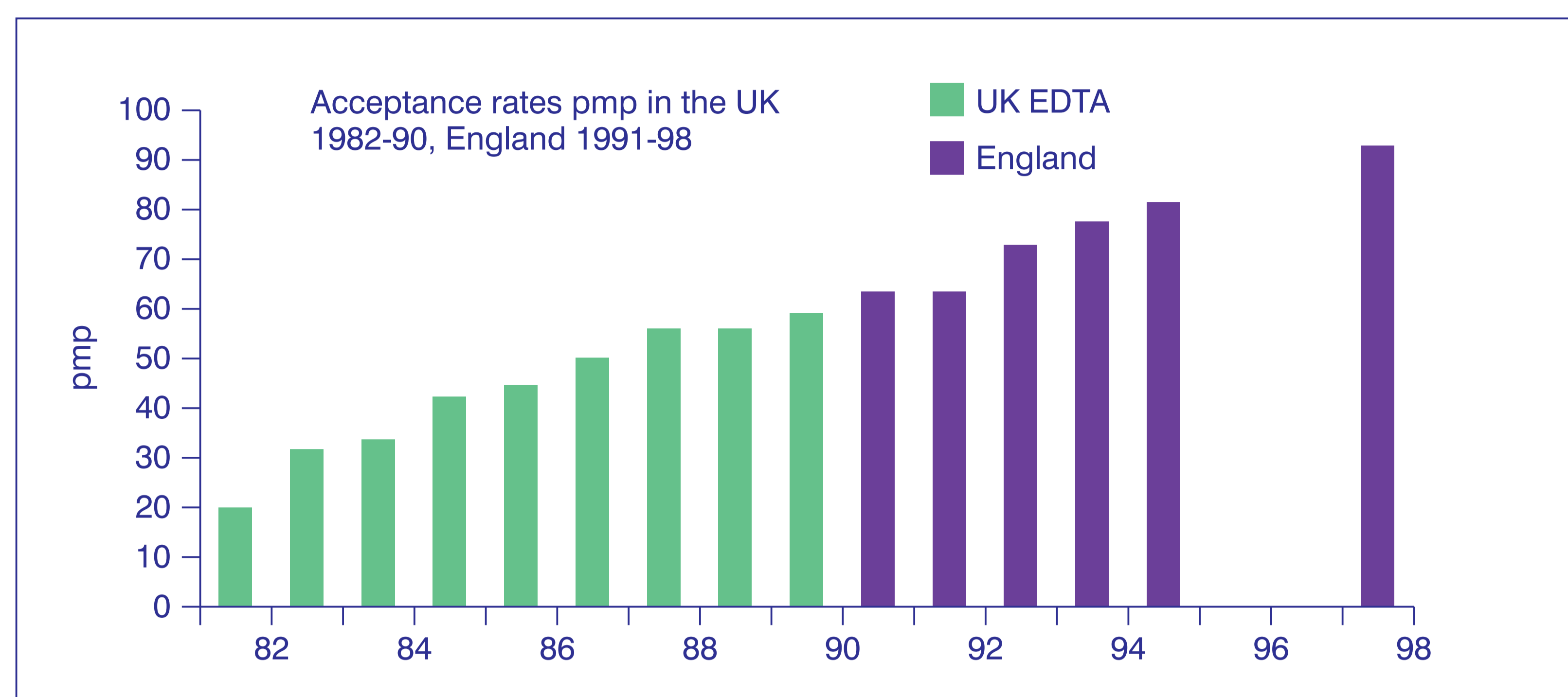


# Predicting the future demand for renal replacement therapy in England

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## BACKGROUND

- RRT acceptance and prevalence rate increasing 5-6% pa
  - acceptance 20 pmp 1982 rising to 92 pmp 1998
  - prevalence RRT 523 pmp in 1998 from 396 pmp in 1993
- Type of patients changing
- Patterns of type of RRT changing



## Patient characteristics of new cases accepted onto RRT in UK/England (%)

|              | >65 | Diabetic |
|--------------|-----|----------|
| 1976- 1978   | 1   | 2        |
| 1986 - 1988  | 23  | 12       |
| 1991 - 1992* | 37  | 14       |
| 1998*        | 46  | 16       |

