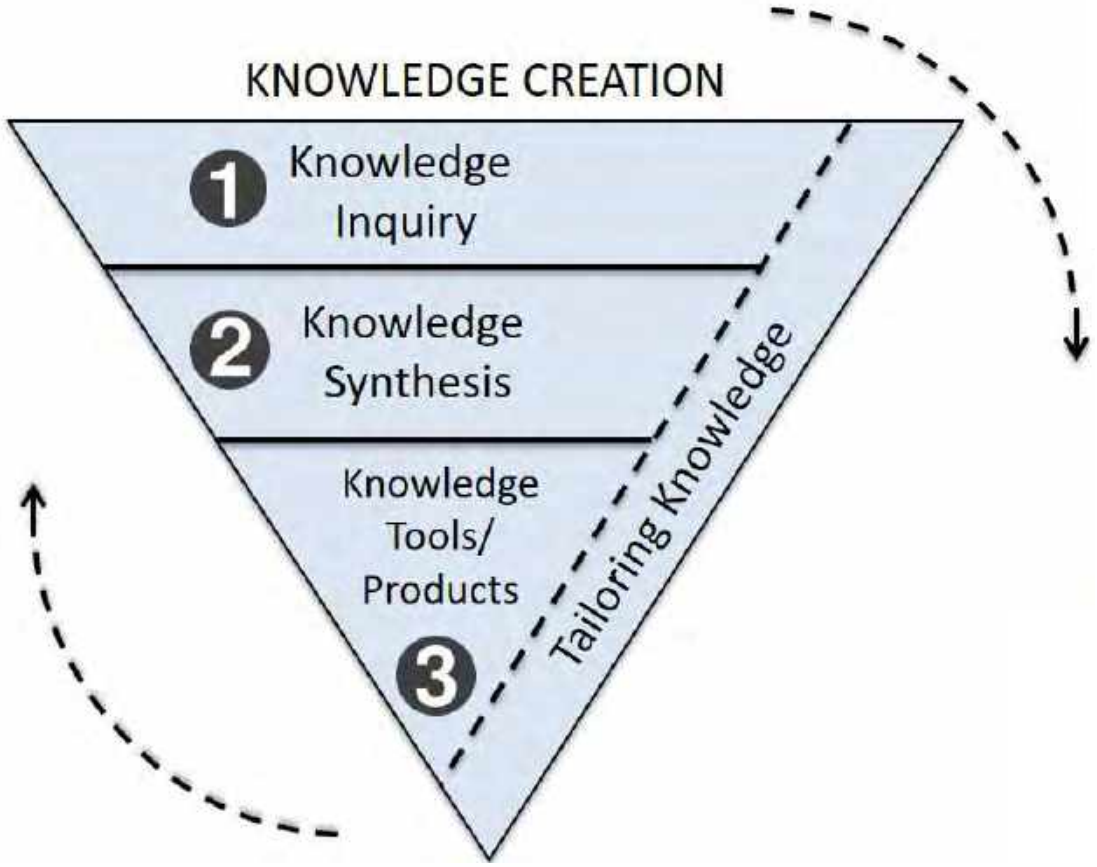
Knowledge Creation

1 Knowledge Inquiry

- Review of Reviews
- Scoping Review
- Interviews with IKT Champions

2 Knowledge Synthesis

- Delphi Consensus

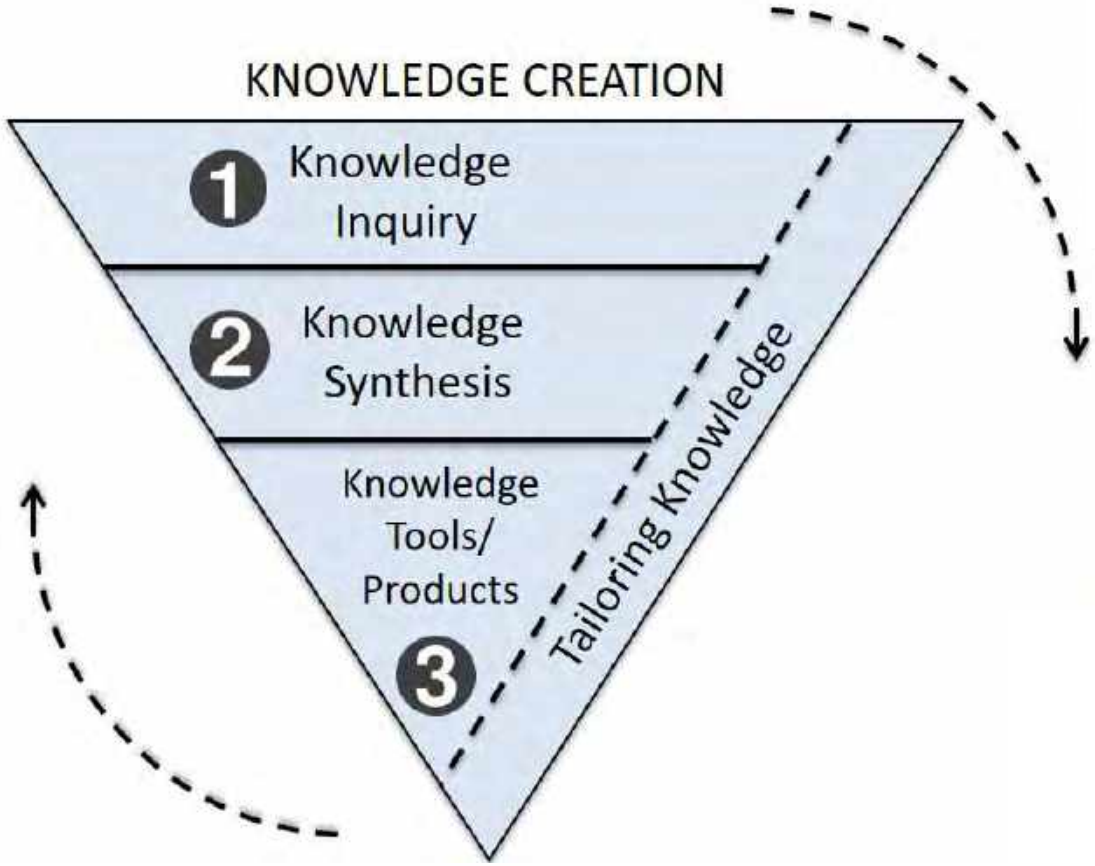


Knowledge Creation

3 Knowledge Product

- AGREE II Consensus Panel

Consensus Panel

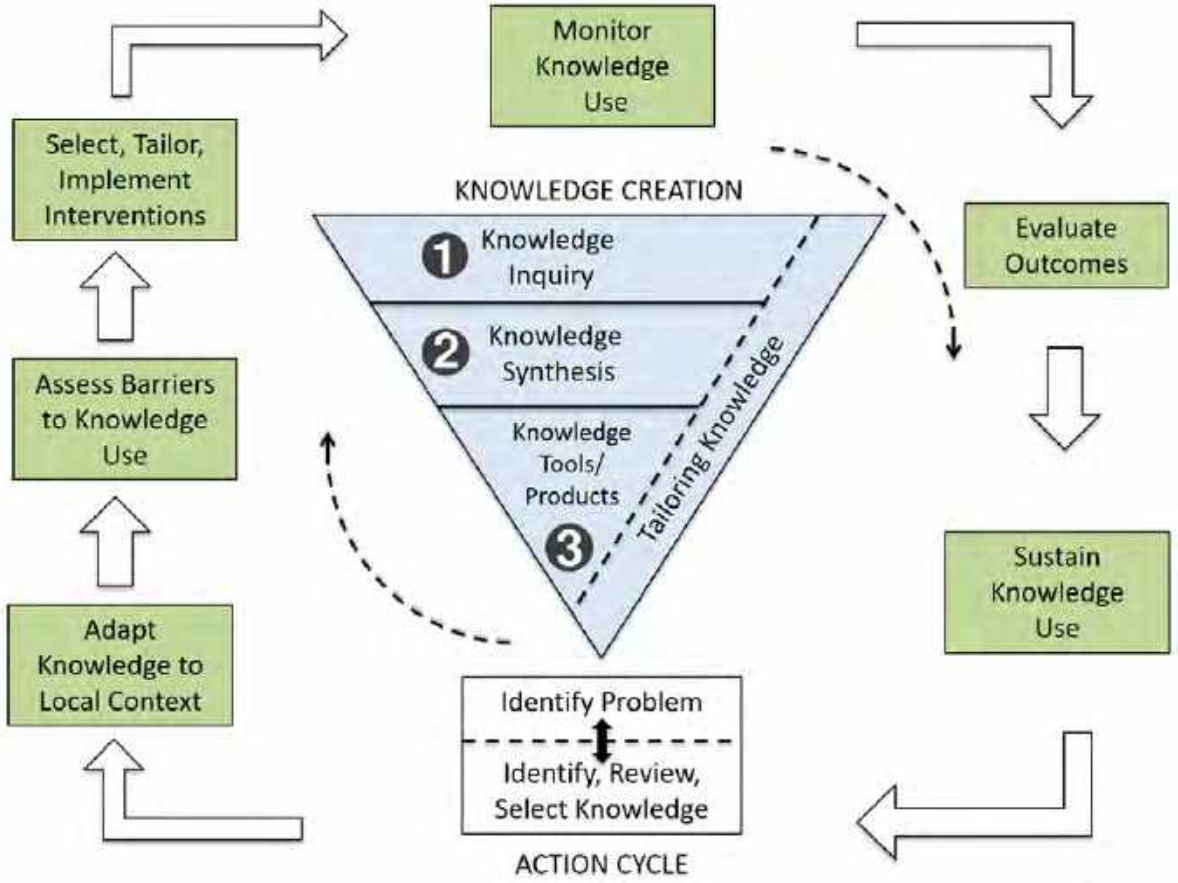


Action Cycle

- Implement and Evaluate the Guiding Principles

- Three Target Audiences:

1. Researchers
2. SCI Stakeholders
3. Funders



(Graham et al., 2006)

In the meantime…

- Alliance will support and incentivise research using an IKT approach.

- Continue to support research to develop and validate the IKT guiding principles.

Acknowledgements

Research Collaborators

- Dr. Amy Latimer-Cheung
- Dr. Kathleen Martin Ginis
- Dr. Shane Sweet
- Dr. Mary Jung
- Dr. Kathryn Sibley
- Dr. Ian Graham
- Dr. Anita Kothari
- Dr. Susan Forwell
- Dr. Ben Mortenson
- Dr. Hugh Anton
- Dr. Kelly Clanchy
- Dr. Sean Tweedy
- Professor Susan Michie
- Dr. Fabiana Lorencatto
- Dr. Karl Erickson
- Professor Robert West
- ICORD

Community Collaborators

- SCI Ontario, SCI BC, SCI Alberta, SCI Canada, Abilities New Brunswick
- Rick Hansen Institute
- National Centre for Smoking Cessation & Training
- ParticipACTION
- Centre for Comprehensive Motivational Interventions
- Peter Athanasopoulos, Dr. Chris McBride, Teren Clark, Sheila Casemore, John Chernesky, Haley Flaro

Students & Trainees

- Kailey Owens
- Kristy Baxter
- Rhyann McKay
- Emily Giroux
- Blake Nicol
- Dr. Femke Hoekstra
- Kelsey Wuerstl

Funding

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- Social Sciences and Humanities Research Council of Canada
- Rick Hansen Institute & ICORD
- MITACS
- UBC – CUES, Hampton New Faculty Award
- Canadian Foundation for Innovation

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Thank You

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@hgainforth

Our Plan for Supporting IKT Research

Partnering with SCIO in Research –Integrated Knowledge Translation – No charge

- All communications about research partnerships and funding proposals with SCIO or Alliance need to go to Peter Athanasopoulos or Sheila Casemore.
- A special meeting to discuss terms of partnership and funding proposals with Sheila and Peter
- Customized Marketing and Recruitment Plan
- Activating a research partnership with SCIO requires a letter of support signed by the CEO
- Special Acknowledgement of the researcher and their work with the SCI Community
- Expectations of a research partnership include:
  - A co-designer of the research being a person with SCI
  - A clearly defined role for SCIO and Alliance
  - A clear dissemination and knowledge translation plan of the research

Our Plan for Supporting IKT Research

Marketing and recruiting people for research studies - $350 per study

- https://sciontario.org/information-news/research/research-opportunities/
- When there is no natural partnership in accordance with our operational plan with SCIO and Alliance and requests are purely marketing and recruitment
- When there is no engagement of people with SCI as part of the research
- When research questions are already defined

Research with student partners

- Special consideration will be given to student partners practicing research for their academic degrees

Lunch

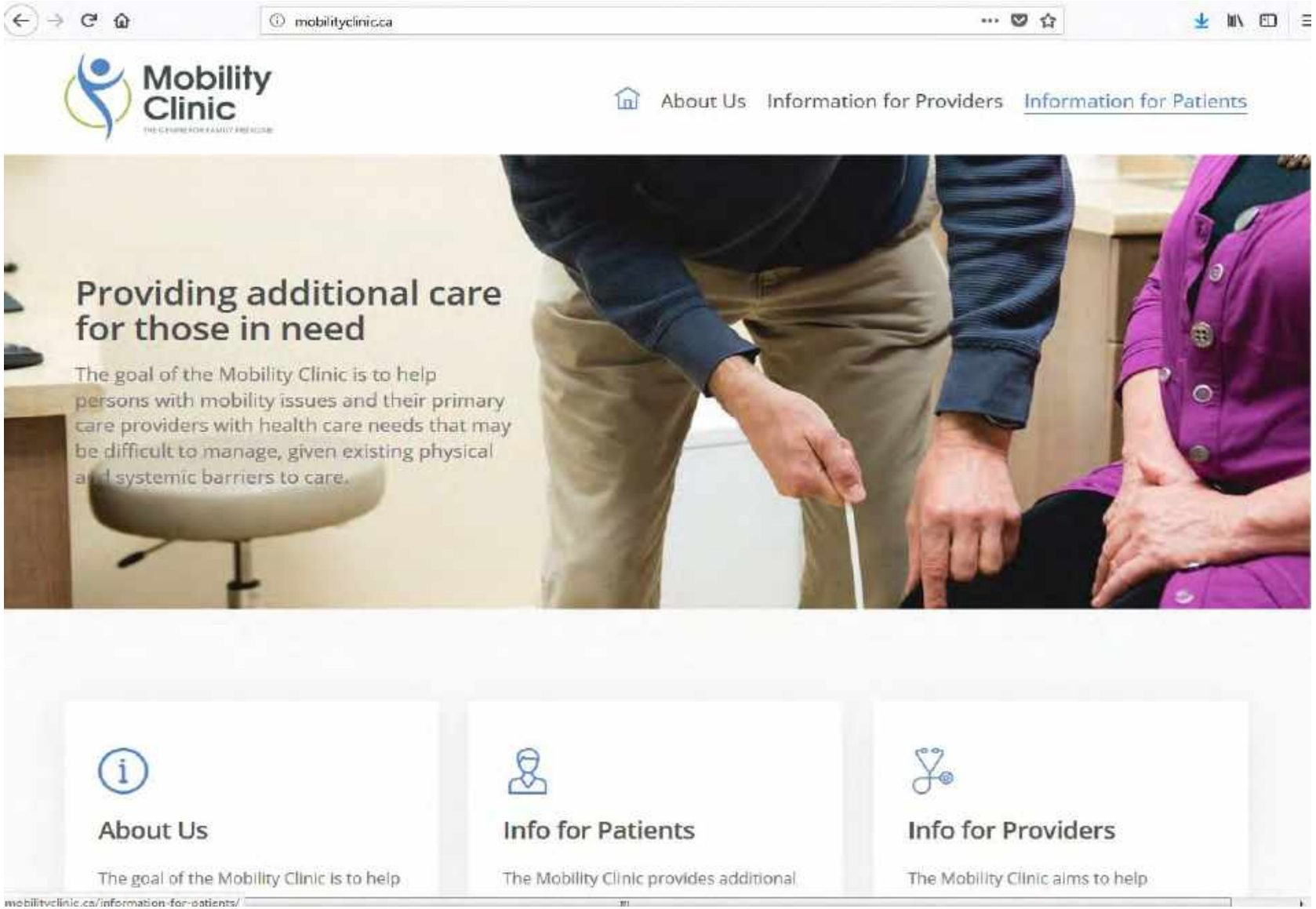
Resuming at 1pm

SCI Alliance Meeting – September 7th

Mobility Clinic Introduction

- Started in 2010 in Kitchener-Waterloo
- Interdisciplinary model
- Makes primary care accessible for people with physical disabilities
- Provide primary care to over 70 individuals with SCI
- Implementing research findings into practice

Model dissemination



Mobility Clinic

Additional primary care for patients with SCI and other conditions that impact mobility

The Mobility Clinics are run by an inter-professional team who provide primary care to patients with health conditions such as:

Spinal Cord Injuries
Amyotrophic Lateral Sclerosis
Multiple Sclerosis
Parkinson's
Stroke
Severe Arthritis

Criteria for Referral

- Adults 18+ in WW LHIN
- Valid Ontario Health Card
- Physical disability or condition impacting the ability to receive care from regular primary care provider
- Referrals must come from a primary care provider

Features

- Fully accessible with hi-low table, lift & wheelchair scale
- The clinic can address general needs of those with physical disabilities or specific requests (eg. general assessment, spasticity, mobility, bowel/bladder, pap tests, weights, etc.)

