



KNOWLEDGE TRANSLATION

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THE ISSUE

- You have conducted your research, drawn conclusions and recommendations
...What next??
 - *Place the document in the shelf or archives?*
 - *Do something else??*

EXPECTATION

1. Identify the need for knowledge translation
2. To appreciate knowledge management capability
3. Define knowledge translation and identify its barriers
4. Recognize strategies for effective research dissemination and knowledge translation
5. Develop a research dissemination and knowledge translation plan

KNOWLEDGE MANAGEMENT

- **Knowledge** – a justified true belief with an account (Plato 369 BC; Theaetetus “Dialogues by Plato”) (refer to the JBT Theory)
- A fluid mix of insights, experiences ... about a phenomenon
- **Phenomenon** - a fact or situation that is observed to exist or happen, especially one whose cause or explanation is in question; e.g., performance of projects, effectiveness of organisations, failed plans etc.; *also knowledge translation!!*

THEORETICAL UNDERPINNING

- **Resource based view (RBV)** - that knowledge is a strategic resource (Barney, 1991; Penrose, 1959 and others)
- Capability paradigm; specifically **dynamic capability view (DCV)** (e.g., Teece and Pisano, 1994)
- See also <http://pure.iiasa.ac.at/id/eprint/4109/1/WP-94-103.pdf>

KNOWLEDGE ECONOMY (KE)

- Is an economy in which growth is dependent on the quantity, quality, and accessibility of the information available, rather than the means of production
- **knowledge economy** is the use of knowledge to create goods and services
- **Characteristics of a knowledge economy**
 - Growth in high technology investment and industries.
 - Growth in **knowledge** intensive service sectors such as education, communications and information.
 - **Knowledge** is a non-finite resource.
 - Capital gets used up but **knowledge** is not limited and can be shared without losing it.

- **KM** – all processes related to knowledge and organisational disposition (set-up) to enable and support the knowledge processes
- Hence, effective KM requires strategic capabilities specific to knowledge
- Two key sets of KM strategic capabilities:
 - KM Process capability
 - KM Infrastructure capability
- These organisational capabilities confer competitive advantage to organisations (see eg., Senaji & Nyaboga, 2011)

PROCESS CAPABILITY

- Acquisition
- Conversion
- Transfer (and sharing)
- Application
- Protection (storage ...)

KM INFRASTRUCTURE CAPABILITY

- Five elements of KM infrastructure
 - Strategy
 - Leadership
 - Structure
 - Culture
 - Technology
- The KM infrastructure should be that which enables the thriving of knowledge processes

LANGUAGE AND KT

- The language we use for concepts is important because common understanding shapes our world.
- By avoiding confusion in nomenclature, we better understand the world around us, and as researchers or practitioners, we deepen our knowledge base and move it forward.
- Shared language helps us communicate more effectively and is critical to collaboration and co-creation, which in turn are critical to science (Thomas & McDonagh, 2013).
- <http://melaniebarwick.com/is-a-rose-by-any-other-name-still-a-rose-why-knowledge-translation-and-implementation-science-are-not-synonymous/>

KNOWLEDGE TRANSLATION DEFINED

- Simply put, knowledge translation is the practice of communicating research evidence using processes and strategies that ensure the evidence can be accessed and understood in a manner that can benefit a range of knowledge users, both within and beyond academia, as appropriate.
- Knowledge translation is conceptualized as an umbrella term that encompasses several subspecialties (not exclusive to health research), including: dissemination; practice, behaviour, or policy change; knowledge management; and commercialization and technology transfer.
- The term translation(al) science is more rarely used today but refers to the translation of basic science to clinical application; one part of the translation continuum.

- When we seek to change practice, behaviour, or policy, we enter the subspecialty of implementation science, defined as “the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care” (Eccles & Mittman, 2006).
- Note that the emphasis on the purpose or KT goal is “to promote the systematic uptake” (Barwick, 2018). This presumes the research evidence we are sharing has instrumental use and is ethically ready for application and scale up.
- Implementation science does not capture the entire spectrum of knowledge translation goals and activities, and hence, the terms are related but not synonymous.

WHAT IS KNOWLEDGE TRANSLATION?

- A. Research dissemination
- B. Research translation
- C. Continuing education
- D. Translational research
- E. All of the above
- F. None of the above

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- F. Not completely any of the above**

TERMS APPLIED TO THE KT PROCESS

- Knowledge transfer
- Knowledge exchange
- Research utilization
- Implementation research
- Research translation
- Research dissemination
- Diffusion
- Continuing education
- Continuing professional development
- Commercialization

WHAT IS KNOWLEDGE TRANSLATION?

