McMaster University
CLINICAL EPIDEMIOLOGY AND BIOSTATISTICS

وزارة الصحة
Ministry of Health

A new approach to CPG adaptation in Saudi Arabia:

Adaptation of practice guidelines to a country-specific context using the GRADE/DECIDE evidence to decision framework

Zulfa Al Rayess
Wojtek Wiercioch

22 August, 2014
GIN Conference, Melbourne

Disclosure of Interests (last 3 years)

Zulfa Al Rayess (Saudi Centre for Evidence Based Health Care):

- No conflicts of interest in relation to the work and views presented

Wojtek Wiercioch (McMaster University):

- Member of GRADE Working Group
- No other conflicts of interest in relation to the work and views presented

Outline

Saudi Center for Evidence Based Health Care (EBHC):

(Presented by Dr. Zulfa Al Rayess)

1. Project description
2. Collaboration model, roles & responsibilities
3. Results, dissemination and conclusions

McMaster University Guideline Working Group:

(Presented by Wojtek Wiercioch)

1. Methodology
2. Evidence-to-Decision Framework

Saudi Arabia

Saudi Arabia

- Largest Arab state in Western Asia by land area
- Population: 29 million
- Largest oil reserves, producer and exporter of petroleum in the world


ABDULAZIZ
PHOTOGRAPHER

Our mission at the Saudi Center for EBHC

To promote the awareness and practice of Evidence-based medicine across the Kingdom, through training, awareness campaigns, and **the creation of robust and nationally agreed on clinical practice guidelines (CPGs)**

Initiative

The Ministry of Health of Saudi Arabia (KSA) partnered with McMaster University to **develop multiple CPGs** for the local healthcare setting based on the GRADE approach and the GRADE/DECIDE evidence to decision (EtD) framework

Target

Produced 10 CPGs in a 4-month time period (Sep – Dec 2013)

Collaboration Model

McMaster University
CLINICAL EPIDEMIOLOGY AND BIOSTATISTICS

Saudi Experts (Medical Societies)

Saudi Center for EBHC

Project Management & Facilitation

- Project coordination (e.g. workshops, panel meetings, communication etc.)
- Facilitate guideline topics selection by stakeholders and decision makers
- Recruit panel members
- Facilitate communication with panels
- Review final reports
- Disseminate guidelines (website, mobile apps, print media, BMJ, newsletters)

How were the CPG topics selected?

Number of topics suggested by individual departments of the Ministry of Health

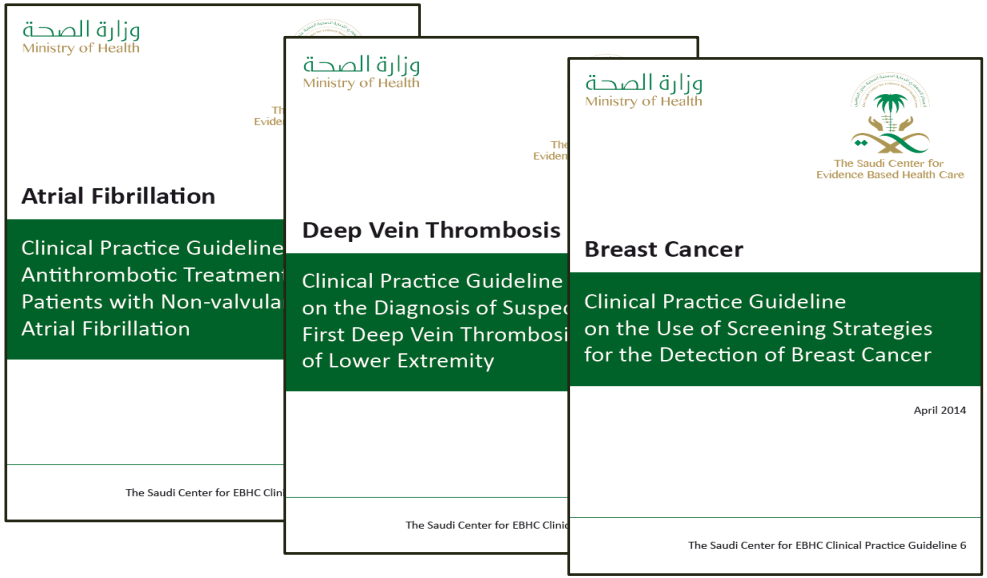
Suggested topics screened by McMaster Group for feasibility of adaptation