To refer to the Mobility Clinic, please visit: http://family-medicine.ca/mobility

Depending upon patient needs, and clinic availability, patients will be triaged to one of two locations:

CFFM Mobility Clinic
250 Laurelwood Drive, Suite 4111
Waterloo, Ontario N2J 0E2
Run weekly on Monday afternoons

Andrew Street Mobility Clinic
16 Andrew Street
Kitchener, Ontario N2H 5R2
Run bi-monthly on Friday afternoons

Mobility Clinic
THE CENTRE FOR FAMILY MEDICINE

REFERRAL FORM

Please fax this completed referral and all relevant medical reports to ***519-904-0658***

PATIENT INFORMATION		
Name:		Date of Birth:
Health Card Number:		
Street Address:		
City:		Postal Code:
Home Phone Number:	Work/Cell Phone Number:	
Alternative Contact: (If necessary)		Relationship:
Home Phone Number:	Work/Cell Phone Number:	
Diagnosis/Medical History:		
If Spinal Cord Injury: Level ____ Complete Incomplete Date of Injury/Event: _____		
Does the patient require a mechanical lift to transfer: yes no		

REFERRAL INFORMATION:	
Primary Care Provider:	Billing No.:
Phone Number:	Fax Number:
Referral Source (if different) :	
Reason for Referral:	

Issues to address:

General assessment	
Preventative Care (Pap, bone health, immunizations etc.)	Skin breakdown/wounds
Bowel/Bladder	Medications
Spasticity	Wheelchair/equipment
Automatic Dysreflexia	Other: _____
Pain	_____

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Updates from Mobility Clinic (1)

- Expansion – additional three sites
  - Andrew Street
  - Langs Farm CHC
  - Iroquois Falls FHT
- Development of training program
- Development of training materials
  - CBLMs
  - Quick Reference Guides

Updates from Mobility Clinic (2)

- Working to remove barriers through using technology
  - Partnership with SCI Ontario on VIP4SCI project
  - PCVC project
  - eConsult

- Pilot Projects
  - UTIs among NB patients- Standard of care and perceptions among providers and patients.
  - Exploring Care of young residents with disability at long term care institution

How the Mobility Clinic and SCI Alliance can work together

- Raise awareness - if PCPs are interested, provide them with our contact information
- Go to our website – www.mobilityclinic.ca
- Distribute educational materials – manual, CBLMs, Quick Reference Guides

What can we offer

- The goal of the Mobility Clinic is to help persons with mobility issues and their primary care providers with health care needs that may be difficult to manage, given existing physical and systemic barriers to care
- The Mobility Clinic team is comprised of health care providers from a range of disciplines. A physician, nurse, chiropractor, and occupational therapist are present at each visit. Other professionals are available as needed, including a social worker, pharmacist, or physiotherapist
- We provide training and educational materials to primary care providers to support the care of individuals with physical disabilities
- To make a referral to the Mobility Clinic, we require a referral from the individual's primary care provider

Contact information

www.mobilityclinic.ca

Dr. James Milligan, BSc.P.T., MD, CCFP

CFFM Mobility clinic

250 Laurelwood Drive, Suite 4111

Wateloo, Ontario

N2J 0E2

Thankyou

Knowledge Exchange Update

Ontario SCI Solutions Alliance Meeting
September 7, 2018

Knowledge Exchange Initiatives

- **Primary Care:** 2017–2018
- **Neuropathic Pain Management:** 2018–2019
- **Bladder Management:** 2019–2020

Primary Care

SUBJECT MATTER EXPERTS	INITIATIVE	TIMELINE
Clinical: Dr. Joe Lee Dr. Jamie Milligan	OTN Professional Learning Series certified webcast for primary care providers: Improving Primary Care for People with SCI	Session 1: Tuesday March 27, 2018 Session 2: Tuesday September 25, 2018
Public Policy: Peter Athanasopoulos		
Lived experience: Anita Kaiser		

Primary Care

Primary Care

Facebook
Total likes: 321
Total shares: 174
Total reach: 17,273

Twitter
Total likes: 19
Total retweets: 13
Total impressions: 15,988

LinkedIn
Total likes: 12
Total Impressions: 2,116

Managing Neuropathic Pain

SUBJECT MATTER EXPERTS	INITIATIVES	TIMELINE
Clinical: Dr. Eldon Loh Public Policy: Peter Athanasopoulos Lived experience: Nouma Hammash Nancy Xia TBD	OTN Professional Learning Series certified webcast for primary care providers: CanPainSCI Clinical Practice Guidelines on management of neuropathic pain after SCI	Session 1: Tuesday March 26, 2019 Session 2: Tuesday September 24, 2019
	Create mixed media resources for people with SCI on non pharmacological management of neuropathic pain – addressing access	January 2019

Bladder Management

SUBJECT MATTER EXPERTS	OUTCOMES	TIMELINE
Clinical: Dr. Blayne Welk Public Policy: Peter Athanasopoulos Lived experience: TBD	OTN Professional Learning Series certified webcast for primary care providers: Bladder management for people with SCI	Session 1: March 2020 Session 2: September 2020
	Create online resource for patients with reconstructive urology options (more advanced surgical procedures)	November 2020

15min break

“The E-Stim Collaboration”

A Best Practice Implementation Project

(funded by Rick Hansen Institute)

Principal Investigator:
Pamela E. Houghton PT, PhD
Professor, School of Physical Therapy, Western University

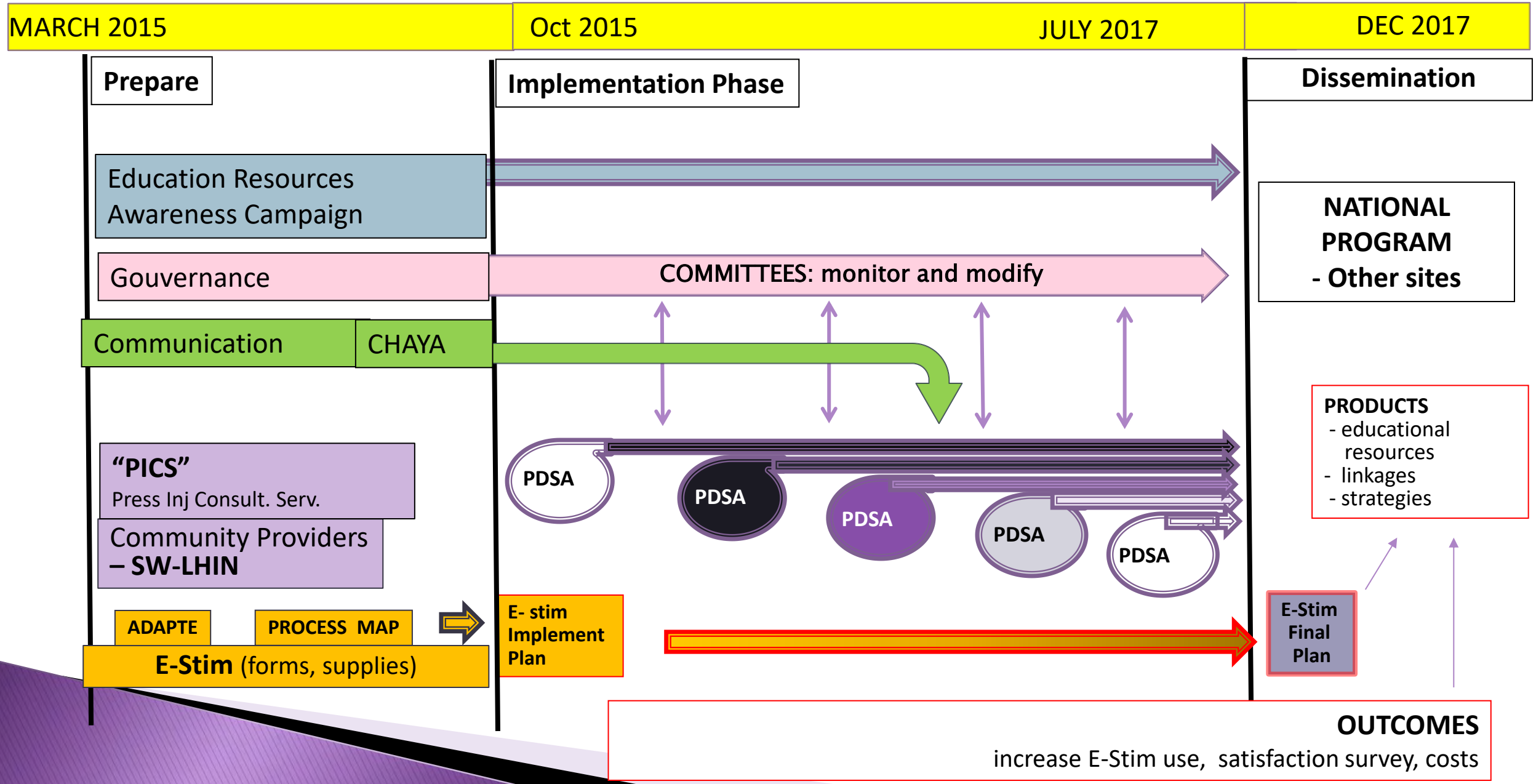
E-Stim Collaboration:
A knowledge mobilization project

OBJECTIVES

- Best Practice implementation
  - Promote uptake of evidence-informed treatment
    - Electrical Stimulation Therapy (E-Stim)
  - Local – field test – SW-LHIN (formerly known as CCAC)
- Expand learnings to other sites across Canada

Pamela Houghton, Dalton Wolfe, Paul Holyoke, Deena Lala, Lyndsay Orr Western University, SCI program Parkwood Hospital, SW-CCAC. FUNDED BY Rick Hansen Institute (March 2015-2017).

Implementation Plan: PDSA cycles

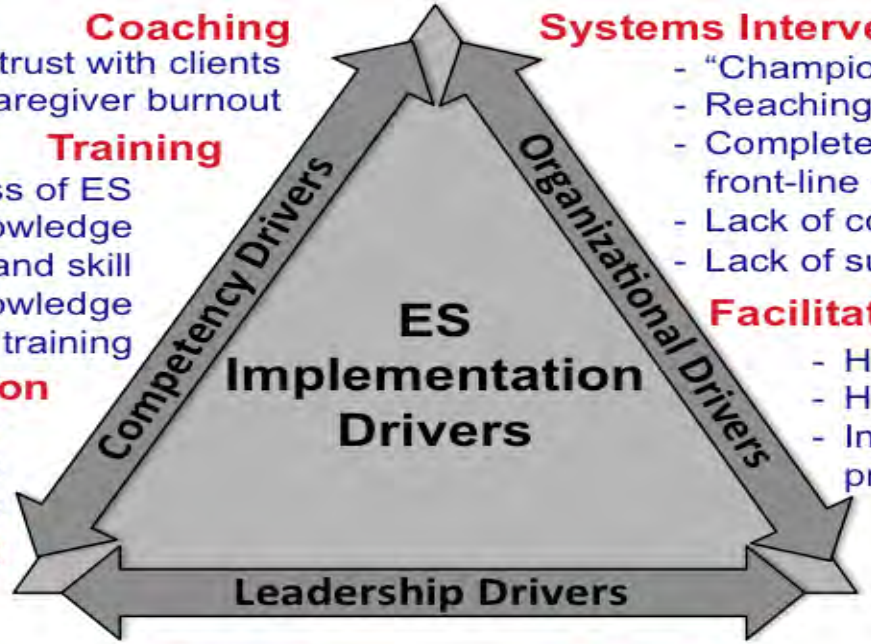


Key Stakeholder Engagement

- Collaborators / Key Stakeholder
  - Regional Rehab Centre – SCI program Parkwood
  - Public Funded Community Care – SW– CCAC/LHIN: –
  - Contracted Home care agency
    St Elizabeth Health Care:
    VHA:
  - Attendant care services: Cheshire London
  - E–Stim Vendor: McNeice TENS
  - SCI – Ontario
  - People with SCI

- Facilitators – Communication Plan

Barriers & Facilitators



Coaching
- Creating rapport/trust with clients
- Recognizing caregiver burnout

Training
- Lack of awareness of ES
- Lack of knowledge
- Lack of training and skill
- Lack of self management knowledge
- Not receptive to training

Selection
- Who will perform ES?
- Caregiver/staff comfort with ES
- Client rarely suitable for ES

Performance Assessment
- Infrequent referrals
- Irregular interdisciplinary team assessments

Systems Interventions
- "Champion" or coordinator needed
- Reaching rural areas
- Complete "buy-in" of all leaders and front-line staff
- Lack of communication at every level
- Lack of support from LTC facilities

Facilitative Administration
- High staff to client ratio
- High demand: waiting lists
- Inconsistent policies and procedures

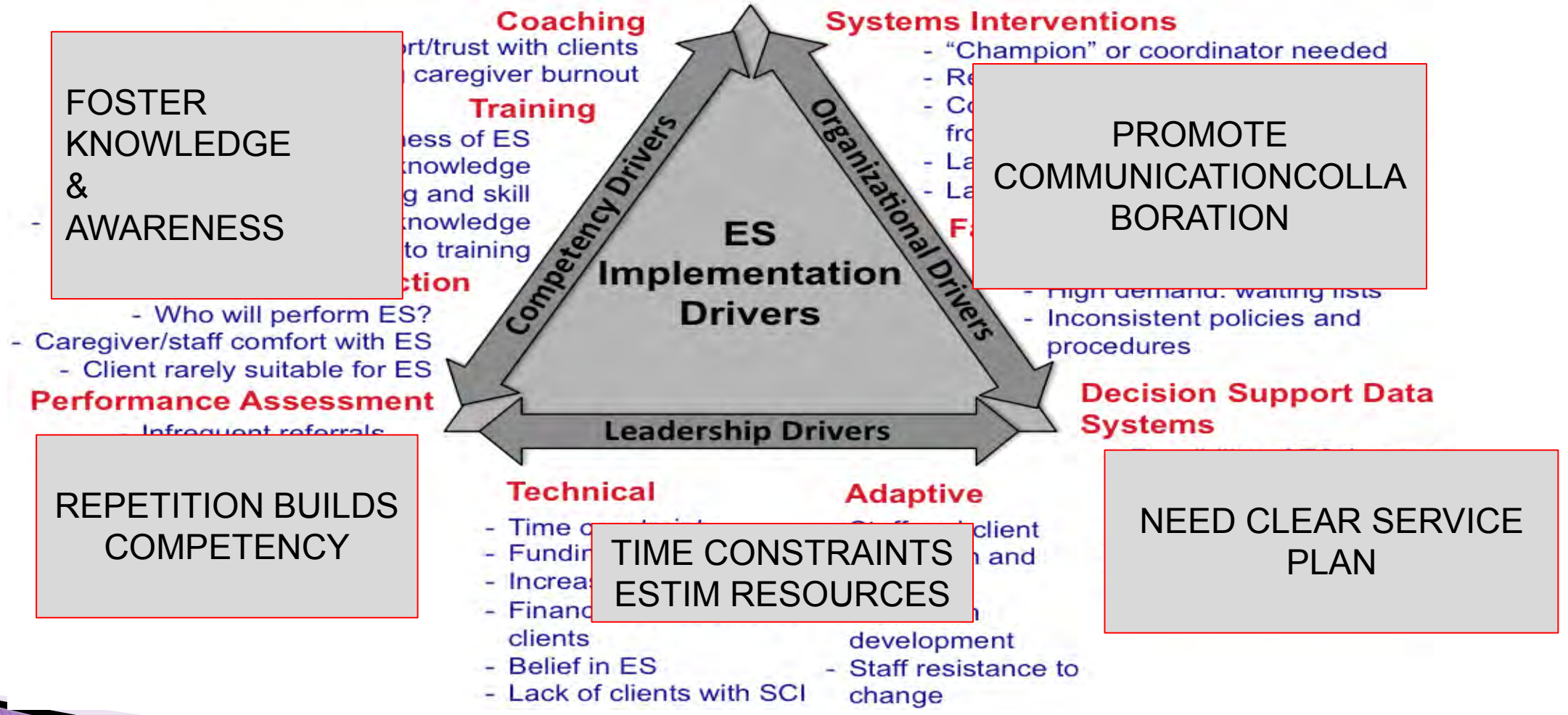
Decision Support Data Systems
- Feasibility of ES (easy to use, inexpensive, evidence)
- Lack of ES suppliers
- A need for ongoing support and feedback

Technical
- Time constraint
- Funding
- Increased workload
- Financial constraints for clients
- Belief in ES
- Lack of clients with SCI

Adaptive
- Staff and client motivation and support
- Staff team development
- Staff resistance to change

Lala D, et al., Topics in Spinal Cord Medicine

Barriers & Facilitators



FOSTER KNOWLEDGE & AWARENESS

PROMOTE COMMUNICATIONCOLLABORATION

REPETITION BUILDS COMPETENCY

TIME CONSTRAINTS ESTIM RESOURCES

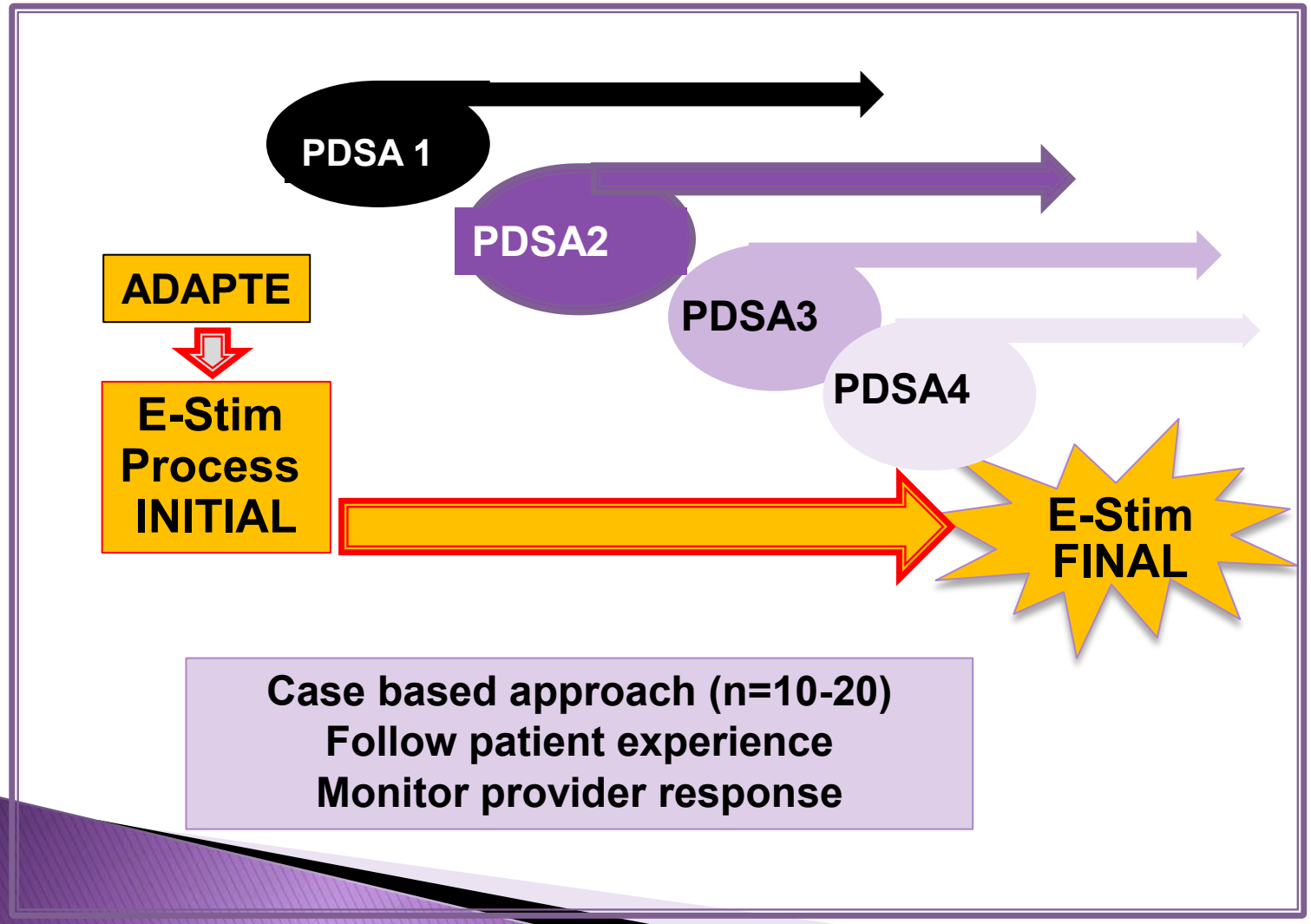
NEED CLEAR SERVICE PLAN

Lala D, et al., Topics in Spinal Cord Medicine

METHODS: Multi-faceted

- ✓Communication Strategy: Existing systems
  Electronic Platform: CHAYA
- ✓Specialized Team
  - Pressure Injury Consultation Service
- ✓Awareness Campaign
- ✓Develop Educational programs
- ✓CCAC processes
- ✓E-Stim Equipment and Supplies
- ✓Engage Providers and Patients

Improvement cycles (PDSA) PLAN, DO, STUDY, ACT



- ADAPT process
- Review after each cycle
  - Document – feedback, notes
- Collect Outcomes
  - E-Stim use
  - Feedback
    - Surveys
      - Patients & providers

X Clinical Outcomes (healing)

Lessons learned

- Knowledge mobilization – where we need to be
  - Careful not to promise clinical outcomes
- Multi-faceted project
  - ?Take on too much – focus on specific setting/patient
- E-Stim will only work if SWC in place
- Time is precious – care providers maxed out
- Wound champion burn-out, turnover+++
- Collect data – pressure ulcer – ID patients
  what is expected healing time
- Collaboration requires communication
  - Another electronic system may not be answer

DISSEMINATION PHASE

Community of Practice

"A group of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly."