- A. Research dissemination – *spread of knowledge*
- B. Research translation – *research vs all ways of knowing*
- C. Continuing education – *one strategy for implementation*
- D. Translational research – *basic science to clinical application*
- E. All of the above
- F. Not completely any of the above**

VIDEOS

- examples for health sector similar principles can be applied to other professions
- <https://www.youtube.com/watch?v=lvygkxOX0dA&feature=youtu.be>
- <https://www.youtube.com/watch?v=smSutjuwfSo&feature=youtu.be>

KNOWLEDGE TRANSLATION - AN EXAMPLE

- A dynamic and iterative process
 - Synthesis
 - Dissemination
 - Exchange
 - Ethically-sound application



To improve health
To provide more effective health services and products
To strengthen the health care system

KNOWLEDGE-TO-ACTION CYCLE

1. Knowledge Creation

2. Knowledge Application

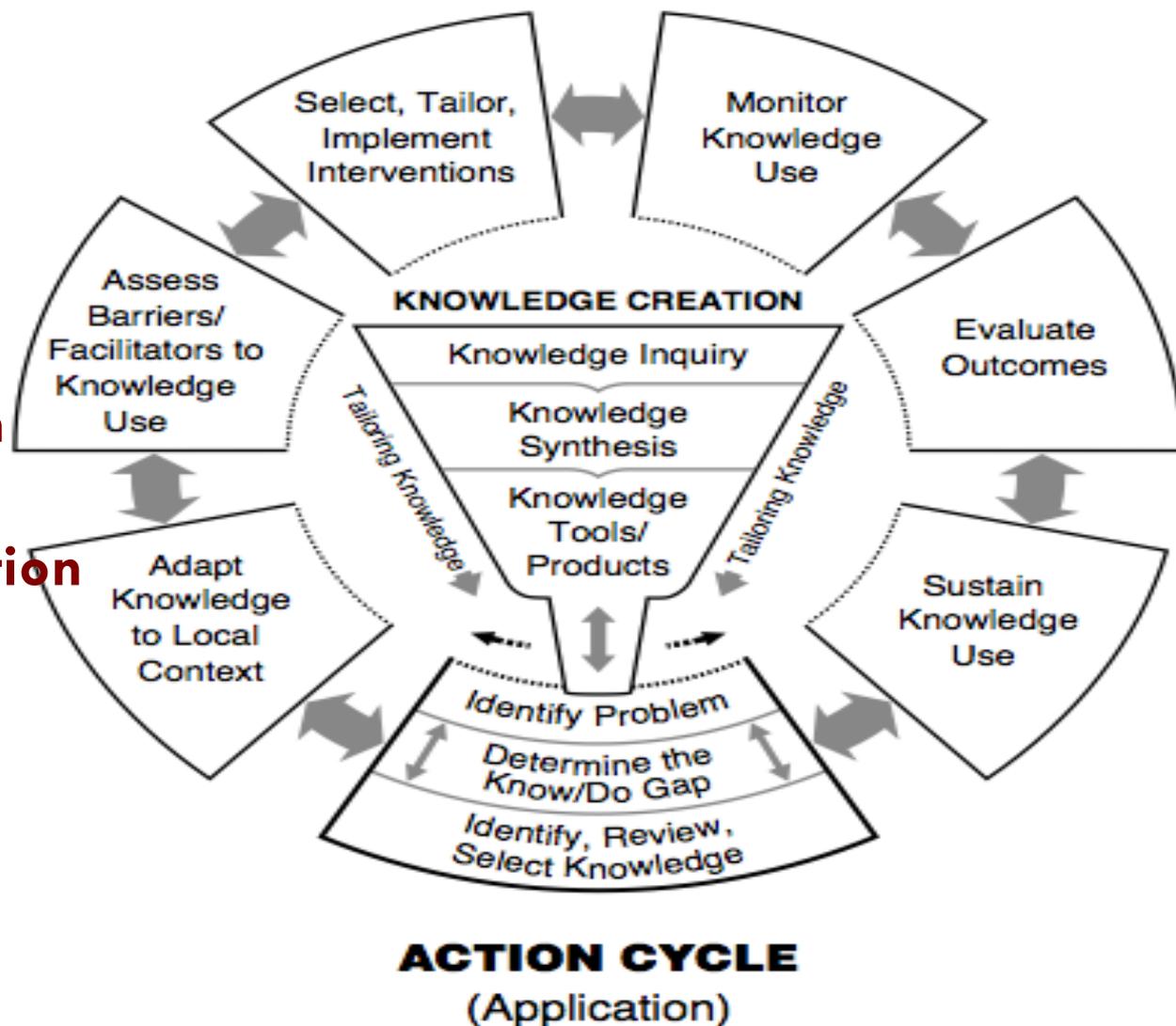


Figure 1.1.1 The knowledge to action cycle.

