CKD Prevention Program Protocol

Taiwan Pathway as an example

I. Understanding problems and situations of ESRD/CKD in Taiwan

1. Understanding the ESRD/CKD Burden
   1) National Dialysis Registry since 1987 by Taiwan Society of Nephrology (TSN)
   2) CKD prevalence estimation by epidemiology study (National and Local)
   3) Impacts on medical economics and financial burdens of National Health Insurance (NHI launched since 1995)

2. Identifying risk factors and target populations through national and local studies
   1) Patients with diabetes, hypertension
   2) Patients with family history of chronic kidney disease (CKD)
   3) Individuals receiving potentially nephrotoxic drugs, herbs or substances or taking indigenous medicine
   4) Individuals older than 65 years

II. Plans and actions taken in strategy consideration and time sequence

1. Facts exposure and collaboration with the government
   1) Report ESRD data to academic organization for international comparison (USRDS) - 2001
   2) Exposure to media and legislators, promote government concern as an important public health issue - 2001
   3) Collaboration with Department of Health (DOH)- TSN President and Committee of Chronic Diseases Prevention, DOH -2001
   4) Active participation in policy making within government institutes (National Bureau of Health Promotion (NBHP) and Bureau of National Health Insurance (BNHI)) - 2002

2. Organize CKD Prevention Committee within Taiwan Society of Society - 2003
   1) Design overall CKD prevention project at national perspectives.
   2) Play the pivot role as opinion, education, and action leader
3) Arrange CKD educational programs extensively at regional and annual meeting
4) Design and initiate training course of multidisciplinary CKD care for nephrologists, CKD nurse educators, and renal dietitians
5) Set up project for organizing the CKD prevention institutions as the key unit of CKD patient care, early prevention measure, and public education at hospital level.

3. Action taken for patient education and multidisciplinary team care in CKD prevention institutions through Taiwan CKD Prevention Project- 2002
   1) Pilot project of Integrated Care of CKD from major hospitals- 2002 (NBHP)
   2) Project expansion to include more CKD Prevention Organizations (rolled out to clinics) - 2003-present (NBHP+TSN)
   3) CKD Information System for register and case management – 2005 (NBHP)
   4) Project of Integrated Care for Pre-ESRD patients (CKD stage 3b, 4, 5) and screening for high risk patients with reimbursement from National Health Insurance - 2007-present (BNHI)
   5) Project of Care for Early CKD patients (CKD 1, 2, 3A), extension to general medicine discipline – 2011- present (BNHI)

III. Collaboration among Government, Academic Societies, and other non-government Organizations
   1. Public propaganda
      1) Use extensive public media for educating CKD concept and promoting prevention action
      2) Initiate the public health promotion activity of Taiwan Kidney Day – 2005 (one year ahead of World Kidney Day)
      3) Continue public propaganda to wherever, whenever, and whoever strategy

   2. Risk factors reduction through National Health Promotion program by Department of Health
      1) Diabetes control
      2) Hypertension control
      3) Hyperlipidemia control
      4) Prohibition of aristolochic acid containing herbs since 2003

   3. CKD Early Detection through adult and elderly physical check-up project
      1) Report eGFR from serum creatinine and urine protein from dipstick test
      2) Make CKD staging accordingly
3) Refer subject detected as CKD to health care system

IV. Outcome Monitor and Future Goals

1. Outcome measures
   1) Long term goals—Reduction of ESRD incidence as final goal
   2) Short term goals—Improving CKD quality of care
      a. Reduction of the incidence of emergent dialysis
      b. Increased rate of prepared vascular access before dialysis
      c. Increased penetration of PD, a less expensive treatment in Taiwan
      d. Promote renal transplantation, a difficult concept in Taiwan
      e. Slowing the renal progression rate by medical and multidisciplinary care
      f. Improved CKD quality of care based on various clinical parameters
      g. Reduction of medical expenses before and after initiation of dialysis
   3) The rising incidence rate of ESRD began to decline from 2006 to 2009

2. Future goals: set by DOH 2011, to work with TSN.
   a. Decrease the dialysis incidence rate—by 2%/year, to move out of the ranking of 5th world highest incidence in 10 years
   b. Keep good dialysis survival rate—5-year survival rate of dialysis must be kept higher than EDTA registry
   c. Increase numbers of new renal transplants—15% increment in 5 years
   d. Increase penetration rate of peritoneal dialysis—20% of incident dialysis cases, 13% of prevalent dialysis cases as PD
Trend of Prevalence and Incidence of Dialysis ESRD Patients

Diabetes became the leading cause of ESRD
Increased incidence of aged group after launching of NHI

Diabetes, aged, and health insurance are majors for increase of ESRD.

TSN Renal Registry
1990 ~ 2007

Yang & Hwang,
NDT, 2008
Multidisciplinary Care Team for CKD Patients

Multidisciplinary Care Team for CKD Patients in Hospitals/Clinics—Preparatory works in a pilot study

Clinical Flow Chart for CKD Out-Patient

Clinical Flow Chart for CKD Out-Patient

1. S/S OPD visit
2. Evaluation Dx of CKD
3. Active involvement
4. Psychological support
5. Medical Tx
6. Nursing Care
7. Dietetic Tx
8. Awareness of D’s status
9. Awareness of RRT
10. Dialysis mode selection
11. Pre-ESRD Edu. 1
12. Pre-ESRD Edu. 2
13. Pre-ESRD Edu. 3
14. Catheter implantation
15. Complications management
16. Homecare education
17. Long term F/U
Activities for promotion of CKD by TSN CKD Prevention Committee

- General and Prospective view on CKD prevention
- Educational activities
  - CKD symposiums at regional and annual meetings
  - CKD Training course
  - Lecture Course at Hospitals (Nephrology, Medicine, and whole hospital)
- Evaluate the CKD prevention organizations
- Lobby government to take action on CKD prevention project and design the system

World Kidney Day vs. Taiwan Kidney Day

- World Kidney Day: 2nd Thursday of March launched from 2006
- Taiwan Kidney Day:
  - June 18, 2005
  - June 19, 2006
  - March 4, 2007
  - March 11, 2008
  - March 8, 2009
  - March 7, 2010
  - From Taipei to Kaohsiung and other cities
  - Screening and Education

Radio, Media, Public Activities
Pre-ESRD Care Program and Screening for High Risk Populations — The BNHI Project since 2006

- Urinary screening for high risk populations
  - 1st, 2nd degree relatives and spouse of CKD/ESRD patients
- Integrated care for stage 4, 5 CKD patients
  - Reimburse for nursing education and dietary education
  - Payment for management fee for care of CKD patients
  - Bonus for patients with good care results

Outcome

- Reduce the incidence of emergent dialysis
- Increase the rate of prepared vascular access before dialysis
- Increase the penetration of PD

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Outcome Measure

- Final goal:
  - Decrease ESRD incident rate in Taiwan
    - Decrease the CKD cases number
    - Slow the CKD progression
- Goals at initial development stages:
  - Promoting the concept and establishment of CKD prevention organizations
  - Follow the preset goals of care at different CKD stages
  - Immediate effect of cost saving for Pre-ESRD care
    - Care quality for CKD stage 5 entering ESRD - RRT
    - Medical utilization for CKD stage 5 entering ESRD - RRT
Comparison of unadjusted ESRD incidence worldwide
Figure 12.1 (Volume 2)

All rates are unadjusted. Data from Argentina (2005–2007, 2009), Czech Republic (2005–2008), Japan, & Taiwan are dialysis only.

Comparison of unadjusted ESRD prevalence worldwide
Figure 12.1, continued (Volume 2)

All rates are unadjusted. Data from Argentina (2005–2007, 2009), Czech Republic (2005–2008), Japan, & Taiwan are dialysis only.