- 187 members (clinicians, HC Provider)
- Informal, secure
- Seminars / Discussion forum (text)
  - Clinical questions
  - Estim application tech

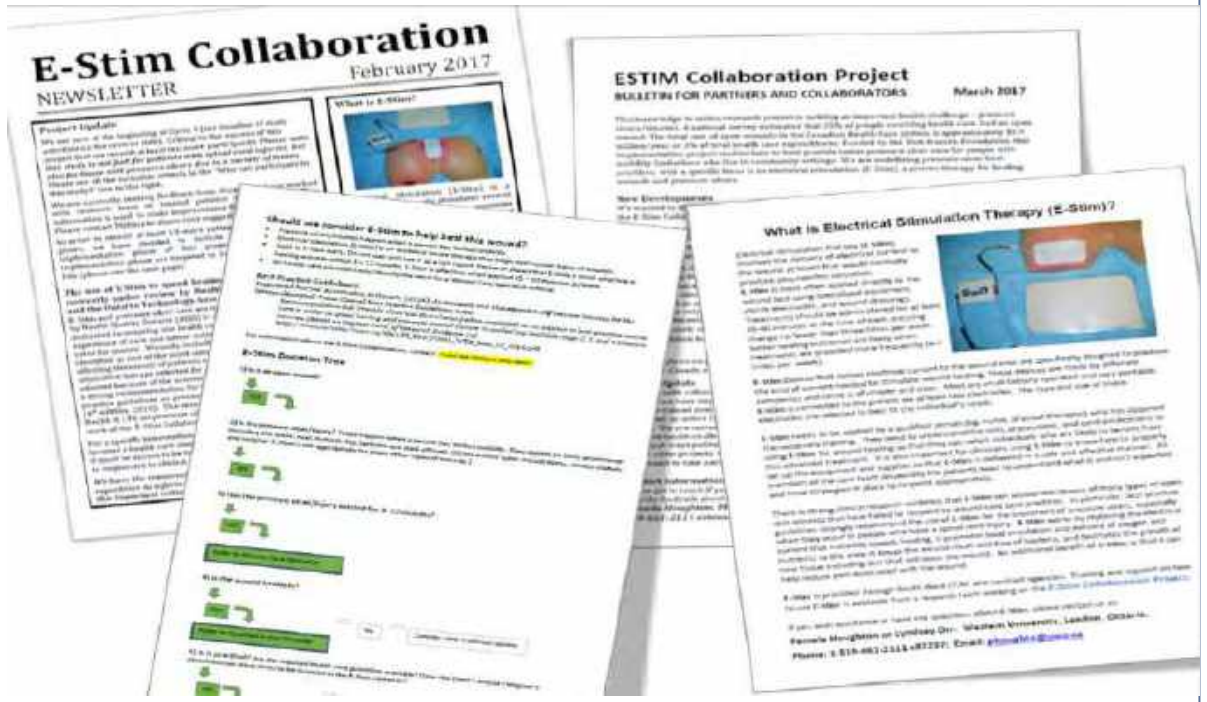
PLEASE JOIN US!!!

A new website

LOG IN

HOME | WHAT IS ESTIM | PROVIDER RESOURCES | PUBLIC RESOURCES | EVENTS | CONTACT US

- Estim protocols
- Consent form
- Contraindications
- Dressings that can be used with Estim
- How to videos
- Identifying appropriate clients
  - Decision Tree
  - Consult form
- Clinical Practice Guidelines
- Research Evidence summarized
  - Houghton review articles
- Wound Assessment forms
  - PWAT



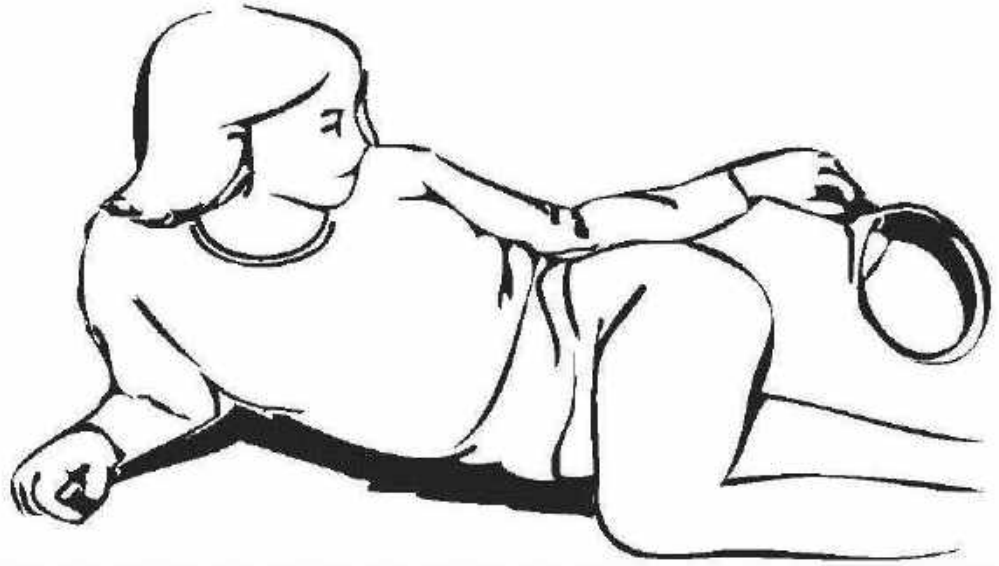
estim4wounds.ca

A new website

LOG IN

HOME | WHAT IS ESTIM | PROVIDER RESOURCES | **PUBLIC RESOURCES** | EVENTS | CONTACT US

- What is Estim
- Patient education pamphlets
  - How to prevent pressure ulcers
  - Checking your skin
- Ways to incorporate exercise into
- Feed your wounds
- Why do people with Diabetes have foot wounds?
- Importance of managing chronic edema



estim4wounds.ca

DISSEMINATION PHASE

NATIONAL PROGRAM: Developing other sites for E-Stim implementation across Canada

9 additional sites, 5 provinces

- Vancouver
- Calgary
- Edmonton
- Winnipeg
- Montreal
- London
- Toronto (2)
- Ottawa
- Hamilton

National Implementation Committee (Advisory Council)

- 30 invited members
  - (interdisciplinary, SCI, advocates)
  - Researchers, clinicians, policy makers,
  - SCI and Wound Care (PrU)
- Champions actively implementing Best Practices: = E-Stim

National Implementation Committee

- Funding from ONF June 2018 to 2020
- Virtual monthly meetings
- Annual retreat (Dec 2016, Nov 2017)
- ? Spring 2018 – strategic priorities

ONTARIO SPINAL CORD INJURY
SOLUTIONS ALLIANCE
ALLIANCE SOLUTIONS
EN LÉSIONS MÉDULLAIRES

- THE SCI COMMUNITY THREE YEAR PLAN (2018-2021)

Pressure Injuries (ulcers)

- ✓ Participation April 2018 meeting
- ✓ Network – join forces: gather expertise
- ✓ Strategic plan – focus efforts
- ✓ Peer activists

THE SCI COMMUNITY'S THREE YEAR PLAN (2018-2021)

X Very little specific to pressure injuries

"continuously promote the use of the evidence based guidelines"

ONTARIO SPINAL CORD INJURY
SOLUTIONS ALLIANCE
ALLIANCE SOLUTIONS
EN LÉSIONS MÉDULLAIRES

E-Stim Collaboration Project

Where we can help – a few examples

- ✓ Online research participation platform
  - ✓ Profile researchers
  - ✓ Testimonials
  - ✓ ADVOCACY: Research to Practice – know what to ask for
- ✓ Experience with Health Quality Ontario system
- ✓ Adopting best practice
  - ✓ Learnings from Estim implementation project: SW-LHIN
    - ✓ Use examples from other provinces (Eg. Alberta)
    - ✓ Collecting important indicators
  - ✓ Ontario SCI implementation network (Estim 5 sites in Ontario)
- ✓ Pathways of Care
  - ✓ Estim and Pressure ulcer management pathways
    - ✓ Link across health care settings
- ✓ VIP4SCI – online virtual platform – link to estim4wounds.ca
- ✓ Physician Education
- ✓ Build Self Management (Public Resources) – Pamphlet

ONT. SCI ALLIANCE; 3 yr. Plan

1. ENHANCE CAPACITY – educate peer activists

2. ONLINE RESEARCH PARTICIPATION PLATFORM – support KT researchers

3. BUILD COALITIONS – Adopting Best Practice {Ontario SCI Implementation networks} – lessons learned E-Stim Collaboration

ONT. SCI ALLIANCE; 3 yr. Plan

4. PATHWAYS of CARE – E-Stim community of practice – everyone asking for the same thing
5. ACCESSIBLE CARE FOR ALL – VIP4SCI online
6. KNOWLEDGE Xchg for PHYSICIANS
   - PrU education – E-Stim referrals
7. ACCESS to SUPPLIES – HQO experience
   - E-Stim devices
8. ACCESS to DEVICES – Seating Clinics

E-Stim Collaboration

- “KT implementers”
- Best Practice
- How can we participate in 3 year plan

DISCUSSION

Estim4wounds.ca

PLEASE JOIN!!!

North American Spinal Cord Injury Consortium

Background

- At the PRAXIS Conference in 2016, in Vancouver, BC a group of delegates ignited a discussion about the continual lack of engagement of the SCI community in research.

- The discussion continued at the 2016 Working 2 Walk Symposium in Minneapolis, Minnesota, where the decision to formalize a North American Consortium to advocate for change was determined.

- Two committees were then formed with representatives from the SCI community in North America including SCI Canada, United Spinal, Association, Rick Hansen Institute, Unite 2 Fight Paralysis etc.
  - Committee # 1 – Preparation Committee
  - Committee # 2 – Organizing Committee

Background Continued

- Following the inaugural NASCIC meeting on October 12, 2017 in Miami, Florida, a Charter was ratified and the NASCIC Executive Council was officially voted in.

- December 2017 NASCIC was officially established with the Canadian/American Spinal Research Organization as the host secretariat.

The Need

SCI research is quickly progressing in North America and people with lived experience need to be equitable partners along the continuum of research to ensure the end results are oriented toward consumer needs, are clinically relevant, and transparent to better enhance uptake.

Purpose

- The purpose of the North American Spinal Cord Injury Consortium is to bring together the many organizations in North America that advocate, represent, or communicate with people living with spinal cord injury. The Consortium will not be designed to replace the member organizations, but to provide a platform for communication, advocacy, and representation of shared goals to the larger community.

- The initial thrust of this Consortium will focus on research and connecting the research community with the SCI community.

Mission

The North American Spinal Cord Injury Consortium (NASCIC) has the mission to bring about unified achievements in research, care, and policy by supporting collaborative efforts across the spinal cord injury community.

Membership

Principal Member

Any organization that is a consumer-based registered 501c3(USA), Registered Charity not-for-profit organization, or the equivalent in its jurisdiction that directly serves, represents, or advocates for the SCI community whether on the national, regional, or local level.

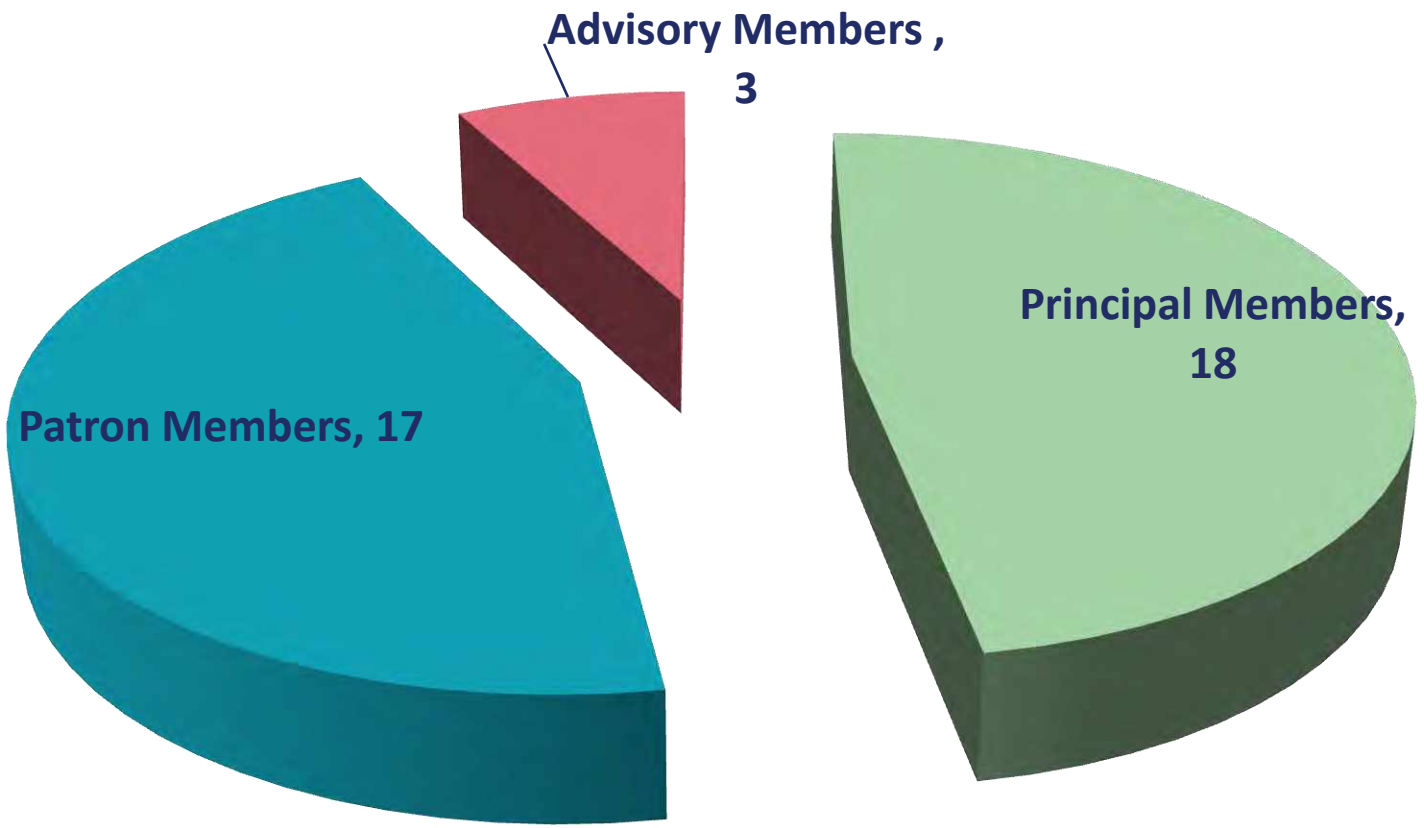
Patron Member

Any individual living with a spinal cord injury or directly representing a person living with a spinal cord injury, such as a caregiver or family member, with a main objective of representing themselves and not an organization.

Advisory Member

Any organization or individual with an interest or activities related to people living with SCI, but not a consumer based registered 501c3 (USA), Registered Charity not-for-profit organization, or the equivalent in its jurisdiction that directly serves, represents or advocates for the SCI community. Examples may be clinical care facilities, professional associations, funding agencies, for profit entities, government agencies, research institutions, etc.

NASCIC Members



CHRISTOPHER & DANA REEVE FOUNDATION
TODAY'S CARE. TOMORROW'S CURE.®
Ontario Neurotrauma Foundation
Fondation ontarienne de neurotraumatologie
EST. 1995
INDEPENDENCE PLACE
LEADERSHIP • ADVOCACY • EDUCATION
Rick Hansen Institute
Institut Rick Hansen
United Spinal Association
KC SCI
Kentucky Congress on Spinal Cord Injury
SPINAL CORD INJURY ONTARIO
LÉSIONS MÉDULLAIRES ONTARIO
THE MIAMI PROJECT TO CURE PARALYSIS
Spinal Cord & Brain Injury Research Center
AbleThrive
PUSHING BOUNDARIES
Exercise, health and hope for people with paralysis
DPClinical
Spinal Cord Injury Alberta
Lésions Médullaires Alberta
Formerly Canadian Paraplegic Association (Alberta)
Fundashon Alton Paas
Un futuro sin limitashon
GET UP STAND UP TO CURE PARALYSIS
unite2fight paralysis
ABILITY NEW BRUNSWICK
CAPACITÉ NOUVEAU-BRUNSWICK
Empowering mobility and independence • Promouvant la mobilité et l'autonomie
CSRO ASRO
CANADIAN / AMERICAN SPINAL RESEARCH ORGANIZATION
Spinal Cord Injury Saskatchewan Inc.
Lésions Médullaires Saskatchewan
DETERMINED2HEAL

Current Projects

- Consumer Advisory Team for Neuromodulation Working Group for Bladder & Bowel
- Spinal Cord Injury Trials Toolkit (SCITT)
- Guiding Principles for Conducting and Disseminating Research in Partnership with the SCI Community
- Consumer Advisory Team for Robotic Exoskeleton Working Group for Increased Mobility – Toyota Mobility Unlimited Challenge

NIH - NINDS Advisory Council

- Within the mission of the North American SCI Consortium is to bring unified achievements in both research and policy. A key funding agency of SCI research is the National Institute of Neurological Disorders and Stroke (NINDS), which is an institute within the National Institutes of Health in the United States. NINDS spends approximately $80M per year on research dedicated toward spinal cord injury.

- Within each institute is a national advisory council consisting of established research scientists and academics. The National Advisory Neurological Disorders and Stroke (NANDS) Council has two general functions: (1) to advise the NINDS on policy and procedures affecting the extramural research programs and (2) to provide a second level of review for all grant and cooperative agreement applications considered by the Institute for funding. They meet 3 times per year.

NIH National Institutes of Health
Turning Discovery Into Health

Research Funding Advocacy

- NASCIC members have decided there is a need to advocate for a redistribution of the research funding to have more emphasis on 1) chronic injury, 2) translational and clinical research to improve care and quality of life, and 3) incorporating the input and voice of those living with SCI and their caregivers in the entire process.

- Update: The first step of this advocacy effort was to submit a letter to the NANDS Council regarding these three issues with the listing of the NASCIC members that support this effort at the time of submission. The letter was submitted prior to the September 13, 2018 council meeting.