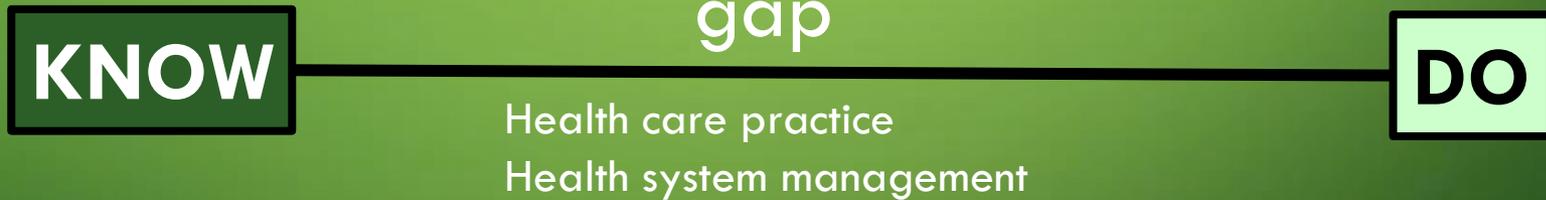
KNOWLEDGE CREATION

- Research through various paradigm and methods (quantitative, qualitative, mixed ...); data collection: surveys, interviews, focus group discussions, observations, desk study
- See also KM literature SECI Model (Nonaka and Takeuchi, 1995; also von Grogh)
 - S= Socialisation, E = Externalisation, C= Combination, I = Internalisation

WHY IS KT IMPORTANT (AN EXAMPLE)

- Health systems fail to optimally use evidence
 - Inefficiencies
 - Quantity and quality of life
- Adults received <55% of recommended care

**Underused
Overused
Misuse of therapies**



- KT is the method for closing knowledge-to-action gap
 - Optimize the return on investment in research

KNOWLEDGE APPLICATION

- Knowledge generated through research and other means should find use in addressing societal problems
- But this is not automatic...deliberate effort is needed...the knowledge translation

KNOWLEDGE TRANSLATION

Level of engagement vary in intensity, complexity
Depends on nature of research and information needs



Generates knowledge

Anyone who can use, benefit from, or be impacted by study results

Actions on Knowledge

1. **Synthesis**
2. **Dissemination**
3. **Exchange**
4. **Ethically-sound application**

TYPES OF KNOWLEDGE USERS (LEONG, C. 2018)

- Practitioner (e.g., doctors, nurses, PTs, social worker, engineers etc.)
- Policy-maker
- Educator
- Decision-maker (e.g., program manager)
- Community leader
- Whole communities
- Health organizations
- Individual in a health charity
- Patient group
- Caregivers
- Professional colleges/associations
- Health care administrator
- Institutions/organizations (e.g., hospitals, clinics)
- Research funders
- Private sector organization
- Industry
- Media outlet
- General public
- Other researchers

BARRIERS TO KNOWLEDGE TRANSFER

- Trust
- Time
- Rewards
- Absorptive capacity
- “Not invented here” cognitive biases

TWO APPROACHES TO KT

1. End-of-Project KT



Raise awareness
Promote action

2. Integrated KT (iKT)



Problem-based
Curiosity-driven

Both types require a **dissemination plan** to share results of the project with interested knowledge users

END-OF-PROJECT KT METHODS

- **Conference presentations**
- **Peer-reviewed journal publications**
- Workshops
- Academic detailing
- Tool development
- Websites
- Creative media
- Podcast, webinars
- Media (TV, radio, print, social media)

Principal modes of **communication to researchers**

vs.

Where there are potential knowledge users **beyond research community**

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STRONG INTEGRATED KT PROJECTS

- Demonstrate established relationship with participating knowledge users
- Specify how the knowledge user will be involved
 - Developing the **research question**
 - **Collecting and analyzing data**
 - **Interpreting** results
 - Crafting overall **message**
 - Developing **recommendations**
 - Identifying audiences for **dissemination**

DETERMINING YOUR KT STRATEGY

Expected findings

+

Knowledge User



KT Strategy



WHAT IS KNOWLEDGE DISSEMINATION?

