MINIMALLY DISRUPTIVE MEDICINE
EFFECTIVE CARE THAT FITS

JOIN US!
OCTOBER 23-24, 2017
MAYO CLINIC, ROCHESTER, MN

KERUNIT
KNOWLEDGE AND EVALUATION RESEARCH
New Approach and New Context

--First Experience of SDM in China

Huang Rong-chong, M.D.& Ph.D.
The First Affiliated Hospital of Dalian Medical University, China
A clinic day in China hospital
Patient-Clinician Distrust

Poor knowledge

Status of disease

Medical policy

Family burden

Context

Side effects and complications

Short time of communication

Education

Clinician communication skill

Type of insurance

Clinical skill and knowledge

Professional opinion

Relationship between patients and clinicians

Costs

Regional disparity of hospitals and clinicians

Socioeconomic status
Cardiovascular diseases is of the major morbidity in China

Infectious disease
Urinary system disease
Endocrine system disease
Digestive system disease
Respiratory system disease
Trauma, poisoning
others
Cardiovascular diseases

40%
Cardiovascular disease Reports in China 2016
Patient compliance and adherence to statin therapy in China

- The patients with coronary artery disease who hospitalized in our hospital stopped stain (36%, n=397) during five years follow-up.
- Statin adherence levels is related to prognosis (death, myocardial infarction, heart failure) in patients with unstable angina.
Patient compliance and adherence to statin therapy: a meta-analysis

图2 高、低他汀类药物依从性患者间心血管不良事件OR值及95%CI比较森林图
注：高依从性（PDC≥80%），低依从性（定义为PDC＜80%、＜40%、＜20%）
Factors associated with Chinese patients' adherence

- Patient variables
  - Trust between physicians and patients
  - Knowledge about CHD, statin, et al
  - progress of medical decision
- Hospital teaching status
- Socioeconomic status

......
• The results from the *Statin Choice* trial give us a clue that decision aids may increase trust through improvement in the decision-making process.

• Delivery of decision aids by clinicians during the visit improves knowledge and shows a trend toward better acceptability and less decisional conflict.
Shared Decision-Making (SDM)

• Taking an active role and participating in investigating the options, one’s preferences, and values as they relate to important healthcare decisions

• Actively working with provider to assure the communication flows both ways

“No fateful decisions in the face of avoidable ignorance.”

“The care patients need and no less, the care they want and no more.”

– Al Mulley, MD
Shared Decision-Making (SDM) – When is it appropriate?
Our experience

**Statin Choice in China**

(No. ChiCTR-OCS-1400464)


Yang X, et al. summit to Circulation Cardiovascular Quality and Outcoms

Huang R. et al. summit to Patient Education and Concealing
**Intervention**

- The intervention will consist of the use of a decision aid (Statin Choice) by patients and their physicians during the clinic encounter ([http://kercards.e-bm.info](http://kercards.e-bm.info)) (Chinese version) [http://statindecisionaid.mayoclinic.org](http://statindecisionaid.mayoclinic.org).
我应该服用他汀类药物吗？
一个决策工具
平均风险<15%

1. 在未来10年内我发生心血管事件的风险是多少？

在100位和您一样未服用他汀类药物的人中发生心血管事件的风险

未服用他汀类药物：
90人未发生心血管事件（绿色）
10人发生心血管事件（红色）
Training of physicians

• A two-day meeting in person discussion to show how to use the decision aid before it began

• A sample video of Chinese version for guiding physician and patients how to perform SDM in their practices
Training of physicians
Are Chinese physicians and patients ready for SDM in their future experience?

(data unpublished)
1200 patients with coronary artery diseases (5 hospitals)

200 clinicians enrolled (2 hospitals)

- Without Video sample Or DA cards (Statin Choice)
- With Video sample Or DA cards (Statin choice)

Patients and clinicians complete the survey by themselves

Patients and clinicians complete the survey by themselves again

Data collection and analysis
Clinician Questions selected to cover the following topics

- Clinician demographics
- Information Sharing Style
- Satisfaction with DA style
- Post DA satisfaction with tool
The basic characteristics of Chinese clinicians and questionnaire answers on SDM