For more information and to download a copy of the letter go to

https://nasciconsortium.org/projects/

Value Proposition for Joining NASCIC

- Dissemination of knowledge
- Actively affecting policy on a national and international level (i.e. NIH NINDS Council – reallocation of SCI funds)
- Being a part of a consortium of organizations that represent the SCI community
- Amplifying the voice of individuals living with a spinal cord injury and local community organizations

NASCIC ANNUAL MEETING – VANCOUVER, BC

SUNDAY OCTOBER 21, 2018

SHERATON VANCOUVER AIRPORT HOTEL

QUESTIONS OR COMMENTS

www.nasciconsortium.org

info@nasciconsortium.org

Prevention and Treatment of Pressure Sores

September 7, 2018

Sophia Y. Li, Milos R. Popovic
Toronto Rehabilitation Institute **| University Health Network**

David A. Dzioba
Dabir Surfaces Inc. | Methode Electronics

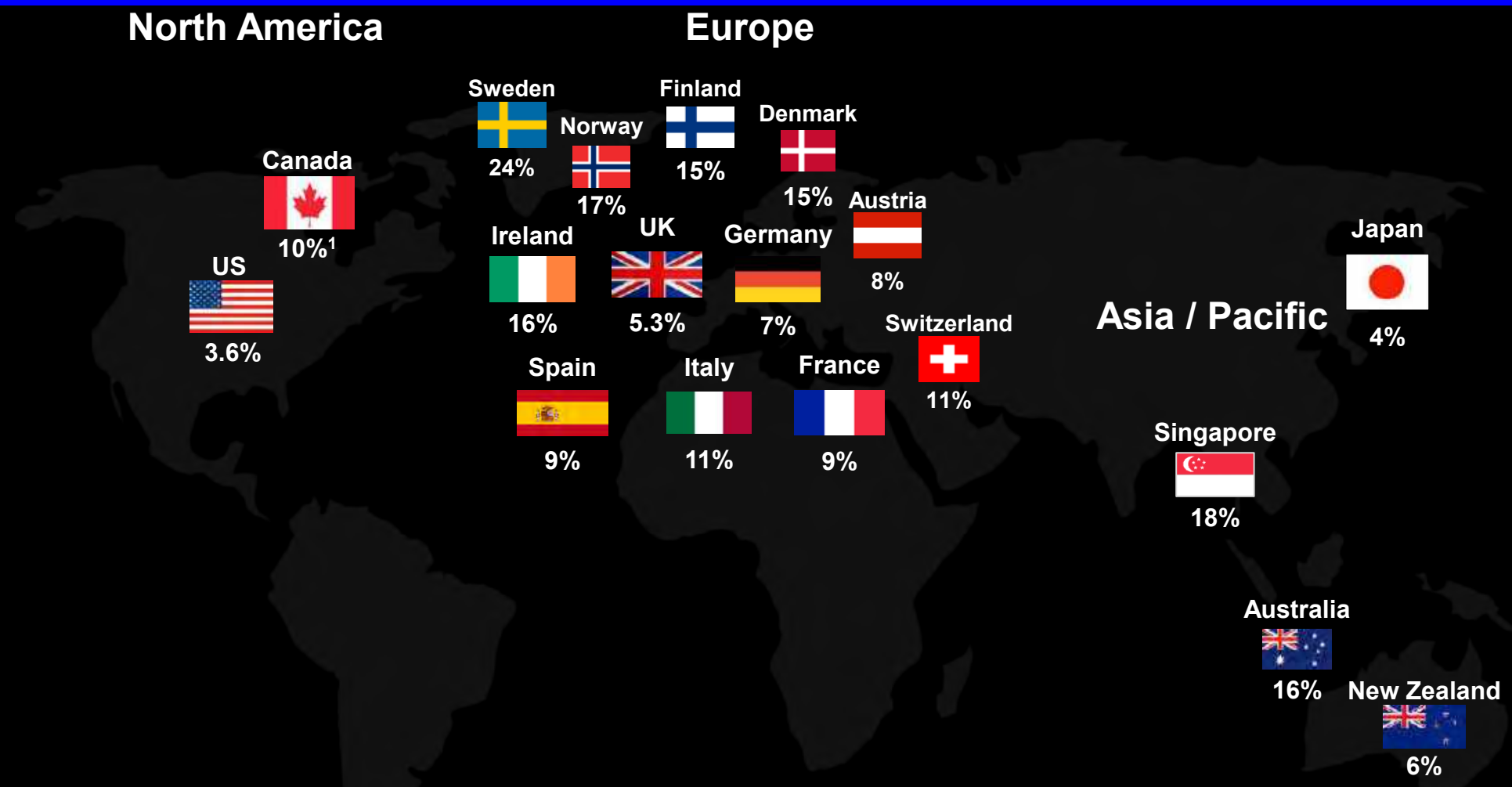
ONTARIO SPINAL CORD INJURY
SOLUTIONS ALLIANCE
ALLIANCE SOLUTIONS
EN LÉSIONS MÉDULLAIRES

Conflict of Interest

Dr. Milos R. Popovic is a shareholder in the medical device company, MyndTec Inc.

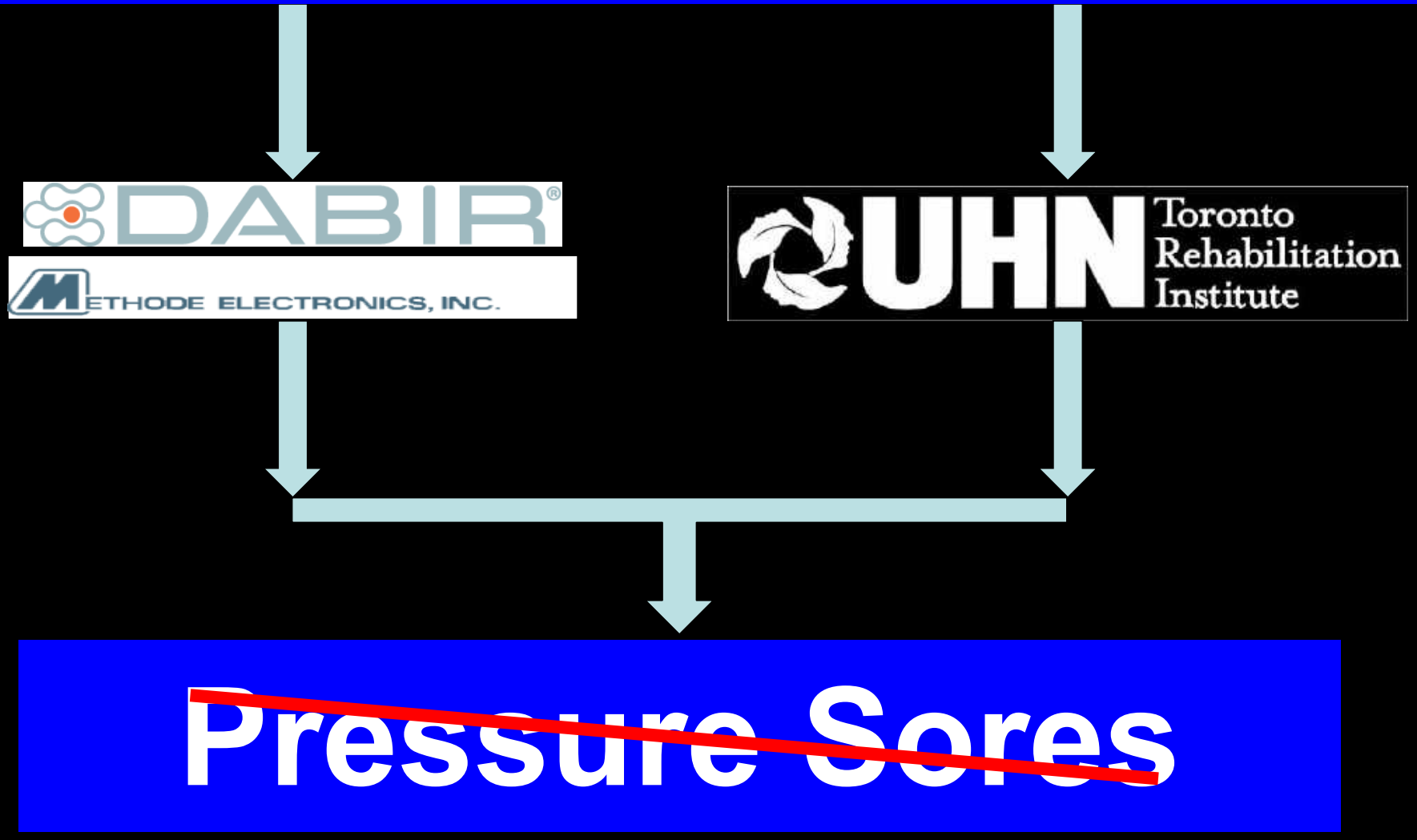
UHN Toronto Rehabilitation Institute

Pressure Sores Overview – International Prevalence Rates (Acute Care)

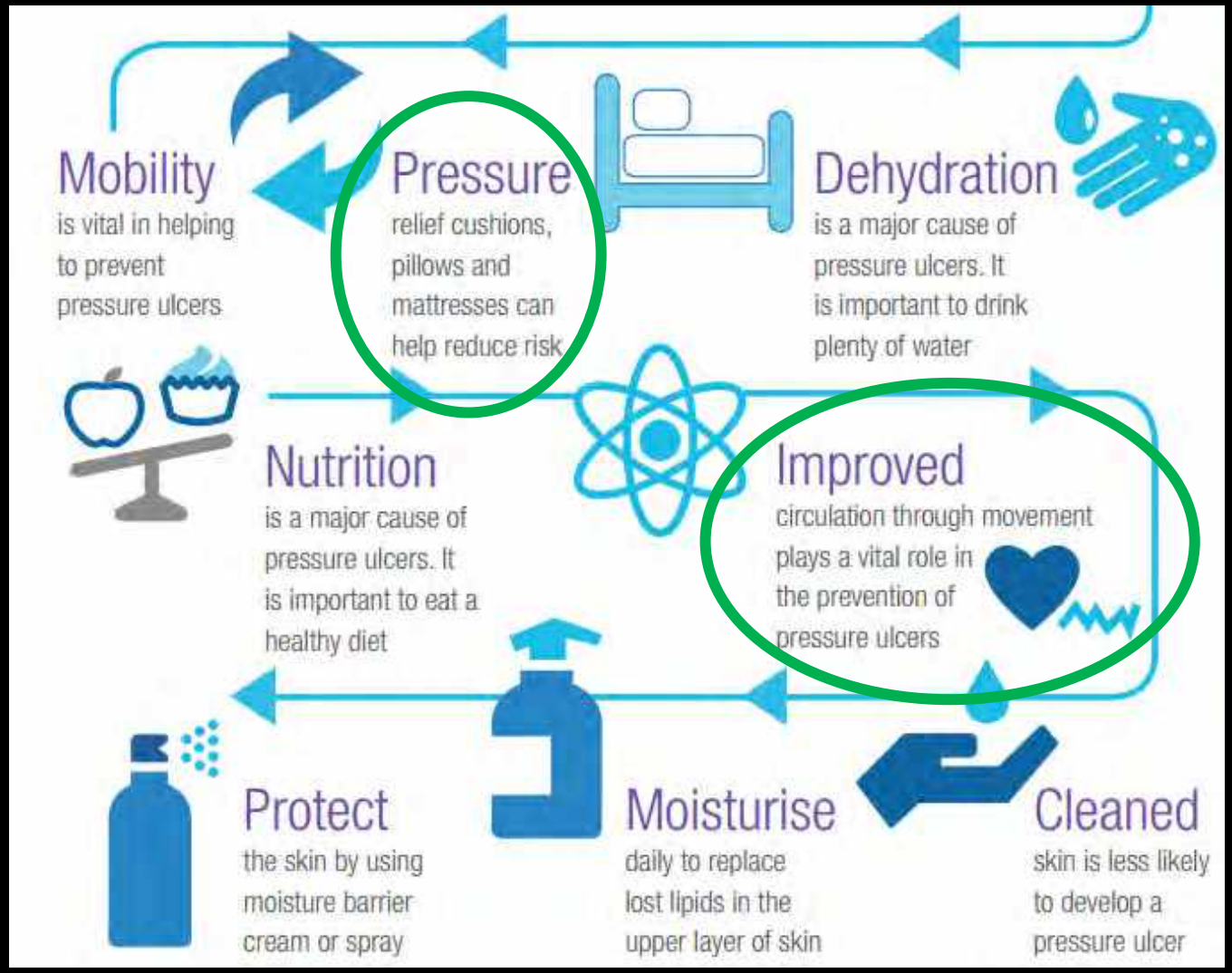


1. Woo KY, Sears K, Almost J, Wilson R, Whitehead M, VanDenKerkhof EG. Exploration of pressure ulcer and related skin problems across the spectrum of health care settings in Ontario using administrative data. Int Wound J. 2017;14(1):24-30.

Prevention and Treatment



Prevention of Pressure Sores



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DABIR®

Prevention of Pressure Sores

The DABIR Surface for Pressure Sores Prevention

METHODE ELECTRONICS, INC.

DABIR®

Methode Electronics Inc. (Global Manufacturing)

CANADIAN ENTERPRISE (METHODE)

- Pacific Insight Headquarters (Sales & Engineering)
  Burnaby, British Columbia, Canada
- Pacific Insight (Manufacturing)
  Nelson, British Columbia, Canada
- Grakon Group: Hamsar Headquarters
  (Sales, Engineering, Manufacturing)
  Burlington, Ontario, Canada

DABIR

CHICAGO, USA

MONTERREY, MEXICO

MRIEHEL, MALTA

CAIRO, EGYPT

SHANGHAI, CHINA

ENGINEERING CENTERS

METHODE

HEADQUARTERS:
CHICAGO, IL

ESTABLISHED: 1946
NYSE: MEI
FY 2019: $1.1B +
CEO: DON DUDA
EMPLOYEES: 4,000+

DABIR®

Executive Summary: Benefits to Patients and Provider Organizations

Dabir systems were designed to:

- **Improve patient outcomes by**
  - **promoting healthy tissue perfusion to prevent pressure injury**
  - **providing cyclic off-loading of compressed tissue**
  - **increasing patient comfort**
- **Positively impact CMS (US) quality metrics: HACRP, HVBP and HRRP**
- **Reduce patient readmissions related to pressure injuries**
- **Minimize related secondary "never events" -- patient falls and wound infections**
- **Provide an overall system level cost savings to the healthcare organization**

Footnote:
HACRP: Hospital-Acquired Condition Reduction Program ; HVBP: Hospital Value-Based Purchasing Program; HRRP: Hospital Readmissions Reduction Program

DABIR®

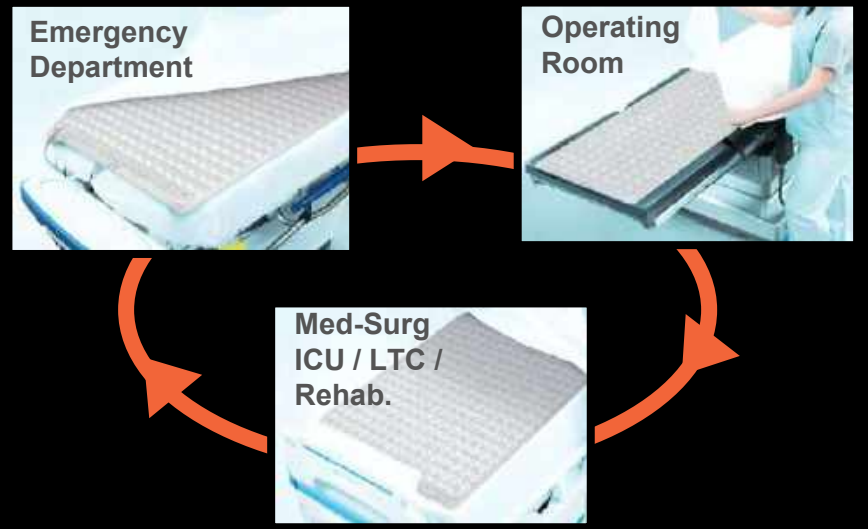
Dabir System Overview

Consist of two primary components:

- Controller (Equipment)
- Multi-patient Surfaces (Semi-Disposable)

Highlights:

- Tissue off-loading while minimizing patient movement
- Reduces skin shear caused by immersion or envelopment
- Maintains patient stability with low-profile design (25mm inflated)
- Deploys between OR pad (mattress) and cover sheet
- Surfaces are radiolucent for diagnostic imaging
- Suitable for use across the continuum of care
- Intelligent electronic controls
- Automatic surface end-of-life notification
  - Surgical: 220 hours
  - Stretcher: 345 hours
  - Med-Surg Bed: 775 hours



- Weight Limit: 15 to 400 lbs. (Surgical) / 15 to 600 lbs. (MedSurg)
- Uses standard hospital cleaning protocol

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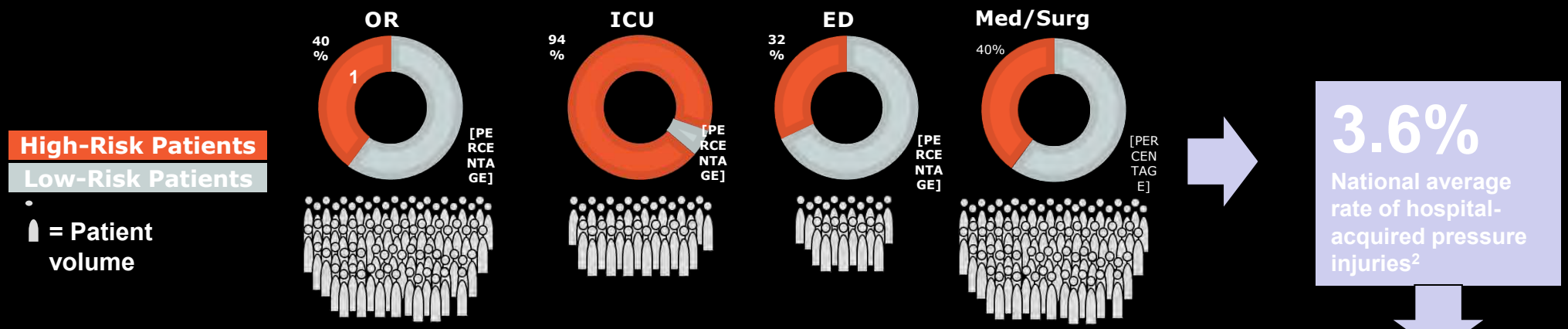
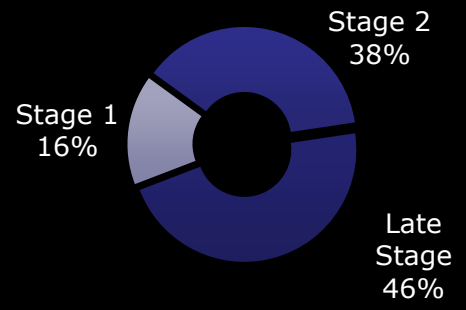
Clinical Prevalence and Treatment Costs (US)



3.6%
National average rate of hospital-acquired pressure injuries[2]

PI distribution by wound stage [3]



23%
of patients who develop PI during hospital stay are readmitted

[1] Dabir Surfaces Internal Estimate, *Primary Research – Web Survey (n=90),* March – April 2017.
[2] Bergquest-Beringer, S. et al, Pressure Ulcers and Prevention Among Acute Care Hospitals in the United States, *The Joint Commission Journal on Quality and Patient Safety, Sep; 39(9);* 404-14
[3] Lyder CH et al., Hospital Acquired Pressure Ulcers: Results from the National Medicare Patient Safety Monitoring System Study, *J Am Geriatric Society*, 60(9): 1603-8.
[4] Trueman, P. and Whitehead, SJ, 2010, The Economics of Pressure Relieving Surfaces: An Illustrative Case Study of the Impact of High-Specification Surfaces on Hospital Finances, *International Wound Journal, 7*: 48-54
[5] Are We Ready For This Change? Content last reviewed October 2014, Agency for Healthcare Research and Quality, Rockville, MD https://www.ahrq.gov/professionals/systems/hospitals/pressureulcertoolkit.putool1.html