1. Diffusion

2. Dissemination

3. Implementation



WHAT IS KNOWLEDGE DISSEMINATION?

1. **Diffusion** → “Let it happen”

2. *Dissemination*

3. *Implementation*

E.g., Publications, conferences

Onus is on the potential adopter

WHAT IS KNOWLEDGE DISSEMINATION?

1. *Diffusion*

2. **Dissemination** → “Helping it happen”

3. *Implementation*

E.g., Knowledge exchange workshop

Target and tailor message about findings to a specific audience

WHAT IS KNOWLEDGE DISSEMINATION?

1. *Diffusion*

2. *Dissemination*

3. **Implementation** → “Making it happen”

Active and systematic process

Encourage adoption of research

Identify and overcome barriers

KNOWLEDGE DISSEMINATION PLAN

1. Goal(s) – *raise awareness vs. promote action*
2. Knowledge user audience – *who, roles, state of current knowledge*
3. Strategies – *diffusion, dissemination, application*
4. Expertise – *to help deliver on strategies*
5. Resources – *to show that KT activities can be delivered (\$, HR, access)*

Knowledge Translation Planning Template©



NOTES: This template was designed to assist with the development of Knowledge Translation (KT) plans for research but can be used to plan other projects. The Knowledge Translation Planning Template is universally applicable to areas beyond health. Begin with box #1 and work through to box #4 to identify the essential components of the KT planning process.

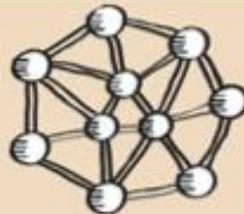
Identify Partners



Researchers
Patients - patients/families
Public
Decision makers
Government/industry
Research funding body
Health sector/NGO
Sponsors



(2) Degree of Partner Engagement



- from idea formulation straight through
- after idea formulation & straight through
- at point of dissemination & project end
- beyond the project

Consider: Not all partners will be engaged at the same point in time. Some will be collaborators, end users or audiences, or people hired to do specific activities.

(3) Partner(s) Roles



(1) What do the partner(s) bring to the project?

(2) How will partner(s) assist with developing, implementing or evaluating the KT plan?

Action: Capture their specific roles in letters of support to funders, if requested.