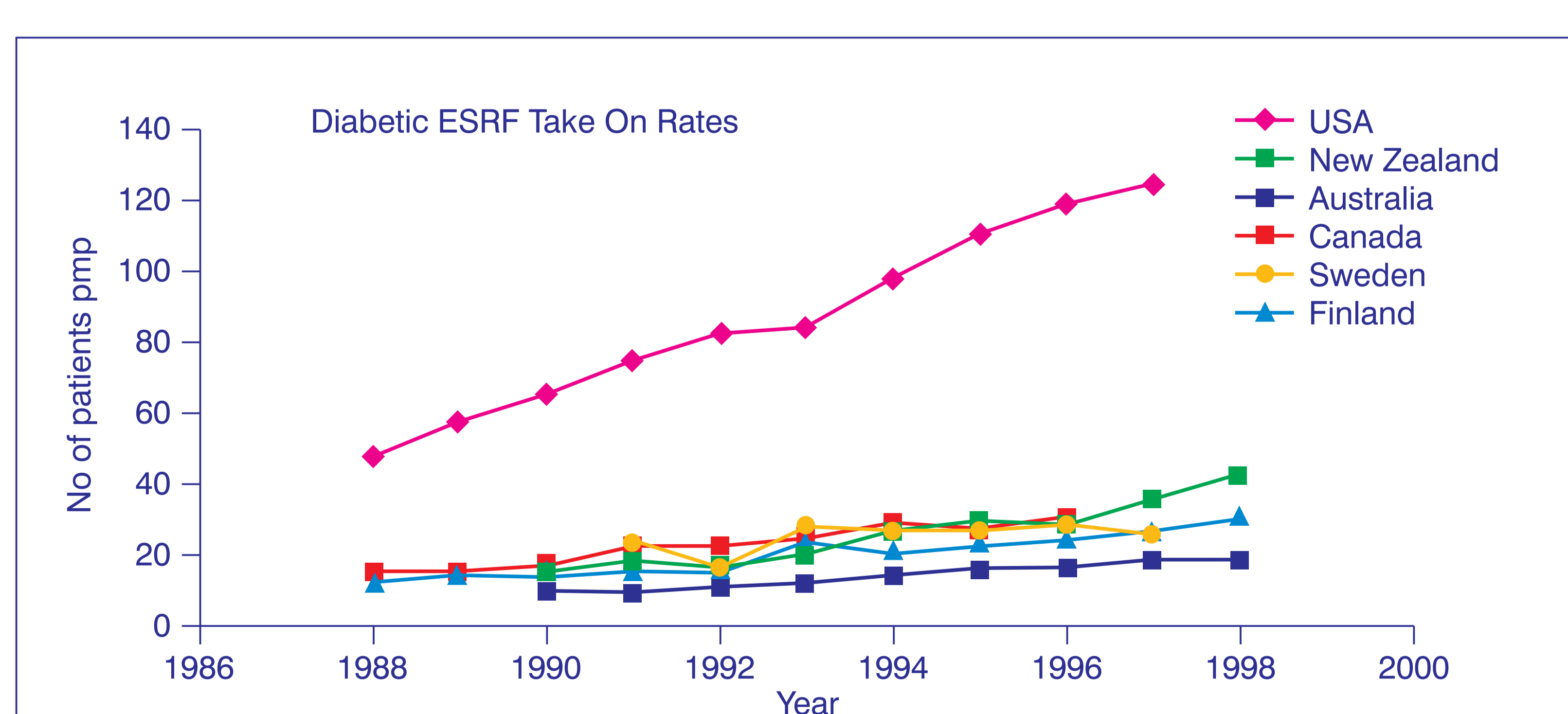