DABIR®

Clinical Impact: Hospital-Acquired Pressure Injuries (HAPIs)

- Recent studies suggest a US average of 3.6% incidence rate of Pressure Injuries occur in the Acute Care setting[1]
- Prevalence of Pressure Injury in Canada has been estimated to be 25% in Acute Care and 30% in non-acute care setting
- Approximately 25% acquired intra-operatively during surgeries lasting three hours or more[3]
- Reduced quality of life, increased length of stay (4-10 days)[4] and at higher risk for mortality[5]
- Stage 3 and 4 injuries expose the patient to a higher risk of Hospital-Acquired Infection[6]
- Patient risk exists in ED, Pre-Op, OR, RR, ICU, Med-Surg Units, IR, EP, & ECMO

[1] Bergquest-Beringer, S. et al, Pressure Ulcers and Prevention Among Acute Care Hospitals in the United States, *The Joint Commission Journal on Quality and Patient Safety, 2013 Sep; 39(9); 404-14*
[2] Woodbury MG and Houghton PE, Prevalence of Pressure Ulcers in Canadian Healthcare Settings, *Ostomy/ Wound Management 2004;50(10):22–38*
[3] Esch, Dianne, Scott Triggers: A Screening Tool for Pressure Ulcer Prevention in Surgical Patients, *American Society of Peri-Anesthesia Nurses, 2010 June; 25; Issue 3*; 186
[4] Scott, JR et al, Incidence and characteristics of hospitalized patients with pressure ulcers, *Plastic Reconstructive Surgery, 2006 Feb; 117(2):*630-4
[5] Allman RM, et al, Pressure ulcers, complications, and disease severity: impact on hospital costs and length of stay, *Advanced Wound Care, 1999 Jan-Feb; 12(1)*:22-30
[6] Bergstrom N et al, The National Pressure Ulcer Long-Term Care Study; outcomes of pressure treatments in long term care. *J Am Geriatric Society, 2005 Oct; 53(10):*1721-9

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Economic Burden: Hospital-Acquired Pressure Injuries (HAPIs)

- US Healthcare System cost estimated between USD $6-15 billion[1]
- Centers for Medicare & Medicaid Services (CMS) exercised its authority under section 5001(c) and will no longer pay for HAPI stages III & IV[2]
- Hospital-Acquired Condition (HAC) adjusts payments to hospitals with risk-adjusted HAC scores; subject to 1% reduction of payment[3]

[1] Mostow EN, Markova A., *Dermatol Clin. 2012 Jan; 30(1):*107-11, ix
[2] CMS, *Department of Health & Human Services, SMDL #08-004*, 2008 July
[3] CMS.gov, *Medicare.Acute Inpatient PPS*, 2017 August

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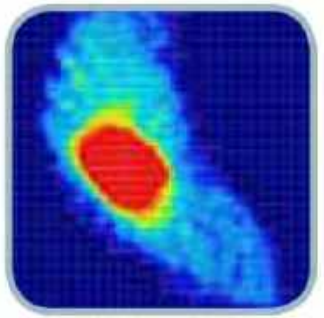
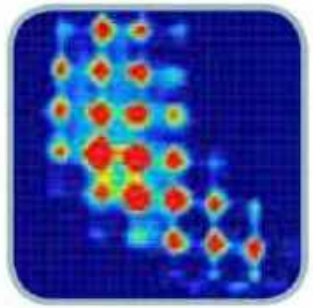
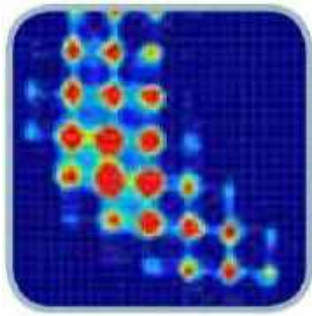
Clinical Evidence – Pressure Mapping & Enhanced Perfusion



STATIC MATTRESS



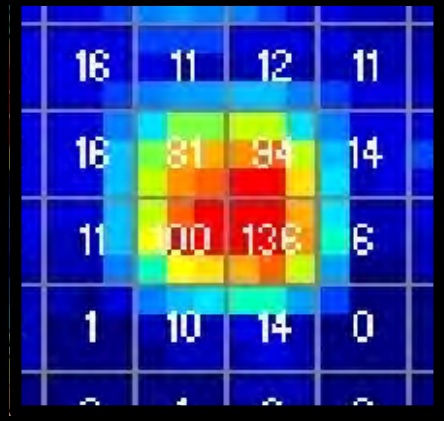
DABIR ZONE 1
(Inflated 2.5 min.)



DABIR ZONE 2
(Inflated 2.5 min.)

Pressure Mapping
Side Lying Position

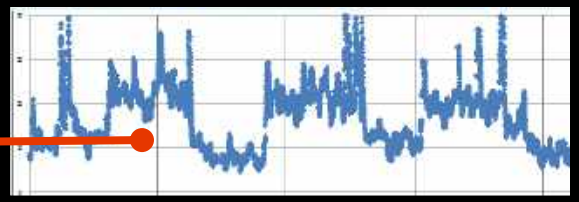
MICRO PRESSURE



- *Alternating nodal support*
- *Localized "Off-loading"*
- *Reduced skin shear*
- *Increased patient comfort*
- *Enhanced tissue perfusion*

Accelerated Cycle Timing
(Actual: 5.0, 7.5 or 10.0 min.)

Cyclic off-loading vs. Measured blood flow
Poster Number: LB-008 (Sacral Area)

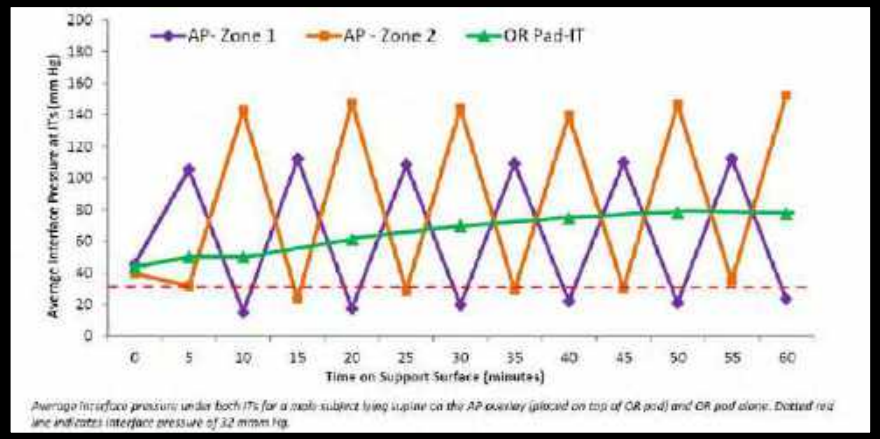


Source: Internal Dabir test results

DABIR®

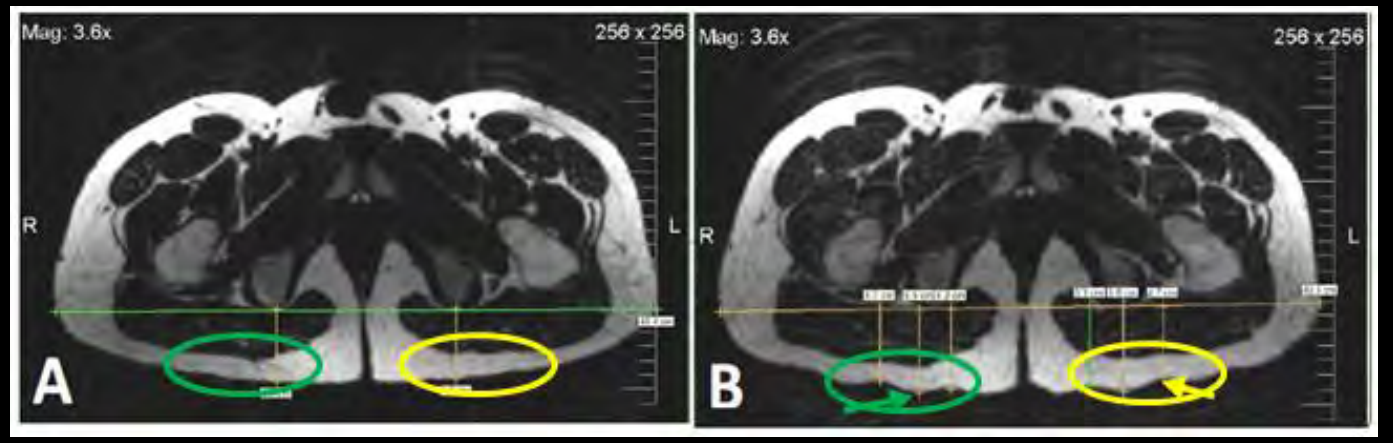
Clinical Evidence – Dabir Dynamic (Alternating) vs. Static Surfaces

Static vs. Dynamic Support Surface – Interface Pressure

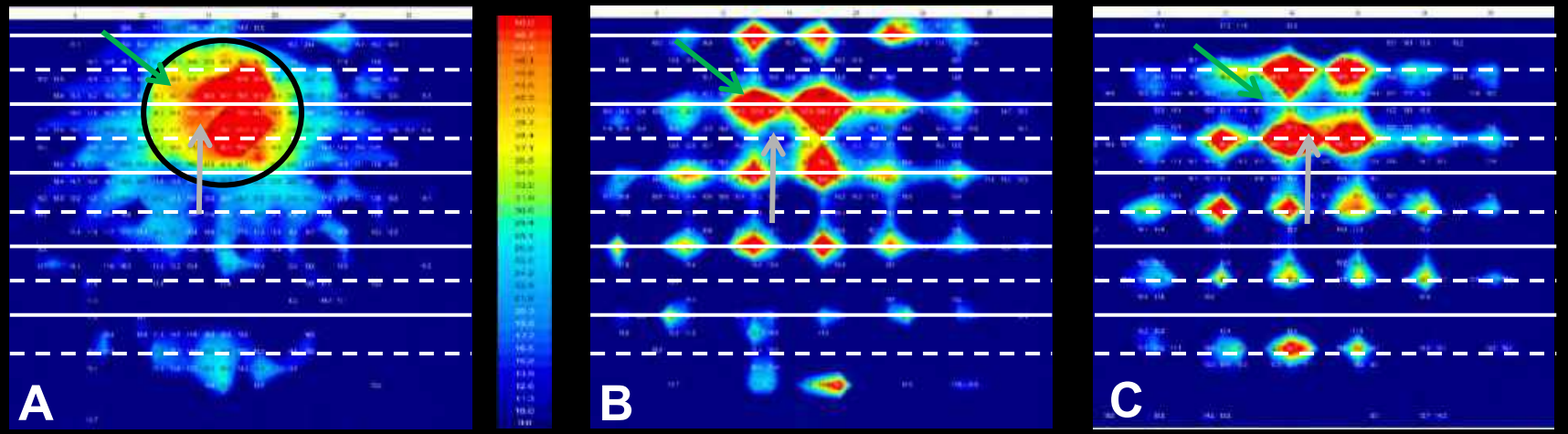


Average interface pressure under both ITs for a male subject lying supine on the AP overlay (placed on top of OR pad) and OR pad alone. Dotted red line indicates interface pressure of 32 mmm Hg.

Static vs. Dynamic Support Surface – Tissue deformation (Magnetic Resonance Imaging)



Static vs. Dynamic Support Surface – Interface Pressure Mapping of Sacrum

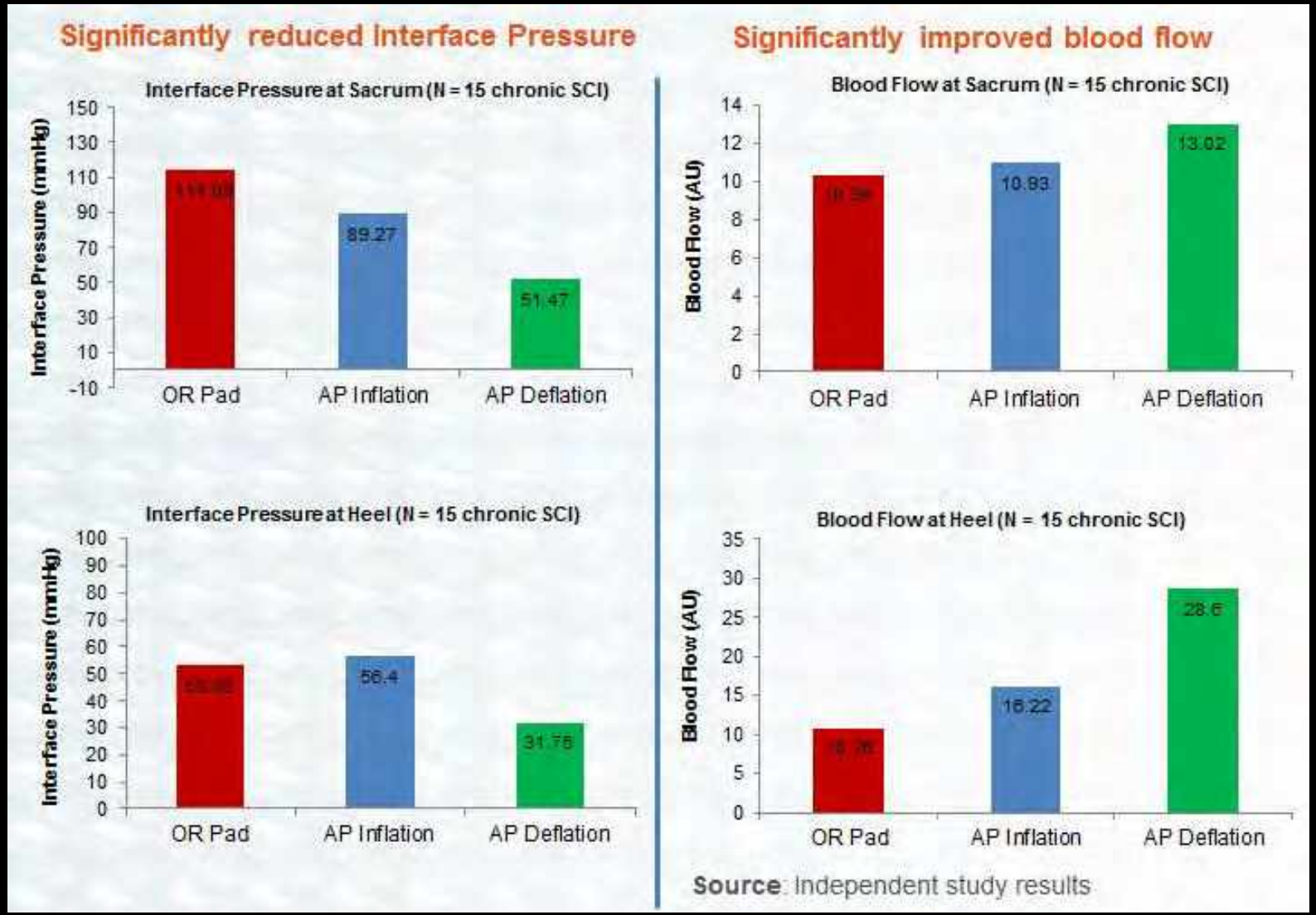


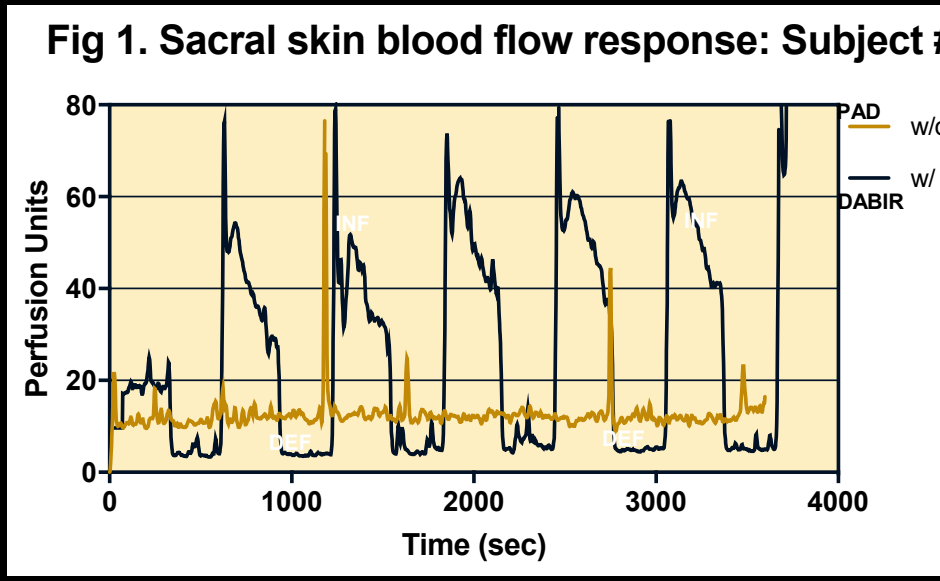
Source: Internal Dabir test results

Dabir Surface provides periodic pressure relief to body areas that are vulnerable to pressure ulcer (injury) development. The periodic micro-pressure relief reduces tissue deformation and skin shear, enhances tissue perfusion, all in a novel low-profile design.

DABIR®

Clinical Evidence – Blood flow studies in chronic SCI subjects





Dabir Surface provides periodic pressure relief to sacrum and heel tissues in chronic SCI patients during deflation cycles. The periodic pressure reduction improves local tissue perfusion and reduces risk for pressure ulcer development.