▶

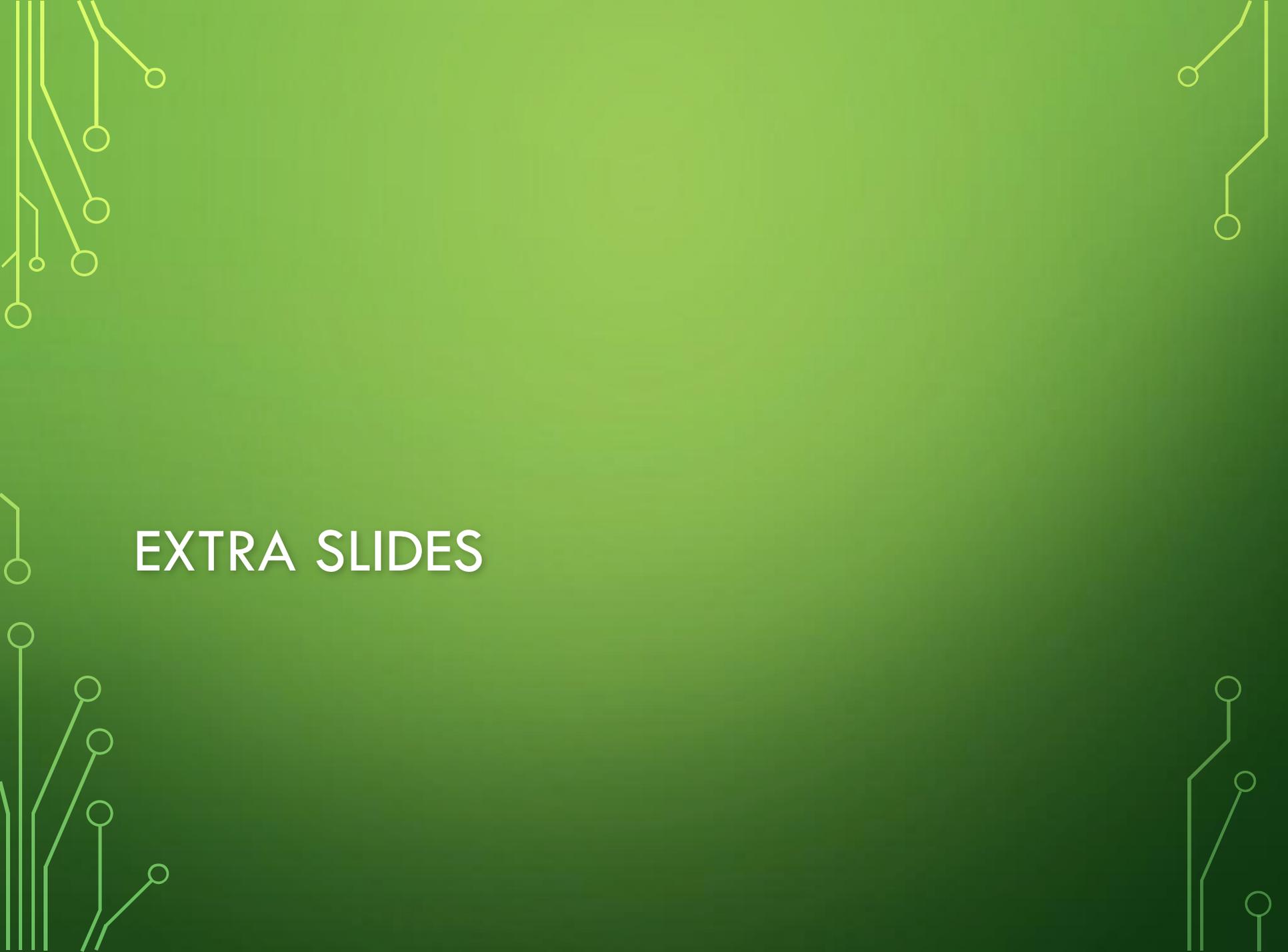
(4) KT Expertise



- scientist(s) with
- consultant with
- knowledge bro
- KT supports with
- KT supports with
- organization(s)
- KT supports hi
- task(s)

KNOWLEDGE TRANSLATION PROBLEMS

- **Knowledge access** (*some hoarding? Cost of access?*)
- **Knowledge incompleteness** (*incomplete specifications of a KT attributes*)
- **Knowledge asymmetry** (*between producers and users*)
- **Knowledge valuation** (*benefits should outweigh costs*)
- **Knowledge incompatibility** (*not consistent with user needs*)

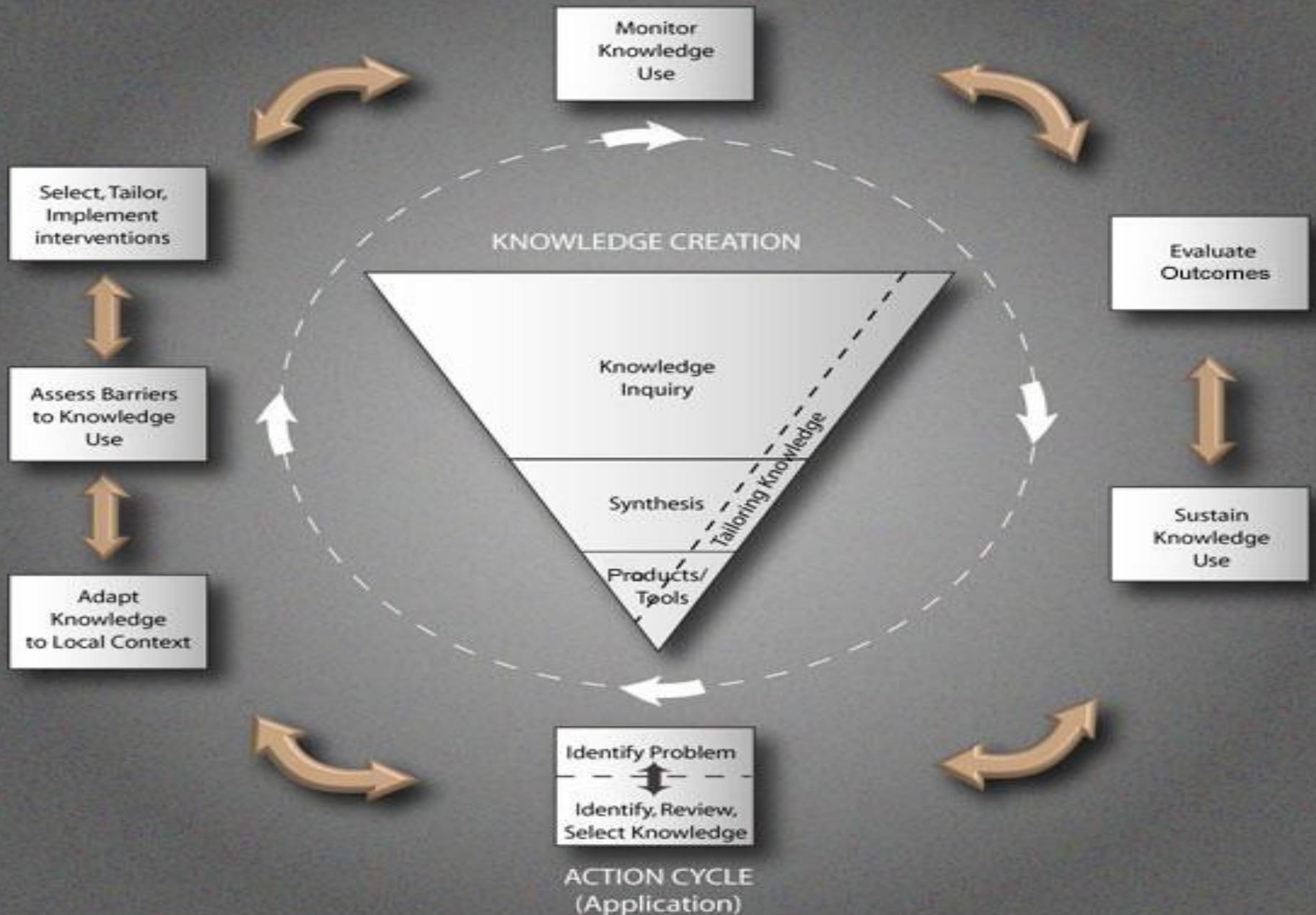
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EXTRA SLIDES