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Without DA (n=200)</th>
<th>With DA (n=193)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMU (n=100)</td>
<td>CMU(n=100)</td>
<td>DMU(n=93)</td>
</tr>
<tr>
<td>CMU(n=100)</td>
<td></td>
<td>CMU(n=100)</td>
</tr>
<tr>
<td>Male, n(%)</td>
<td>35 (35)</td>
<td>34(37)</td>
</tr>
<tr>
<td></td>
<td>40 (40)</td>
<td>40 (40)</td>
</tr>
<tr>
<td>Age, years, means(SD)</td>
<td>25.8 (1.6)</td>
<td>25.8 (1.6)</td>
</tr>
<tr>
<td></td>
<td>25.1 (2.3)</td>
<td>25.1 (2.3)</td>
</tr>
<tr>
<td>Study time, years, means(SD)</td>
<td>6.9 (0.8)</td>
<td>6.9 (0.8)</td>
</tr>
<tr>
<td></td>
<td>6.2 (1.5)</td>
<td>6.2 (1.5)</td>
</tr>
<tr>
<td>Q1 the type of decision making</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1, n(%)</td>
<td>1(1)</td>
<td>1(1)</td>
</tr>
<tr>
<td>2, n(%)</td>
<td>39(39)</td>
<td>38(39)</td>
</tr>
<tr>
<td>3, n(%)</td>
<td>26(26)</td>
<td>54(58)</td>
</tr>
<tr>
<td>4, n(%)</td>
<td>24(24)</td>
<td>11(12)</td>
</tr>
<tr>
<td>5, n(%)</td>
<td>0(0)</td>
<td>2(2)</td>
</tr>
<tr>
<td>Q2 factors related to decision making</td>
<td>51(51)</td>
<td>50(54)</td>
</tr>
<tr>
<td>1, n(%)</td>
<td>47(47)</td>
<td>47(47)</td>
</tr>
<tr>
<td>2, n(%)</td>
<td>29(29)</td>
<td>25(27)</td>
</tr>
<tr>
<td>3, n(%)</td>
<td>10(10)</td>
<td>13(14)</td>
</tr>
<tr>
<td>4, n(%)</td>
<td>10(10)</td>
<td>17(17)</td>
</tr>
<tr>
<td>Q3 preference in SDM</td>
<td>45(45)</td>
<td>49(53)</td>
</tr>
<tr>
<td>1, n(%)</td>
<td>33(33)</td>
<td>44(44)</td>
</tr>
<tr>
<td>2, n(%)</td>
<td>67(67)</td>
<td>56(56)</td>
</tr>
<tr>
<td>3, n(%)</td>
<td>7(7)</td>
<td>1(1)</td>
</tr>
<tr>
<td>Q4 preference in using DA yes, n(%)</td>
<td>69 (69)</td>
<td>75(81)</td>
</tr>
<tr>
<td>1, n(%)</td>
<td>49 (49)</td>
<td>58(58)</td>
</tr>
<tr>
<td>2, n(%)</td>
<td>31(31)</td>
<td>35 (35)</td>
</tr>
<tr>
<td>3, n(%)</td>
<td>10(10)</td>
<td>16(16)</td>
</tr>
<tr>
<td>4, n(%)</td>
<td>51(51)</td>
<td>42(42)</td>
</tr>
<tr>
<td>Q5 attitude on DA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1, n(%)</td>
<td>11(11)</td>
<td>11(12)</td>
</tr>
<tr>
<td>2, n(%)</td>
<td>56(56)</td>
<td>50(54)</td>
</tr>
<tr>
<td>3, n(%)</td>
<td>2(2)</td>
<td>14(15)</td>
</tr>
<tr>
<td>4, n(%)</td>
<td>31(31)</td>
<td>18(19)</td>
</tr>
</tbody>
</table>
| DMU means Dalian Medical University, CMU means Capital Medical University, SDM means shared decision making.
Patient Questions selected to cover the following topics

- Information Sharing Style
- Satisfaction with DA style
- Knowledge about Risks
- Knowledge about Benefits
- Decisional Conflict
- Trust
# Chinese patient preferences in decision-making on stain choice

