

Using the Knowledge to Action Cycle to Improve Timing of dialysis initiation

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*Funded by The Kidney Foundation of Canada and the Canadian Institutes of Health Research
in partnership with the Canadian Society of Nephrology*

Overview

1. CANN-NET: A Canadian Society of Nephrology (CSN) initiative
2. What is knowledge translation?
3. What is CANN-NET?
 - why the interest in timing of dialysis initiation?
4. Illustrating the use of the knowledge to action cycle to improve timing of dialysis initiation

CANN-NET: a CSN initiative

- In 2008, the CSN published guidelines for the care of CKD patients.
 - the impact of the guidelines was attenuated given limited formal linkages with knowledge users
 - The CSN had no knowledge translation plan / activities
 - the guidelines identified many areas where further knowledge was needed
- Horizons (2000 and 2015) recommended creating a network of kidney researchers across Canada, and creating stronger links between researchers and knowledge users.

The Canadian Society of Nephrology Scientific Committee was asked to create a national network of clinical researchers with a focus on knowledge translation

What is Knowledge Translation?

KT is defined as a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of Canadians, provide more effective health services and products, and strengthen the health care system

Canadian Institutes of Health Research

Basically, getting evidence into practice...

Canadian Kidney Knowledge Translation and Generation Network

1. Using the knowledge to action cycle to improve care and outcomes in priority areas in kidney disease
2. To generate new knowledge by facilitating multi-center clinical trials in kidney disease of highest priority to decision makers



CANN•NET

Canadian Kidney
Knowledge Translation
And Generation Network



CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada



Priorities for Knowledge Translation

Priority areas

- Timing of dialysis initiation
- Increasing appropriate use of home dialysis
- Management of pediatric nephrotic syndrome

Why?

- Wide variation in practice
- New knowledge
- Impact for patients, and health care system

Timely initiation of dialysis

- **Initiation of dialysis is the raison d'être of Nephrology**
- **Guidelines recommend initiating dialysis at mean eGFR of 10.5mls/min**
- Evidence suggests we are initiating dialysis earlier and earlier (at higher eGFR)
- IDEAL study suggests no difference in mortality, hospitalization or quality of life for patients initiating at lower eGFR (2/3 of whom had symptoms)

How do we get prepare our systems for smooth (later) initiation of dialysis?

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Dialysis initiation over time

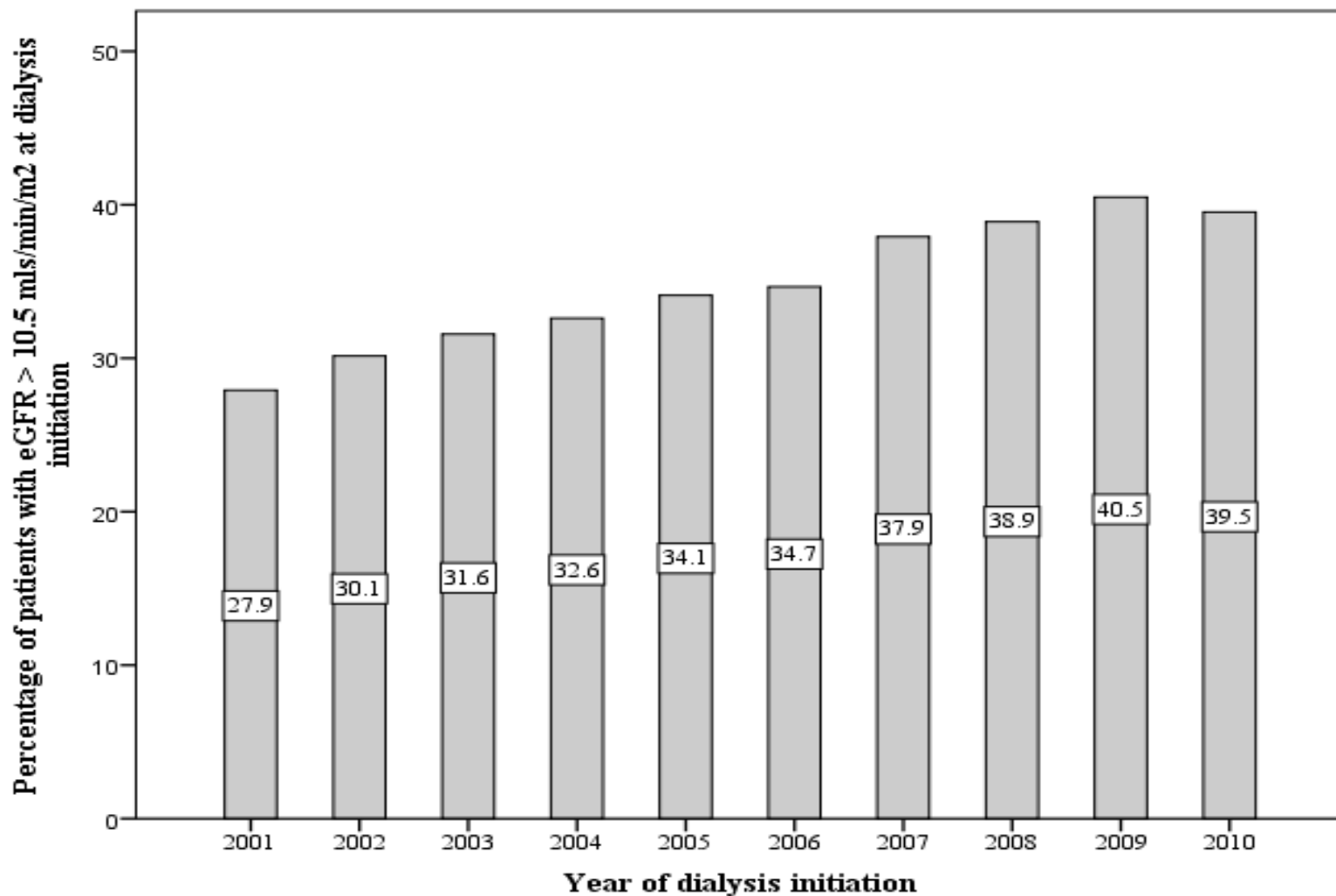
United States:

- The proportion of individuals starting dialysis at eGFR > 10mL/min/1.73m² has increased from **19% in 1996** to **45% in 2005** (USRDS)

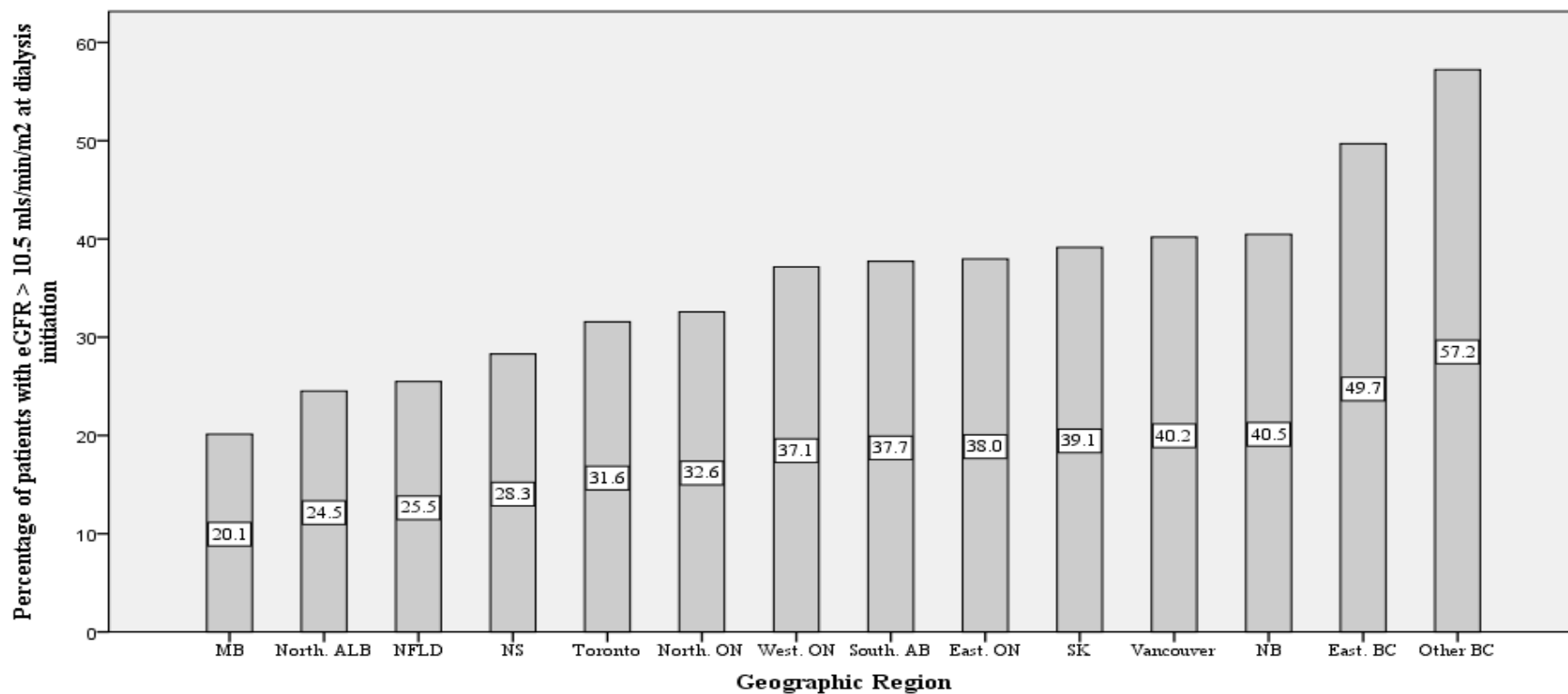
Canada:

- The proportion of individuals starting dialysis at eGFR > 10mL/min/1.73m² has increased from **28% in 2001** to **36% in 2007** (Clark et al, CMAJ, 2011)

Trends over time in initiation of dialysis with eGFR > 10.5mls/min

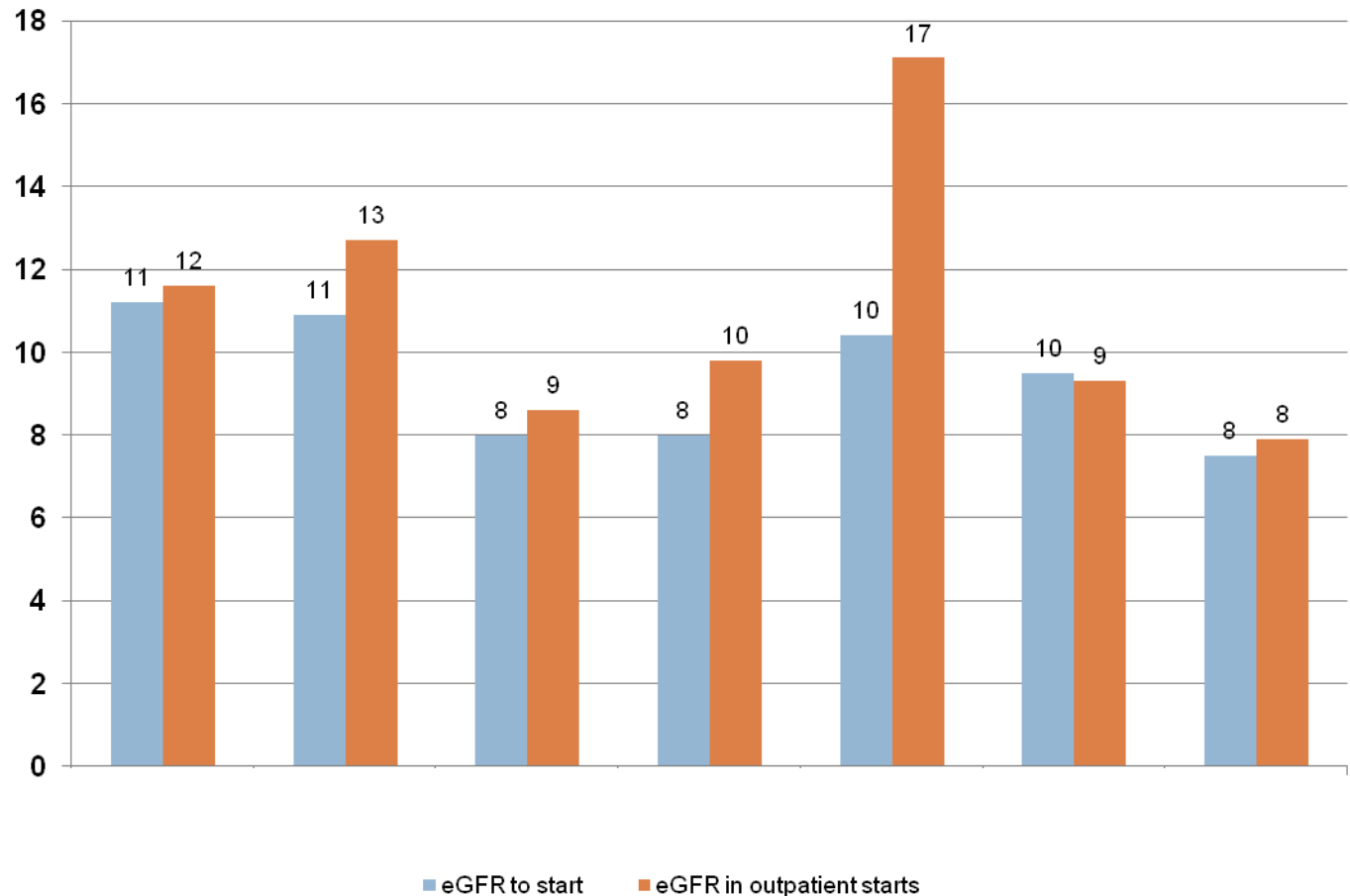


Regional variation in initiation of dialysis with eGFR > 10.5mls/min



eGFR at the start of dialysis varies from 8 to 13mls/min

eGFR at start,
ml/min/1.73m²



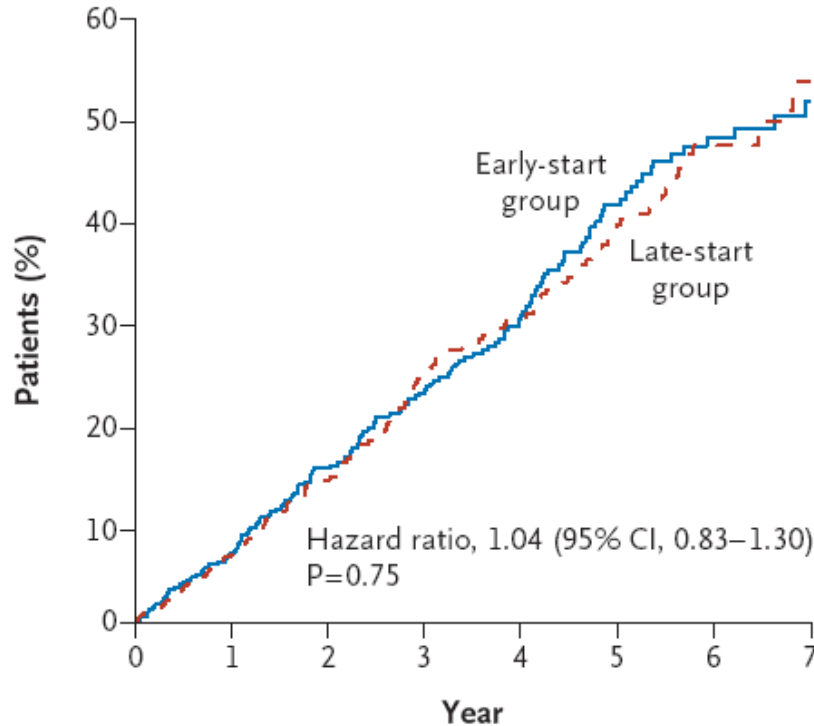
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How do we prepare our systems for smooth (later) initiation of dialysis?

Ideal study – no difference in mortality, quality of life or hospitalization

B Time to Death



No. at Risk

Early start	404	358	305	249	177	99	59	32
Late start	424	385	333	254	187	115	60	32

- this study was a highly selected population
- observational studies suggest harm to early initiation in certain subgroups

- No difference in quality of life or hospitalization
- Six month delay in initiation of dialysis