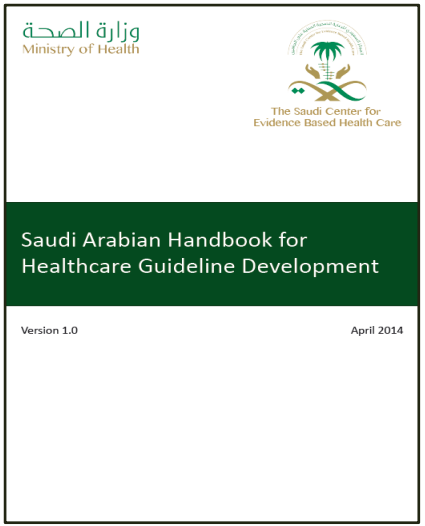
Screened topics presented to Ministry decision makers for final selection of guideline topics

Recruited multidisciplinary panel of local experts relevant to each CPG topic

Results

- Produced 10 CPGs with 80 recommendations achieved in 4 month time period
- Produced a Manual for CPG development for Saudi Arabia

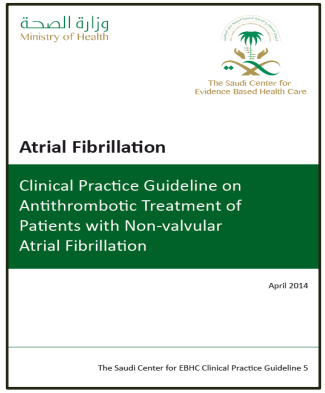




10 CPGs Developed

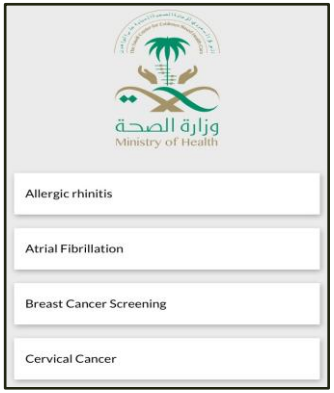
CPG topic	Society
Diagnosis of Deep Vein Thrombosis	Saudi Scientific Hematology Society
Anticoagulant Therapy for Atrial Fibrillation	Saudi Heart Association
Anticoagulant Therapy for Venous Thromboembolism	Saudi Scientific Hematology Society
Anticoagulant Therapy for Acute Stroke Management	Saudi Stroke Association
Venous Thromboembolism prevention in Stroke	Saudi Stroke Association
Allergic Rhinitis in Asthma	Saudi Allergy, Asthma and Immunology Society
Cervical Cancer Screening and Treatment	Saudi Obstetric and Gynecology Society
Breast Cancer Screening	Saudi Oncology Society
Role of Vitamin D, Calcium, and Exercise in Fracture Prevention	Saudi Osteoporosis Society
Timing of Initiation of Hemodialysis	Saudi Society of Nephrology and Transplantation

Dissemination



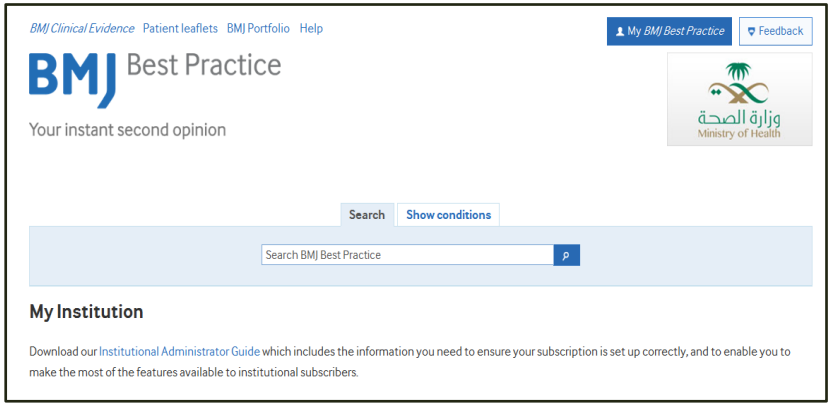
Printed CPGs

EBHC website



Mobile apps

Newsletters



BMJ Best Practice

Conclusions

- In this unique collaboration, we established and applied a methodology for adaptation of CPGs in 4-month period