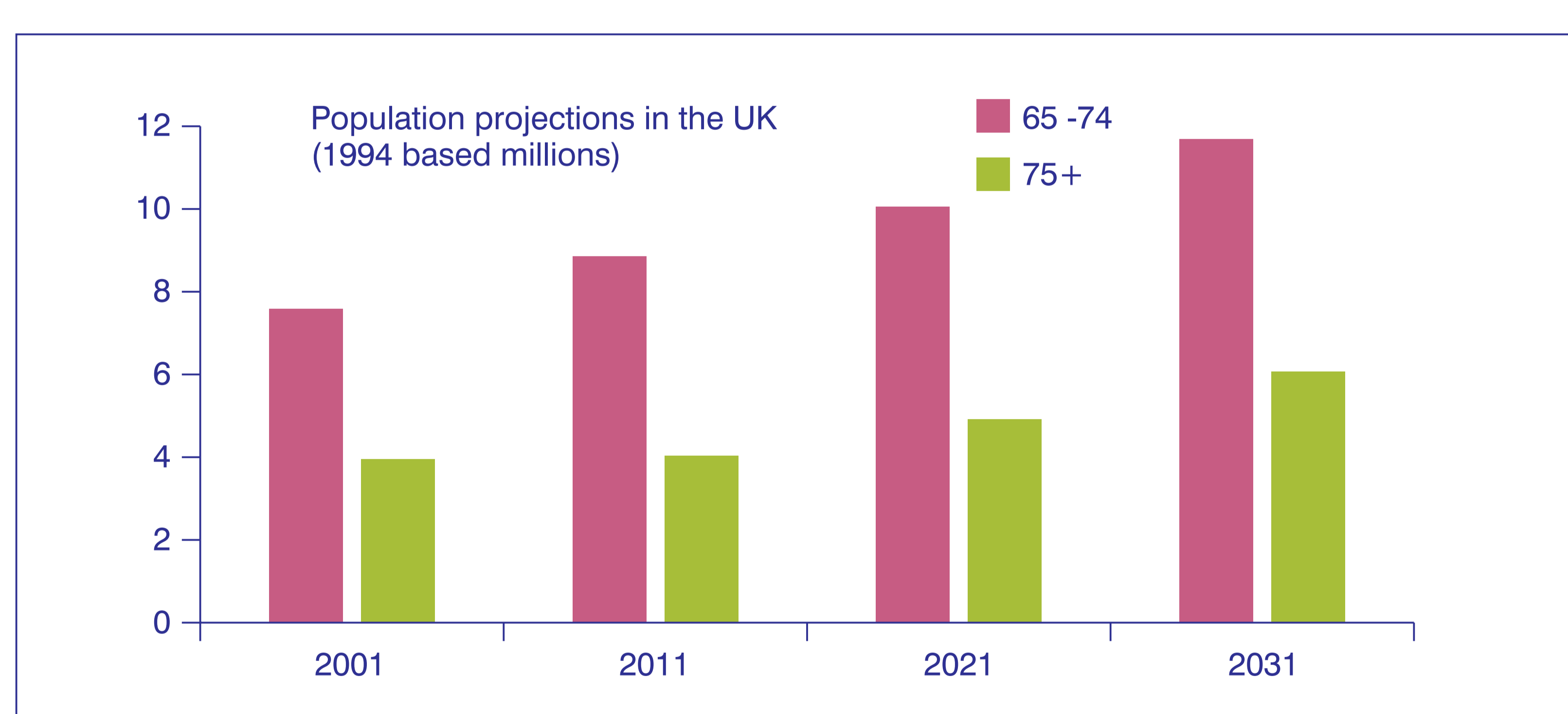
\*England

