Article title: Effect of a Pay-for-Performance Program on Renal Outcomes Among Patients With Early-Stage Chronic Kidney Disease in Taiwan

Journal name: International Journal of Health Policy and Management (IJHPM)

Authors' information: Min-Ting Lin¹, Chien-Ning Hsu^{2,3}, Chien-Te Lee^{4,5}, Shou-Hsia Cheng^{1,6}*

¹Institute of Health Policy and Management, College of Public Health, National Taiwan University, Taipei, Taiwan.

²Department of Pharmacy, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan.

³School of Pharmacy, Kaohsiung Medical University, Kaohsiung, Taiwan.

⁴Division of Nephrology, Department of Medicine, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan.

⁵College of Medicine, Chang Gung University, Taoyuan, Taiwan.

⁶Population Health Research Center, National Taiwan University, Taipei, Taiwan.

(*corresponding author: shcheng@ntu.edu.tw)

Supplementary file 1

Table S1. Contents of the Guideline-based Early-CKD Program

- 1. Screening of CKD patients
 - ullet eg. routine examination of urine protein-to-creatinine ratio (U_{PCR}) or urine albumin-to-creatinine ratio (U_{ACR})
- 2. Guidelines for the management of CKD patients comorbid with hypertension
 - eg. prescription of angiotensin-converting-enzyme inhibitors (ACEI) or angiotensin receptor blockers (ARB)
- 3. Guidelines for the management of CKD patients comorbid with diabetes
 - eg. attainment of blood glucose and HbA1c target values
- 4. Guidelines for the management of CKD patients comorbid with hyperlipidemia
 - eg. routine examination of fasting lipid profile, including total cholesterol,
 triglyceride, LDL-C and HDL-C
- 5. Lifestyle modification recommendations
 - eg. smoking cessation, body weight reduction
- 6. Medication use recommendations
 - eg. avoidance of nonsteroidal anti-inflammatory drugs (NSAIDs) and aminoglycoside

Table S2. Outcome-based Incentive in the Early-CKD Program

If a patient meets any of the below two criteria, the treating physician will receive financial reward (around 400 NTD for each patient).

Criterion 1: An improvement in the CKD stage (eg. from stage 2 at enrolment to stage 1)

Criterion 2: An improvement in the eGFR value, with an achievement in at least two of the below indicators:

- Blood pressure control: an improvement from $\geq 140/90$ mmHg at enrolment to < 130/80 mmHg
- HbA1c control in patients with diabetes: an improvement from $\geq 7.0\%$ at enrolment to < 7.0%
- LDL control: an improvement from ≥ 130 mg/dl at enrolment to < 130 mg/dl
- Smoking cessation for at least 6 months

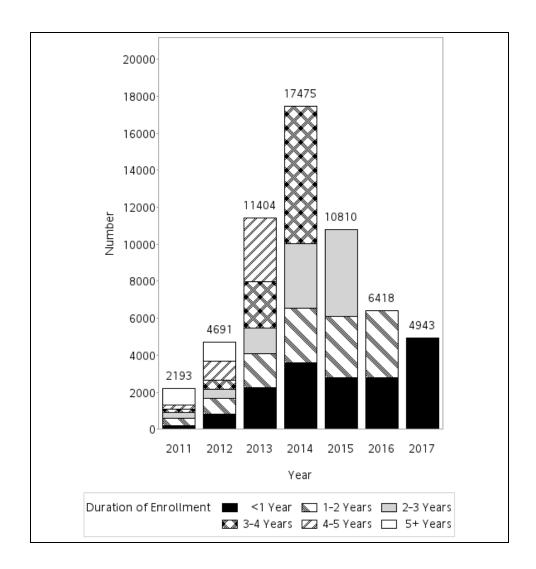
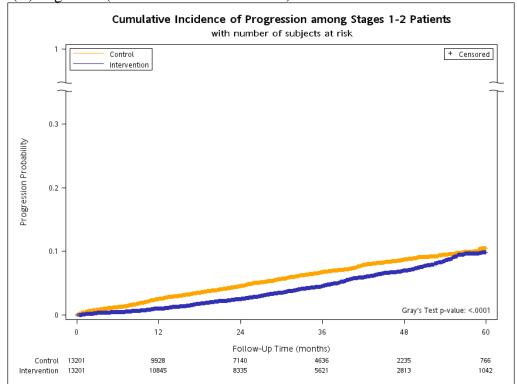
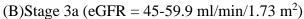


Figure S1. Number of Patients Newly-enrolled in the Early-CKD Program, Categorized by Duration of Enrolment.

(A)Stages 1-2 (eGFR \ge 60 ml/min/1.73 m²)





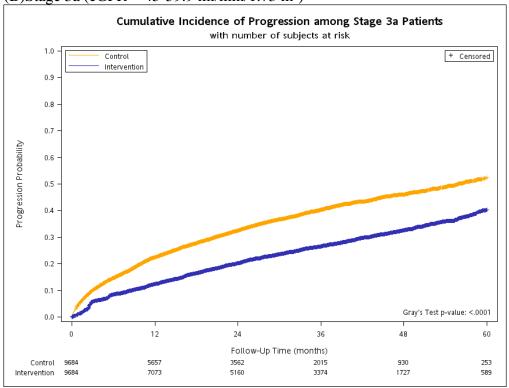


Figure S2. Cumulative Incidence of Progression by Baseline CKD Stage.

Table S3. Characteristics of CKD Patients with Diabetes at Baseline

	Control Group (N =9,963)		Intervention Group (N =13,108)		p-value
Characteristics					
Male	5677 (57.0)%)	7504	(57.2%)	0.6852
Age, years					0.4389
Mean + SD	64.7 <u>+</u> 11.0		64.6 <u>+</u> 11.1		
eGFR, ml/min/1.73 m ²					< 0.0001
Mean + SD	70.0 <u>+</u> 17.5		74.9 <u>+</u> 23.2		
CKD Stage					< 0.0001
$1 \text{ (eGFR} \ge 90)$	374 (3.89	%)	358	(2.7%)	
2 (eGFR 60-89.9)	5945 (59.7	7%)	8232	(62.8%)	
3a (eGFR 45-59.9)	3644 (36.6	5%)	4518	(34.5%)	
Baseline CCI Score*					
Mean + SD	1.0 <u>+</u> 1.5		0.6 <u>+</u> 1.2		< 0.0001
0	4484 (45.0)%)	8534	(65.1%)	< 0.0001
1-2	4499 (45.2	2%)	3933	(30.0%)	
>3	980 (9.89	%)	641	(4.9%)	
Baseline Diabetes P4P	1467 (147	70/	4092	(21.10/	< 0.0001
Enrolment	1467 (14.7	170)	4083	(31.1%)	<0.0001

^{*}Diabetes was not included in the calculation