Timely initiation of dialysis

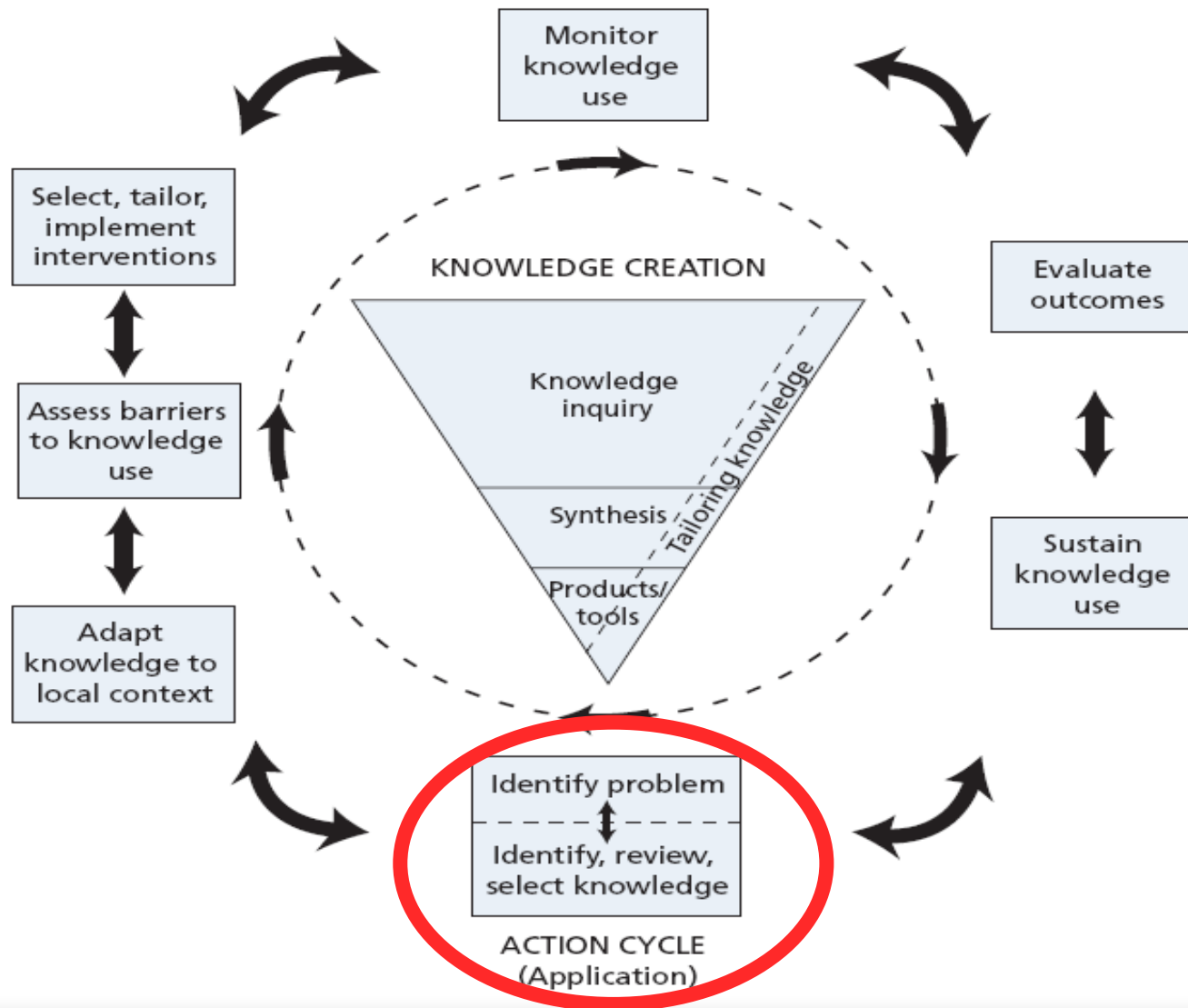
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How do we prepare our systems for smooth (later) initiation of dialysis?

Transferring the evidence to practice

- 1. You have to get the evidence straight**
- 2. You have to develop evidence based policy**
- 3. You have to apply the policy**
 - The hard part

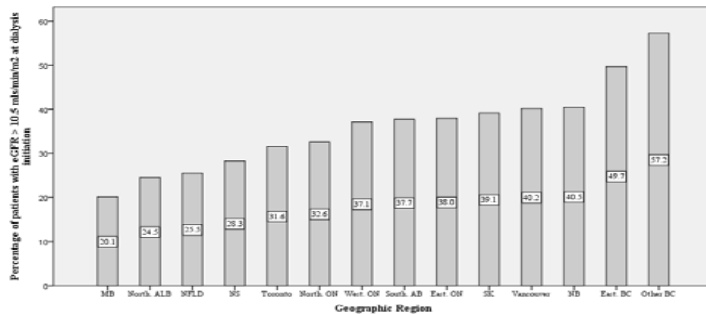
The Knowledge to Action Cycle:



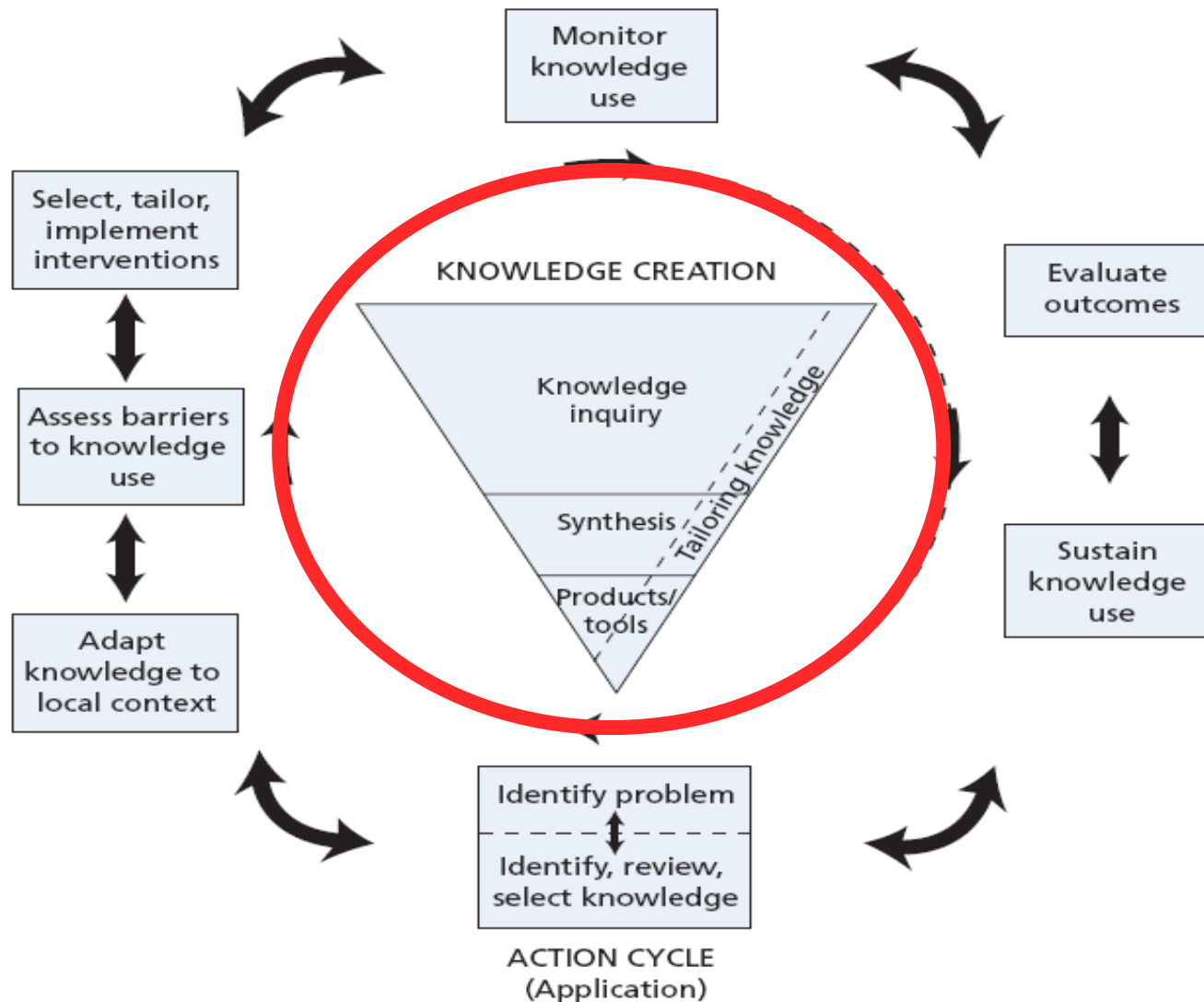
Identify Problem → Identify and Review Knowledge Gaps

Decisions around starting dialysis are complicated:

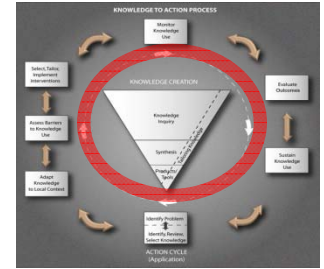
- Strength of the evidence base
- Physician knowledge and practice
- Patient and family values
- Patient autonomy



The Knowledge to Action Cycle:

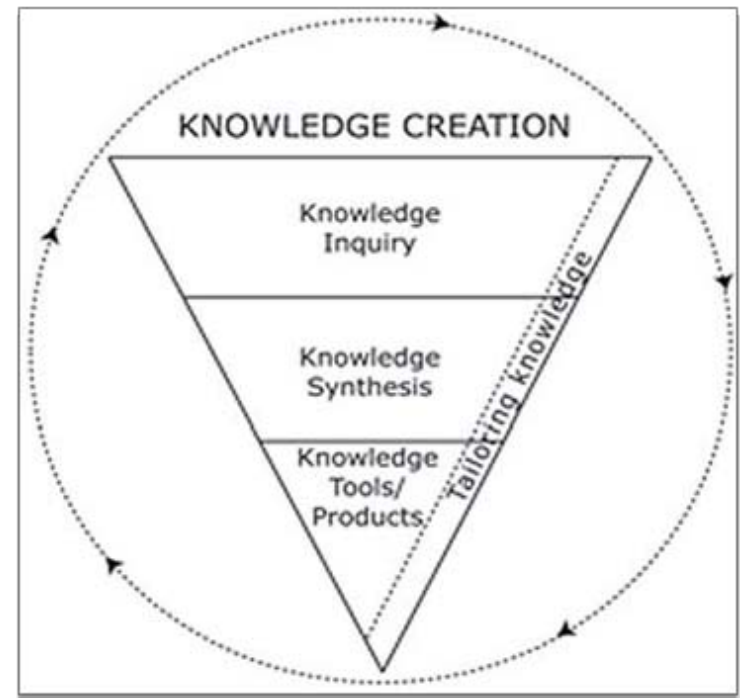


Create Knowledge Tools

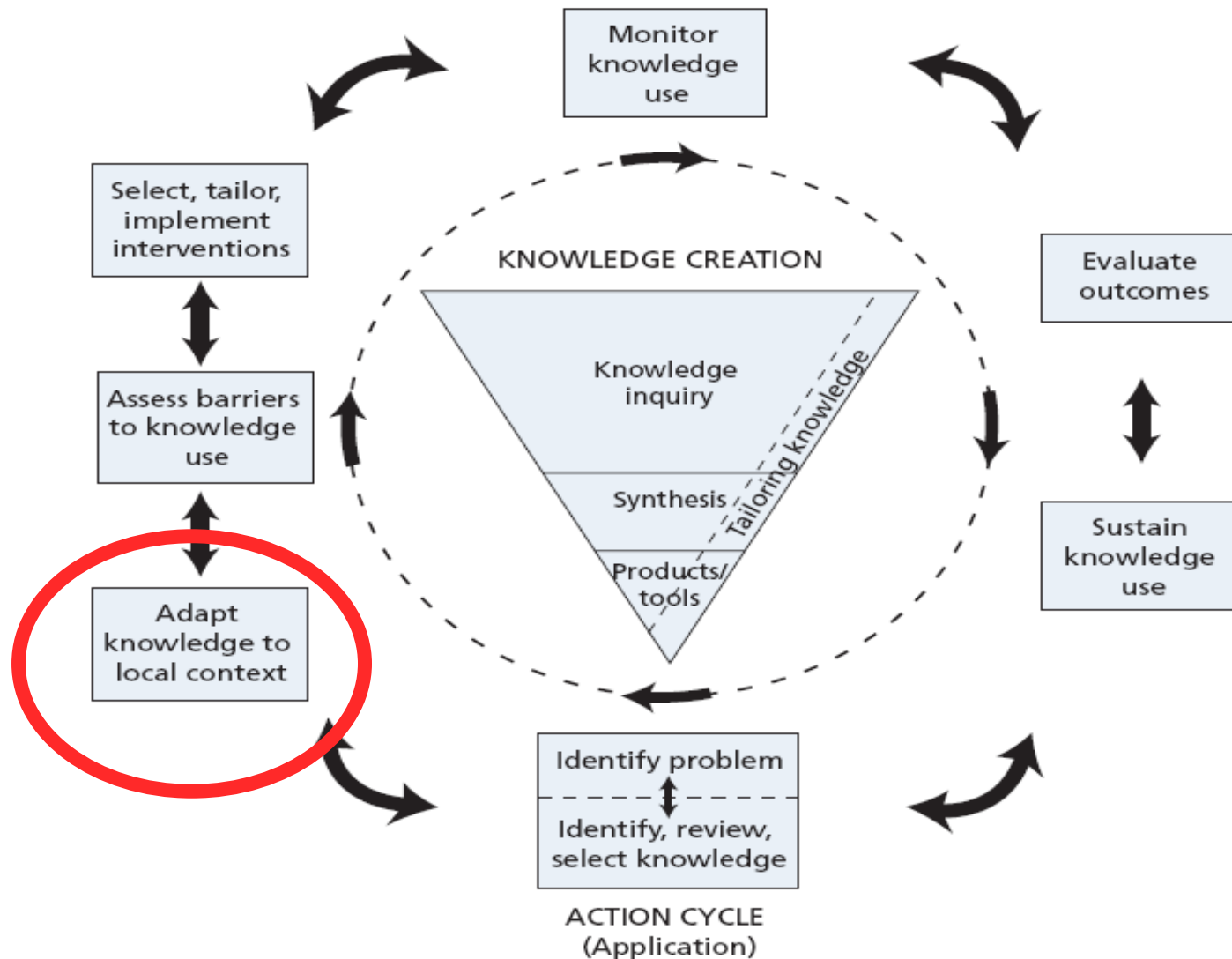


Synthesized knowledge is used to create knowledge tools and products:

- Clinical Practice guidelines
- Patient decision aids



The Knowledge to Action Cycle:



Adapt Knowledge to Local Context

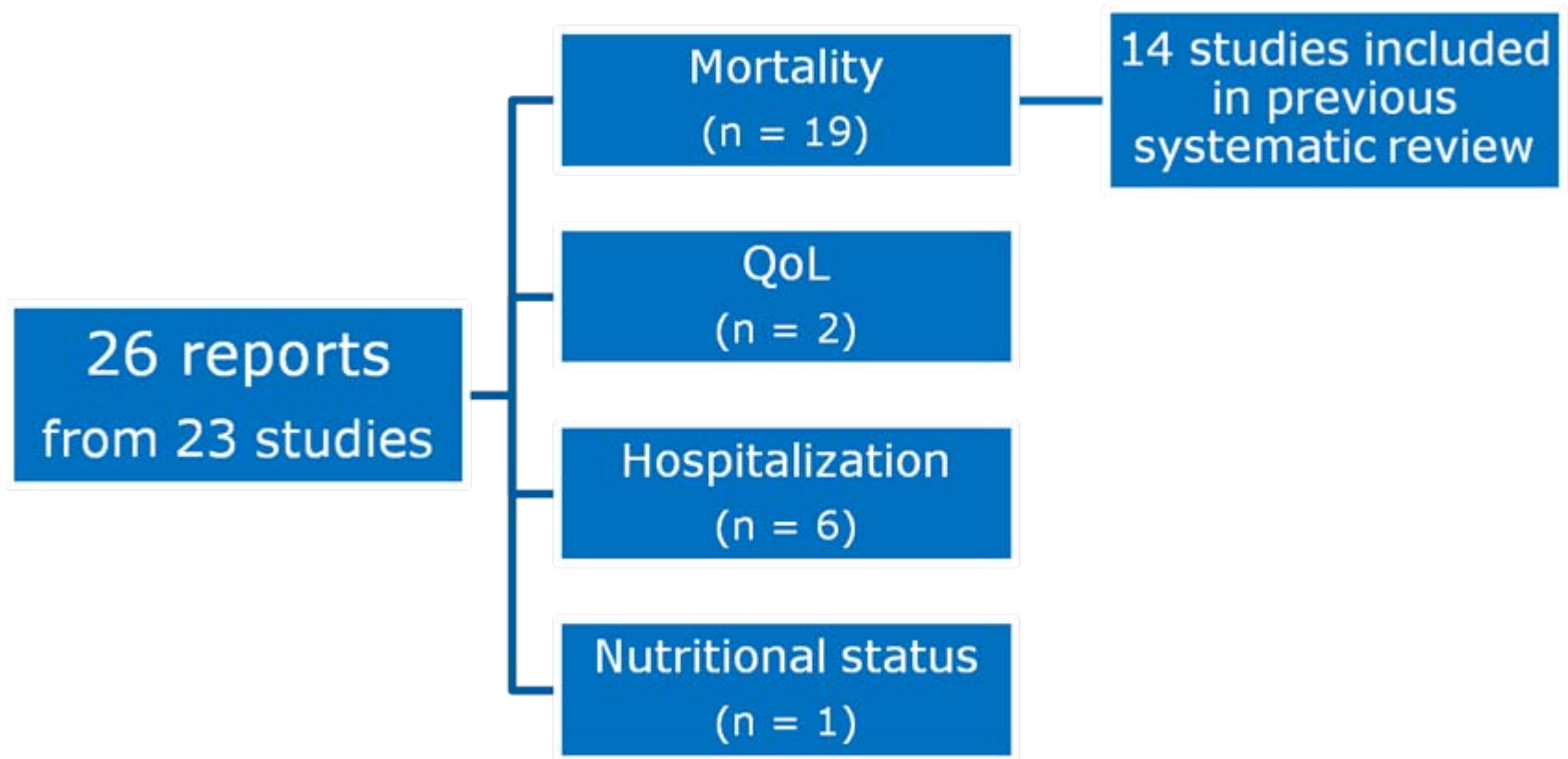
- Consider evidence and the need for new clinical practice guidelines

CSN 2013 CLINICAL PRACTICE GUIDELINE FOR TIMING THE INITIATION OF CHRONIC DIALYSIS

Gihad E. Nesrallah, Reem A. Mustafa, William F. Clark, Adam Bass, Lianne Barnieh, Brenda R Hemmelgarn, Scott Klarenbach, Robert R Quinn, Swapnil Hiremath, Pietro Ravani, Manish M. Sood, Louise M. Moist