## TYPES OF RRT

- Transplantation
  - most cost effective but transplant supply doesn't meet demand, UKT Business plan to increase
- Haemodialysis (HD)
  - largest growth, more in satellites
  - Home HD declining.
- PD slow increase/static
  - may not be suitable for many elderly plus technique fails with time

## SUMMARY OF FUTURE PRESSURES

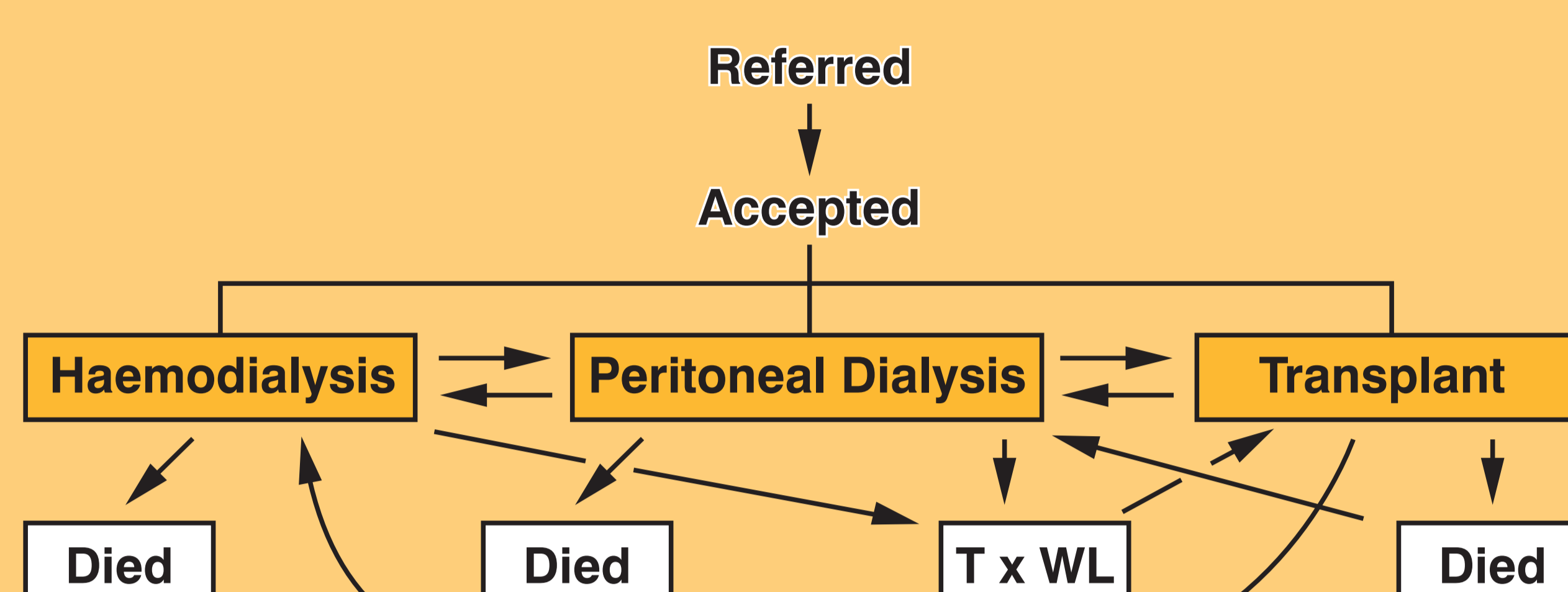
- Incidence ESRF rising
  - Increase incidence type 2 diabetes
  - population ageing esp ethnic minorities
- Meeting population need
  - unmet need esp elderly, diabetics
- Transplant supply
- Patient survival
  - Will improved standards lead to improved survival, counterbalance by increased co-morbidity of new cases?



## AIMS

- To model RRT demand in England using simulation, specifically
  - to explore changes in
    - acceptance rate
    - transplant supply
  - costs