- The experience to produce adapted CPGs in a short period is feasible but challenging

- We succeeded because we had:
  - Committed stakeholders
  - Strong scientific support (McMaster Group)
  - Effective project management (EBHC and McMaster Group)

Acknowledgement

- Dr. Mohamad Zamakhshary, Deputy Vice minister for Training & Planning, Ministry of Health

- Colleagues from the Saudi Centre for EBHC
  - Dr. Yaser Adi (Scientific Advisor)
  - Dr. Amena Munshi (Project Manager)
  - Nourah Al Mufarreh (Project Coordinator)

- Support from GE Healthcare

Project Methodology

Adaptation **Deve**lopment

Ad**o**ption

Adolopment

Guideline ‘Ad-o-lopment’

- Ad-o-lopment = Adaptation + Adoption + Development
- Approach to the development of guidelines that begins with identifying existing evidence syntheses, including systematic reviews, HTAs, and evidence reports, which may have been produced to support previous guidelines and address specific clinical questions.
- Followed by the updating of the evidence syntheses and development of guideline recommendations specific to the healthcare setting.

Evidence Synthesis

Home treatment compared to hospital treatment for patients with DVT

Patient or population: patients with patients with DVT[1,2]
Settings:
Intervention: home treatment[3,4]
Comparison: hospital treatment
Bibliography: Othieno R, Aby A, Okpo E. Home versus inpatient treatment for DVT. Cochrane database of Systematic Reviews 2007 Issue 3. Algahtani 2013

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk Hospital treatment	Corresponding risk Home treatment				
Mortality	**46 per 1000**	**33 per 1000** (21 to 53)	**RR 0.72** (0.45 to 1.15)	1708 (6 studies)	⊕⊕⊖⊖ **low**[3,4,5,6]	
Recurrent VTE	**76 per 1000**	**49 per 1000** (33 to 71)	**RR 0.65** (0.44 to 0.94)	1769 (7 studies)	⊕⊕⊕⊖ **moderate**[3,4,5]	
Major bleeding	**21 per 1000**	**14 per 1000** (7 to 29)	**RR 0.67** (0.33 to 1.36)	1708 (6 studies)	⊕⊕⊖⊖ **low**[3,4,5,6]	
Quality of life	-	-	-	0 (3 studies[7])	⊕⊕⊖⊖ **low**[8,9,10]	
Post thrombotic syndrome - not reported	-	-	-	-	-	

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **RR:** Risk ratio;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1] RCTs included recruited patients "whose home circumstances were adequate"
[2] RCTs included patients with leg DVT. They excluded those with PE and pregnant women
[3] 4 RCTs had partial hospital treatment for some participants in the home group: Levine 1996 (mean hospital stay 2.1 vs. 6.5 days in home and hospital arms respectively), Koopman 1996 (2.7 vs. 8.1 days), Boccalon 2000 (1 vs. 9.6 days), and Ramacciotti 2004 (3 vs. 7 days). Chong 2005 and Daskalopoulos 2005 did not report mean duration of hospital stay.