Published Clinical Posters

Low-profile Alternating Pressure for Peri-operative Pressure Injury Prevention
Presented at Fall SAWC, Las Vegas, NV, October 7-9, 2016. Poster Number: CR-002

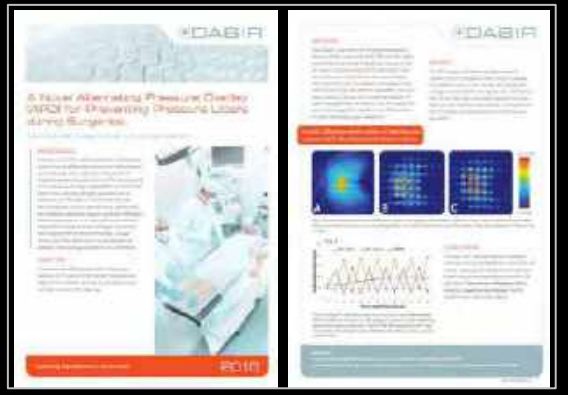
Improving Patient Comfort and Satisfaction in Emergency Departments with a Micropressure Overlay
Presented at Fall SAWC, Las Vegas, NV, October 7-9, 2016. Poster Number: CS -020

MRI Evaluation of Changes in Deep Tissue Thickness for a Novel Alternating Pressure Overlay (APO)
Presented at Fall SAWC, Las Vegas, NV, October 16-18, 2014. Poster Number: IR-024

A Novel Alternating Pressure Overlay (APO) for Preventing Pressure Ulcers during Surgeries
Presented at Fall SAWC, Las Vegas, NV, October 16-18, 2014. Poster Number: IR-023

Sacral skin blood flow response to alternating pressure operating room overlay
Presented at Fall SAWC, Las Vegas, NV, October 7-9, 2016. Poster Number: LB-008

Preventing peri-operative pressure ulcers – evaluation of a sacral dressing and an active overlay
Presented at Fall SAWC, Las Vegas, NV, October 7-9, 2016. Poster Number: CR-056



Piloting an Alternating Pressure Overlay to Mitigate Pressure Injury
Presented at AORN Global Surgical Conference and Expo, Boston, April 1-5, 2017

Customer List

Representative Dabir Customers

Large acute care hospital in Alberta, Canada (Head & Neck OR Procedures)

Multispecialty academic hospital in Northeast Ohio

Teaching hospital that includes schools of allied health professions, behavioral health, dentistry, medicine, nursing, pharmacy, public health, and religion in Southern California

Large health system in Southeast Michigan

Not-for-profit, integrated, managed care health care organization based in West Michigan

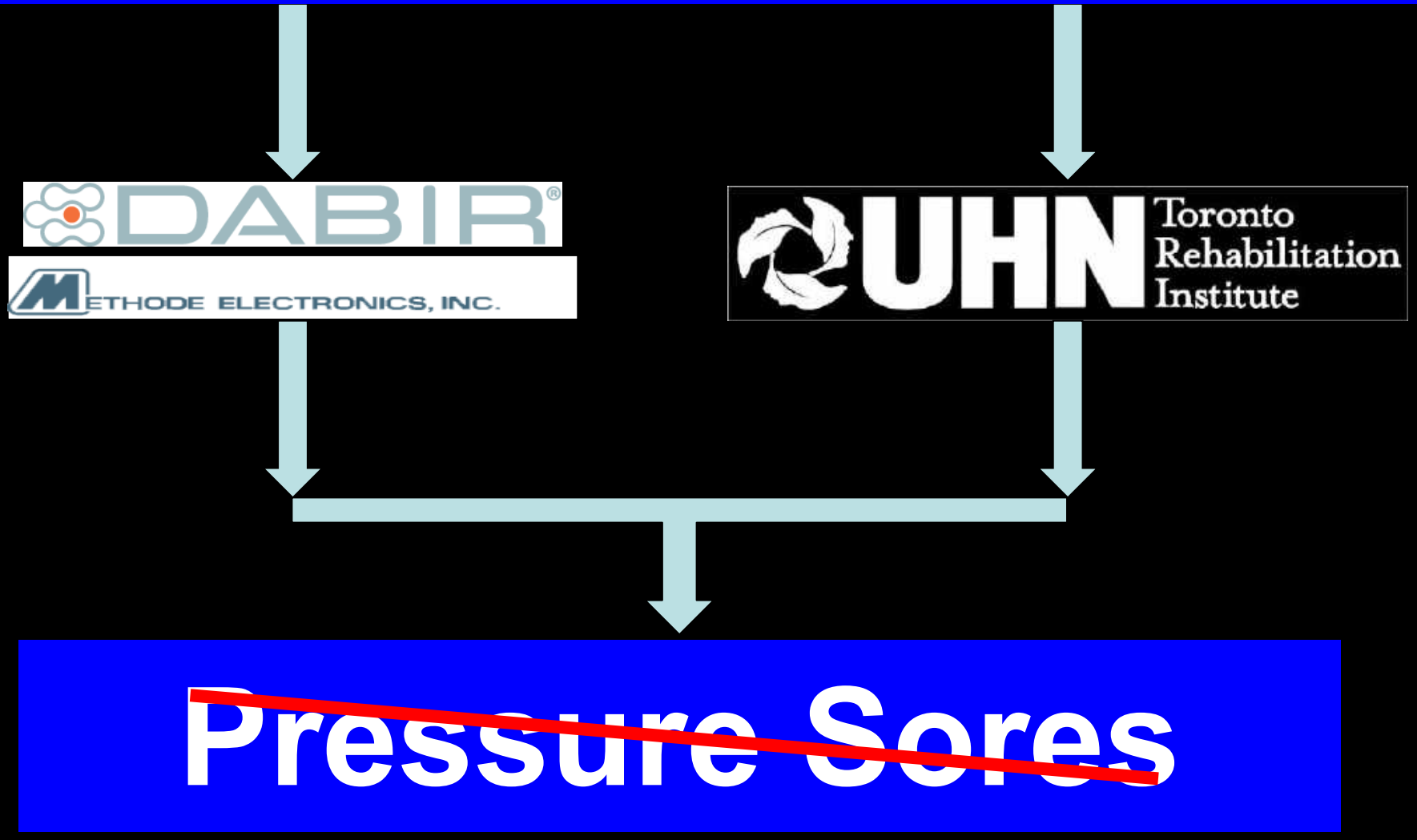
Not-for-profit health care system headquartered in Milwaukee and serving Eastern Wisconsin

A 368-bed acute care hospital in Denver, Colorado

Comprehensive, integrated, non-profit, managed care, health care organization in Metro Detroit, Michigan

Personalized, patient-centered cancer treatment organization

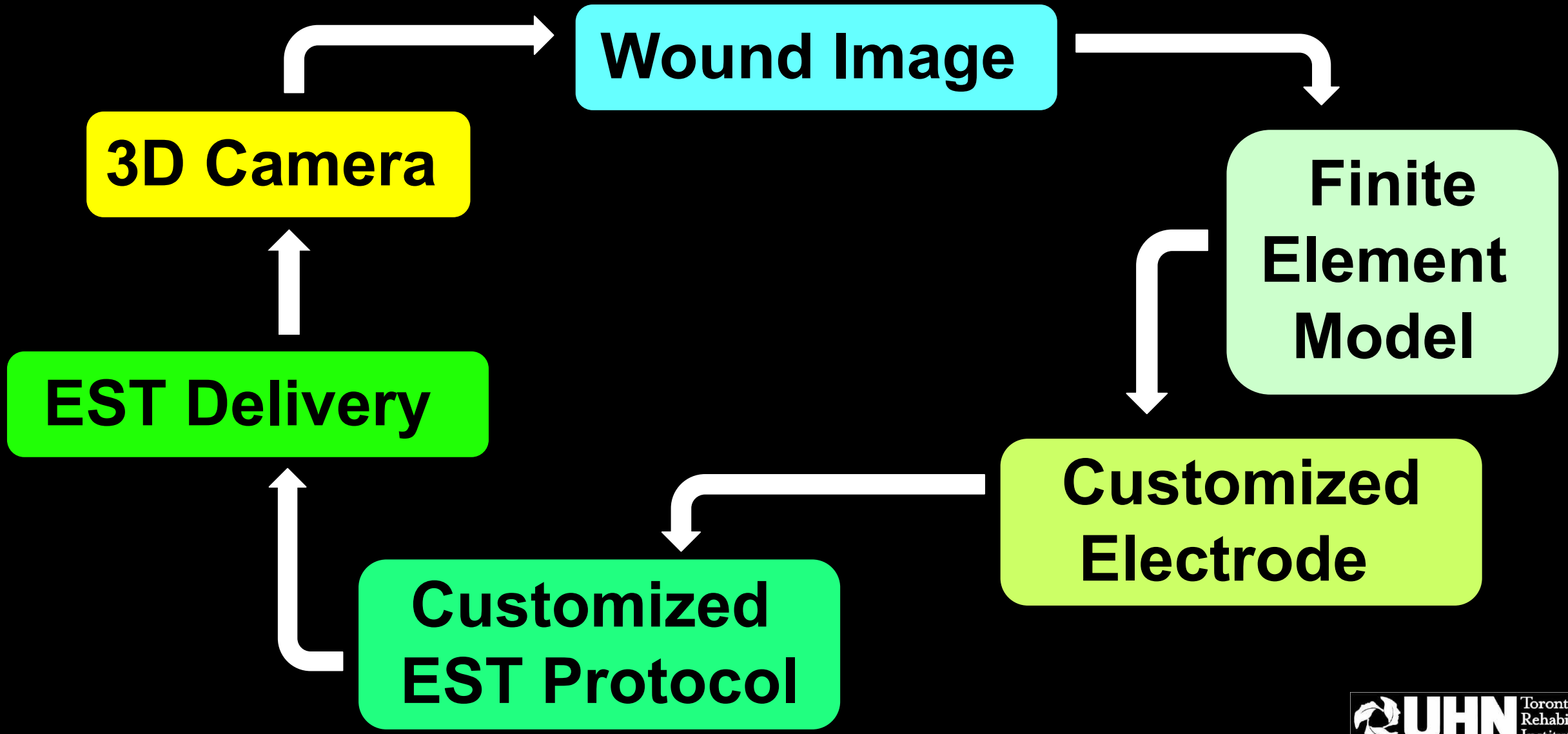
Prevention and Treatment



Treatment of Pressure Sores

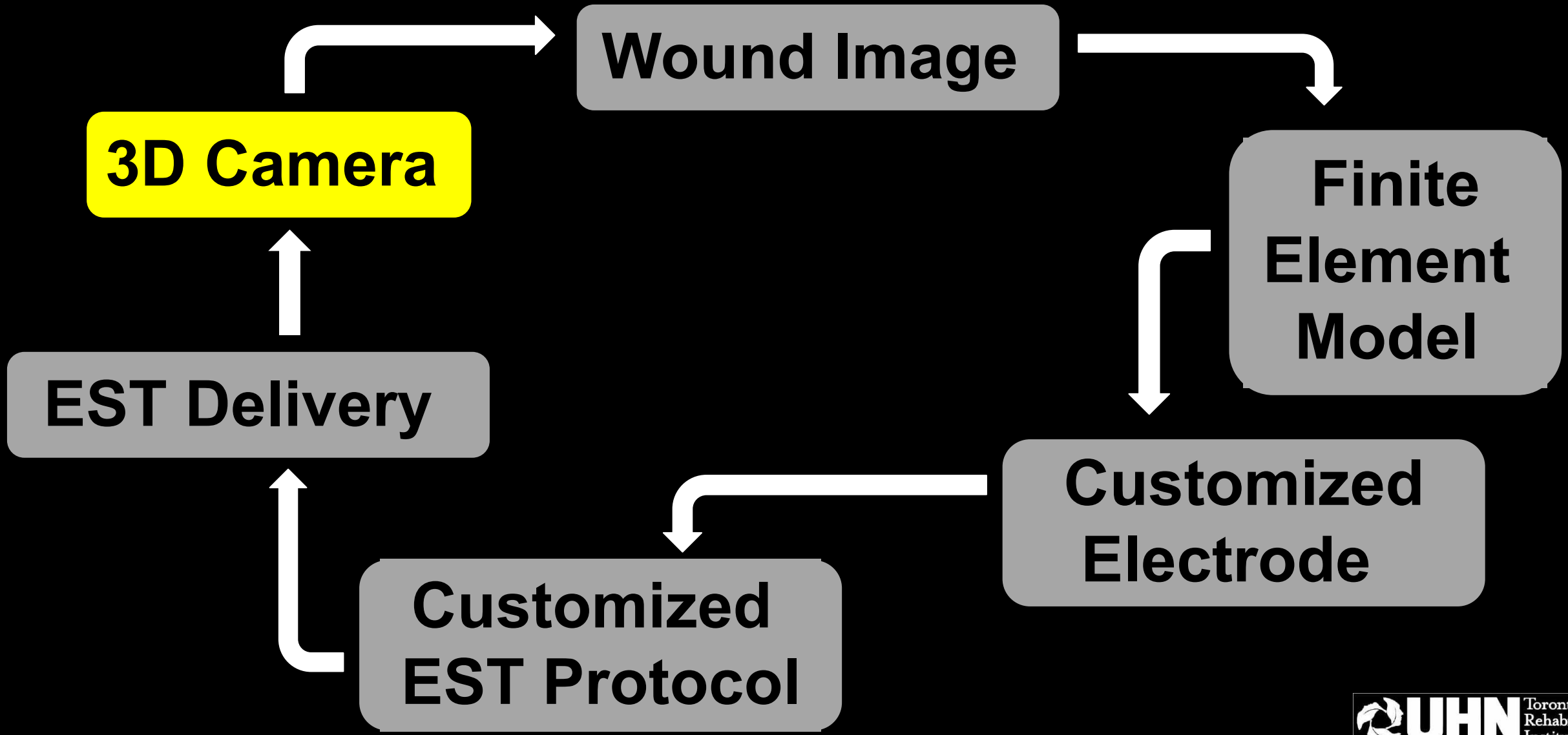
Pressure ULcer Surveillance and Rehabilitation (PULSaR) tool

Solution - PULSaR



UHN Toronto Rehabilitation Institute

Solution - PULSaR



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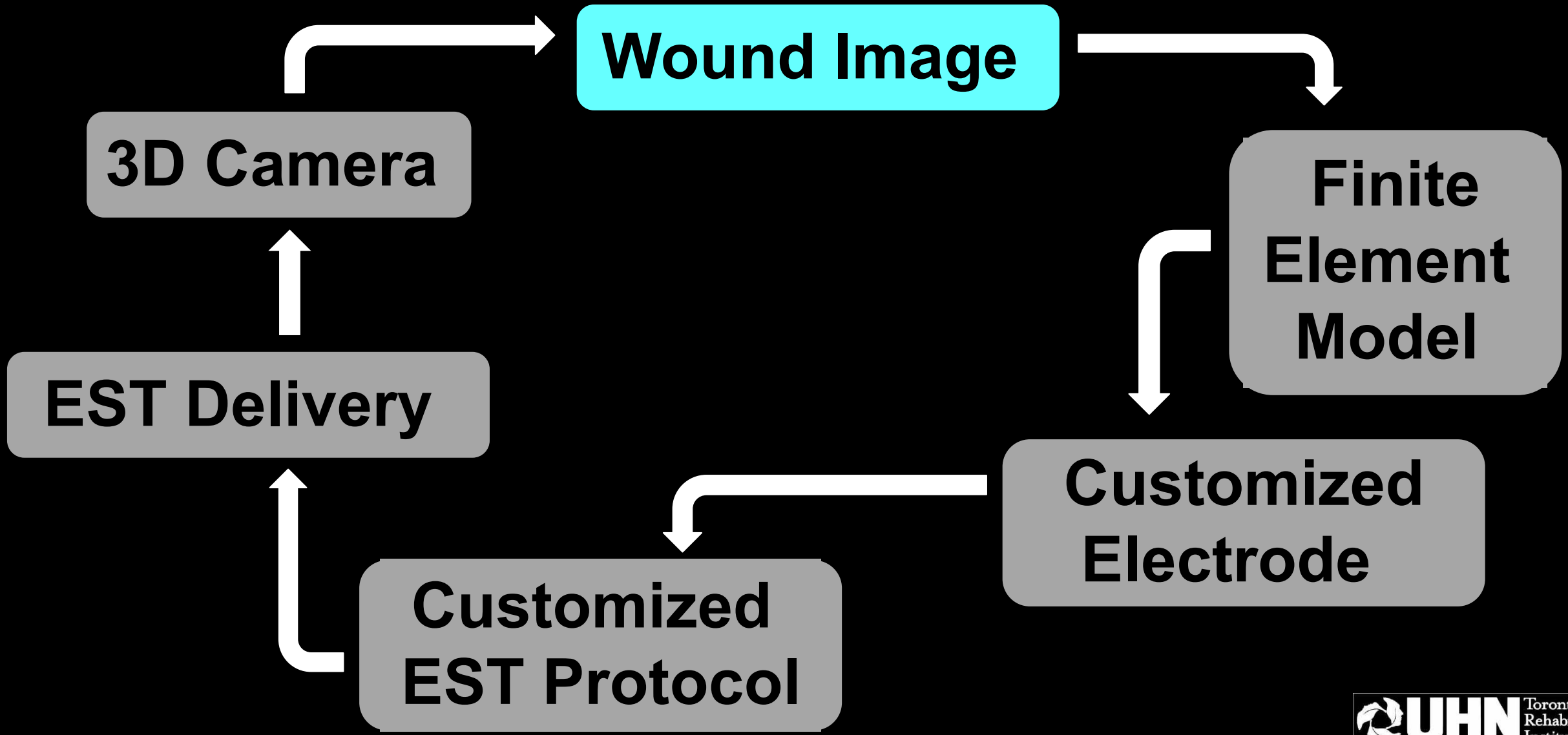
Solution - PULSaR

Sixth Sense Processware - IP

UHN Toronto Rehabilitation Institute

Solution - PULSaR



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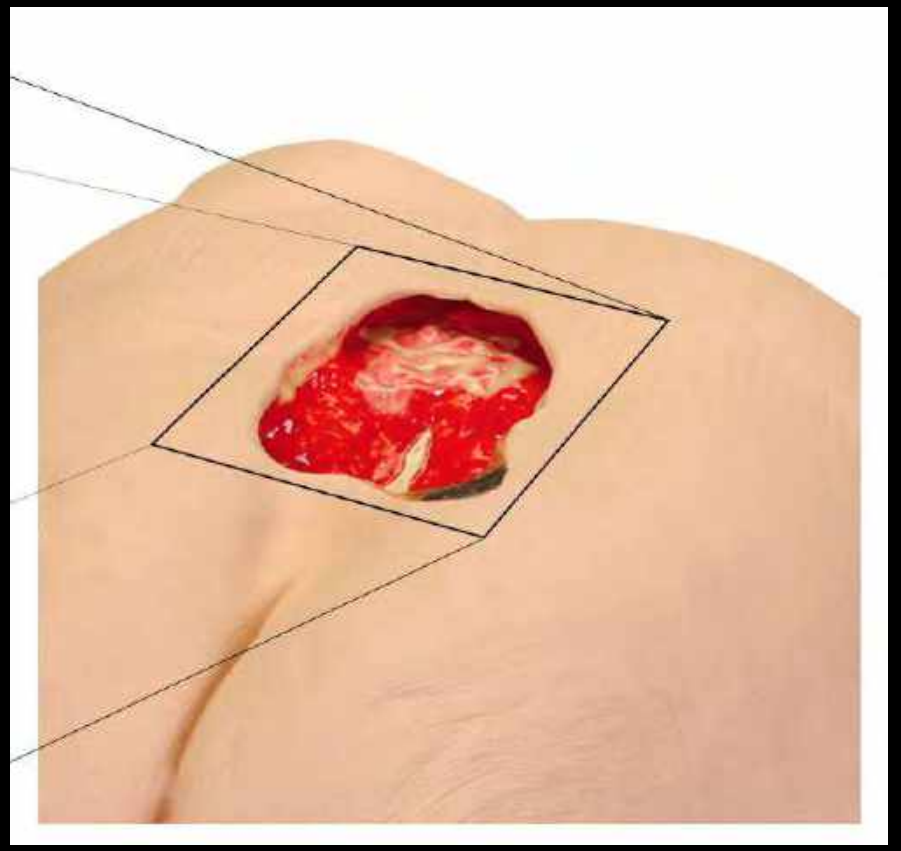
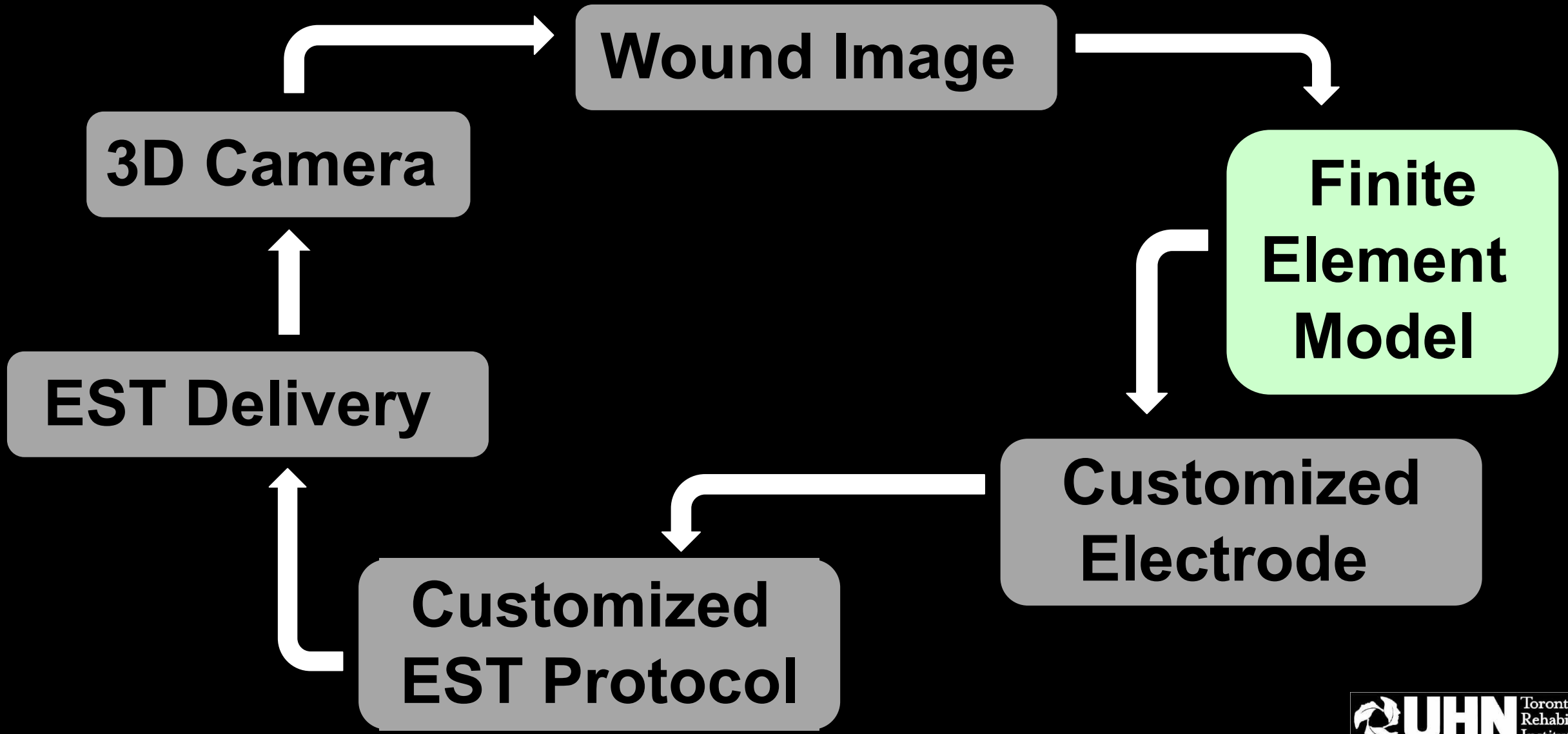
Solution - PULSaR