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CHARACTERISTICS OF STUDIES



SURVIVAL

RCT's (IDEAL TRIAL)

- Intent-to-defer:
 - Crossover rate of 75%
 - Average eCrCl of 9.8 mL/min at initiation
- Intent-to-start-early:
 - Crossover rate of 19%
 - Average eCrCl of 12.0 mL/min at initiation
- HR = 1.04 (95% CI 0.83 – 1.30)

OBSERVATIONAL STUDIES (N=14)

- HR = 1.04 (95% CI 1.03 – 1.05)

QoL and HOSPITALIZATION

QoL

- No difference (IDEAL trial and 2 observational studies)

Hospitalizations

- No difference in rate or total days in hospital in IDEAL trial
- Conflicting results in observational studies

RESOURCE USE

IDEAL trial

- Median start time to dialysis:
 - Intent-to-start-early: 1.90 months
 - Intent-to-defer: 7.30 months
- Resulted in higher costs:
 - Dialysis-- \$10,777 CAD per patient
 - Transportation-- \$3,610 AUS per patient
- No difference in costs and number of hospitalizations or outpatient visits

SUBGROUPS

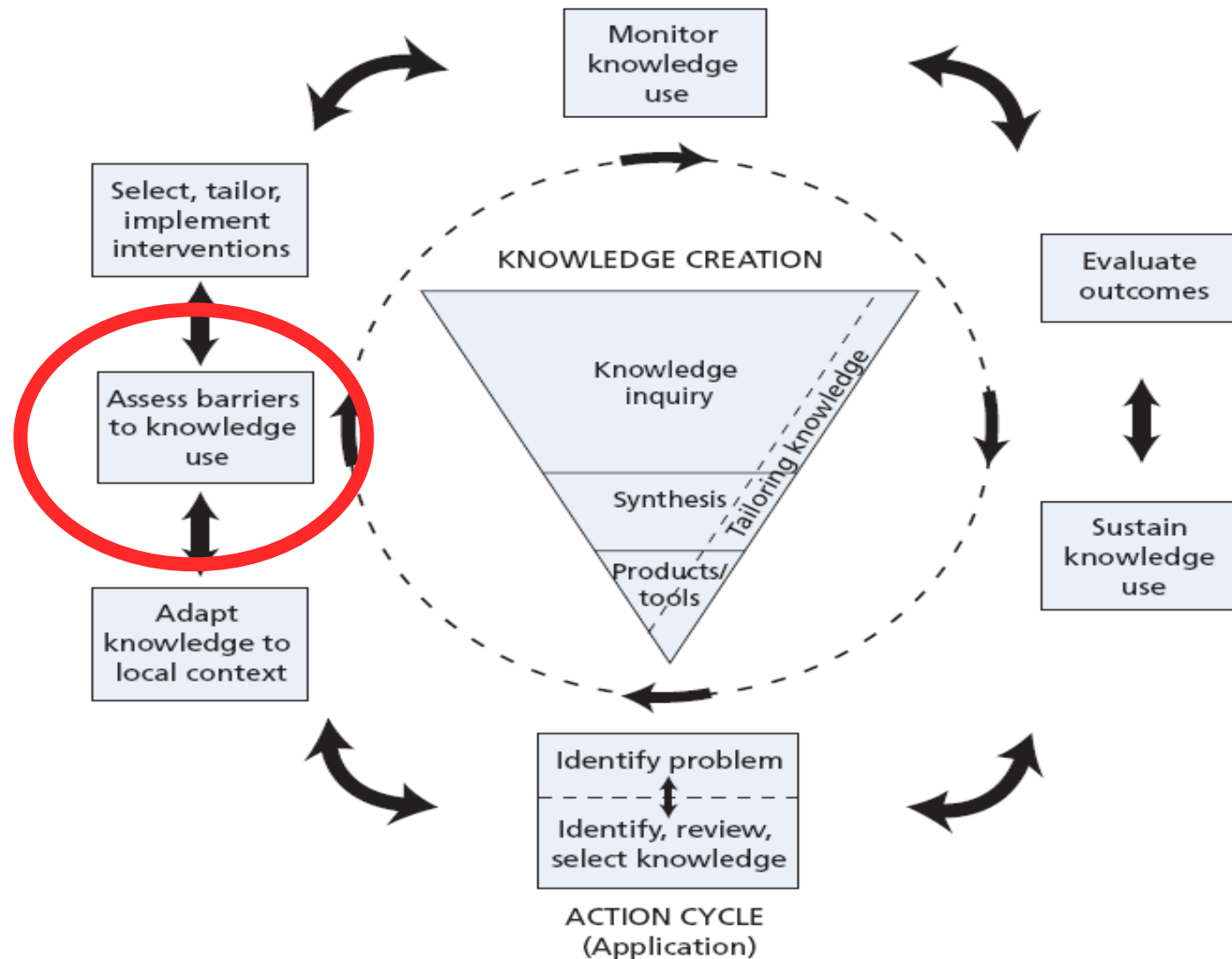
- No evidence to support separate recommendations for:
 - PD vs HD
 - With or without diabetes
 - High vs low comorbidity
- Single recommendation, applicable to all subgroups

RECOMMENDATION

For adult patients (>18 years of age) with Stage 5 chronic kidney disease, we recommend an “intent-to-defer” over an “intent-to-start early” approach for the initiation of chronic dialysis.

(Strong recommendation, moderate quality evidence)

The Knowledge to Action Cycle:



Barriers to implementation of evidence

- Professional
- Patient
- Health care team / organization
- Practice environment

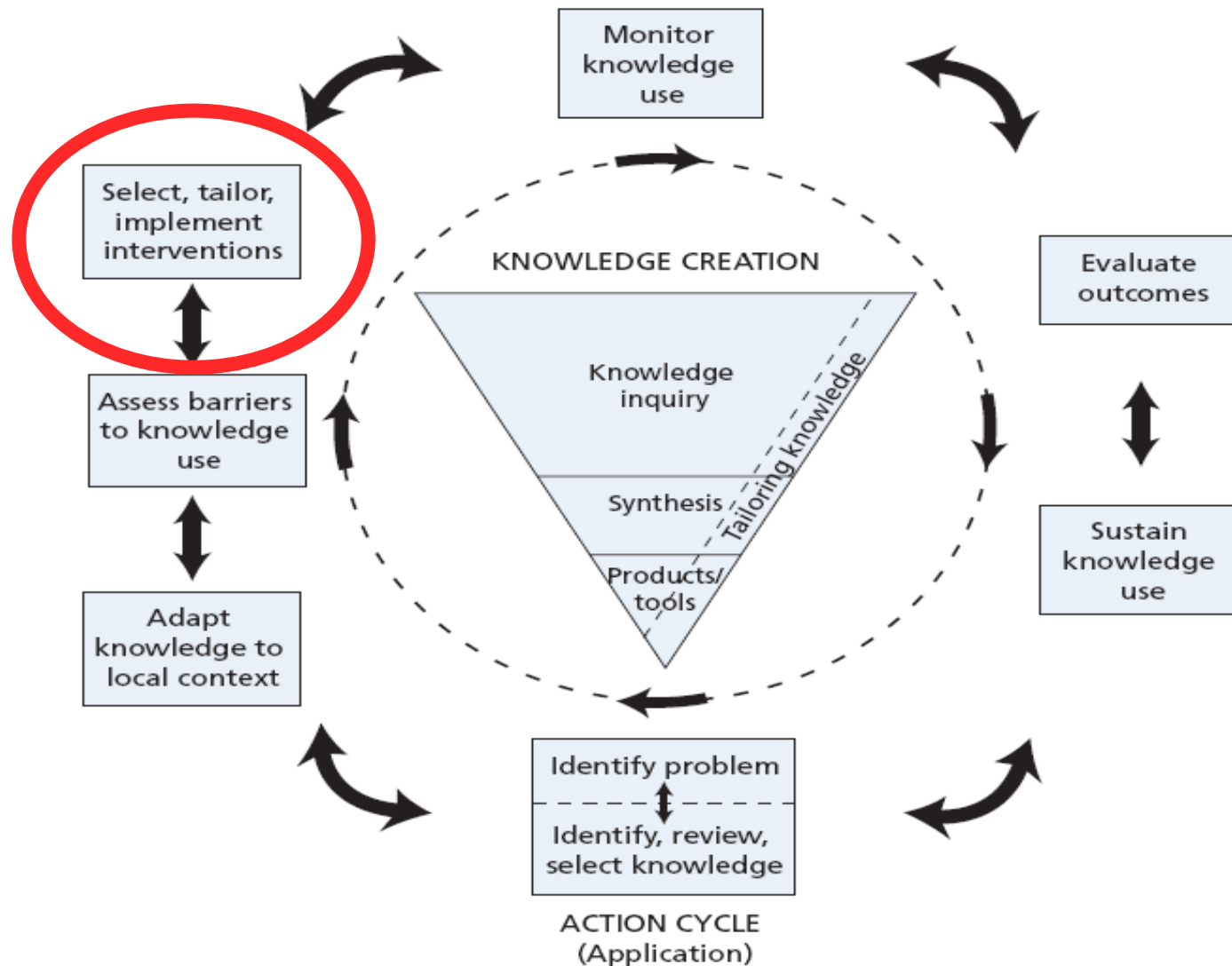
Health Care Provider Survey

- Led by Manish Sood
- To assess barriers to “intent to defer dialysis initiation” approach from the perspective of Nephrologists
- May 2013

Health Care Provider Survey – main findings

- No renal program across Canada has a policy on timing of dialysis initiation
- A significant number of respondents felt uremic symptoms occurred earlier in patients with advancing age or co-morbid illness.
- Many Nephrologists felt there was an absolute eGFR at which they would initiate dialysis in an asymptomatic patient.