<table>
<thead>
<tr>
<th>Type of decision making</th>
<th>DMU (n=282)</th>
<th>CIU (n=103)</th>
<th>TPH (n=144)</th>
<th>SJH (n=30)</th>
<th>CMU (n=200)</th>
<th>Total (n=759)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>1, n(%)</td>
<td>3(1.1)</td>
<td>4(1.4)</td>
<td>1(1.0)</td>
<td>1(1.0)</td>
<td>2(1.4)</td>
<td>5(3.5)</td>
</tr>
<tr>
<td>2, n(%)</td>
<td>33(11.7)</td>
<td>33(11.7)</td>
<td>15(14.5)</td>
<td>12(11.6)</td>
<td>24(16.7)</td>
<td>21(14.5)</td>
</tr>
<tr>
<td>3, n(%)</td>
<td>101(35.8)</td>
<td>102(36.2)</td>
<td>28(27.2)</td>
<td>28(27.2)</td>
<td>32(24.3)</td>
<td>35(24.3)</td>
</tr>
<tr>
<td>4, n(%)</td>
<td>57(20.2)</td>
<td>55(19.5)</td>
<td>30(29.1)</td>
<td>29(28.2)</td>
<td>42(29.2)</td>
<td>44(30.6)</td>
</tr>
<tr>
<td>5, n(%)</td>
<td>88(31.2)</td>
<td>88(31.2)</td>
<td>29(28.2)</td>
<td>33(32.0)</td>
<td>44(30.5)</td>
<td>39(27.1)</td>
</tr>
</tbody>
</table>

1. Decision made by patient themselves, 2. Decision made by patient themselves after considering clinician’s option, 3. Shared decision-making, 4. Clinician made the decision after considering patient’s options, 5. Clinician made the decision;

DMU: The First Affiliated Hospital of Dalian Medical University, CJH: China-Japan Union Hospital of Jilin University, TPH: The Third People’s Hospital of Dalian, SJH: Shengjing Hospital of China Medical University, CMU: Beijing Anzhen Hospital, Capital Medical University
# Change in physician-patient trust before and after shared decision-making process on statin choice

<table>
<thead>
<tr>
<th>Change of scores</th>
<th>Q3(n,% )</th>
<th>Q12(n,% )</th>
<th>Q13(n,% )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>16(2.1)</td>
<td>6(0.8)</td>
<td>10(1.3)</td>
</tr>
<tr>
<td>-1</td>
<td>80(10.5)</td>
<td>62(8.2)</td>
<td>53(7.0)</td>
</tr>
<tr>
<td>0</td>
<td>627(82.6)</td>
<td>648(85.4)</td>
<td>644(84.9)</td>
</tr>
<tr>
<td>1</td>
<td>28(3.7)</td>
<td>39(5.1)</td>
<td>44(5.7)</td>
</tr>
<tr>
<td>2</td>
<td>8(1.1)</td>
<td>4(0.5)</td>
<td>6(0.8)</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>2(0.3)</td>
</tr>
</tbody>
</table>

Q3, the extent of preference for shared decision-making in further visits; Q12, the extent of physician telling patients the truth about disease; Q13, the degree of physicians understanding patient concerns.
Relationship between the basic characteristics of patients and change in physician-patient trust

<table>
<thead>
<tr>
<th></th>
<th>Change of Q3</th>
<th>Change of Q12</th>
<th>Change of Q13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>0.628</td>
<td>0.780</td>
<td>0.541</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>0.576</td>
<td>0.587</td>
<td>0.592</td>
</tr>
<tr>
<td><strong>Cardiovascular events risk scores</strong></td>
<td>0.315</td>
<td>0.891</td>
<td>0.880</td>
</tr>
</tbody>
</table>

Q3, the extent of preference for shared decision-making in further visits; Q12, the extent of physician telling patients the truth about disease; Q13, the degree of physicians understanding patient concerns
The change in patient population preferring shared decision-making (SDM) and giving the answer “yes” to the questions on statin choice before and after SDM

1: Patients who chose SDM, 2: Patients who want to present information about statins to other patients, 3: Patients who want to know information about other treatment choices through SDM, 4–5: Patients who know the adverse effects of statins, 6–7: Patients who know their cardiovascular risk with or without statins, 8–11: Patients who are sure of the clinical decision, 12–13: Patients who think the physician can completely tell them the truth and understand their concerns.
Conclusions-1

• Most young Chinese clinicians want to participate in shared-decision making.

• Approximately one-third of Chinese patients prefer SDM.

• The implementation of SDM interviews and use of decision aids improve the patient’s cognitive level of the disease and treatment, and reduces decision-making conflicts.