## CURRENT MODEL



## ACCEPTANCE RATE SCENARIOS

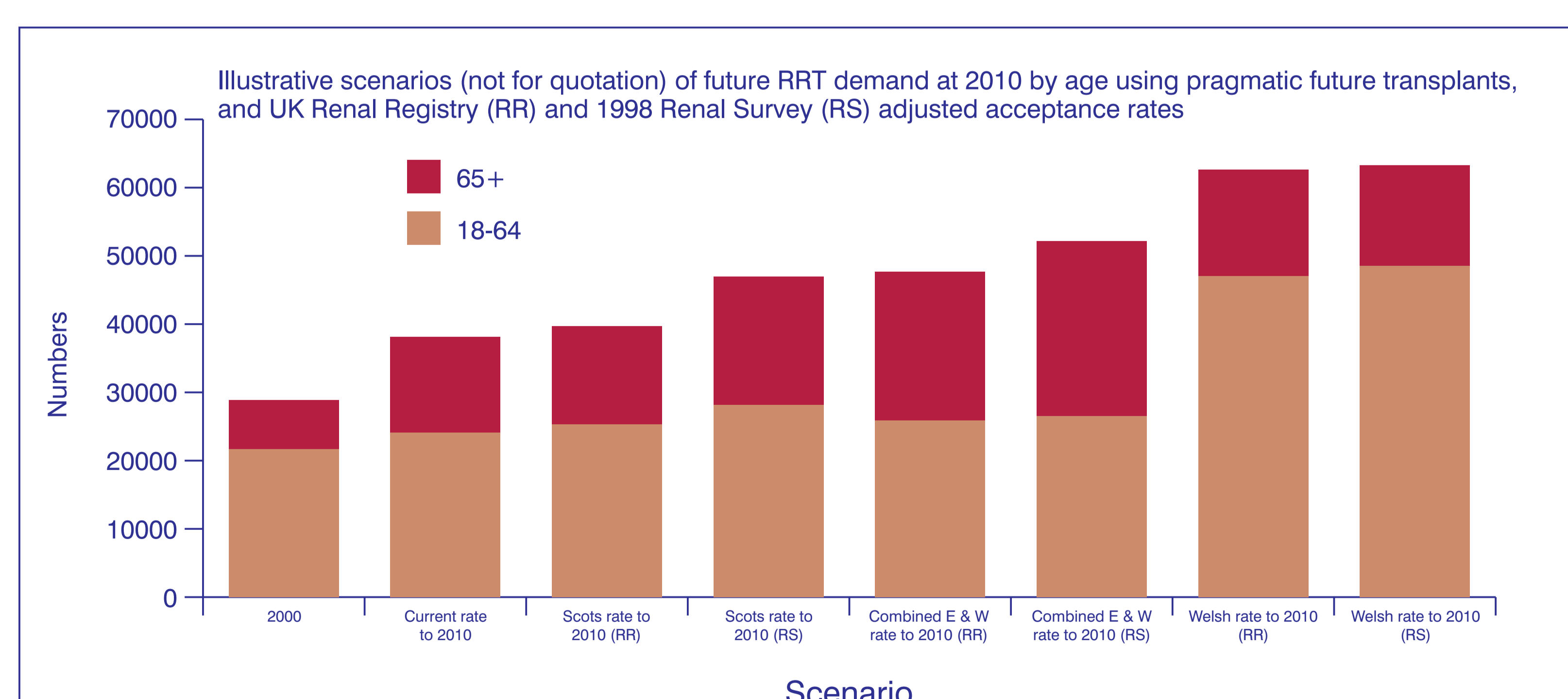
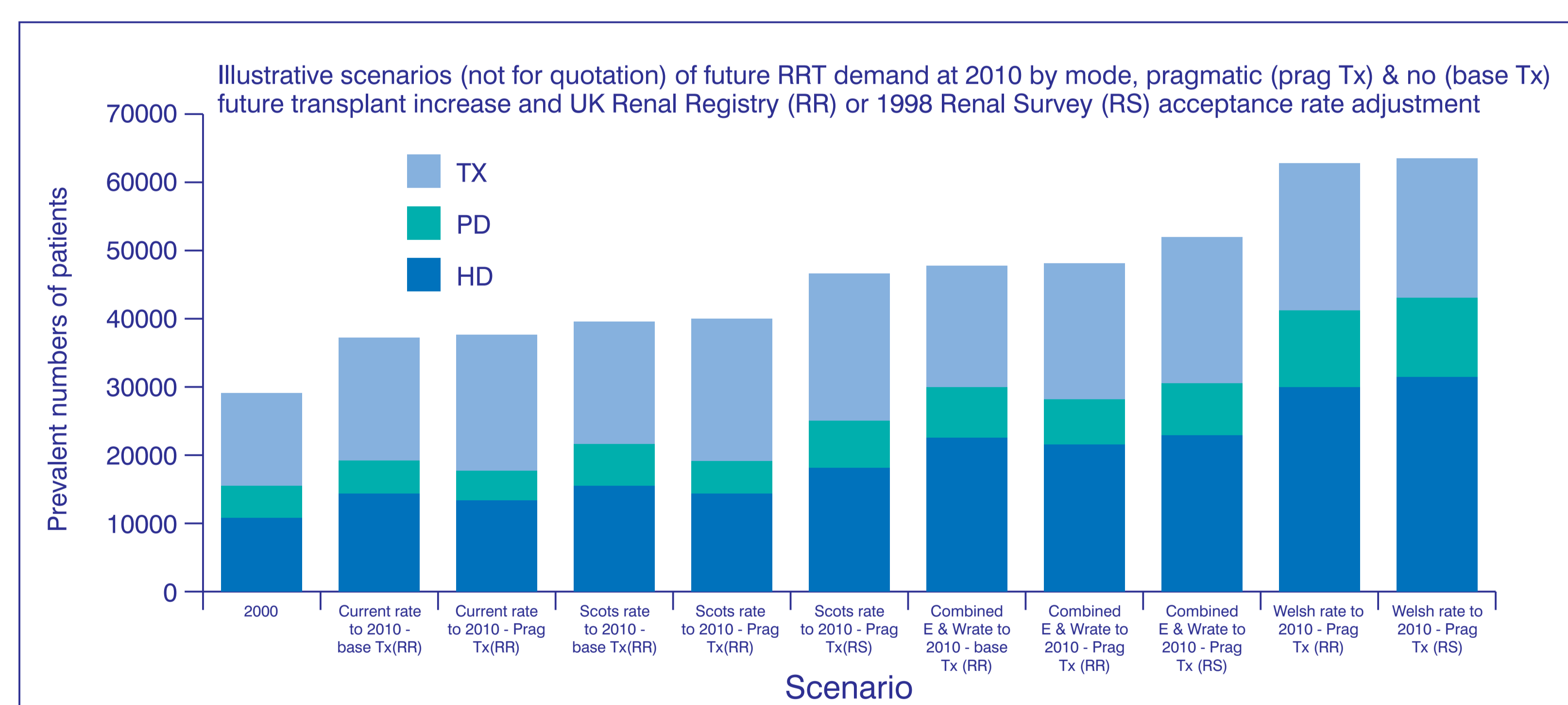
- Current acceptance data in 2000 from Renal Registry from 22 units in England
- 2 methods of adjustment to national acceptance rate
  - by units estimated catchment population
  - by differential response of these Registry units in 1998 Renal Survey in terms of % of total and % elderly and diabetic
- Population to 2010 estimated taking account of demographic change by ethnic minority
- acceptance rates applied to 2010 population, to be achieved over decade:
  - current (catchment adjusted,RR);current (survey adjusted RS)
  - Scottish 2000 rate and Welsh 2000 rate for non ethnic minorities adjusted for ethnic population in England
  - mix current English rates to under age 55, Welsh to over 55s

## OTHER PARAMETERS

- Patient and mode survival from Renal Registry and UK transplant by age +/- diabetic ESRD
- stock from Renal Registry 2000 (2 methods of adjustment as per acceptance data)
- probability transplant waiting list and receiving transplant by age/diabetes from UK Transplant/Registry
- Transplant supply from UKT business plan
  - pragmatic increase in cadaver (65% plan) live (90% plan) by 2005, no increase

## COSTS

- From 1996 Renal Purchasing Guidelines updated to 2000
- Hosp HD £34500 p.a
- PD £20000 p.a
- Cadaver transplant £20000 per op
- Live transplant £35000 per op
- Year maintenance £6500



## INITIAL CONCLUSIONS

- Future prevalence of RRT could increase by between 33-100% by 2010
- Sensitive to current acceptance rate, future acceptance rate
- Increasing transplant supply key to dialysis:transplant ratio and costs
- Large increase in elderly on RRT
- ongoing work to complete other scenarios including costs, patient choice, change survival