OTHER TERMS APPLIED TO THE KT PROCESS (SEE LEONNG, C. 2018)

Knowledge transfer	<ul style="list-style-type: none">• Process of getting knowledge used by stakeholders• Sounds unidirectional• Some may interpret as dissemination vs. use of knowledge (putting it into action)
Knowledge exchange	<ul style="list-style-type: none">• Assumes researchers and stakeholders are two separate groups with distinct cultures/perspectives on knowledge• Purpose is to ensure knowledge created is relevant and applicable to stakeholders and useful to researchers• Collaborative research approach; researcher and stakeholder engaged from research question to knowledge application
Research utilization	<ul style="list-style-type: none">• Subset of knowledge use with a research base to substantiate it• Focused on moving research findings into action
Implementation research (UK, Europe)	<ul style="list-style-type: none">• Method to promote the systematic uptake of clinical research findings and other evidence-based practices in to routine practice to improve the quality and effectiveness of healthcare

KNOWLEDGE TO ACTION PROCESS



STUDY EXAMPLE (INSUFFICIENT TRANSLATION – HEALTH SECTOR LEONG, 2018)

- Tool developed, tested, and validated for assessing X for patients presenting to primary care clinics to provide personalized recommendations, found a 50% drop in X if tool was used
- Tool showed very good sensitivity and specificity and validated in a range of clinics across the country
- Data published and presented in high impact peer reviewed journals and academic conferences

BUT ...

- Uptake is low
 - GPs (users) say tool is too long and no time to administer
 - Health planners say it is too expensive and would rather focus limited resources on primary prevention
 - Patients not sure what to do with tool results unless they are willing and able to pay for intervention or spend hours on website

THEREFORE

- Understanding the problem, the context and environment where results are to be applied
- Can identify potential facilitators and barriers to the uptake of findings
- Positioning to adopt new knowledge
- Capacity to tailor messages and interventions
- Able to evaluate the implementation process and outcomes

