

WHAT SHOULD BE THE ROLE OF MEDICAL CENTER IN DIALYSIS THERAPY?

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Nephrologist in the Hell

- 7 attending physicians in nephrology section
- 155 stations in three shifts and emergency
- 750 HD patients
- 200 PD patients
- 2500 CKD patients

My Advice about the Role of Medical Center

1. Care only the patients who fit you
2. Dialysis service will bury the nephrologist if the dialysis unit is large enough



Nephrologist

The Poor Nephrologist



The Role of Medical Center in Dialysis Therapy- Shin Kong Memorial Hospital as an example

- Training
- Clinical study
- Difficult case
- Prophylaxis
- Complication of dialysis
- Acute renal failure
- CRRT
- Disaster shelter
- Multi-discipline care
- Quality benchmark

Training

- Medical staff
 - Nephrologist
 - Dialysis Nurse
- Paramedical staff
 - Technician
 - *Dietitian*
 - *Social worker*
- Medical students

Clinical Study

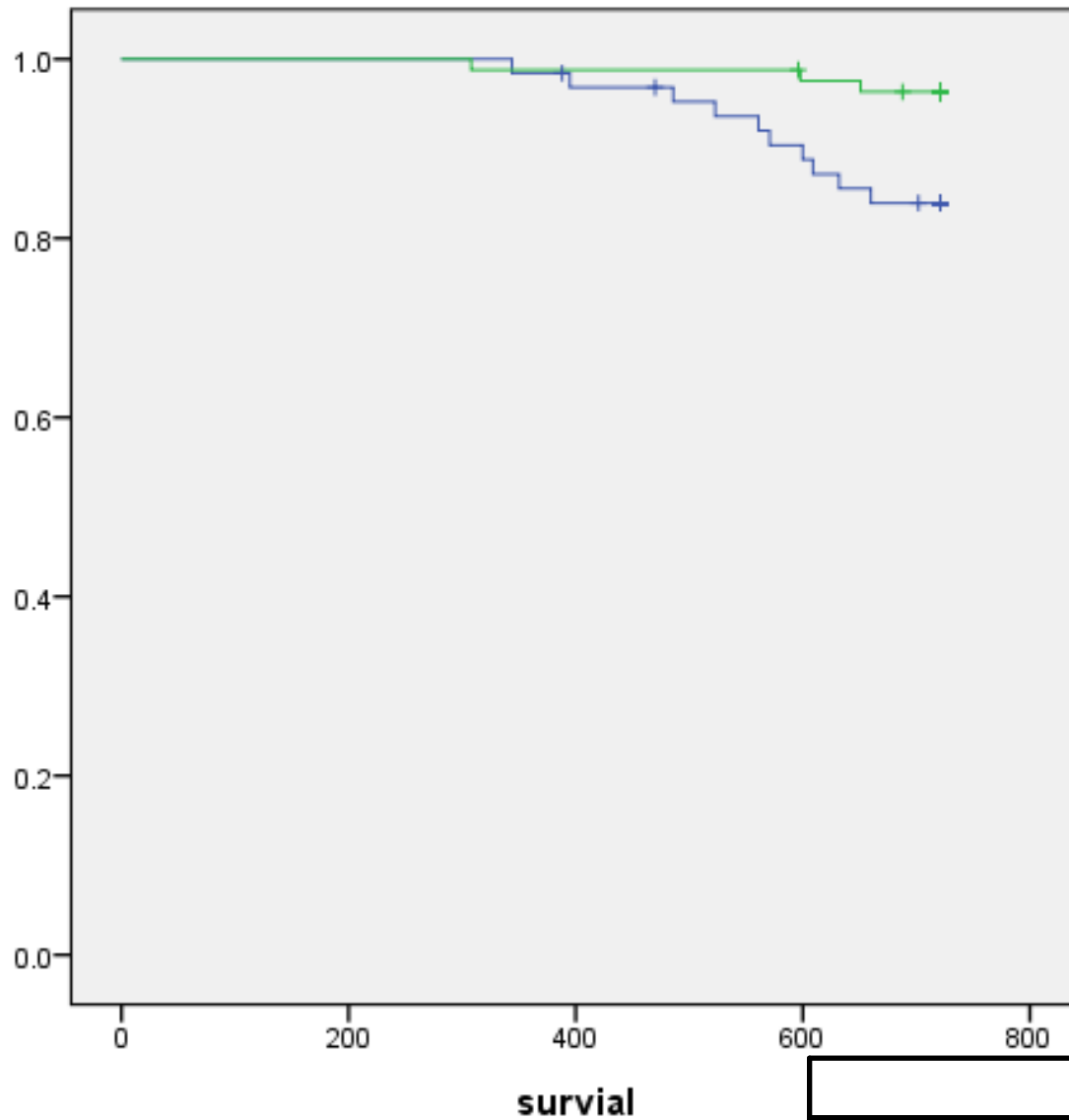
- Most study about dialysis done in academic medical center
 - Lanthanum carbonate international phase III trial
 - Ferric citrate phase II and phase III trial
- Dialysis unit should be adequate in size

生存函數

Pro-BNP

- <6000
- >6000

累積生存函數



1998.5~2010.5

整體比較

| | 卡方統計量 | 自由度 | 顯著性 |
|--------------------------------|-------|-----|------|
| Log Rank (Mantel-Cox) | 6.705 | 1 | .010 |
| Breslow (Generalized Wilcoxon) | 6.673 | 1 | .010 |

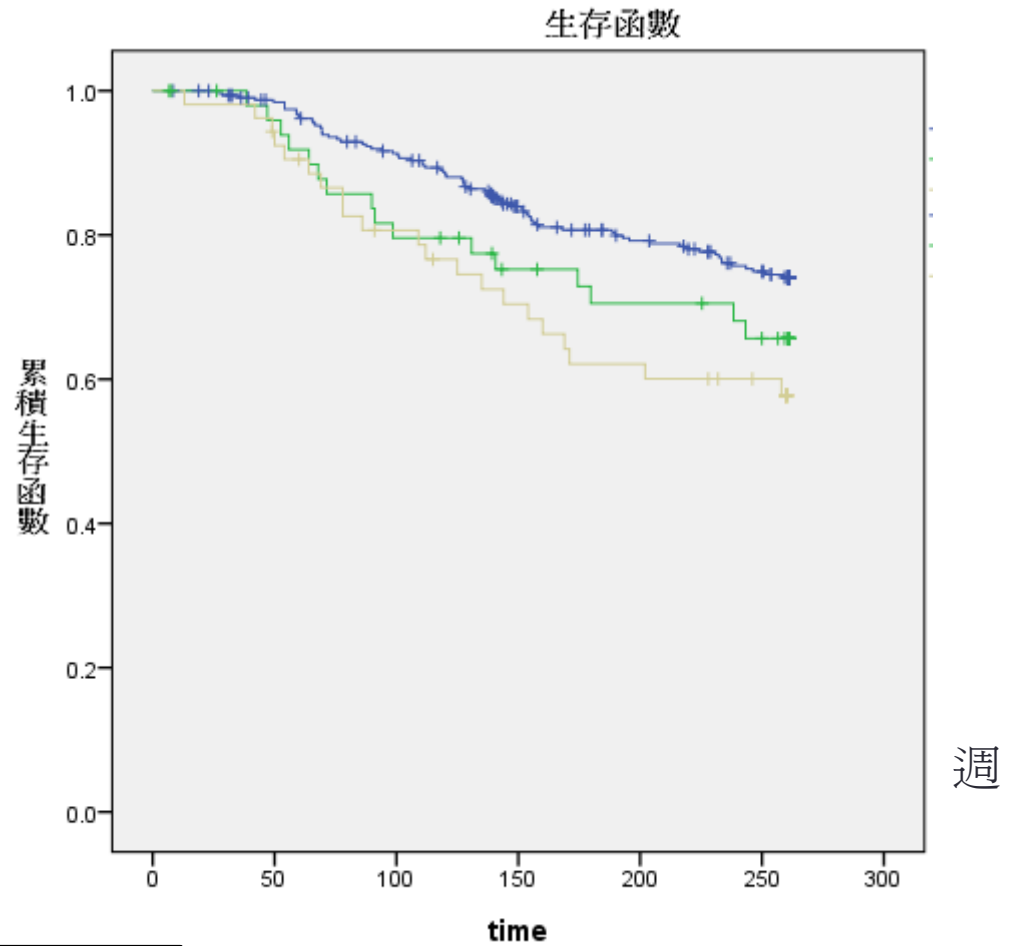
組別>6000-1 不同水準的存活分配等式檢定。

Cardiac Index

-----normal

----->4.5

-----<2.5



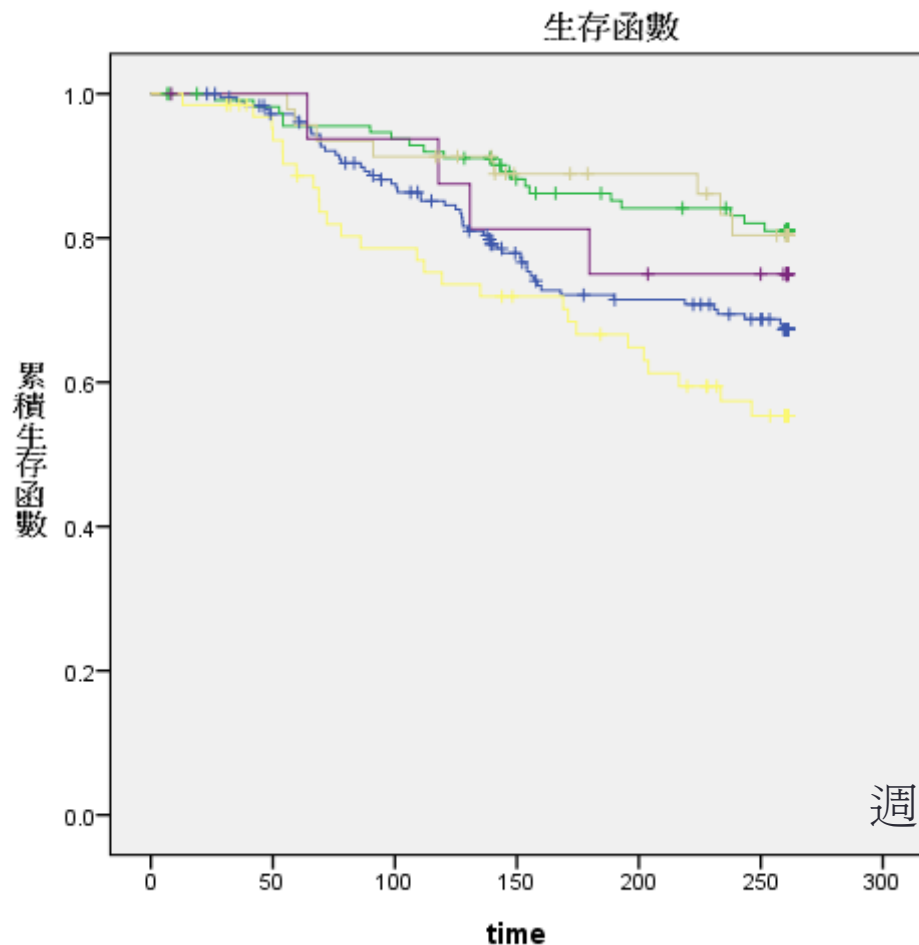
整體比較

| | 卡方統計量 | 自由度 | 顯著性 |
|--------------------------------|-------|-----|------|
| Log Rank (Mantel-Cox) | 7.946 | 2 | .019 |
| Breslow (Generalized Wilcoxon) | 8.876 | 2 | .012 |

2003-2008

group 不同水準的存活分配等式檢定。

Access Flow



整體比較

| | 卡方統計量 | 自由度 | 顯著性 |
|--------------------------------|--------|-----|------|
| Log Rank (Mantel-Cox) | 16.458 | 4 | .002 |
| Breslow (Generalized Wilcoxon) | 16.755 | 4 | .002 |

2003-2008

access 不同水準的存活分配等式檢定。

PROPHYLAXIS

prophylaxis

- Influenza and streptococcus vaccination
- Amputation prevention screen: ABI, O₂ saturation
- Liver sono every 6 months for hepatitis carrier
- Renal sono every 12 months
- CAD screen every two years
- Cancer screen: pap smear, breast, colon, oral cancer
- Falling down prevention skill training
- Vascular access flow every two months: acute thrombosis is very rare in my center
- Cardiac output and index every year
- Recirculation screen every year

Difficult cases

- Sustain hypotension
- Hyper-hypotension
- Frequent dialysis related hypotension or shock
- Acute renal injury with multiple organ failure and in intensive care unit

COMPLICATIONS OF HEMODIALYSIS

Dialysis disequilibrium syndrome-

Infection-

Hepatitis Infection-

Etc..

COMPLICATIONS OF ALL KINDS OF VASCULAR ACCESS

- **Failure of maturation**
- **Stenosis**
- **Thrombosis**
- **Infection**
- **steal syndrome**
- **Pseudoaneurysm**

COMPLICATIONS OF PERITONEAL DIALYSIS

- Hypotension
- Infection:
 - peritonitis
- Hypo-albuminemia
- Bowel perforation
- Bladder perforation
- Catheter malposition
- Respiratory difficulties

Acute Renal Failure-1/3 of new dialysis

- Where it happened?
- Where it been treated?

CRRT

- expertise of personnel delivering the therapy
 - Up to 300 patient-day of CRRT /month
- Include CVVH, CVVHD, SLED

DISASTER SHELTER

BEFORE A DISASTER HITS:

◆ Patients are prepared:

➤ They have a “TO GO “ bag with:

- a 3 day supply of medications
- their dialysis prescription
- current medication list
- 3 doses of kayexelate with sorbitol
- bottled water
- some canned food
- one change of clothing

➤ When the disaster hits

- in the dialysis unit: They know what will happen and what to do
- at home : They should know where to call. (*Hotline*)

THE PLAN:

- ◆ **Medical center should store the contact information of uremic patients outside the hospital, at least three copy in three different places**
- ◆ **The renal department needs to handle the dialysis patients:**
 - **Set up triage for ESRD patients in or near the dialysis unit**
 - **Injuries go to Emergency Room**
 - **ESRD patients are placed on schedule**
 - **After the disaster, call the patient as soon as possible**

The Plan:

The Renal Treatment Center:

- 1. Patient treatments may be reduced to 2 hours**
- 2. Dialysis unit will run 24 hours**
- 3. Dialysate flows will be reduced to 400cc/minute, if necessary**

Multi-discipline care

- *Nephrologist*
- *Dietitian*
- *Psychiatry*
- *Social worker*
- *Cardiologist or intervention radiologist*
- *Vascular surgeon*

Table 2 Mortality Hazards Ratios

| Characteristic | Adjusted* Hazards Ratios (95% CI) | <i>P</i> |
|-------------------------------|-----------------------------------|----------|
| Facility profit status | | |
| Not-for-profit | Reference | - |
| For-profit | 1.02 (0.99–1.06) | 0.143 |
| Facility affiliation | | |
| Freestanding | Reference | - |
| Hospital-based | 1.18 (1.14–1.23) | < 0.0001 |

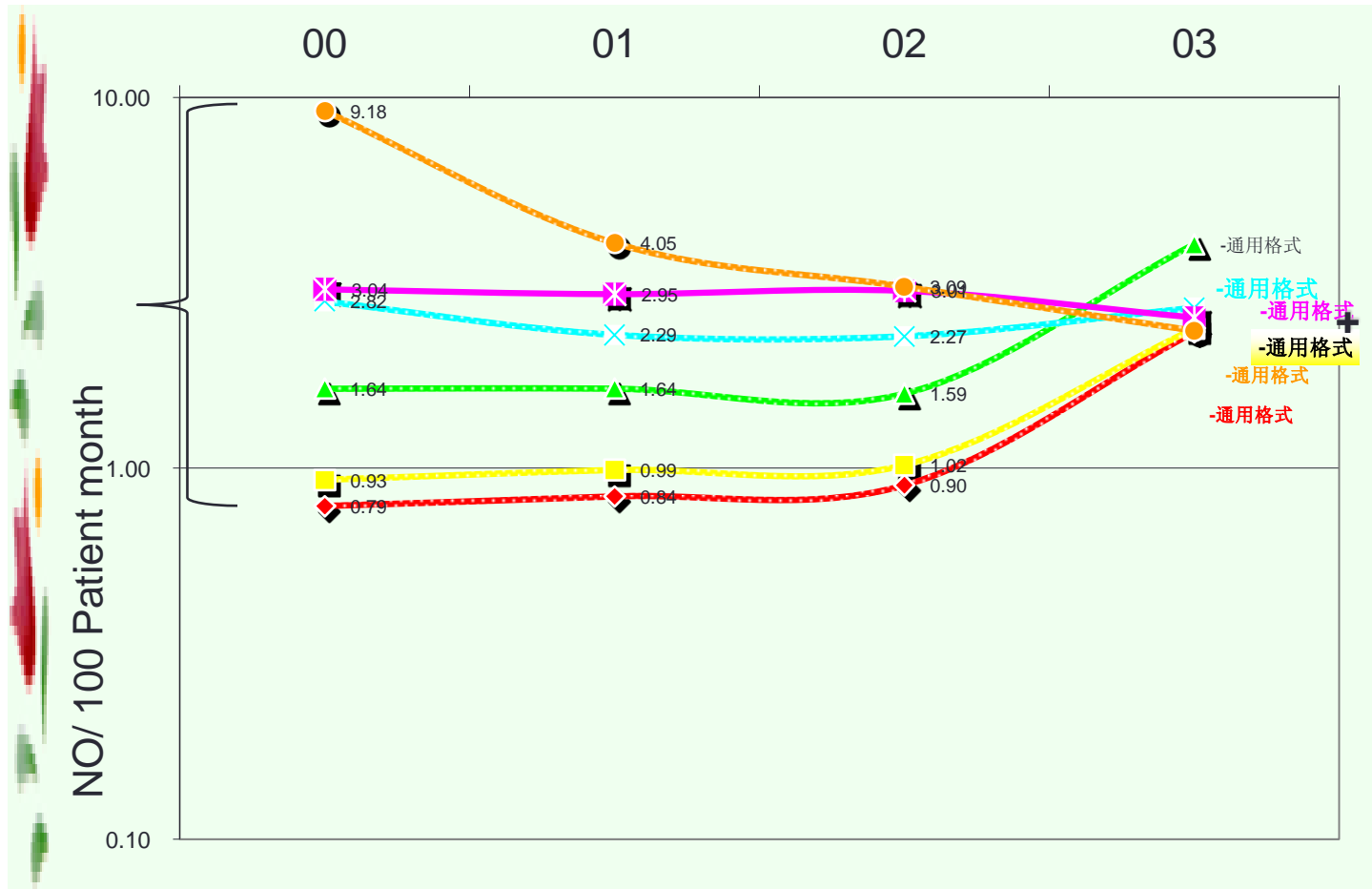
Robert N Foley, BMJ, 2003

QUALITY BENCHMARK

Down to every physician

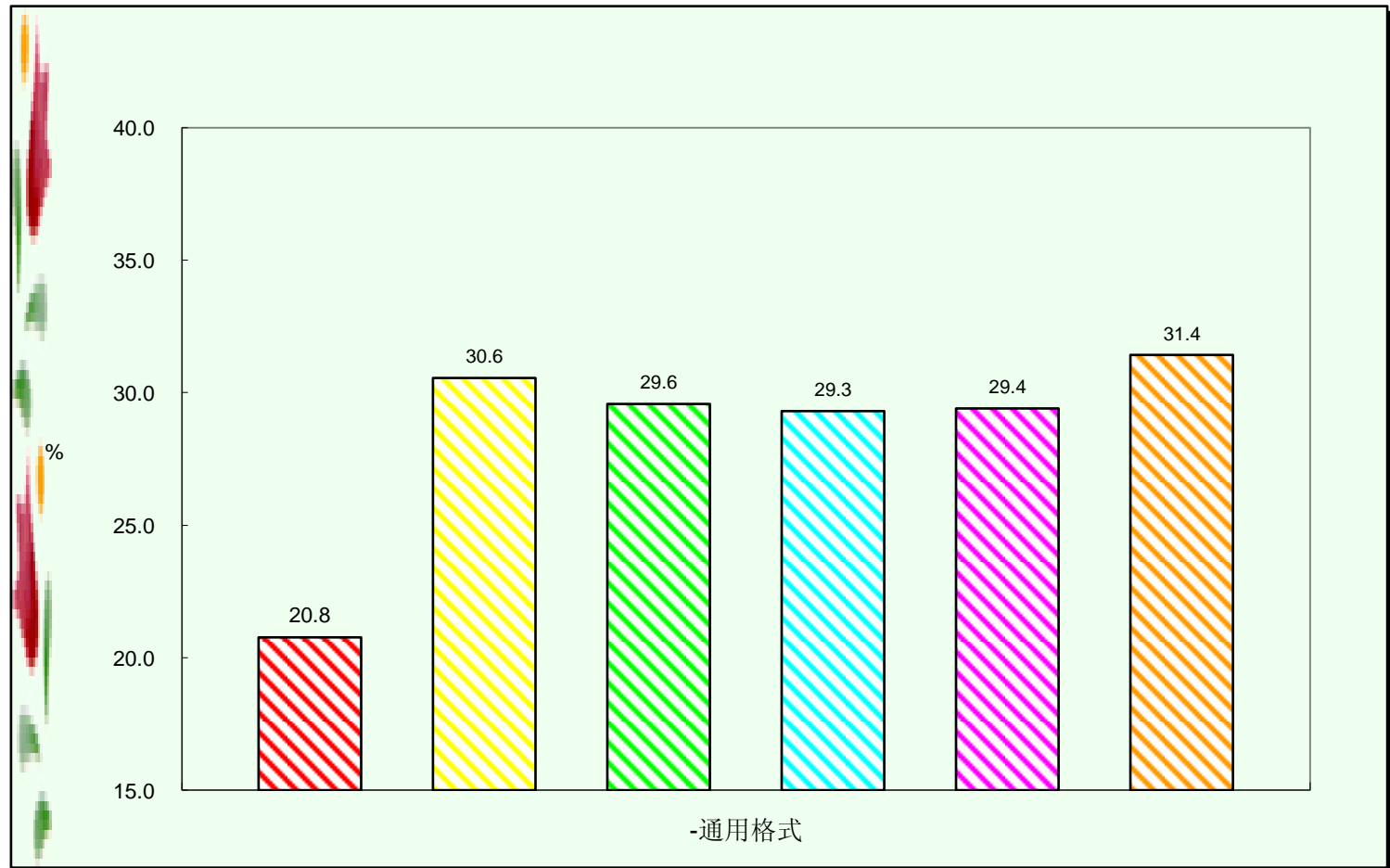
Emergent Dialysis needed by Regular Dialysis Patients

11.6 fold

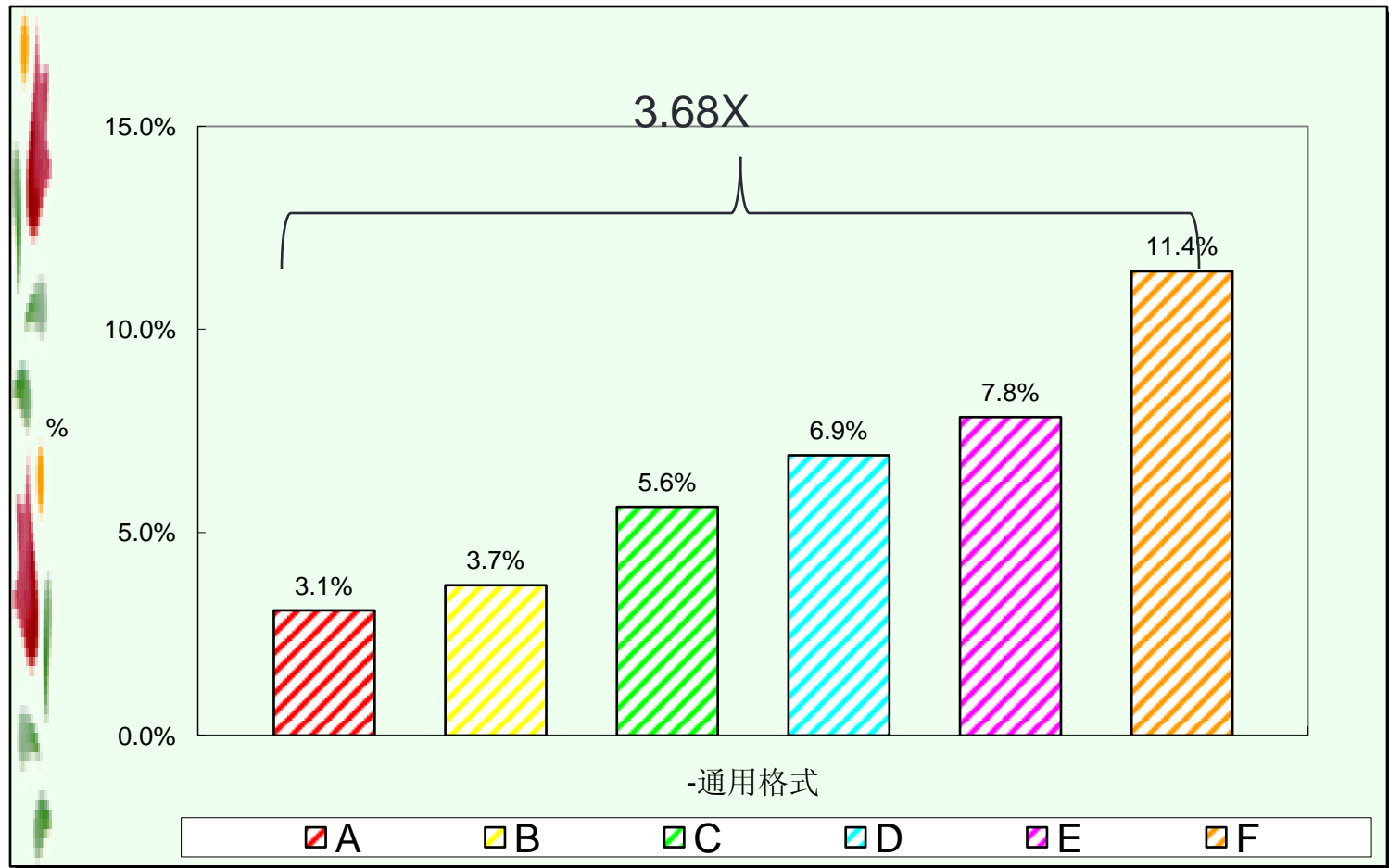


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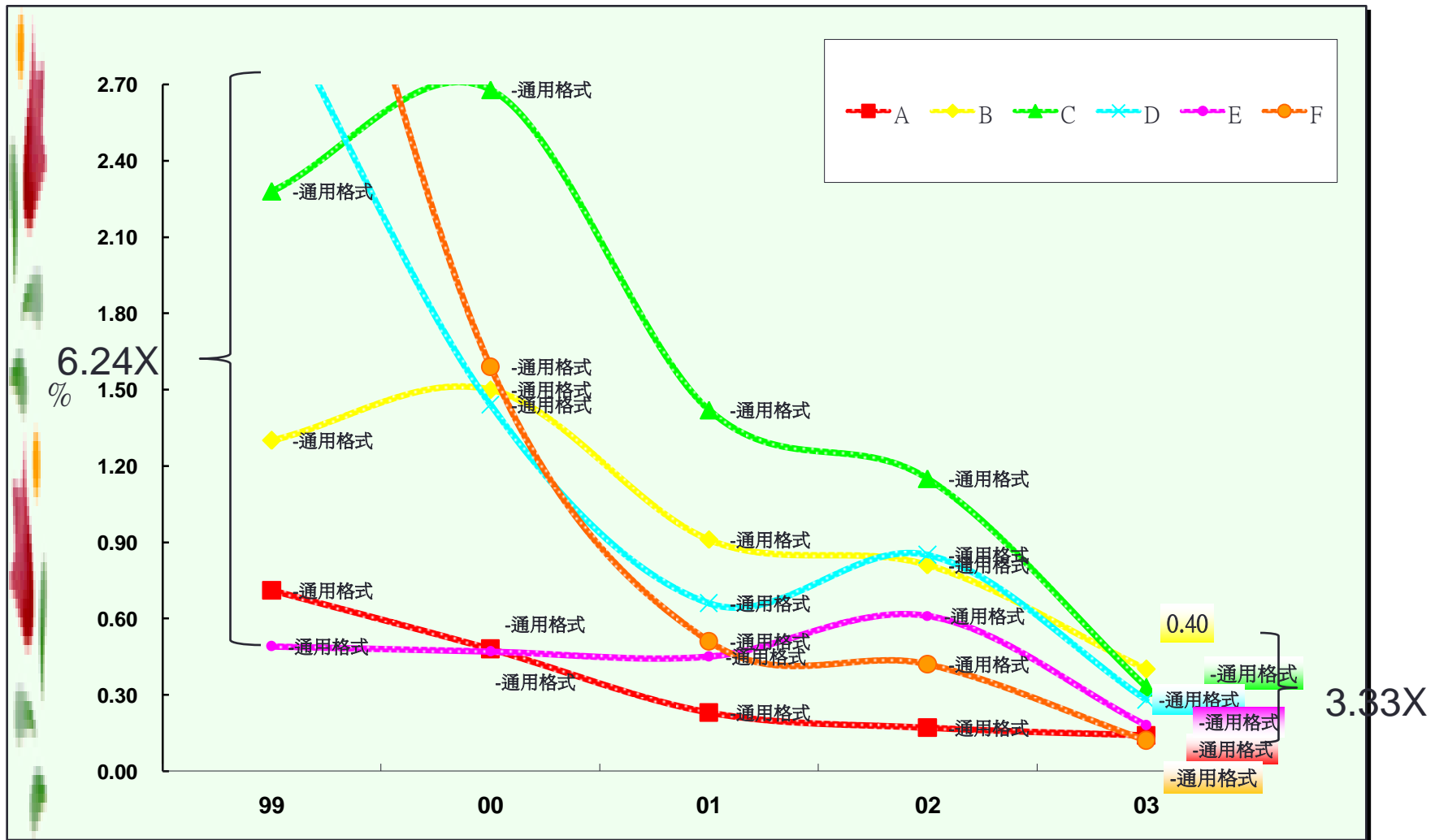
Dyslipidemia by Physicians



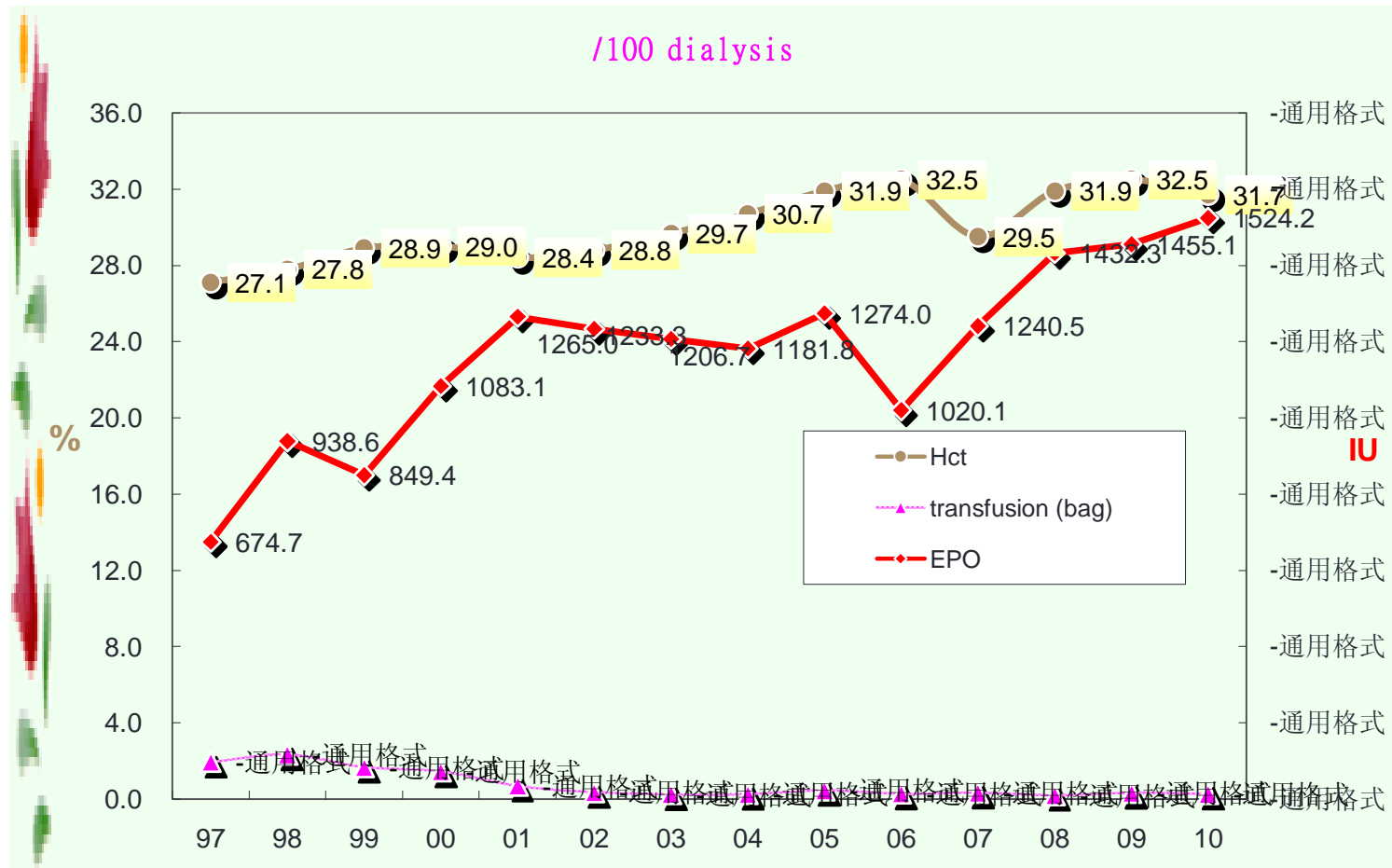
Albumin < 3.5 g/dl in regular dialysis patient by physicians



Blood Transfusion by Physicians

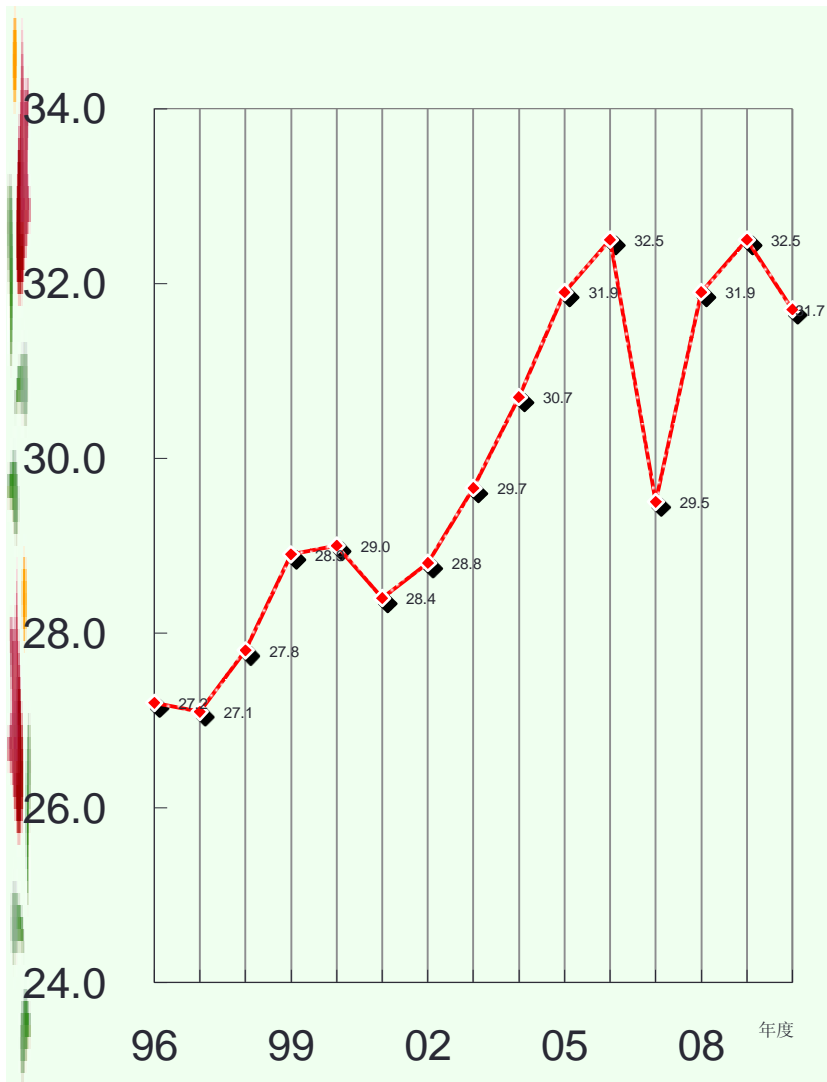


Hct、EPO、Transfusion

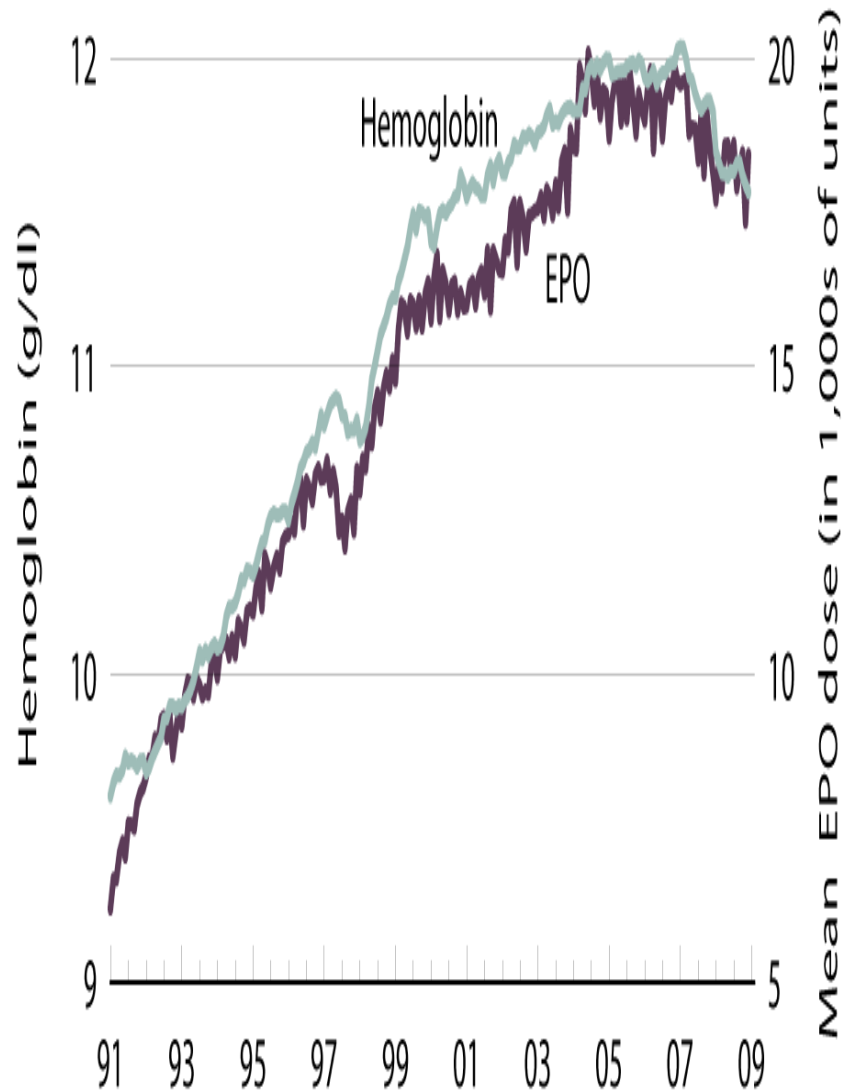


Hct

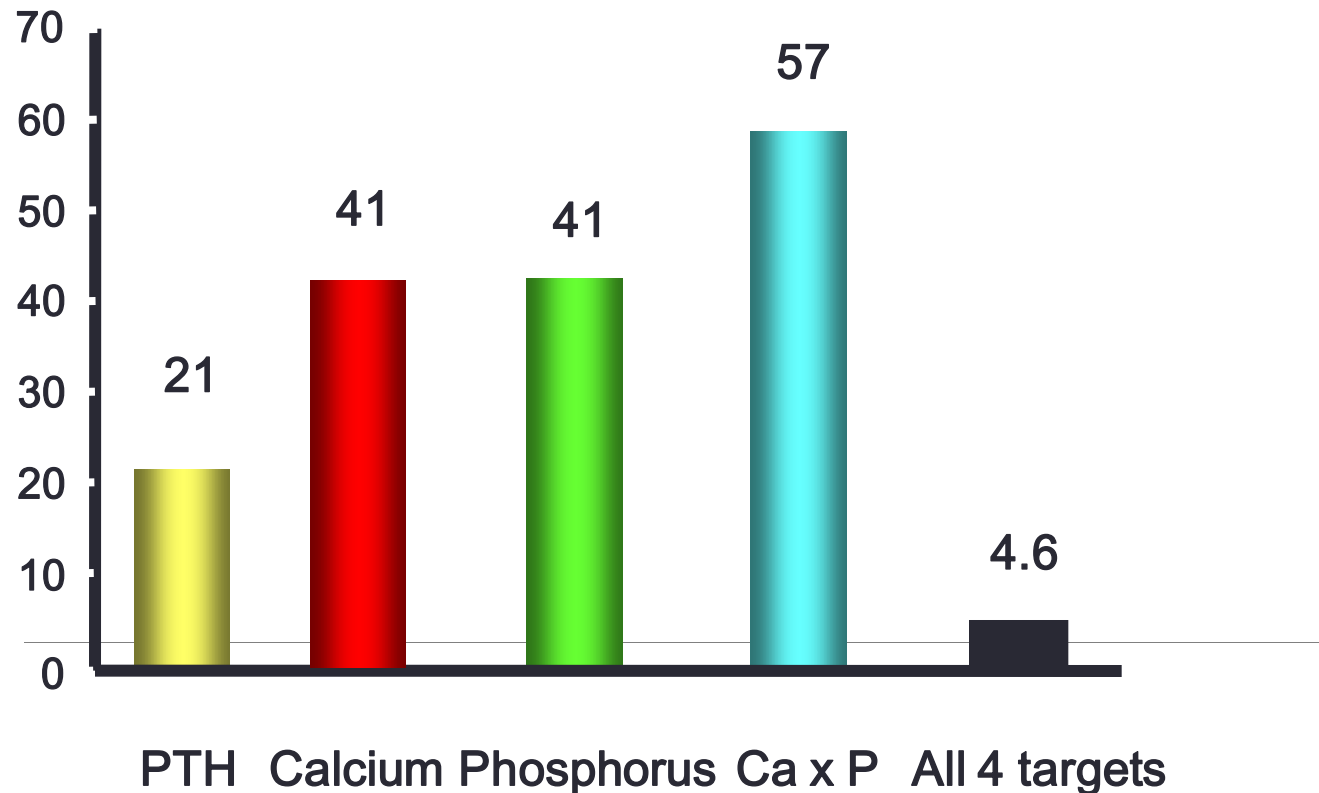
SKH



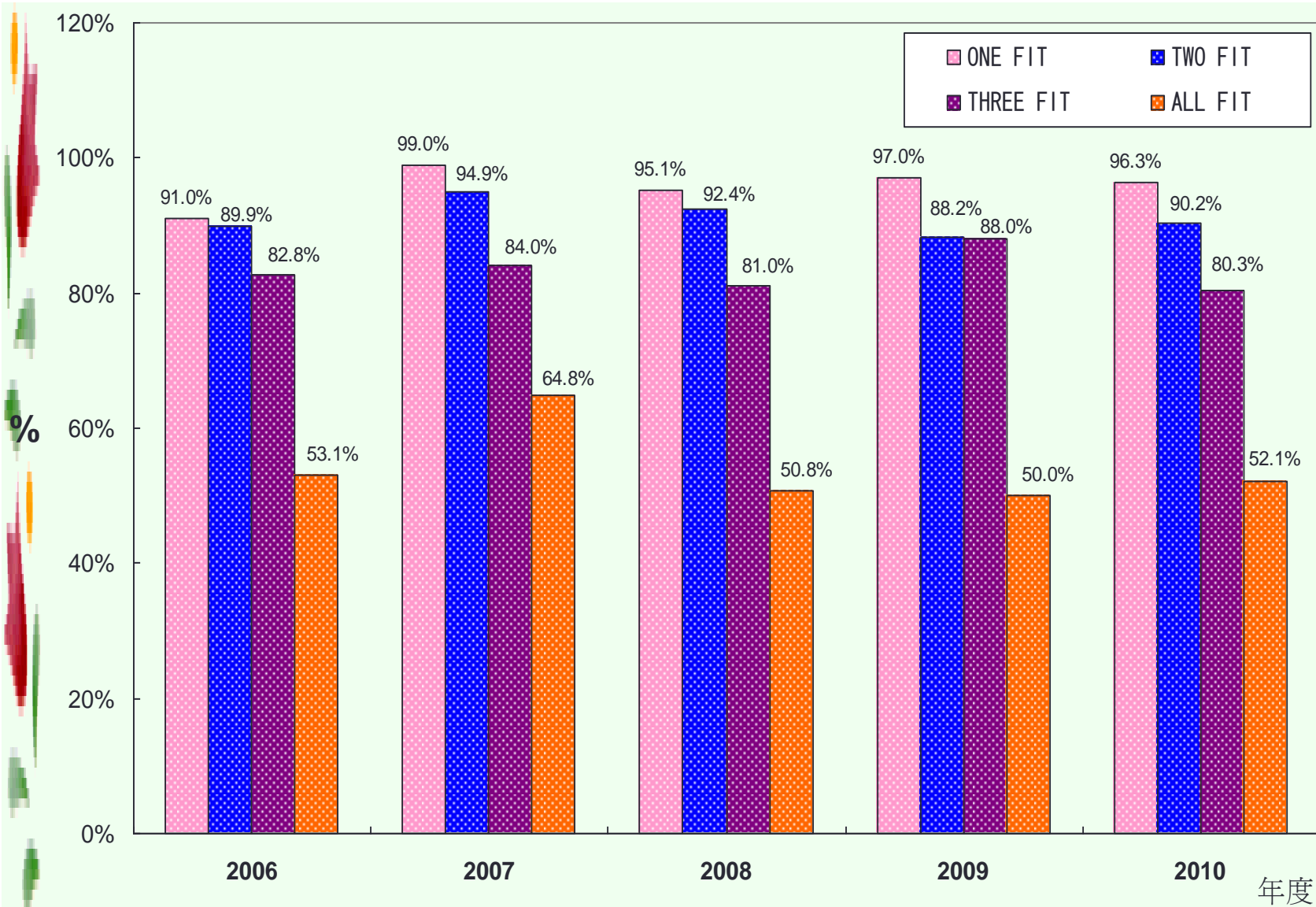
USA



Achieving multiple K/DOQI targets



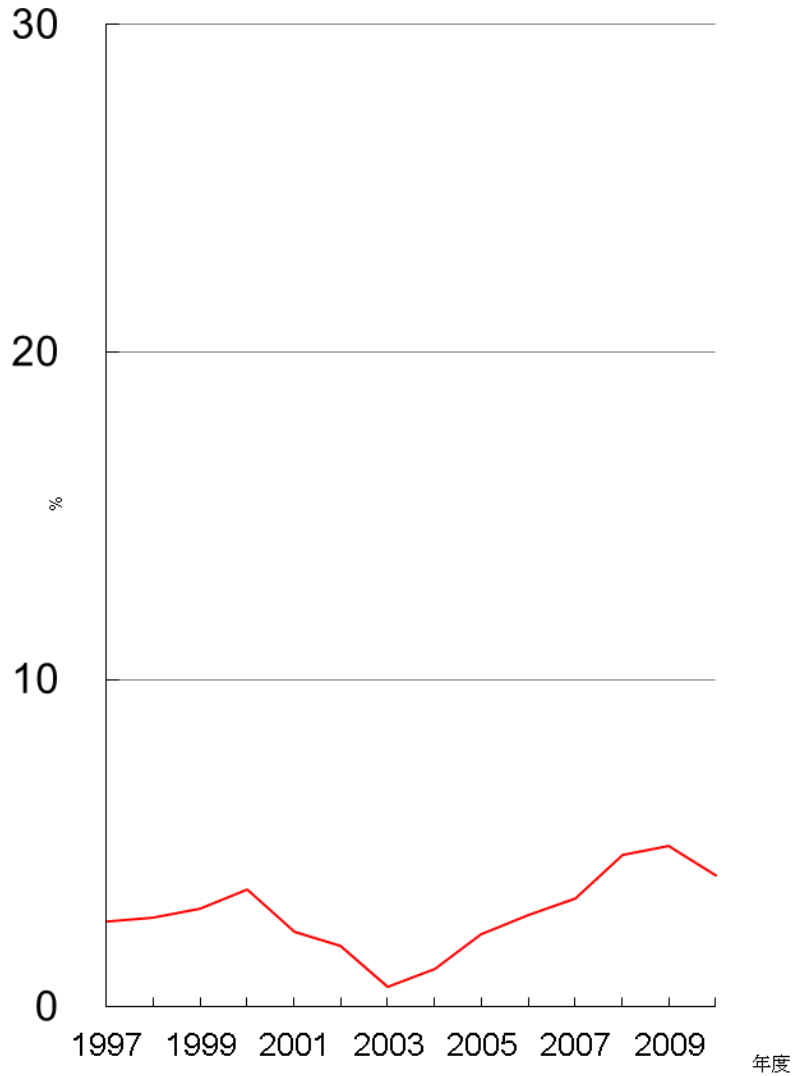
Achieving multiple K/DOQI targets in Taiwan Medical Center



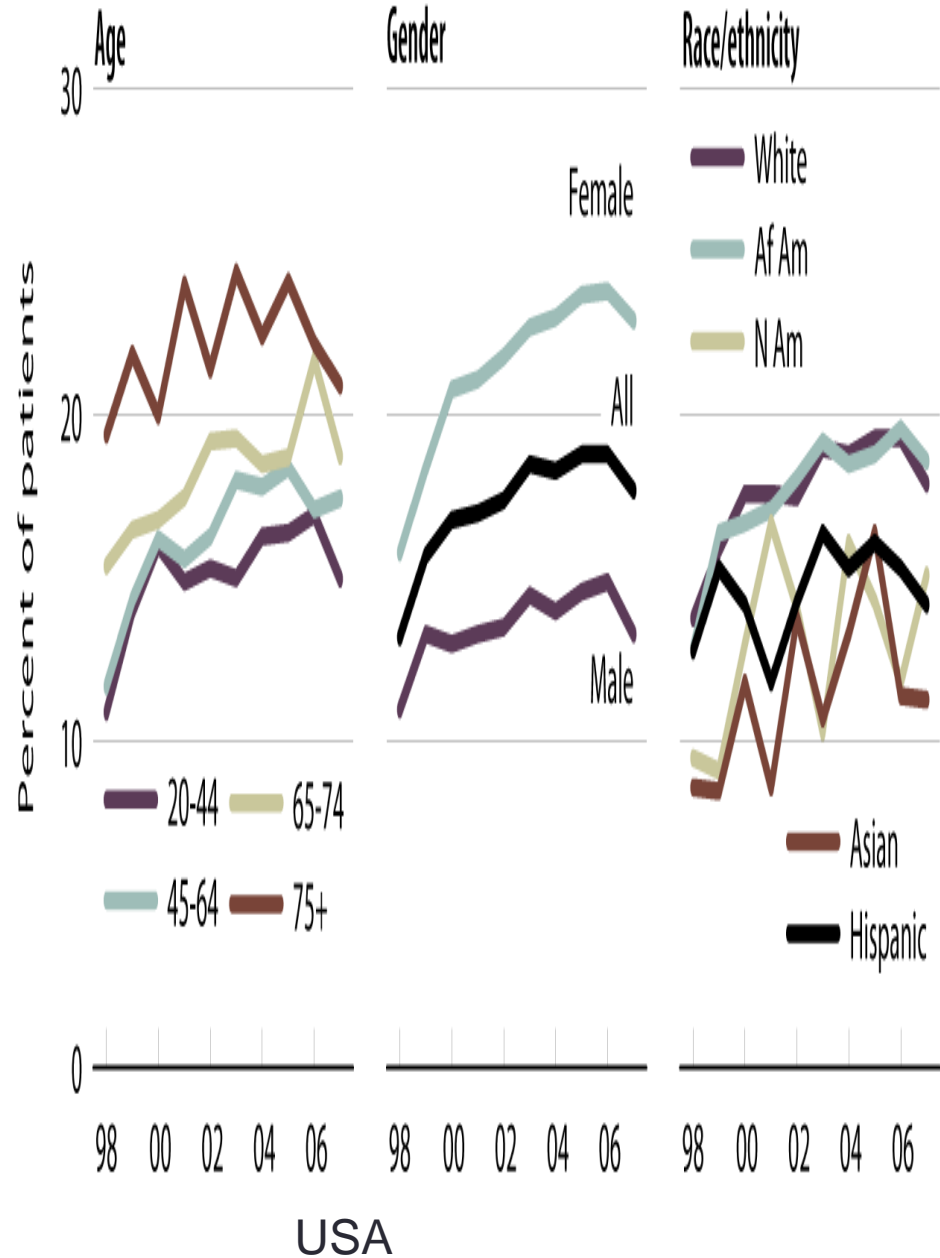
Emergent Catheterization by physicians



Catheter Usage

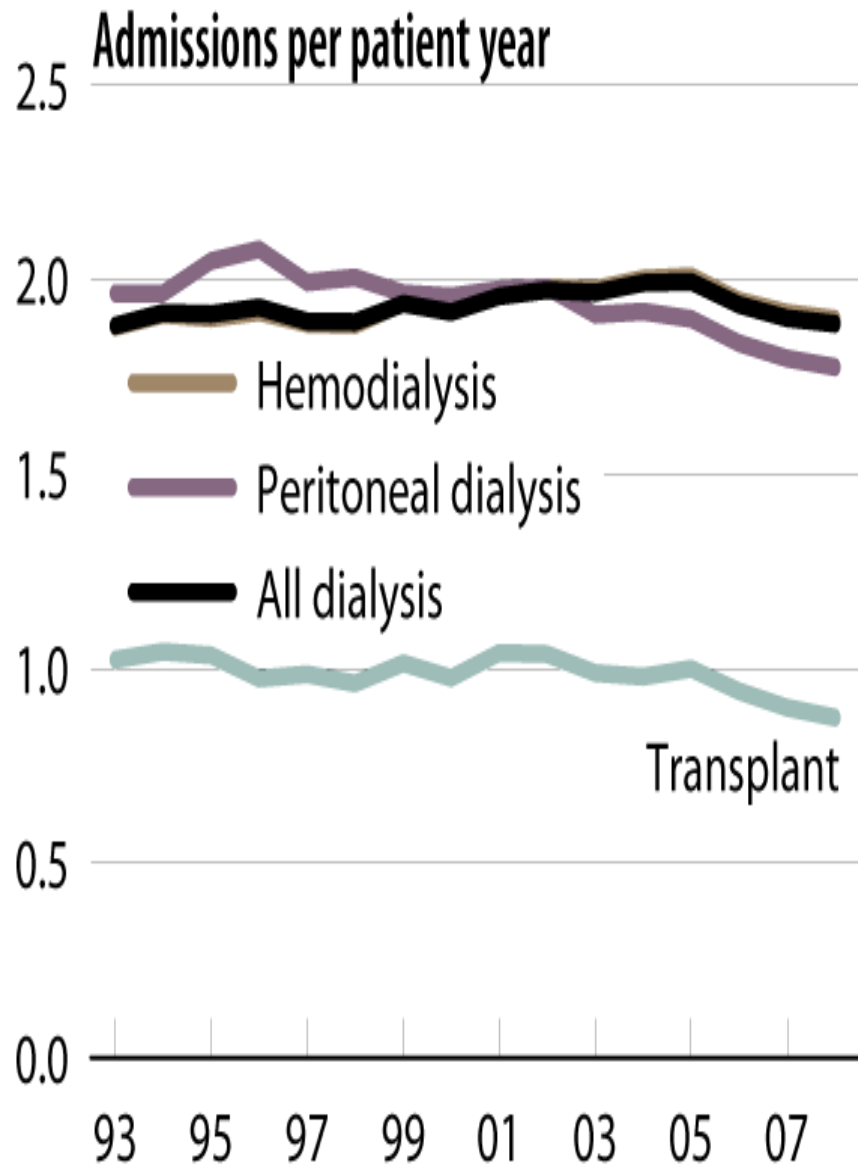


Shih Kong Memorial Hospital

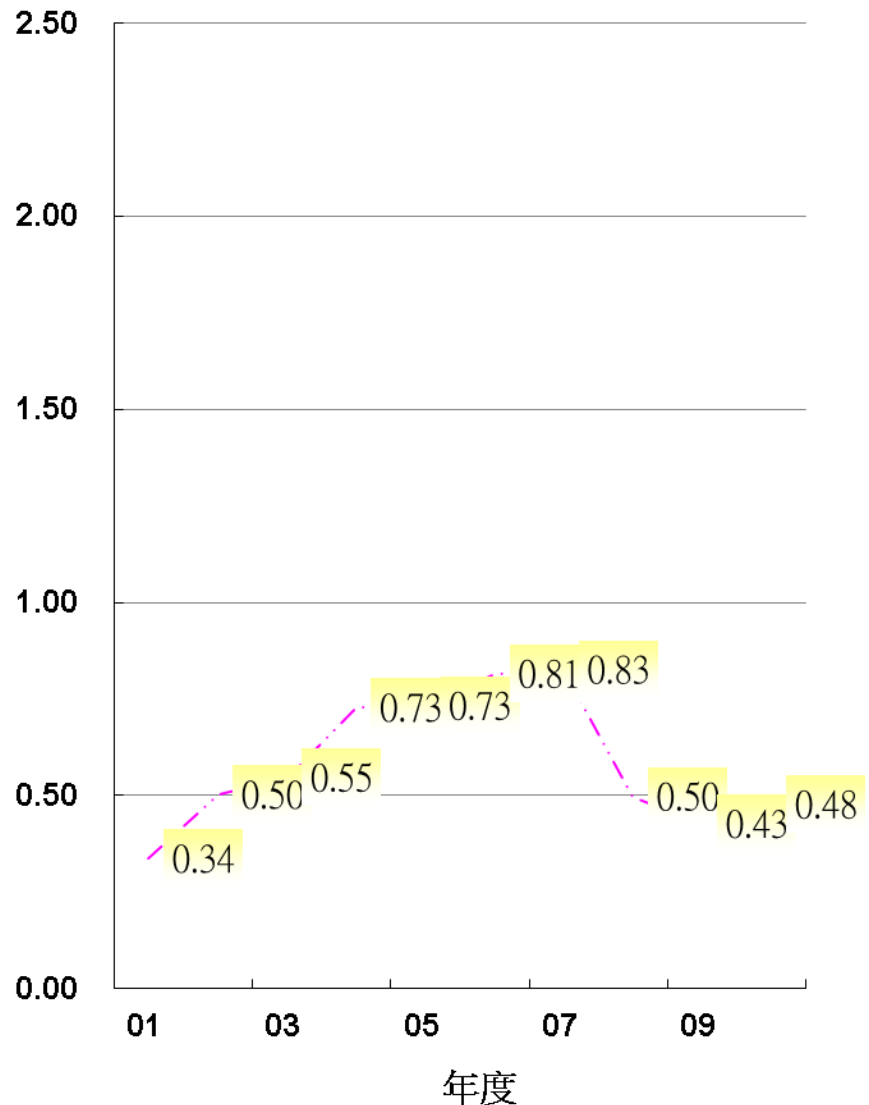


USA

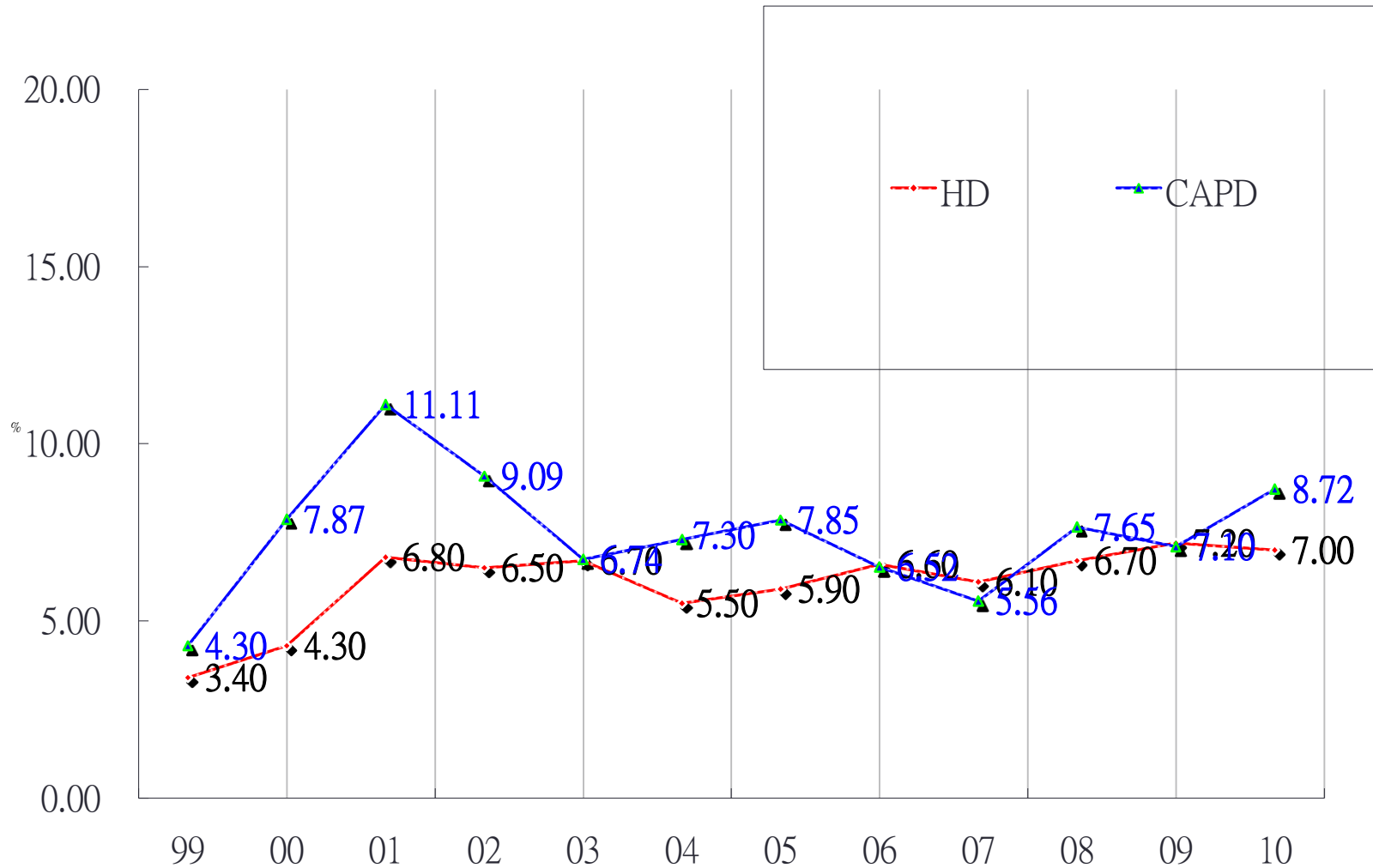
USA



Shih Kong Memorial Hospital HD



Mortality Rate



Mortality Rate

| | Taiwan | USA | EUROPE | HONG KONG |
|----|--------|-------|--------|-----------|
| HD | 8.15% | 21.7% | 15.6% | 14% |
| PD | 6.31% | | | 11% |

% **gross mortality / year**

Goodkin J Am Soc Nephro (2003) 14:3270-3277

THANK YOU FOR YOUR ATTENTION

Q & A