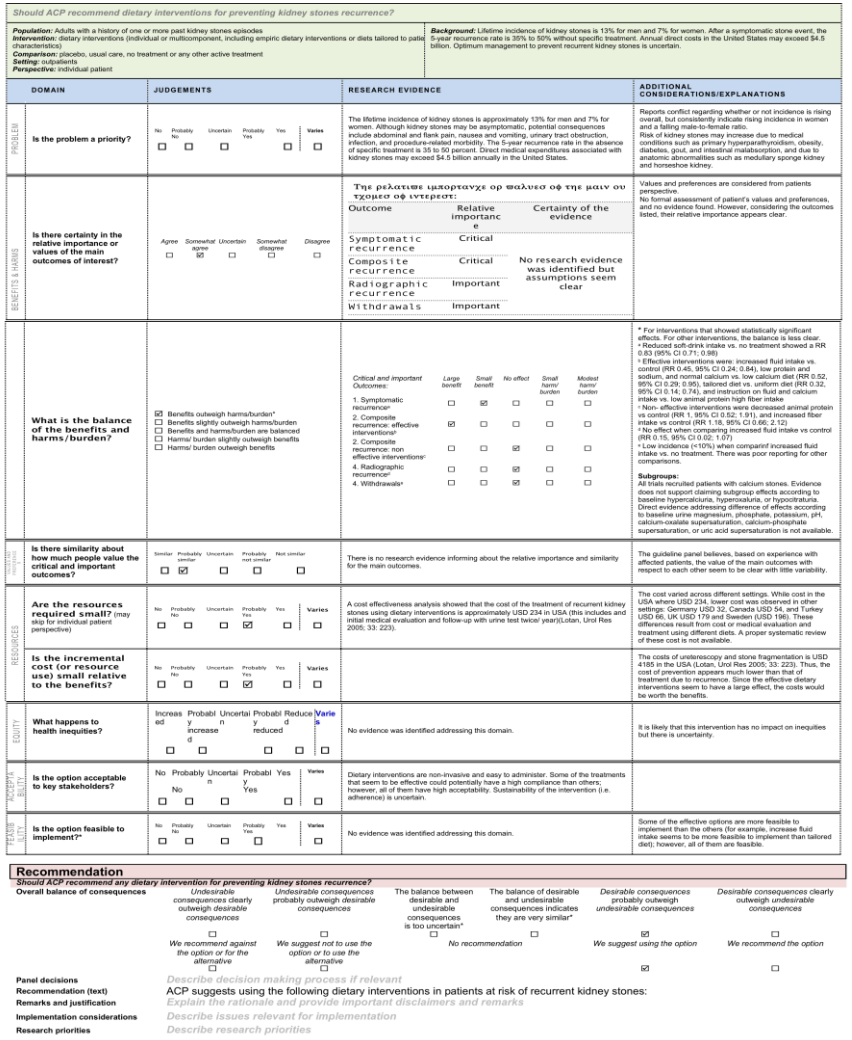
Formulating Recommendations

- Online training modules for panels and 1-day workshop on guideline development
- In-person panel meetings, facilitated by McMaster guideline leaders
- Recommendations formulated using the Evidence-to-Decision (EtD) framework

Evidence-to-Decision Framework

- Factors that bear on recommendations and their strength
- Enables formulation of recommendations tailored to the specific healthcare setting, through consideration of the factors outlined in the framework (e.g. patients' values and preferences in local setting, resources acceptability, feasibility)

- Question/Problem
- Benefits and harms
- Quality of evidence
- Values and Preferences
- Resource use
- Impact on health equity
- Acceptability
- Feasibility
- Recommendation



Should ACP recommend dietary interventions for preventing kidney stones recurrence?

Population: Adults with a history of one or more past kidney stones episodes
Intervention: dietary interventions (individual or multicomponent, including empiric dietary interventions or diets tailored to patie characteristics)
Comparison: placebo, usual care, no treatment or any other active treatment
Setting: outpatients
Perspective: individual patient

Background: Lifetime incidence of kidney stones is 13% for men and 7% for women. After a symptomatic stone event, the 5-year recurrence rate is 35% to 50% without specific treatment. Annual direct costs in the United States may exceed $4.5 billion. Optimum management to prevent recurrent kidney stones is uncertain.