The Knowledge to Action Cycle:



Select, Tailor and Implement KT Interventions

- **Establish an end-user network**
- Understand what works to change care

Review of Current Practice in Multidisciplinary CKD Clinics in Canada

Goal:

- Understand what interventions might assist CKD clinics in the future care of patients by understanding current clinic structure and function

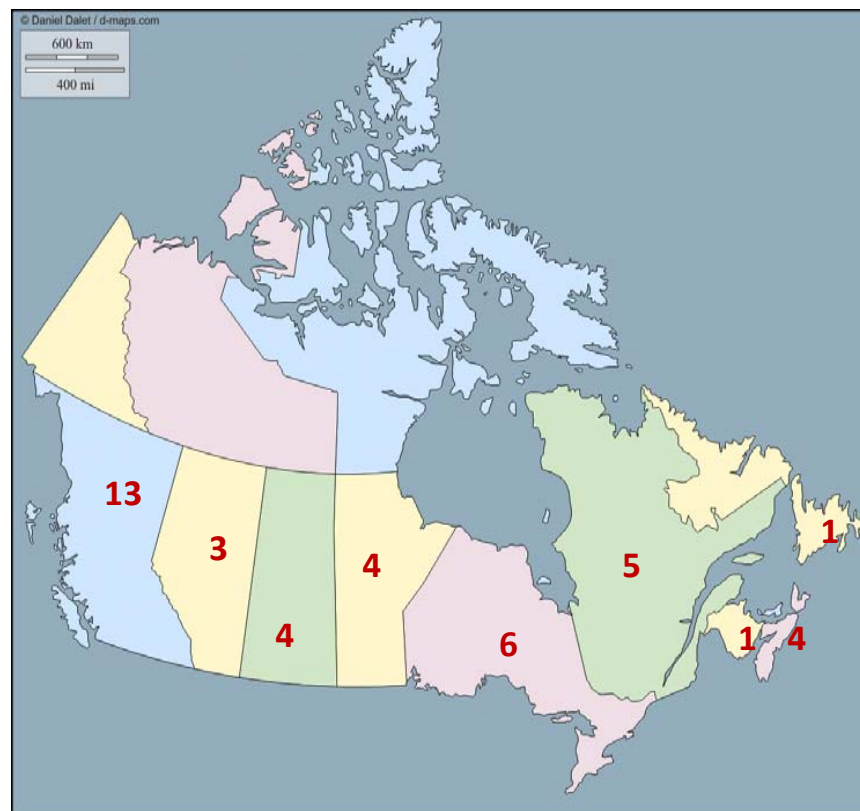
Methodology:

- Identified the nursing, administrative or medical leads of all renal programs across Canada.
- Collected contact information for local nursing and medical leads and/or clinic managers for all multidisciplinary CKD clinics

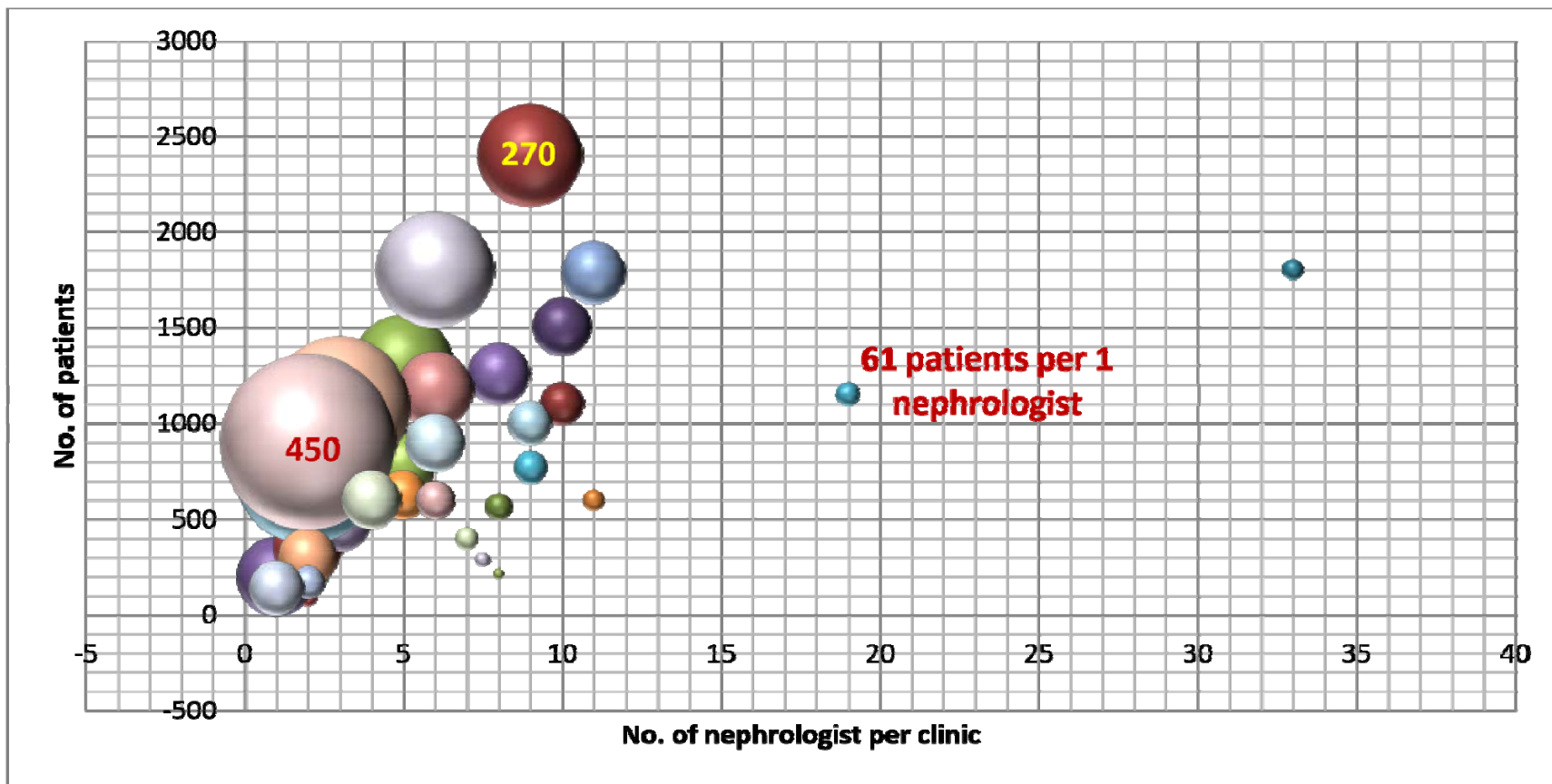
Preliminary Findings: April 2013

51 interviews conducted

- 41 clinics
- 24 in Western Canada,
- 6 in Ontario,
- 5 in Quebec,
- 6 in the Atlantic Provinces
- 5 interviews were with
- medical leads (physicians)