• The main barriers for both of physicians and patients in China to perform SDM are lack of experience, and time.
Is it feasible for Chinese physicians to perform SDM in China?
Flow Chart

86 patients with coronary artery diseases (2 hospitals)

7 physicians perform SDM (Statin Choice)

With DA from the website (Statin Choice)

shared decision making (Video or audio recording)

6 patients refused to be recorded

OPTION and Fidelity Score

Data collection and analysis

12-month Follow-up
### Table 1 Participants' characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Hospital A</th>
<th>Hospital B</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clinician 1</td>
<td>Clinician 2</td>
<td>Clinician 3</td>
</tr>
<tr>
<td>Number of encounters</td>
<td>8</td>
<td>31</td>
<td>2</td>
</tr>
<tr>
<td>Sex, male, n (%)</td>
<td>7 (88)</td>
<td>17 (55)</td>
<td>2 (100)</td>
</tr>
<tr>
<td>Age (years), median (range)</td>
<td>63 (44, 76)</td>
<td>66 (44, 78)</td>
<td>76 (72, 79)</td>
</tr>
<tr>
<td>Current smoker, n (%)</td>
<td>7 (88)</td>
<td>11 (36)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Atrial fibrillation, n (%)</td>
<td>1 (13)</td>
<td>1 (3)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Coronary heart diseases, n (%)</td>
<td>5 (63)</td>
<td>26 (84)</td>
<td>2 (100)</td>
</tr>
<tr>
<td>Previous myocardial infarction, n (%)</td>
<td>1 (13)</td>
<td>3 (10)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Hypertension, n (%)</td>
<td>7 (88)</td>
<td>27 (87)</td>
<td>1 (50)</td>
</tr>
<tr>
<td>Diabetes, n (%)</td>
<td>3 (38)</td>
<td>12 (39)</td>
<td>1 (50)</td>
</tr>
<tr>
<td>Taking aspirin before enrollment, n (%)</td>
<td>2 (25)</td>
<td>15 (48)</td>
<td>1 (50)</td>
</tr>
<tr>
<td>Taking statin before enrollment, n (%)</td>
<td>1 (13)</td>
<td>6 (19)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Education = high school, n (%)</td>
<td>4 (50)</td>
<td>10 (32)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Self-reported illiterate, n (%)</td>
<td>0 (0)</td>
<td>2 (7)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Employed, n (%)</td>
<td>0 (0)</td>
<td>6 (19)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Retired, n (%)</td>
<td>5 (63)</td>
<td>15 (48)</td>
<td>1 (50)</td>
</tr>
<tr>
<td>With health insurance, n (%)</td>
<td>8 (100)</td>
<td>31 (100)</td>
<td>2 (100)</td>
</tr>
<tr>
<td>Living in rural area, n (%)</td>
<td>4 (50)</td>
<td>9 (29)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Received patient education before enrollment, n (%)</td>
<td>1 (13)</td>
<td>11 (36)</td>
<td>1 (50)</td>
</tr>
<tr>
<td>SDM time (minutes), median (range)</td>
<td>14 (12, 31)</td>
<td>13 (8, 30)</td>
<td>13 (9, 19)</td>
</tr>
<tr>
<td>Total time (minutes), median (range)</td>
<td>18 (15, 38)</td>
<td>18 (9, 39)</td>
<td>20 (13, 28)</td>
</tr>
</tbody>
</table>

### Clinicians’ characteristics

<table>
<thead>
<tr>
<th>Sex</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>41</td>
<td>28</td>
</tr>
<tr>
<td>Medical education</td>
<td>MD</td>
<td>MS</td>
</tr>
<tr>
<td>Years as a cardiologist</td>
<td>18</td>
<td>2</td>
</tr>
</tbody>
</table>

**Notes:** *Data on 30 of 31 (97%). †Data on 1 of 2 (50%). ‡Data on 7 of 80 (9%). §Data on 7 of 80 (9%). ‡Data on 25 of 27 (93%). †Data on 23 of 27 (85%). §Data on 76 of 80 (95%).

**Abbreviations:** SDM, shared decision making; MD, Doctor of Medicine; MS, Master of Medicine.
Overall Average Normalized OPTION Scale By Physician No (patients’ preference)
Overall Average Fidelity By Physician No (physicians’ preference)
### 12-month Follow-up