	DOMAIN	JUDGEMENTS	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS/EXPLANATIONS
PROBLEM	Is the problem a priority?	No / Probably No / Uncertain / Probably Yes / Yes / Varies	The lifetime incidence of kidney stones is approximately 13% for men and 7% for women. Although kidney stones may be asymptomatic, potential consequences include abdominal and flank pain, nausea and vomiting, urinary tract obstruction, infection, and procedure-related morbidity. The 5-year recurrence rate in the absence of specific treatment is 35 to 50 percent. Direct medical expenditures associated with kidney stones may exceed $4.5 billion annually in the United States.	Reports conflict regarding whether or not incidence is rising overall, but consistently indicate rising incidence in women and a falling male-to-female ratio. Risk of kidney stones may increase due to medical conditions such as primary hyperparathyroidism, obesity, diabetes, gout, and intestinal malabsorption, and due to anatomic abnormalities such as medullary sponge kidney and horseshoe kidney.
BENEFITS & HARMS	Is there certainty in the relative importance or values of the main outcomes of interest?	Agree / Somewhat agree ☑ / Uncertain / Somewhat disagree / Disagree	Τηε ρελατιωε ιμπορτανχε οφ ωαλυεσ οφ τηε μαιν ουτχομεσ οφ ιντερεστ: Outcome — Relative importance — Certainty of the evidence Symptomatic recurrence — Critical Composite recurrence — Critical — No research evidence was identified but assumptions seem clear Radiographic recurrence — Important Withdrawals — Important	Values and preferences are considered from patients perspective. No formal assessment of patient's values and preferences, and no evidence found. However, considering the outcomes listed, their relative importance appears clear.
BENEFITS & HARMS	What is the balance of the benefits and harms/burden?	☑ Benefits outweigh harms/burden* ☐ Benefits slightly outweigh harms/burden ☐ Benefits and harms/burden are balanced ☐ Harms/ burden slightly outweigh benefits ☐ Harms/ burden outweigh benefits	Critical and important Outcomes: — Large benefit / Small benefit / No effect / Small harm/ burden / Modest harm/ burden 1. Symptomatic recurrence[a] — ☐ / ☑ / ☐ / ☐ / ☐ 2. Composite recurrence: effective interventions[a] — ☑ / ☐ / ☐ / ☐ / ☐ 2. Composite recurrence: non effective interventions[a] — ☐ / ☐ / ☑ / ☐ / ☐ 4. Radiographic recurrence[a] — ☐ / ☐ / ☑ / ☐ / ☐ 4. Withdrawals[a] — ☐ / ☐ / ☑ / ☐ / ☐	* For interventions that showed statistically significant effects. For other interventions, the balance is less clear. [a] Reduced soft-drink intake vs. no treatment showed a RR 0.83 (95% CI 0.71; 0.98) [b] Effective interventions were: increased fluid intake vs. control (RR 0.45, 95% CI 0.24; 0.84), low protein and sodium, and normal calcium vs. low calcium diet (RR 0.52, 95% CI 0.29; 0.95), tailored diet vs. uniform diet (RR 0.32, 95% CI 0.14; 0.74), and instruction on fluid and calcium intake vs. low animal protein high fiber intake [c] Non- effective interventions were decreased animal protein vs control (RR 1, 95% CI 0.52; 1.91), and increased fiber intake vs control (RR 1.18, 95% CI 0.66; 2.12) [d] No effect when comparing increased fluid intake vs control (RR 0.15, 95% CI 0.02; 1.07) [e] Low