Sixth Sense Processware - IP

UHN Toronto Rehabilitation Institute

Solution - PULSaR



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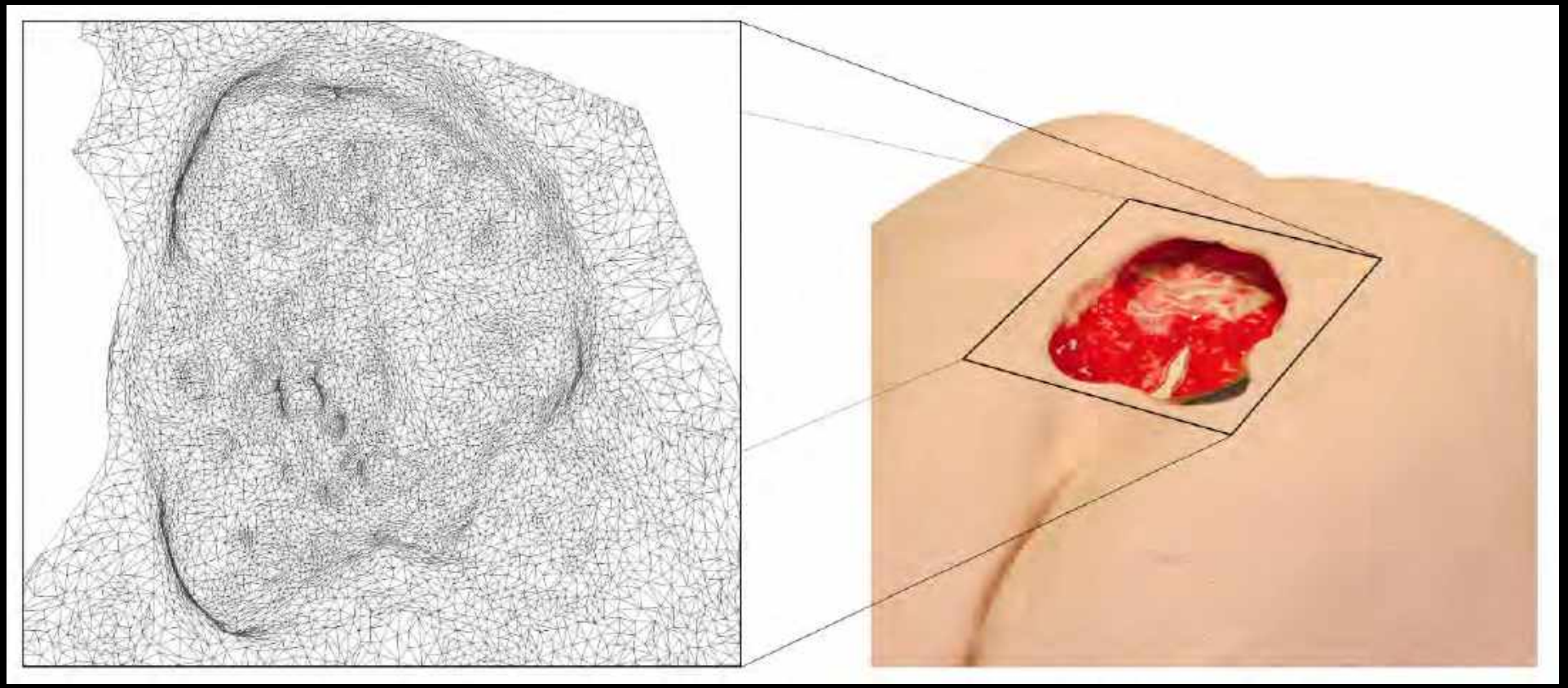
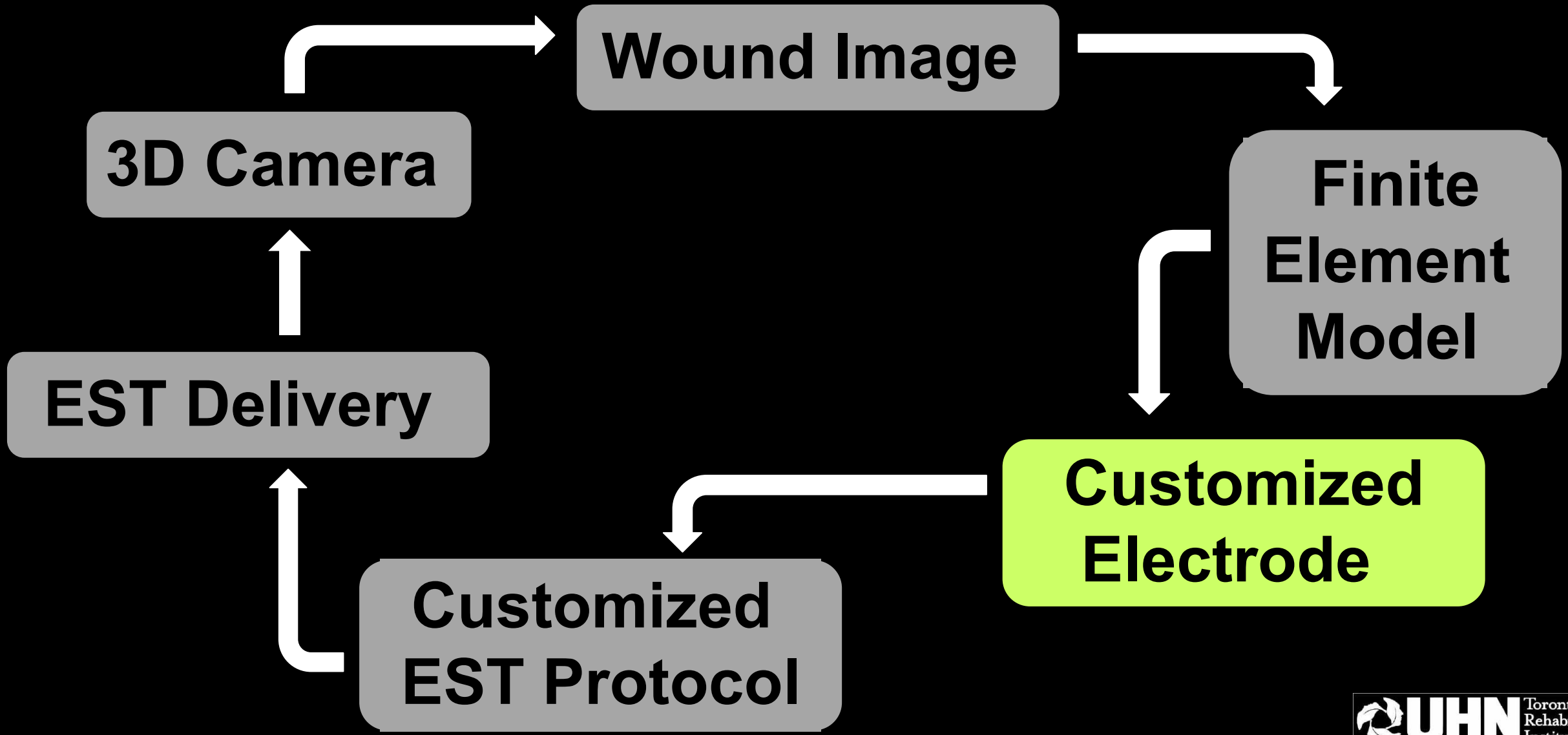
Solution - PULSaR