CREDITS

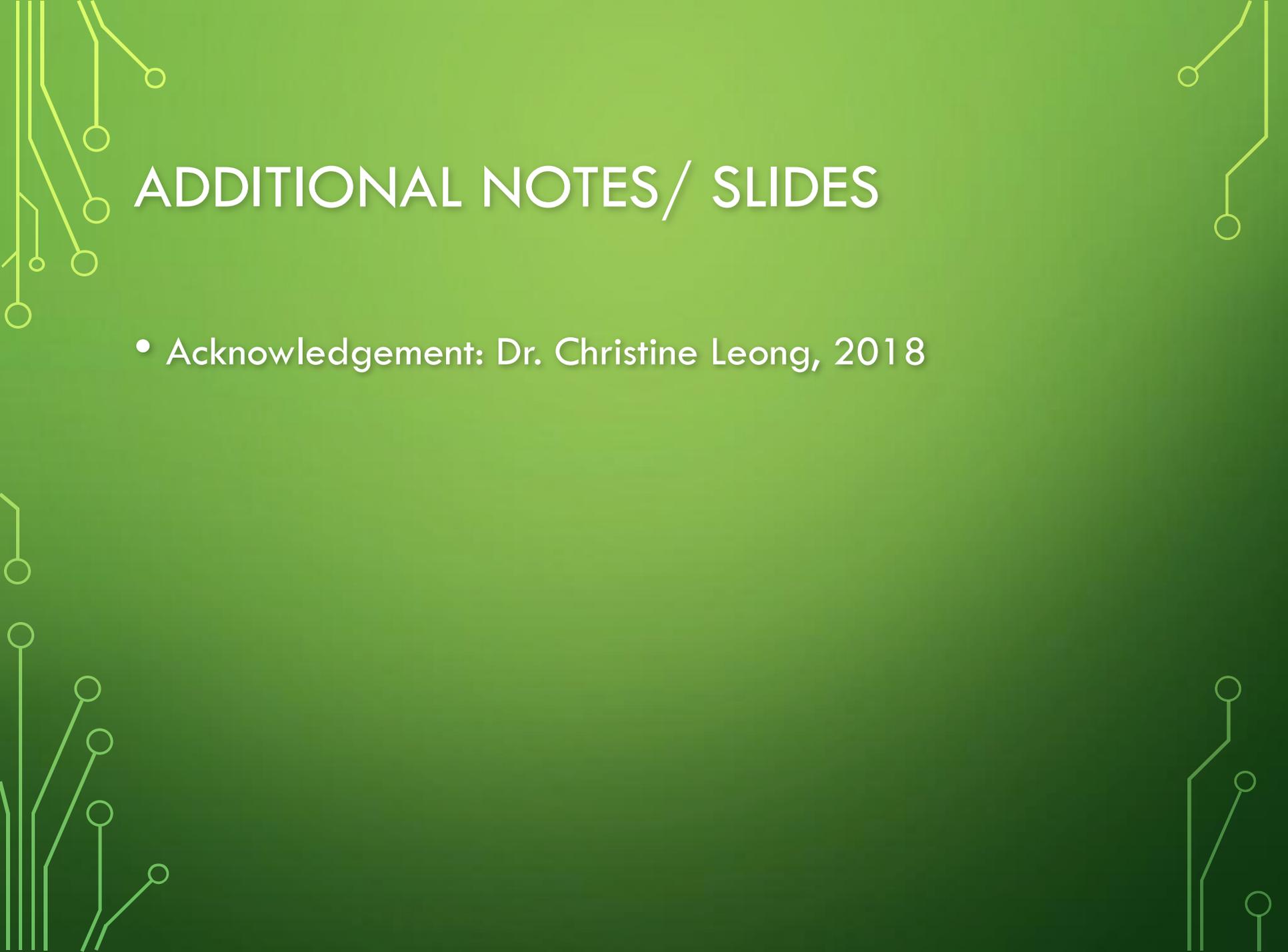
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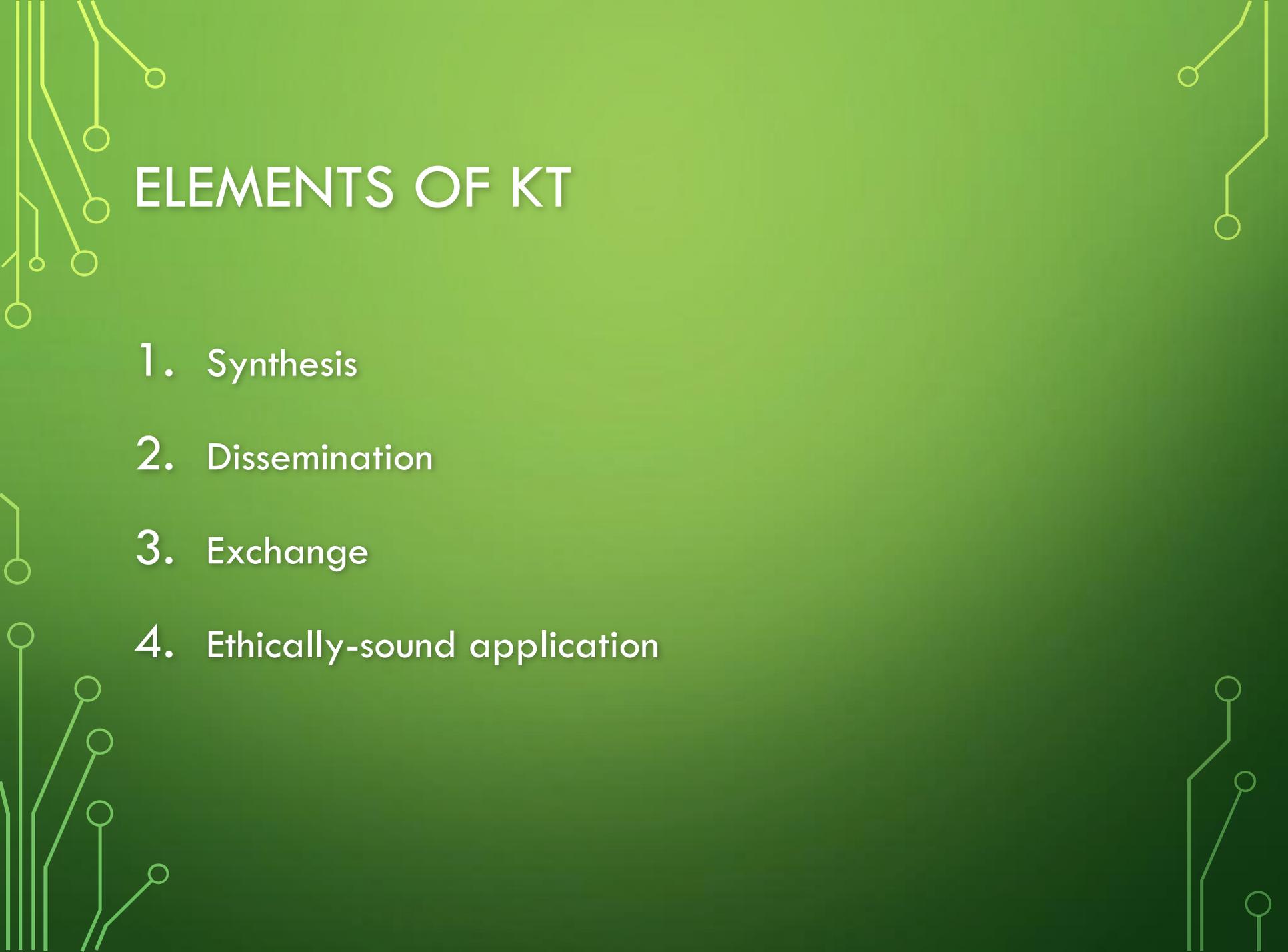
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ADDITIONAL NOTES/ SLIDES