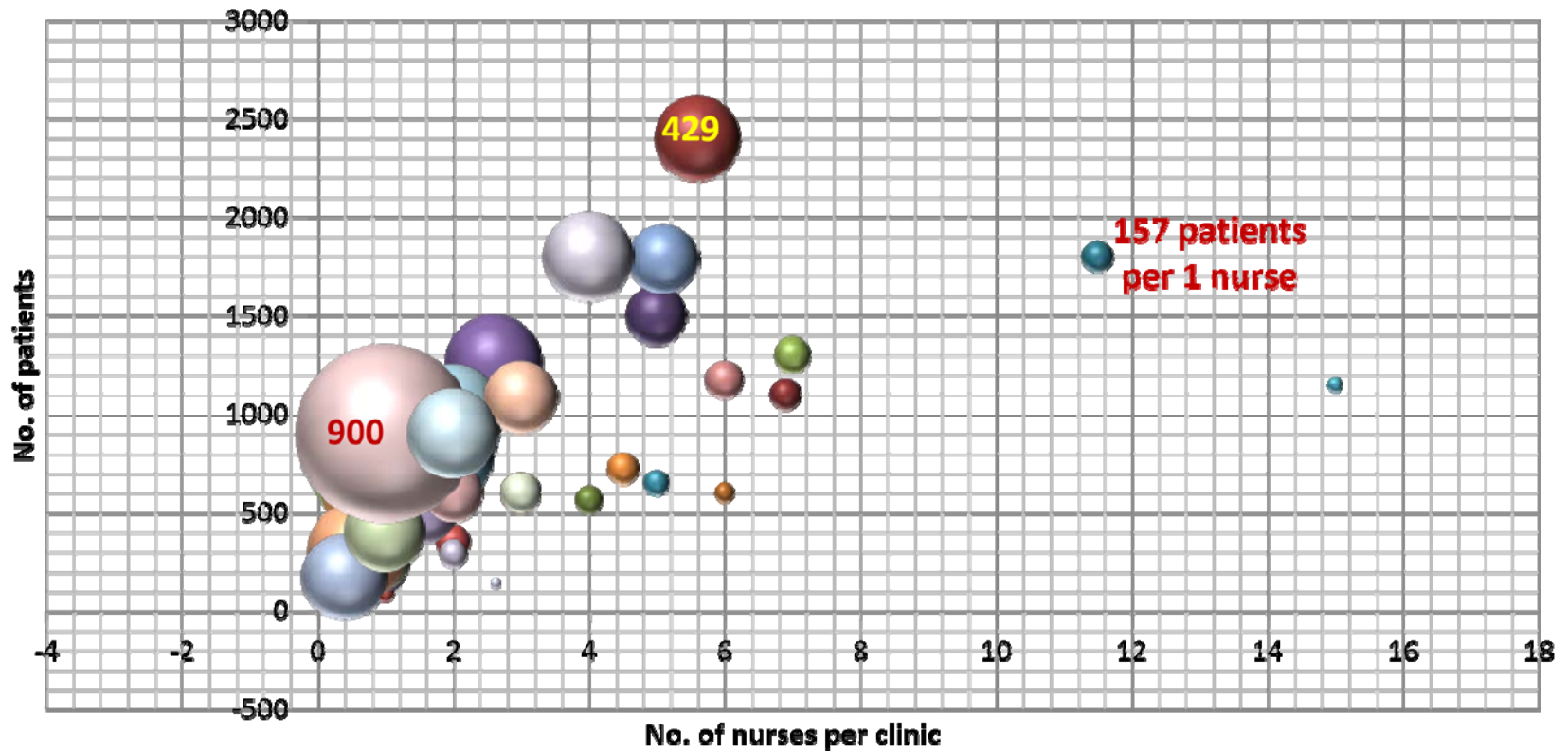
Variability in Number of Patients to Nephrologists per Clinic Surveyed



Median = 150 patients/nephrologist

*Larger bubbles = more patients per nephrologist

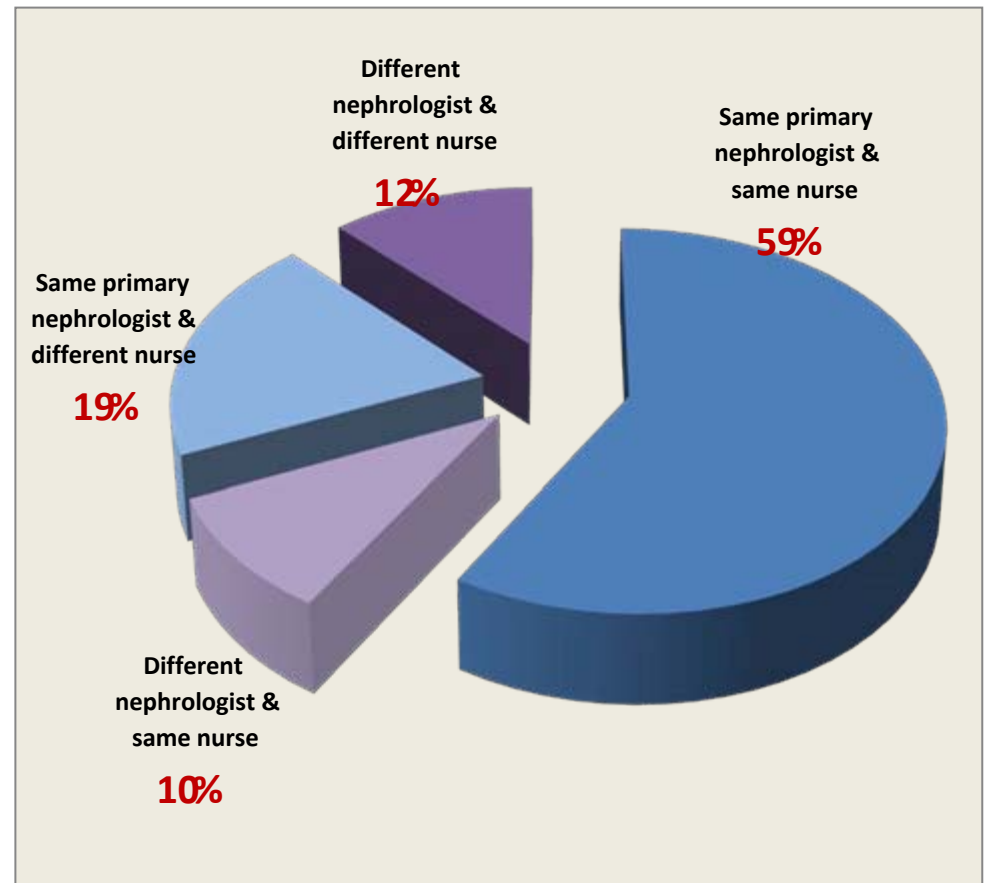
Variability in Number of Nurses to Patients



Median = 230 patients per nurse

Variability in Models of Care Within CKD Clinics

- Nurse + MD constant (59%)
- Variable Nurse and MD (12%)
- Primary MD and variable Nurse (19%)
- Variable MD and same nurse (10%)



Select, Tailor and Implement KT Interventions

- Establish an end-user network
- **Understand what works to change care**

So What Works to Change Care?

It depends what the identified barrier is...

- No one intervention is effective in all circumstances
- Combinations of interventions may be more effective

If the Barrier is Physician Knowledge:

- 1. Distribution of educational materials to professionals:** mixed effects
- 2. Guideline implementation strategies:** median improvement in “care” of 8%
- 3. Continuing Medical Education:**
 - Large conferences and didactic teaching: No/minimal effect
 - Small group / interactive education with active participation: Positive effects on practice, possibly outcomes
- 4. Educational outreach by experts:** particularly effective for prescribing

Other Strategies:

Audit and feedback:

- Most evidence is around targeting of test ordering or prevention
- Mixed results when used on its own.
- Possibly more effective when combined with reminders, and education

Reminders (posters, patients reminding staff):

- largest effect of any of the strategies used on its own, but large variation across studies

Other Strategies:

Substitution of tasks:

- Use of nurses / pharmacists
- Anemia protocols, or management of CV risk
- Can be similarly effective or more effective than physician-only care

Patient-directed interventions

- Can be effective; particularly for improving prevention / vaccination
- Examples include education or Facilitated relay

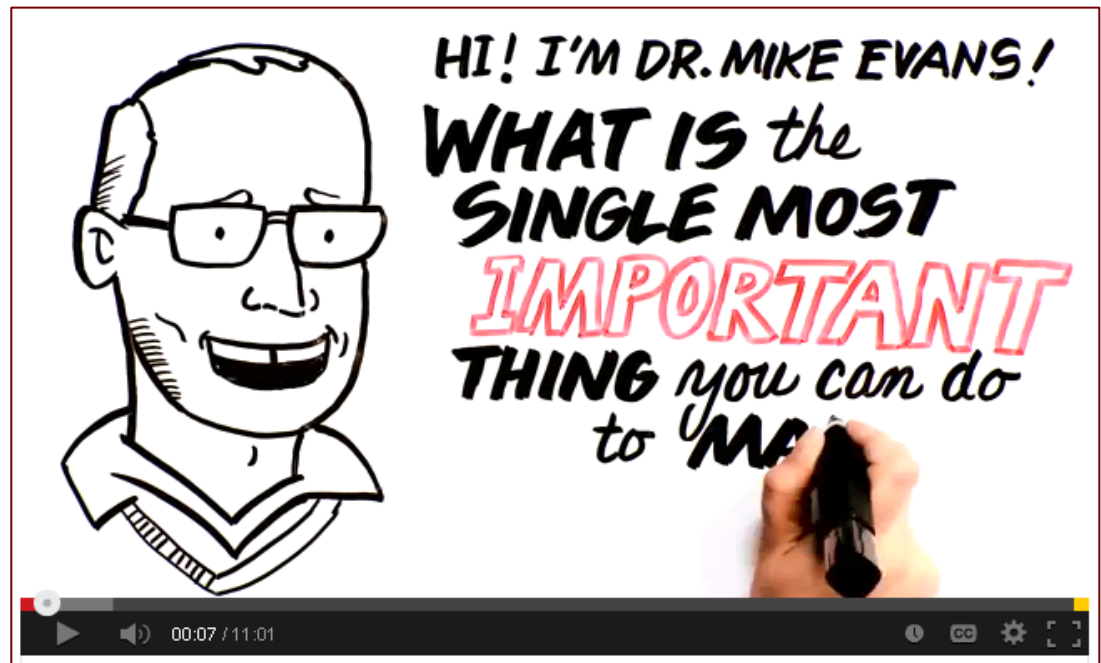
Select, Tailor and Implement KT Interventions: Options for timing of dialysis initiation