incidence (<10%) when comparinf increased fluid intake vs. no treatment. There was poor reporting for other comparisons. **Subgroups:** All trials recruited patients with calcium stones. Evidence does not support claiming subgroup effects according to baseline hypercalciuria, hyperoxaluria, or hypocitraturia. Direct evidence addressing difference of effects according to baseline urine magnesium, phosphate, potassium, pH, calcium-oxalate supersaturation, calcium-phosphate supersaturation, or uric acid supersaturation is not available.
UNCERTAINTY	Is there similarity about how much people value the critical and important outcomes?	Similar / Probably similar ☑ / Uncertain / Probably not similar / Not similar	There is no research evidence informing about the relative importance and similarity for the main outcomes.	The guideline panel believes, based on experience with affected patients, the value of the main outcomes with respect to each other seem to be clear with little variability.
RESOURCES	Are the resources required small? (may skip for individual patient perspective)	No / Probably No / Uncertain / Probably Yes ☑ / Yes / Varies	A cost effectiveness analysis showed that the cost of the treatment of recurrent kidney stones using dietary interventions is approximately USD 234 in USA (this includes and initial medical evaluation and follow-up with urine test twice/ year)(Lotan, Urol Res 2005; 33: 223).	The cost varied across different settings. While cost in the USA where USD 234, lower cost was observed in other settings: Germany USD 32, Canada USD 54, and Turkey USD 66, UK USD 179 and Sweden (USD 196). These differences result from cost or medical evaluation and treatment using different diets. A proper systematic review of these cost is not available.
RESOURCES	Is the incremental cost (or resource use) small relative to the benefits?	No / Probably No / Uncertain / Probably Yes ☑ / Yes / Varies		The costs of ureteroscopy and stone fragmentation is USD 4185 in the USA (Lotan, Urol Res 2005; 33: 223). Thus, the cost of prevention appears much lower than that of treatment due to recurrence. Since the effective dietary interventions seem to have a large effect, the costs would be worth the benefits.
EQUITY	What happens to health inequities?	Increased / Probably increased / Uncertain / Probably reduced / Reduced / Varies	No evidence was identified addressing this domain.	It is likely that this intervention has no impact on inequities but there is uncertainty.
ACCEPTABILITY	Is the option acceptable to key stakeholders?	No / Probably No / Uncertain / Probably Yes / Yes / Varies	Dietary interventions are non-invasive and easy to administer. Some of the treatments that seem to be effective could potentially have a high compliance than others; however, all of them have high acceptability. Sustainability of the intervention (i.e. adherence) is uncertain.	
FEASIBILITY	Is the option feasible to implement?*	No / Probably No / Uncertain / Probably Yes / Yes ☐ / Varies	No evidence was identified addressing this domain.	Some of the effective options are more feasible to implement than the others (for example, increase fluid intake seems to be more feasible to implement than tailored diet); however, all of them are feasible.