- Acknowledgement: Dr. Christine Leong, 2018

OUTLINE

- What is knowledge translation (KT) and research dissemination?
- Why is KT important?
- How do we create a KT and research dissemination plan?

The background is a solid green color with a subtle gradient. In the corners, there are decorative white line-art patterns resembling circuit traces or neural network connections. These patterns consist of straight lines of varying lengths and angles, ending in small white circles. The patterns are located in the top-left, top-right, bottom-left, and bottom-right corners.

ELEMENTS OF KT

1. Synthesis
2. Dissemination
3. Exchange
4. Ethically-sound application

ELEMENTS OF KT

1. Synthesis

2. Dissemination

Systematic reviews

Meta-analyses

Consensus conference/expert panel

Practice guidelines

Qualitative/quantitative results

Realist syntheses

Narrative syntheses

- Contextualization and integration of research findings of individual research studies within the larger body of knowledge on the topic
- Must be reproducible and transparent in its methods (*qualitative/quantitative*)

ELEMENTS OF KT

1. *Synthesis*

- Identification of appropriate audience
- Tailoring message and medium to audience

2. Dissemination

Summaries/briefings for stakeholders

Educational sessions (*patients, practitioners, and/or policy makers*)

Engaging knowledge users (*dissemination plan, tools, media*)

ELEMENTS OF KT

1. *Synthesis*

2. *Dissemination*

3. **Exchange**

4. *Ethically-sound application*

- Interaction between knowledge user and researcher → mutual learning
- Collaborative problem-solving between researchers and decision-makers

ELEMENTS OF KT

1. *Synthesis*

2. *Dissemination*

3. *Exchange*

4. **Ethically-sound application**

- Iterative process by which knowledge is put into practice
- Activities consistent with ethical principles, norms, social values, legal/regulatory frameworks
- Evaluation and monitoring of KT initiatives, processes, activities

FURTHER INFORMATION ON KT

- Straus SE, et al. Knowledge Translation in Health Care: Moving from Evidence to Practice, 2nd edition.
- Graham ID, et al. J Contin Educ Health Prof 2006;26:13-24
- CIHR. KT Learning and Guides. <http://www.cihr-irsc.gc.ca/e/49443.html>

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THANK YOU!

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