- Guidelines to be published in CMAJ Feb 2014
- Disseminate guidelines and tools (*infographic*, and a *draft policy* on dialysis initiation) to all CKD clinics in Canada

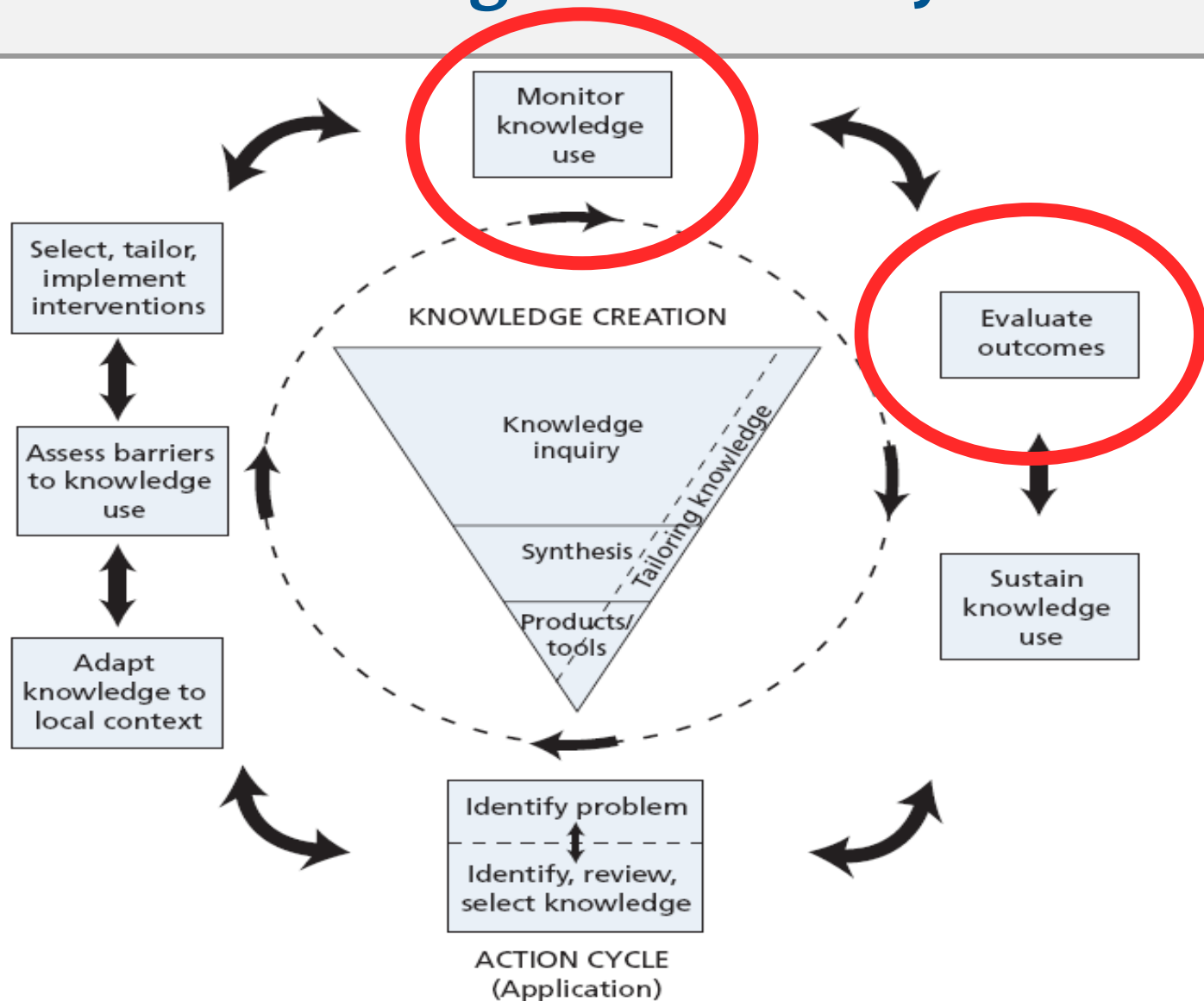


Select, Tailor and Implement KT Interventions: Options for timing of dialysis initiation

- CORR center-specific report forms (audit and feedback)
- Patient education – White board



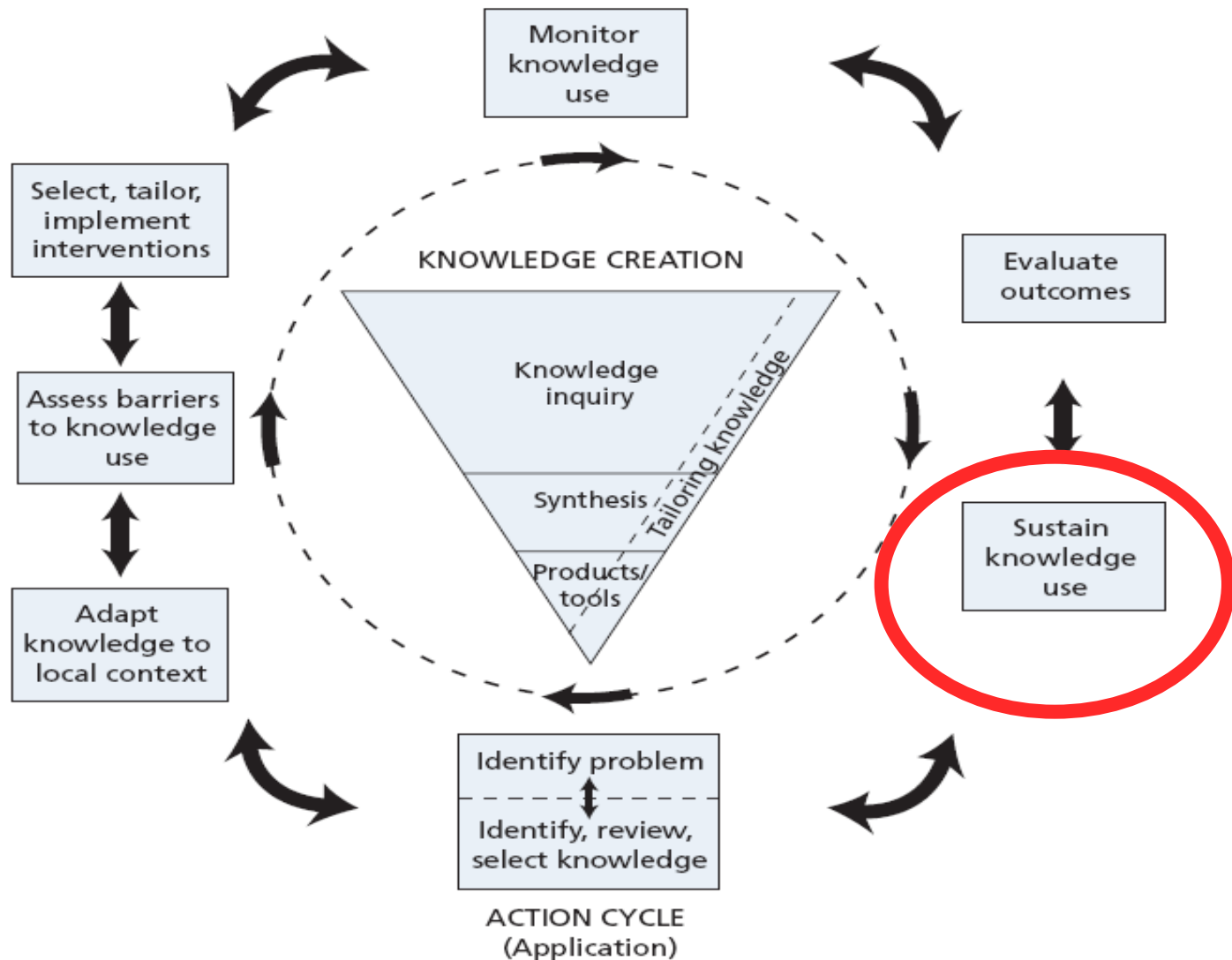
The Knowledge to Action Cycle:



Evaluate Outcomes

- Using a combination of approaches (including an experimental design to assess the ideal method of knowledge translation), we will monitor timing of dialysis initiation using CORR data

The Knowledge to Action Cycle:



Sustain Knowledge

- Continued “check – in” with end users
- Modify material as needed

The Knowledge to Action Cycle:

