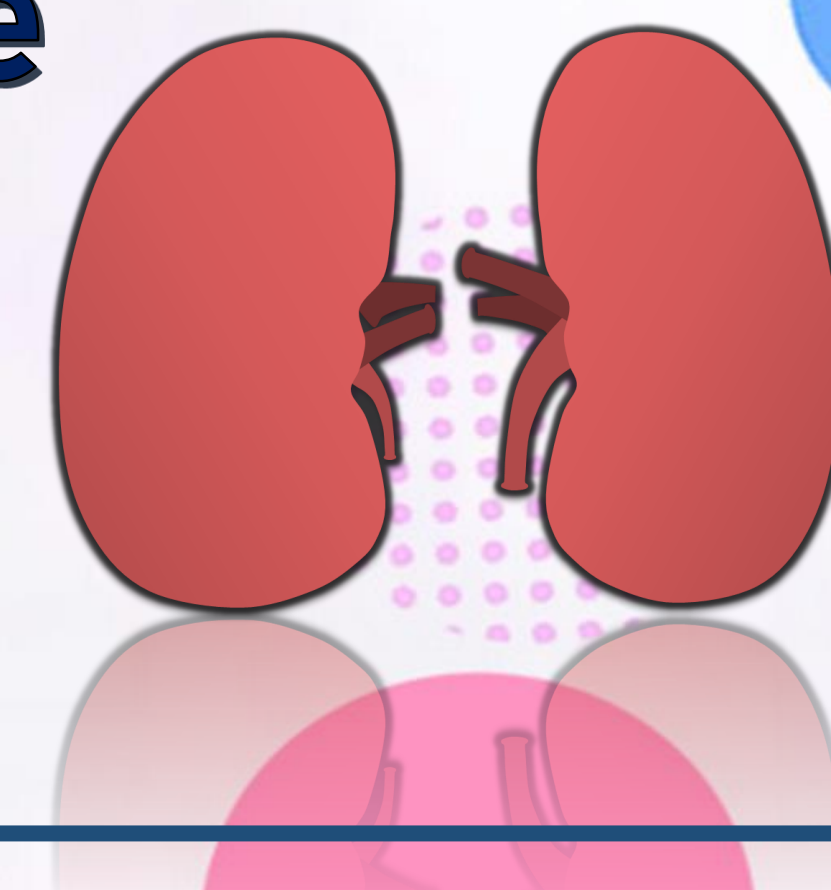


# Improve the Effectiveness of Nutrition Education for Patients with Stage 5 Chronic Kidney Disease

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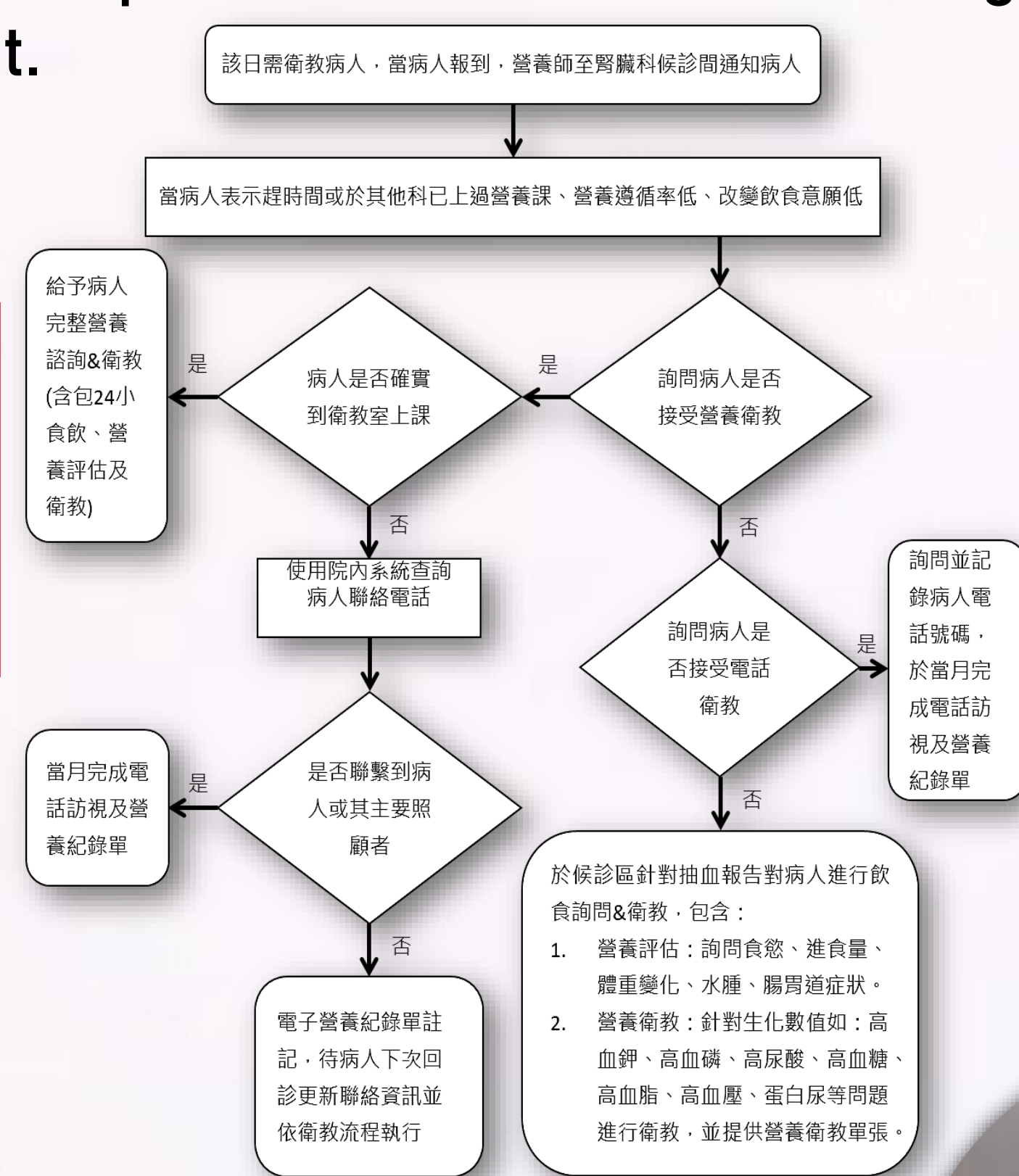
# 1 Introduction

- ◆ **【Nutrition Education】** Taiwan has the highest incidence and prevalence of ESRD across the world, therefore, the issue of CKD and ESRD cares should be highlighted in Taiwan. Diet modification with low protein intake is the basic concept for retarding progression of CKD. However, the effectiveness of nutrition education is still a major concern.
- ◆ In the fourth quarter of 2020, the rate of complete nutrition education for our CKD stage 5 patients was only 84.3%, which did not reach the threshold set by our team (85.0%). Therefore, we started a Plan-Do-Check-Act (PDCA) program since Jan 2021 to improve the rate of patients receiving nutrition education and try to evaluate the effectiveness on the amount of daily protein intake in patients with stage 5 CKD.

## 2 Methods

## Formulate guidelines for unwilling patients Standard procedure

- Telephone contact or proactive visits: For patients who refuse to be educated, carry out telephone contact, simply the education content, and proactive visits while waiting for treatment.



## Formulating simple health education

- **Provide constrict education:** For patients who do not have enough time or are unwilling to receive complete education, we perform constrict education by education leaflet to reduce the education time.

## Build an Automated Educational Checklist

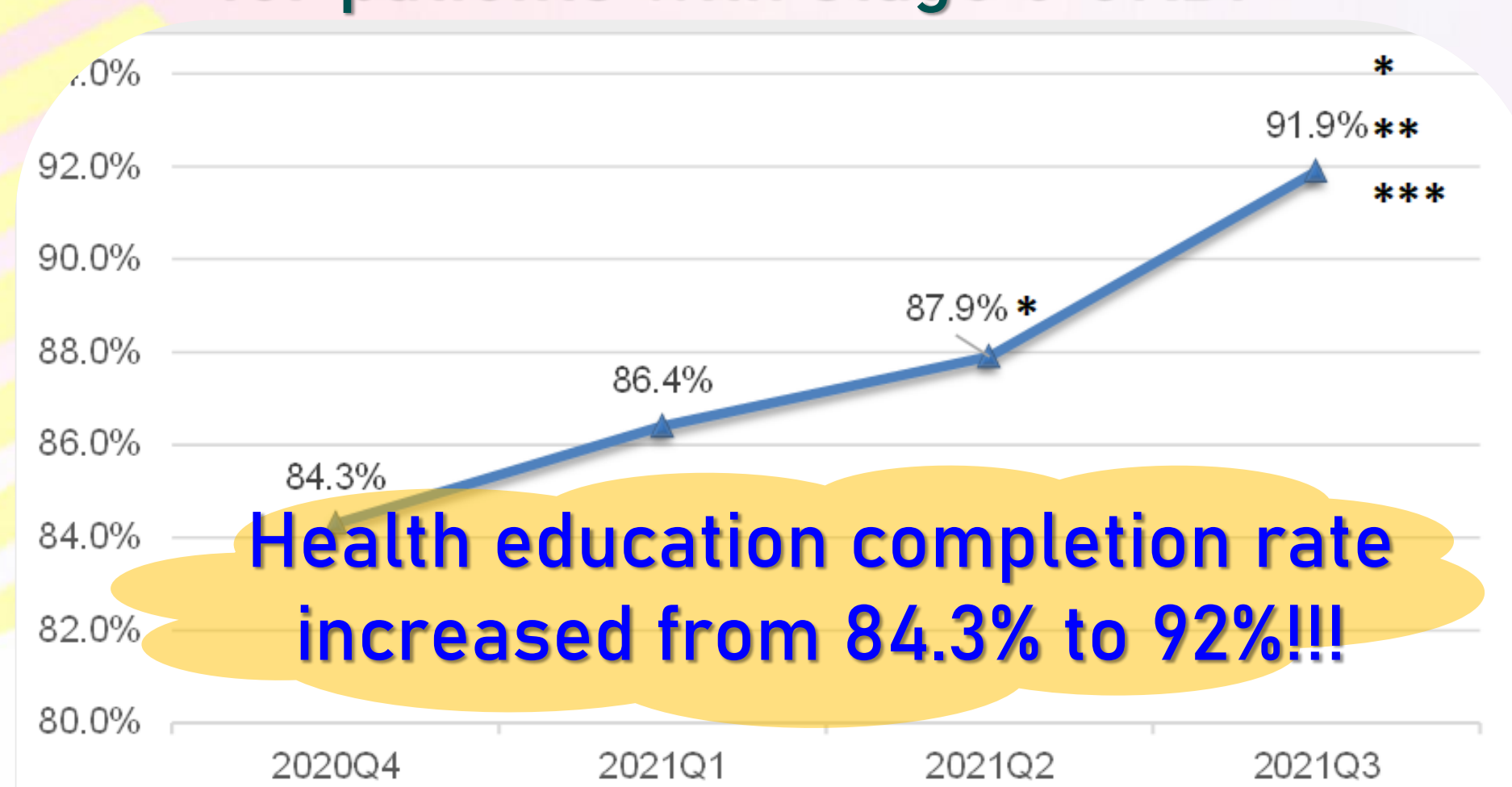
- ✱ **Establish an automated electronic list:**  
The automated report shows the patient's registration status while waiting for outpatient clinic, which helps the dietitian to take the initiative to educate those patients.

| 義大醫院營養諮詢追蹤報表   |         |        |       |           |          |     | 2022/12/1 11:07:15 |         |         |         |              |
|----------------|---------|--------|-------|-----------|----------|-----|--------------------|---------|---------|---------|--------------|
| 就醫日: 111-12-01 |         | 診次: 早診 |       | 醫師: 吳青芳   |          |     |                    |         |         |         |              |
| 看診號            | 病歷號     | 姓名     | ckd階段 | opd_stage | Pre_esrd | CKD | Early Ckd          | 申報日期    | 營養前次紀錄1 | 營養前次紀錄2 | 營養1-營養>=120天 |
| 001            | 0307384 |        | 5     | 完成        | 結案       |     |                    |         |         |         |              |
| 002            | 0668535 |        |       | 轉到        |          |     |                    |         |         |         |              |
| 004            | 0291102 |        | 1     | 完成        |          |     |                    |         |         |         |              |
| 006            | 0277120 |        | 4     | 暫存        | 複診       | 收案  | 1110908            | 1110908 | 1110324 |         |              |
| 008            | 0987065 |        | 5     | 完成        |          |     |                    |         |         |         |              |
| 010            | 0690211 |        | 4     | 掛號        |          |     |                    |         |         |         |              |
| 011            | 0169507 |        | 4     | 完成        | 收案       | 收案  |                    |         |         |         |              |
| 012            | 0751711 |        | 3a    | 完成        |          |     |                    |         |         |         |              |
| 013            | 0049805 |        | 4     | 完成        | 複診       | 收案  | 1111006            | 1110714 |         |         | *            |
| 014            | 0517202 |        | 5     | 轉到        | 收案       |     |                    |         |         |         |              |
| 017            | 0484274 |        | 3b    | 掛號        |          |     |                    |         |         |         |              |
| 018            | 1254075 |        |       | 掛號        |          |     |                    |         |         |         |              |
| 019            | 0133204 |        | 3b    | 完成        |          |     |                    |         |         |         |              |
| 021            | 3033621 |        | 5     | 完成        |          |     |                    |         |         |         |              |
|                | 0117453 |        | 3a    | 轉到        | 複診       | 收案  | 收案                 | 1081107 | 1081107 | 1080523 |              |

### 3 Results

After the PDCA program, the quarter rates of patients receiving nutrition education in 2021 was 84.3% at baseline, and elevated to 86.4%, 88.0% and 92.0%, respectively, which showed a significant improvement since the second quarter ( $p<0.05$ ).

- Completion rate of nutrition education for patients with stage 5 CKD.



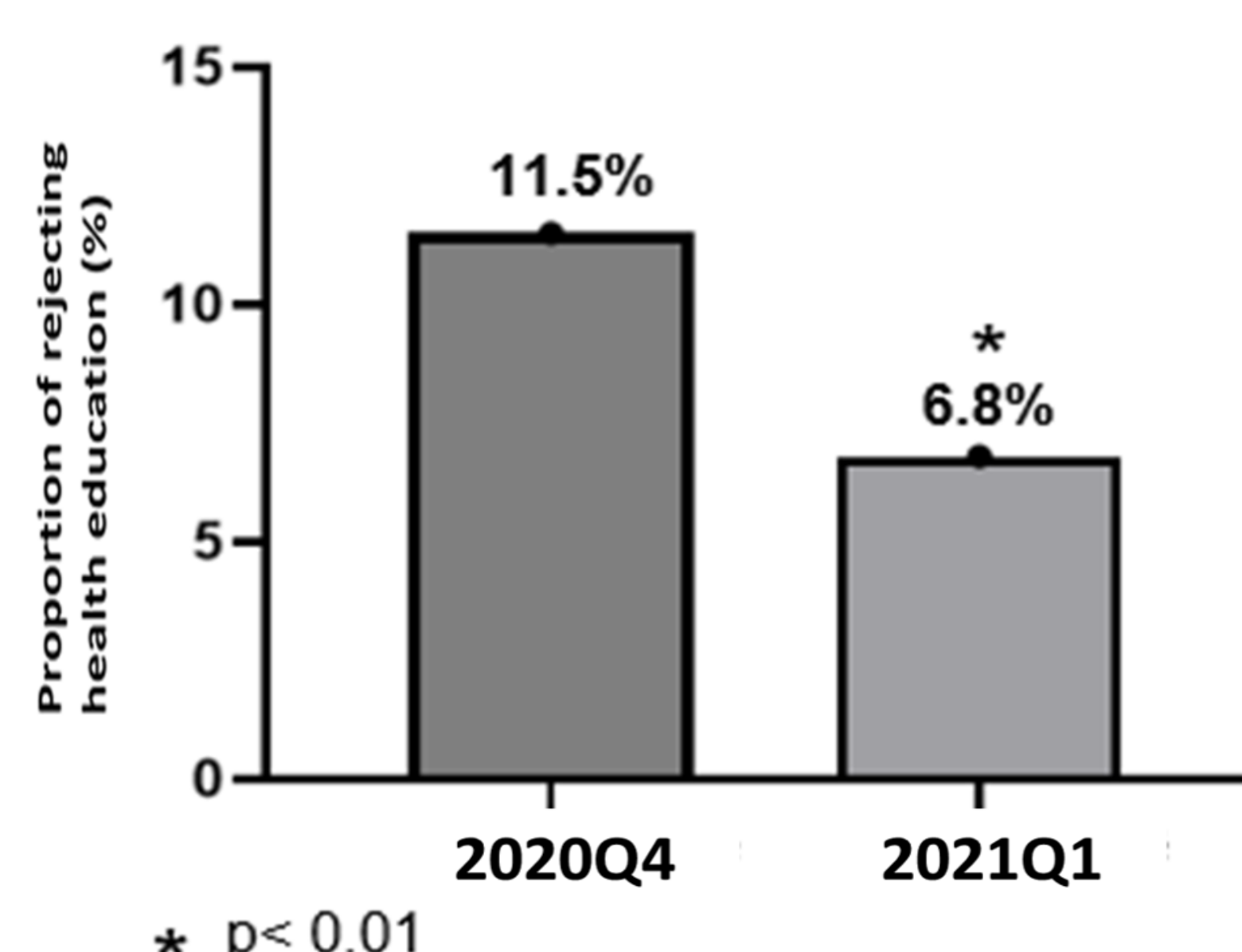
| stage5      | October | November | December | 2021<br>January | February | March | April | May   | June  | July  | August | September |
|-------------|---------|----------|----------|-----------------|----------|-------|-------|-------|-------|-------|--------|-----------|
| Numerator   | 192     | 192      | 197      | 201             | 198      | 191   | 189   | 191   | 190   | 181   | 180    | 186       |
| Denominator | 228     | 232      | 228      | 231             | 230      | 222   | 218   | 216   | 214   | 200   | 195    | 199       |
| Ratio       | 84.2%   | 82.4%    | 86.4%    | 87.0%           | 86.1%    | 86.0% | 86.7% | 88.4% | 88.8% | 90.5% | 92.3%  | 93.5%     |

<sup>1</sup>Q5 compared to 2020Q4, \*\* p<0.05 compared to 2021Q1, \*\*\* p<0.05 compared to 2021Q2

**The rate of refusal to defend education dropped from 11.5% to 6.8%!!!**

In Q4 of 2020, the rate of rejection of health education was 11.5% (13 /113 ), and after intervention, the rate of rejection of health education in Q1 of 2021 was 6.8% (8/117 ) ( $p<0.01$ ).

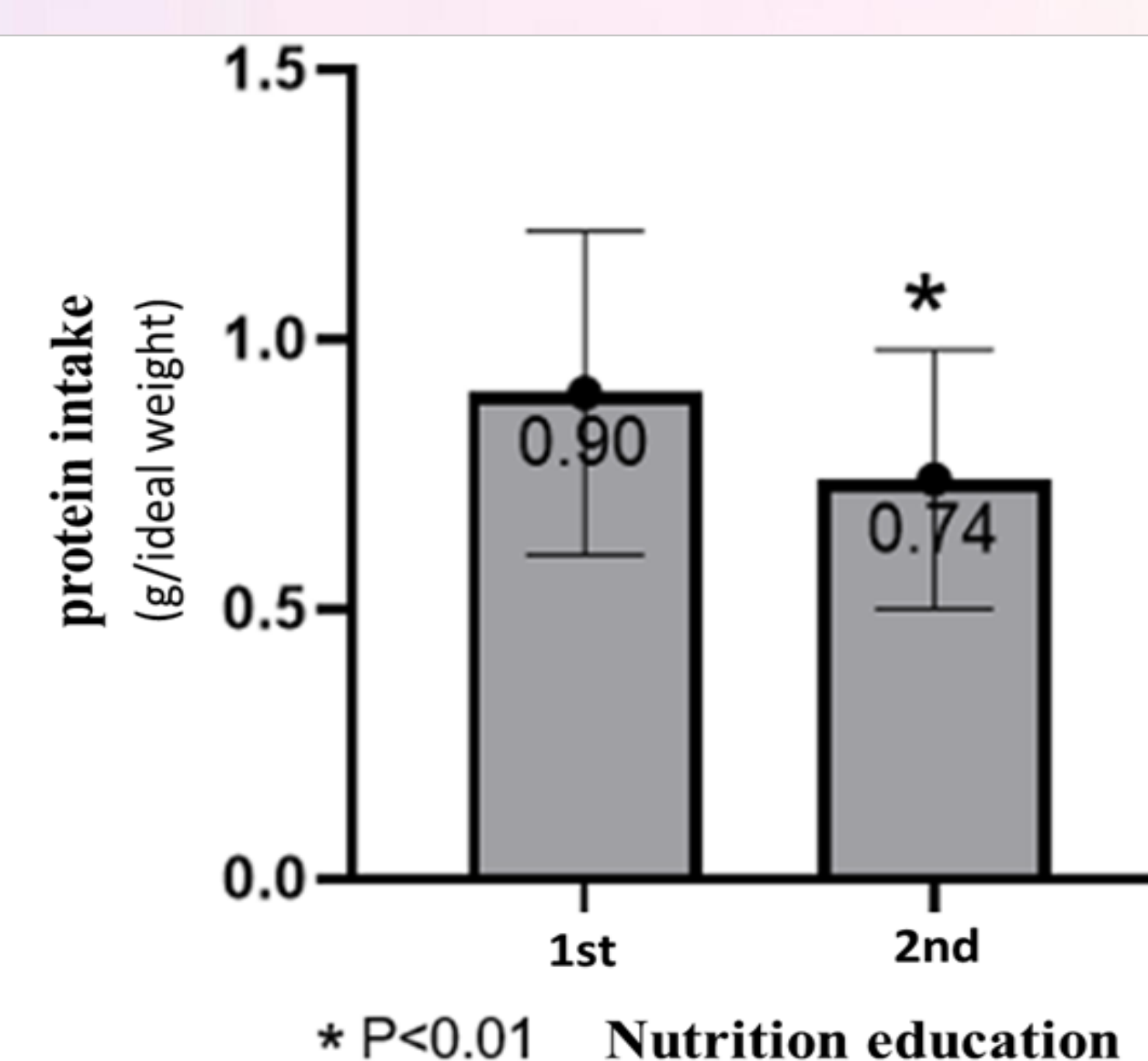
- Proportion of patients with chronic kidney disease stage 5 refusing health education.



Daily protein intake dropped from 0.9 (g/Kg) to 0.74!!!

The average daily protein intake significantly decreased from 0.9 (g/kg ideal body weight) in the first consultation to 0.74 (g/kg ideal body weight) in the second consultation ( $p < 0.01$ ).

- 2021/01~08 Daily protein intake in first and second education.



## 4 Conclusion

- ★ Integrated interdisciplinary care and ameliorated nutrition education program could successfully improve the rate of nutrition education and the effectiveness on low protein intake for patients with stage 5 CKD.

## References:

United States Renal Data System(2018).International comparisons . Retrieved from [https://www.usrds.org/2018/view/v2\\_11.aspx](https://www.usrds.org/2018/view/v2_11.aspx)