<table>
<thead>
<tr>
<th>Clinical outcomes</th>
<th>Statin PDC &lt;80% (n=4)</th>
<th>Statin PDC ≥80% (n=69)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Side effects of statin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscle aches or myalgia (n, %)</td>
<td>1, 25</td>
<td>0</td>
</tr>
<tr>
<td>Elevated levels of CPK (n, %)</td>
<td>1, 25</td>
<td>2, 2.9</td>
</tr>
<tr>
<td><strong>MACEs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-cause mortality (n, %)</td>
<td>0</td>
<td>1, 1.4</td>
</tr>
<tr>
<td>Cardiac death (n, %)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Acute myocardial infarction (n, %)</td>
<td>1, 25</td>
<td>0</td>
</tr>
<tr>
<td>Angina (n, %)</td>
<td>1, 25</td>
<td>2, 2.9</td>
</tr>
<tr>
<td>Coronary revascularization (n, %)</td>
<td>1, 25</td>
<td>2, 2.9</td>
</tr>
<tr>
<td>Heart failure (n, %)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Abbreviations: CPK, creatine phosphokinase; MACEs, major adverse cardiac events; PDC, percentage of days covered.
Conclusions-2

• Using an encounter decision aid developed in the US, it was feasible to implement SDM in a referral cardiology practice in Mainland China.

• Further work to ensure that the encounter aid is pertinent to the Chinese population and that SDM is tested in at-risk patients could contribute to the implementation of SDM across Mainland China.
Barriers to practicing SDM

- Clinicians
  - Challenge to physician autonomy
  - Don’t recognize preference sensitive decisions
  - Evidence difficult to extract, interpret, communicate
  - **Communication skills**

- Practice
  - Logistics
  - **Lack of time**
  - Lack of reimbursement

- Patients
  - “Patients don’t want to participate”
  - Variation in role preference
  - Literacy, Numeracy
  - **Lack of basic science on medicine**

- Decision aids
Implement SDM in China
Group Education before and after SDM
Group SDM process
Modify DAs for Chinese patients

CTO Decision Aids for patients with single chronic total artery occlusion
CTO Choice in Chinese Stable Angina Patients

Ongoing trial
Coronary Angiogram
Flow Chart

Screening of patients

Fulfills inclusion criteria, no exclusion criteria -> Ineligible

Consent

Baseline PET/CT, CMR, TTE

Within 2 days

PCI+OMT  OMT alone

30-day follow-up

6-month follow-up

12-month follow-up

SDM
Open CTO or not - CTO DA
Ongoing data

- Of all 240 patients, 112 patients completed one-year follow-up.

- CTO patients were all satisfied with the process of SDM. DA is helpful to improve the knowledge of CTO and decrease the conflict of making decision.
Take home messages

• In China context, SDM is acceptable for both physicians and patients. They could perform SDM in their practice after patient education and modifying decision aids.

• It is feasible to implement SDM in China with new SDM model and DA.
Acknowledgement

- Victor M. Montori, M.D. & MSc
- Henry H. Ting, M.D. & MBA
- Kasey R. Boehmer M.S.
- Michael R. Gionfriddo Pharm. D.
- Aaron Leppin M.D.
- Ian G. Hargraves Ph.D.
- Song Xian-tao M.D.
- Huang Wei M.D.
- Zhang Dong-feng M.D.
- He Yi M.D.
- Mi Hongzhi M.D.
- Yang Ya M.D.
- Zhang Dong-feng M.D.
- Li Jianan M.S.
- Chen Yalei M.S.
- Guo Lei M.S.
- Wu Jian M.D.
- Ding Huai-yu M.D.
- Zhong Lei M.D.
- Wang Hui M.D.
- Yang Xueyao M.S.
- Lu Ya-fei M.D.
- Li Shu-ting M.S.
- Tian Tian M.B.
- Liang Bin M.D.
- Gai Yubo M.D.
- Yan Yan M.D.
- Sun Min M.D.
- Li Zhi M.D.
- Li Bing M.D.
- Yang Ping M.D.
- Liu Yue M.D.
- Ma Shumei M.D.
- Li Qi M.S.
- Xu Jia-ying M.S.
- Liu Yong-xian M.S.
- Chen Kun M.S.
- Li Zhi-yong M.D.
- Zhou Xu-chen M.D.
- He Peng-cheng M.D.
- Huang Zheng M.D.
- Xiu Jia-cheng M.D.
- Tian Wen M.D.
- Zhang Hai-shan M.D.
- Zhang Xing-wei M.D.
- Du Xue-mei M.D.
- Zhang Xin M.D.
- Zuo Hui-juan M.D
- Ge Chang-jiang M.D.
- Zhang Bo M.D.
- Yang Jun-qing M.D.
- Zhang Min M.D.
- Lv Shu-zheng M.D.
Thank you for your comments