Recommendation

Should ACP recommend any dietary intervention for preventing kidney stones recurrence?

Overall balance of consequences

Undesirable consequences clearly outweigh desirable consequences	*Undesirable consequences probably outweigh desirable consequences*	The balance between desirable and undesirable consequences is too uncertain*	The balance of desirable and undesirable consequences indicates they are very similar*	*Desirable consequences probably outweigh undesirable consequences*	*Desirable consequences clearly outweigh undesirable consequences*
☐	☐	☐	☐	☑	☐
We recommend against the option or for the alternative	*We suggest not to use the option or to use the alternative*	*No recommendation*		*We suggest using the option*	*We recommend the option*
☐	☐			☑	☐

Panel decisions — *Describe decision making process if relevant*

Recommendation (text) — ACP suggests using the following dietary interventions in patients at risk of recurrent kidney stones:

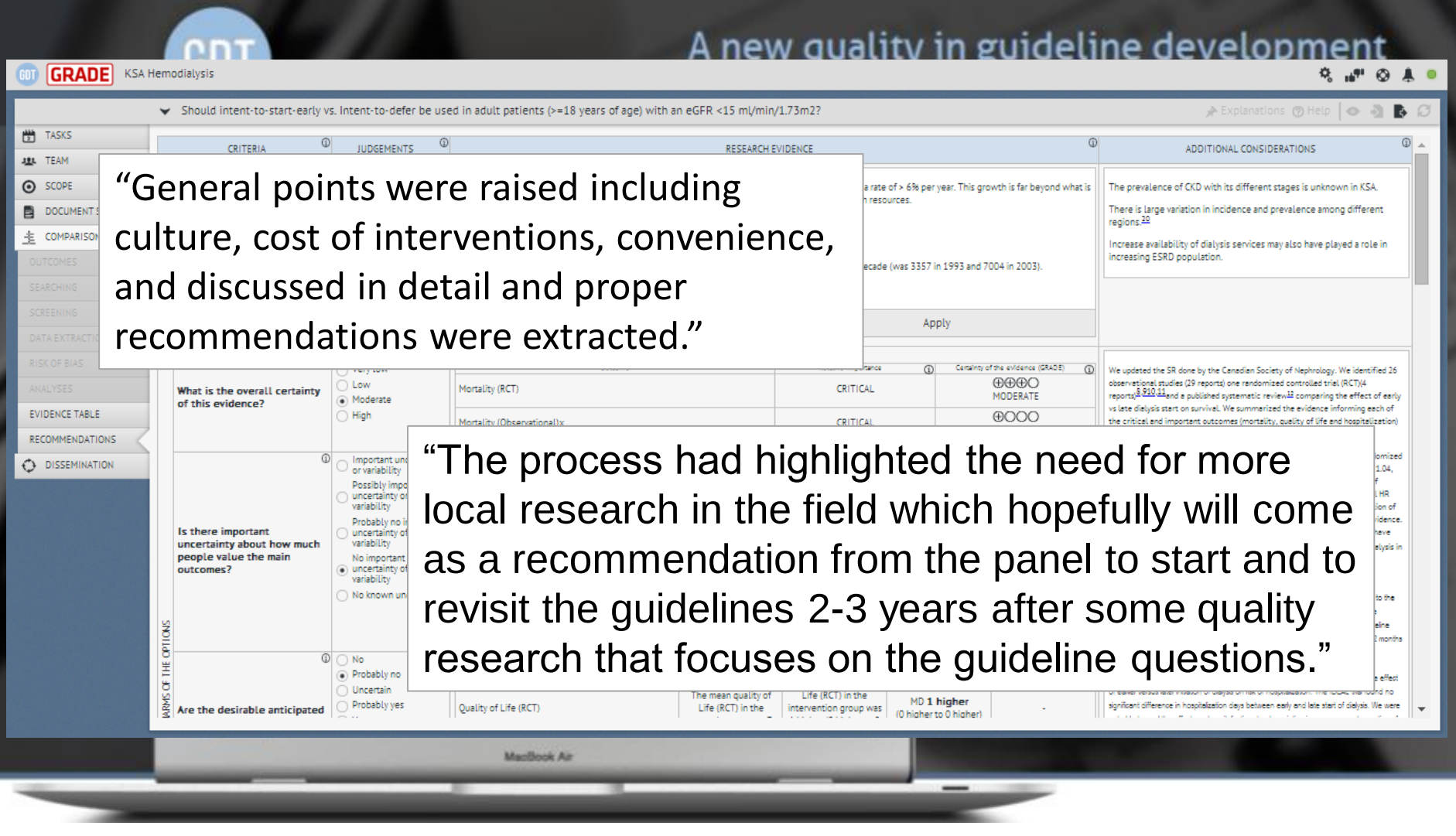
Remarks and justification — *Explain the rationale and provide important disclaimers and remarks*

Implementation considerations — *Describe issues relevant for implementation*

Research priorities — *Describe research priorities*

GRADE DECIDE

Evidence to decision



"General points were raised including culture, cost of interventions, convenience, and discussed in detail and proper recommendations were extracted."

"The process had highlighted the need for more local research in the field which hopefully will come as a recommendation from the panel to start and to revisit the guidelines 2-3 years after some quality research that focuses on the guideline questions."

Conclusions

- Ad-o-lopment approach allows for efficient production of guidelines
- Support and facilitation from trained methodologists to help with development of guidelines
- Evidence-to-Decision framework allows for formulation of recommendations specific to the local healthcare setting

Acknowledgment

Holger Schünemann

Jan Brozek

Elie A. Akl

Waleed Alhazzani

Romina Brignardello-Petersen

Alonso Carrasco-Labra

Carlos Cuello

Itziar Etxeandia-Ikobaltzeta

Maicon Falavigna

Juan José Yepes-Nuñez

Reem Mustafa

Ignacio Neumann

Yuan Zhang