Global Electronic Solutions D.O.O - IP

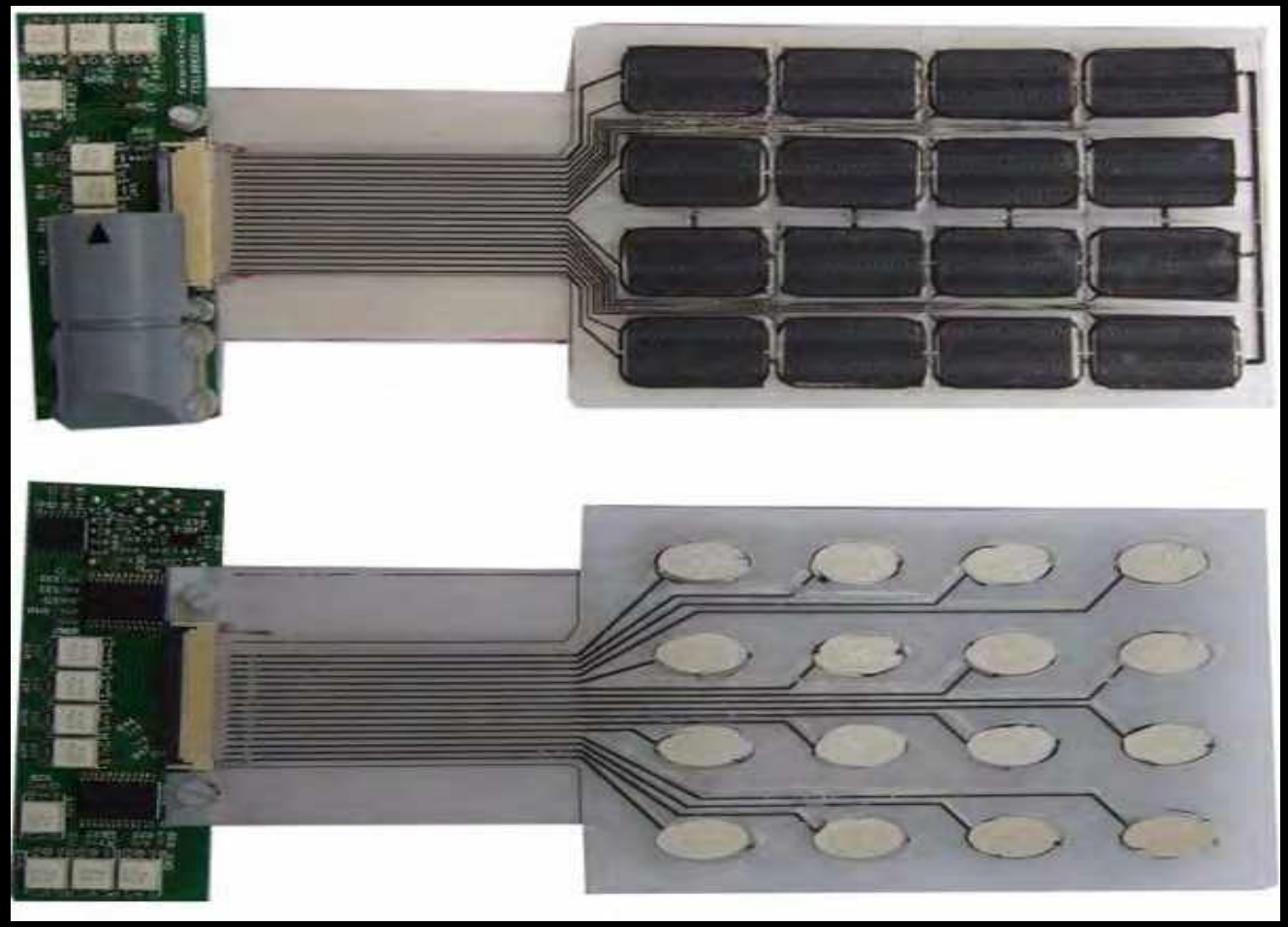
UHN Toronto Rehabilitation Institute

Solution - PULSaR



UHN Toronto Rehabilitation Institute

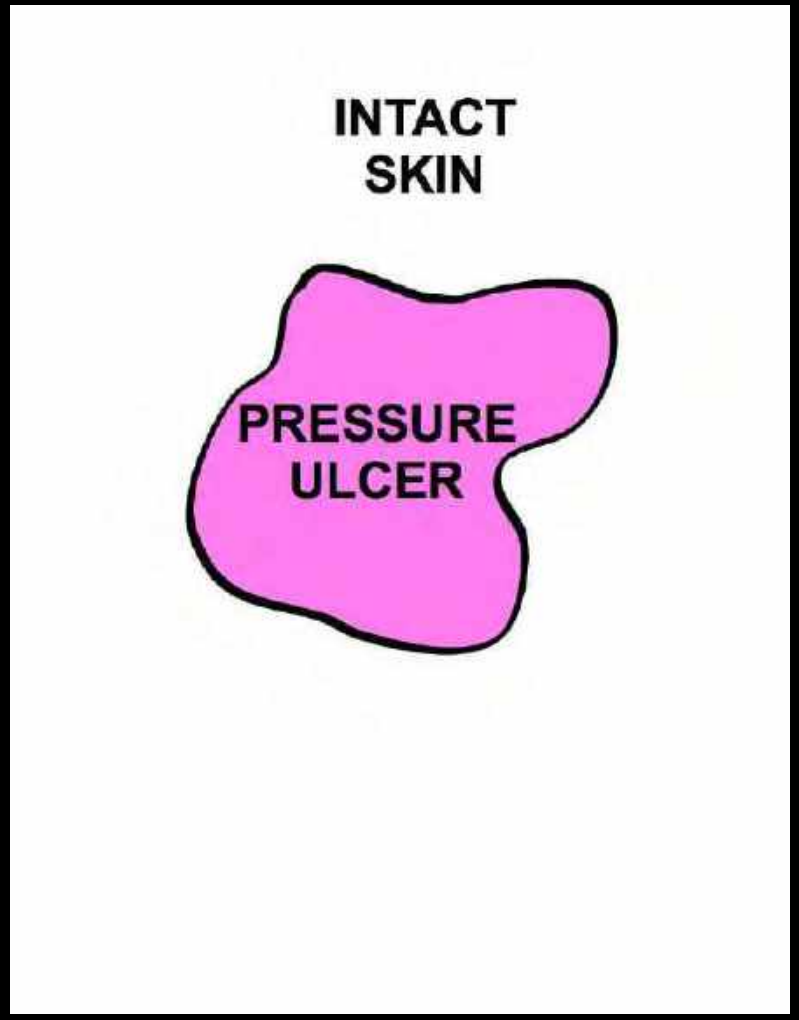
Solution - PULSaR



Global Electronic Solutions D.O.O - IP

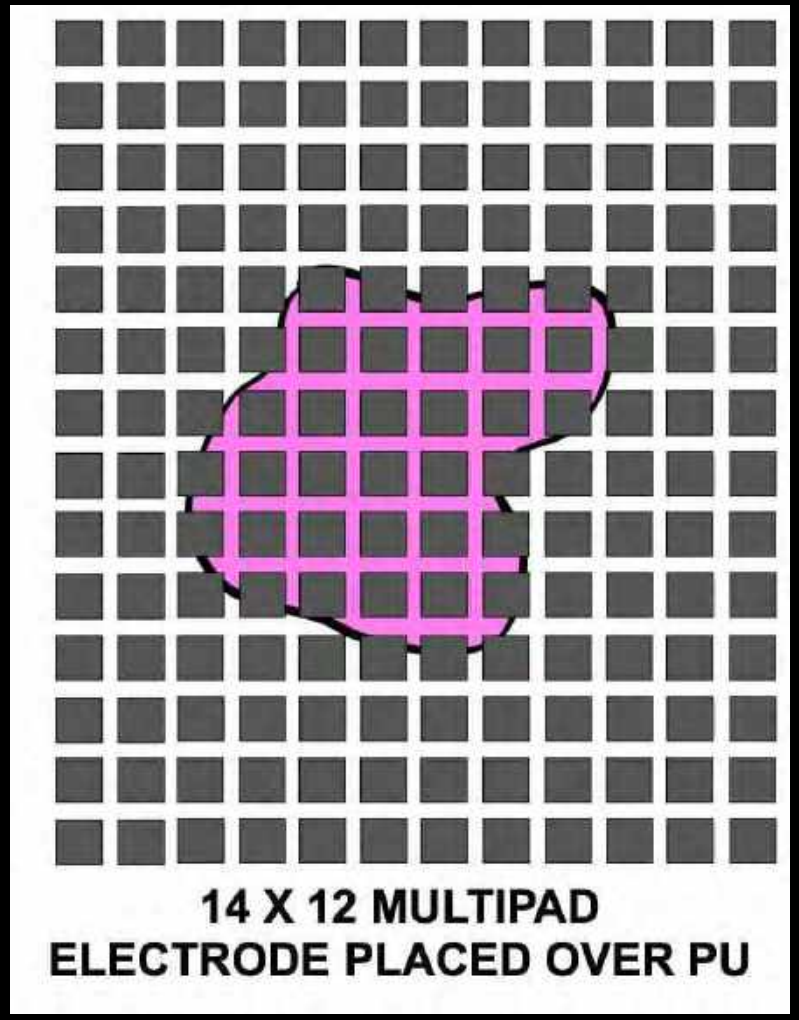
UHN Toronto Rehabilitation Institute

Solution - PULSaR



UHN - IP

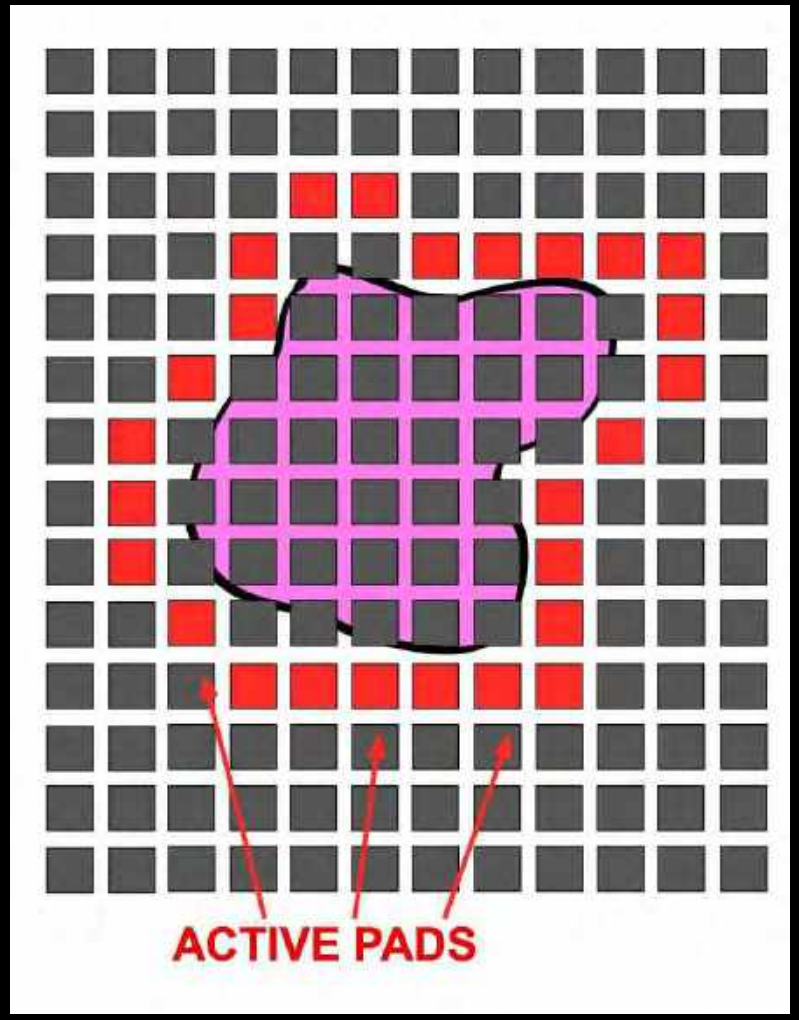
Solution - PULSaR



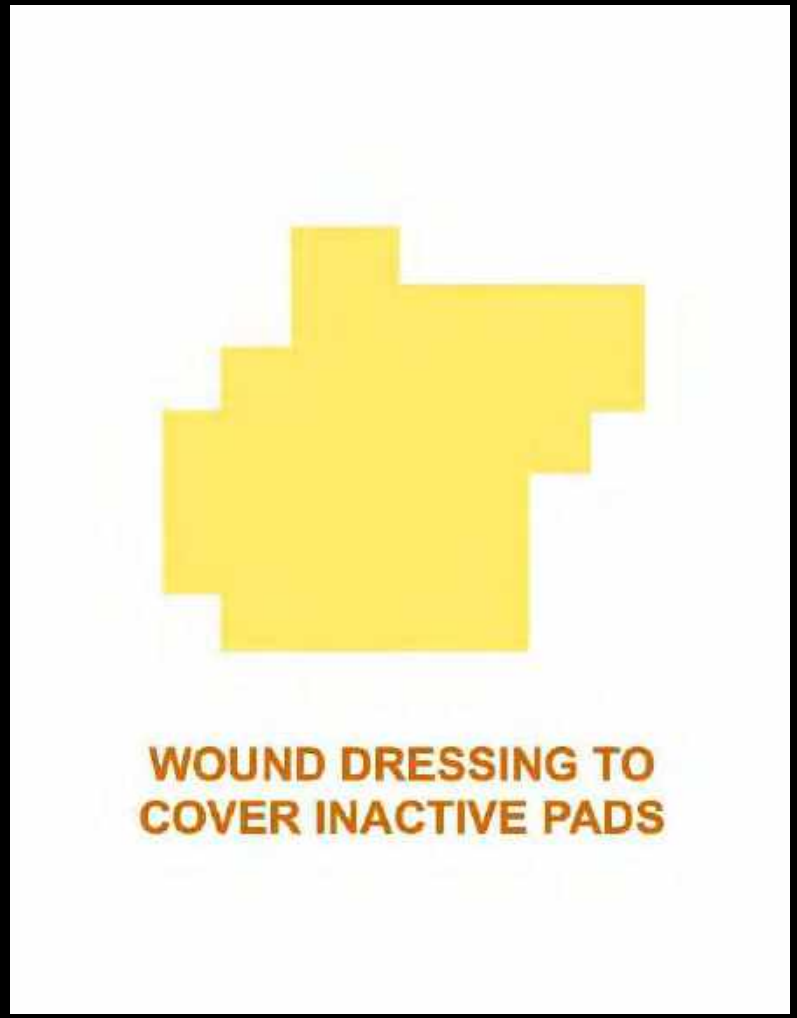
UHN - IP

UHN Toronto Rehabilitation Institute

Solution - PULSaR



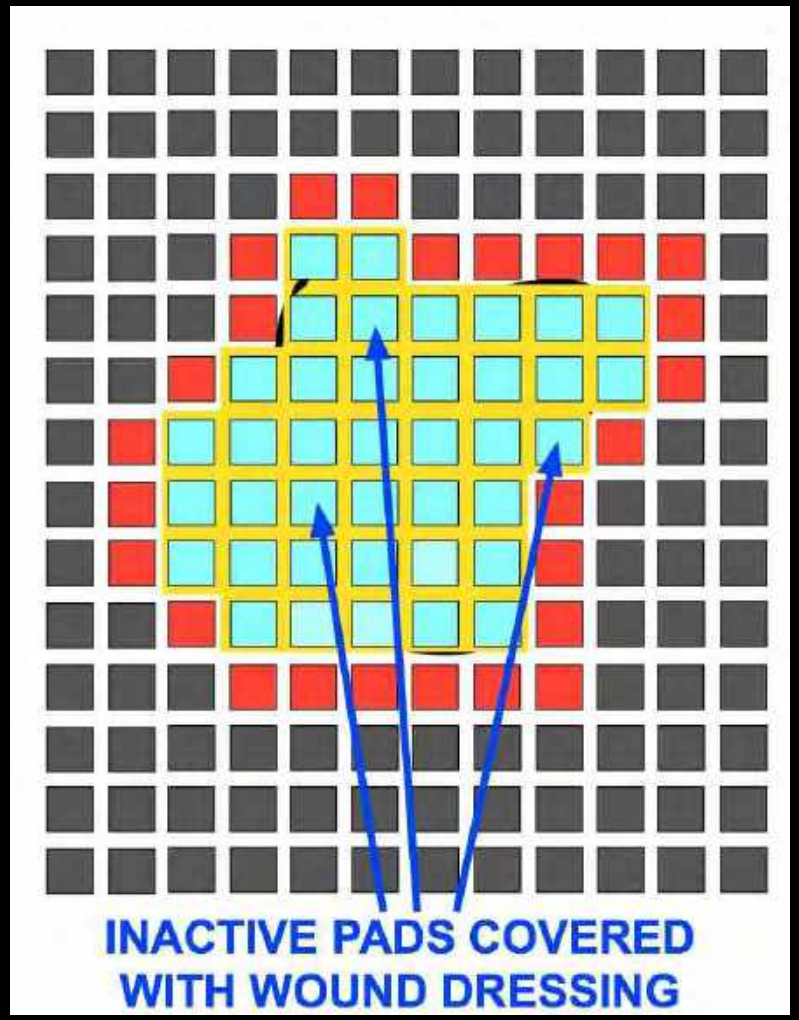
Solution - PULSaR



UHN - IP

UHN Toronto Rehabilitation Institute

Solution - PULSaR



UHN - IP

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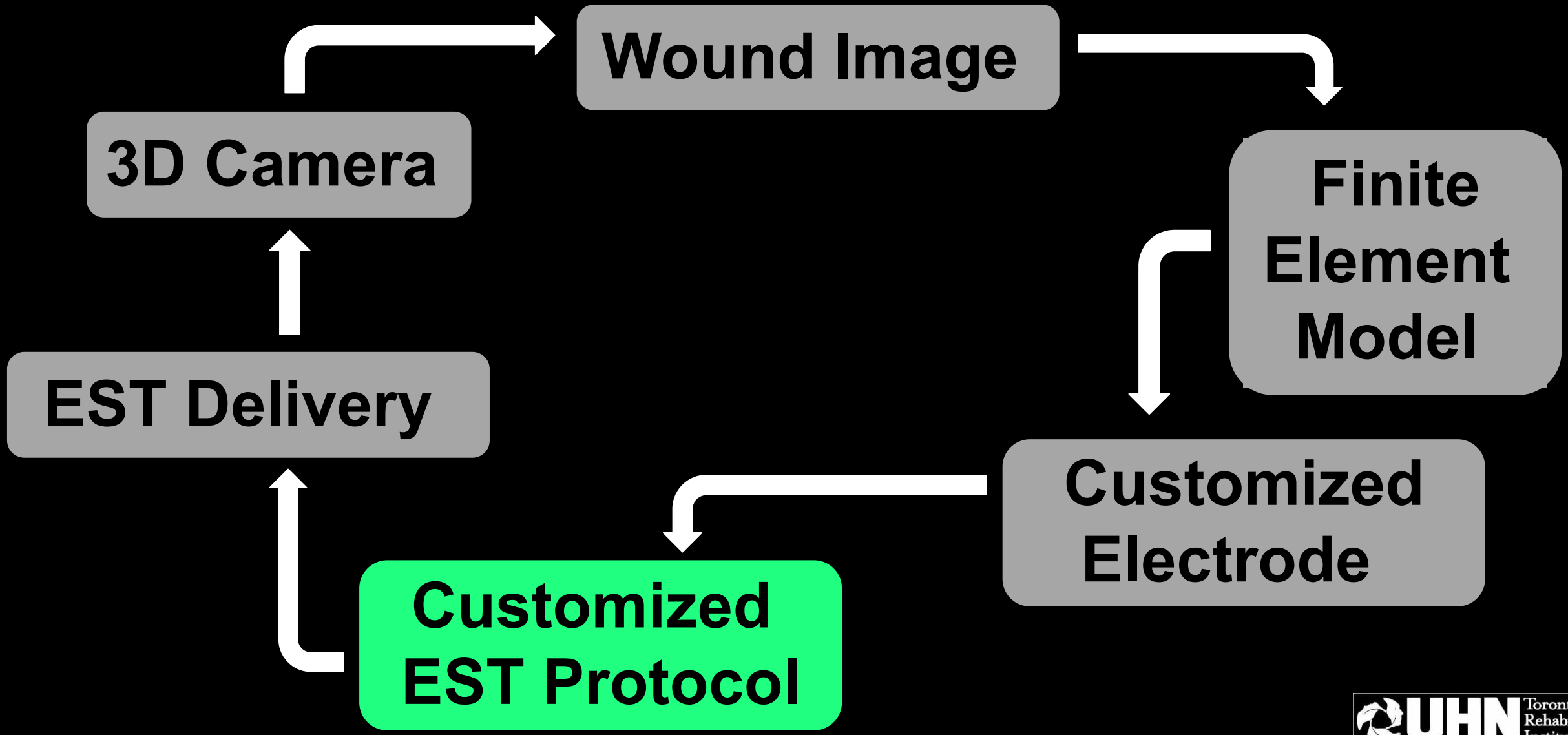
Solution - PULSaR



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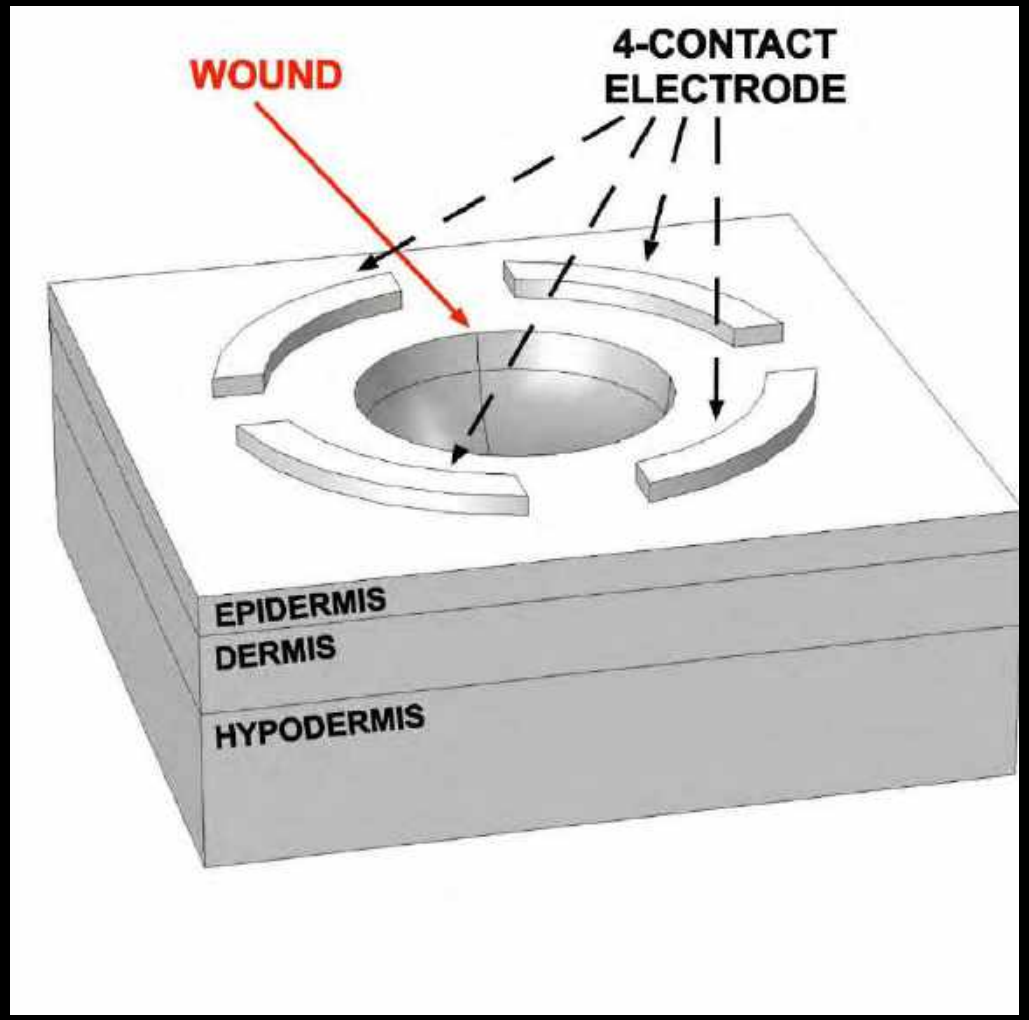
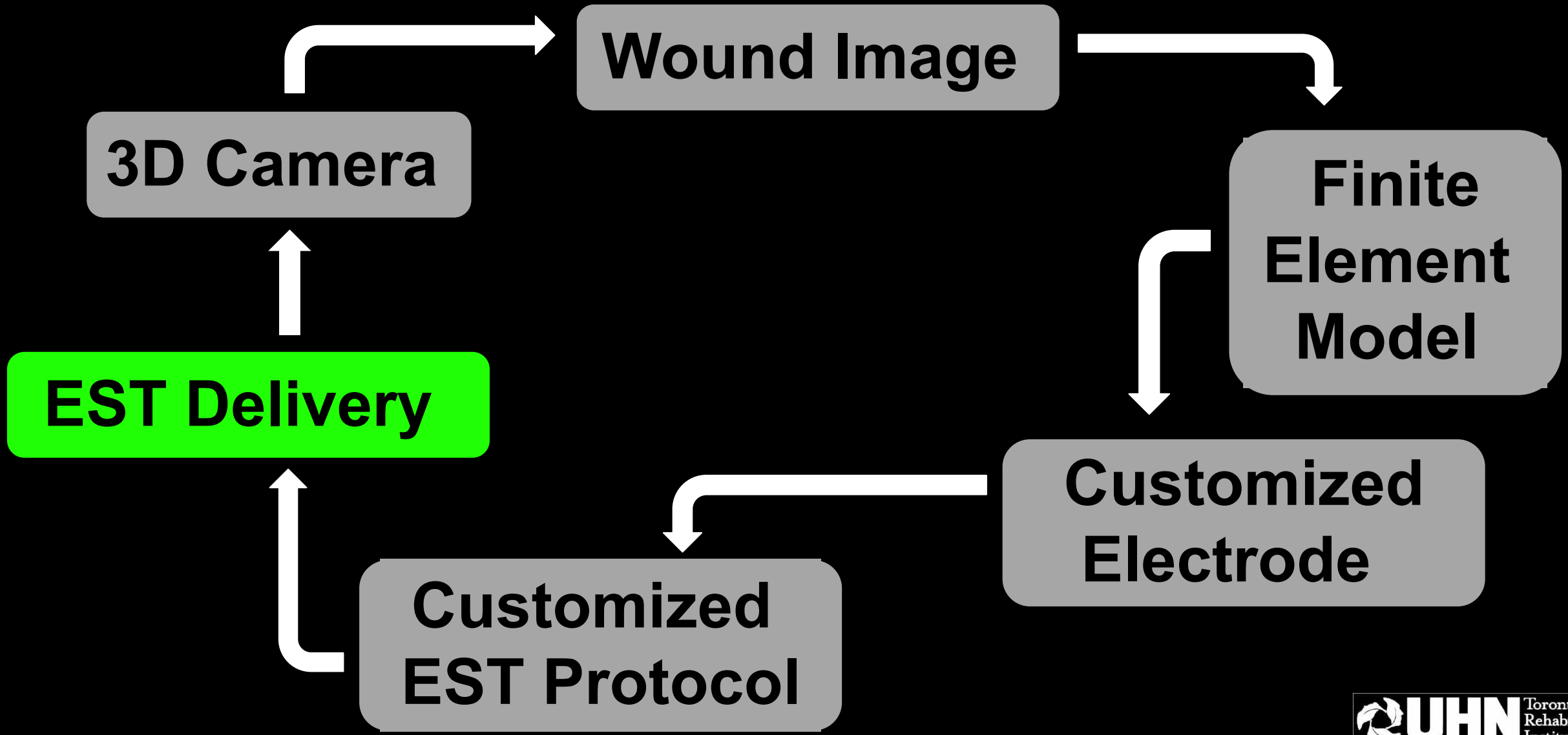
Solution - PULSaR



UHN & Global Electronic Solutions D.O.O - IP

UHN Toronto Rehabilitation Institute

Solution - PULSaR



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Solution - PULSaR

UHN & MyndTec - IP

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Solution - PULSaR

3D Camera

EST Delivery

Finite Element Model

tomized ctrode

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Solution - PULSaR

UHN Toronto Rehabilitation Institute

Solution - PULSaR

Next Steps

Secure funding

Engage industrial partners

Define the milestones

Run the project

Collaboration

Thank you!

David A. Dzioba

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