



# 資料加值與創新應用之未來展望 以醫療產業應用為例

- 末期腎臟病之腹膜透析治療



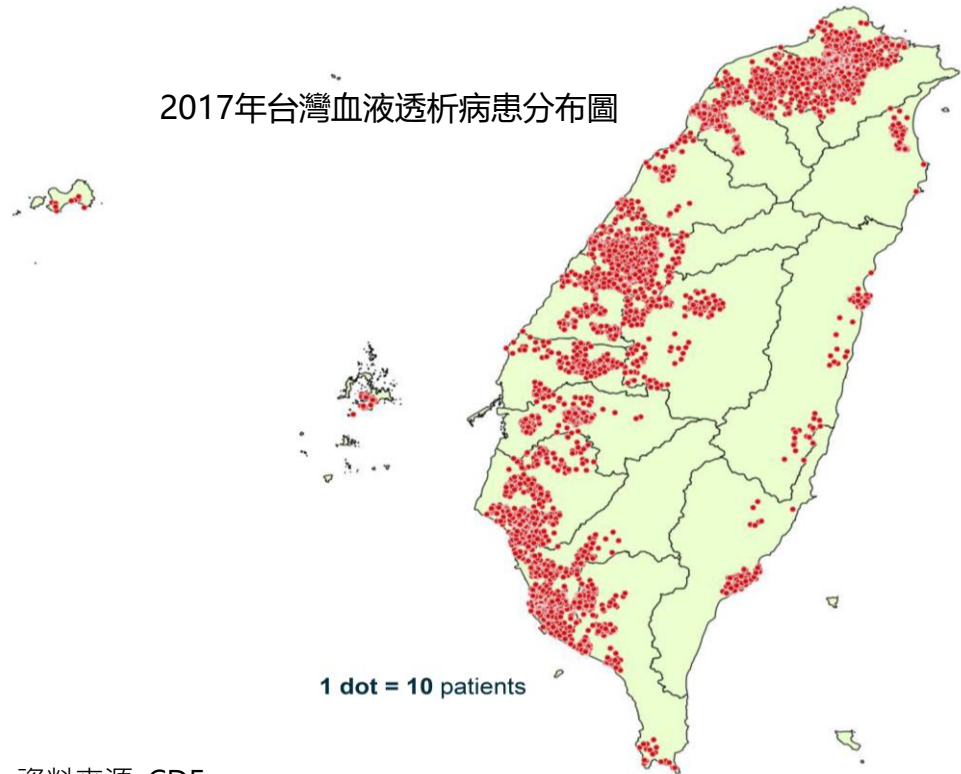
百特醫療產品股份有限公司  
林志旭 總監

2019.11.26

# In the past

末期腎臟病透析病患須親臨透析中心治療，  
耗時費力  
即便腹膜透析居家治療，患者病情不易掌握

2017年台灣血液透析病患分布圖



資料來源: CDE

# The Future is now



居家透析  
雲端醫療管理平台讓醫病不再保持距離



# 台灣唯一結合雲端技術的腹膜透析設備，領先業界

百特提供雲端醫療管理平台的軟、硬體設施的升級及維護



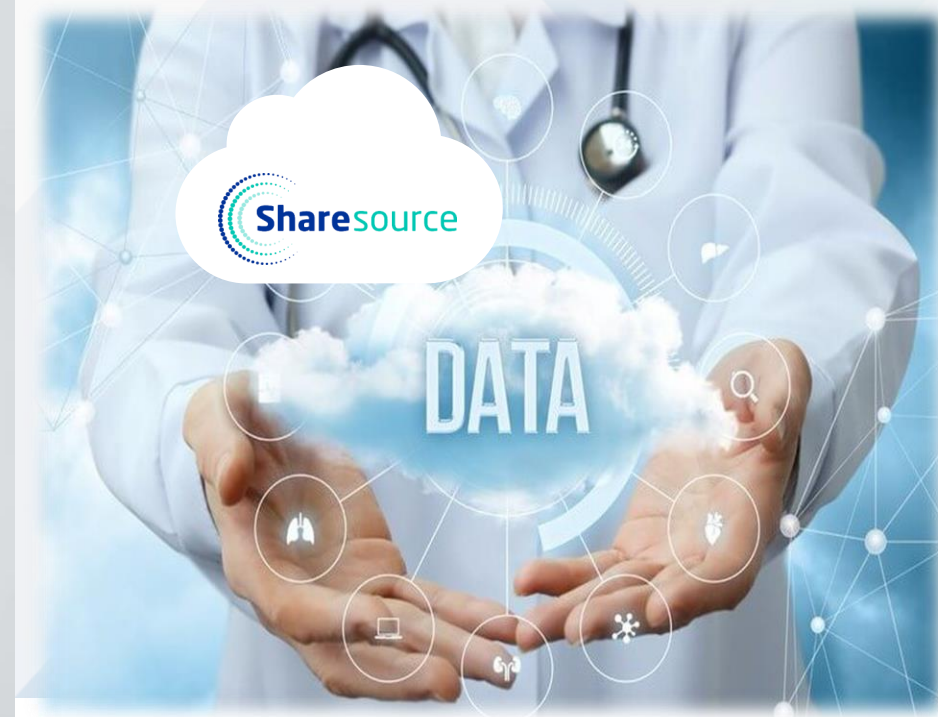
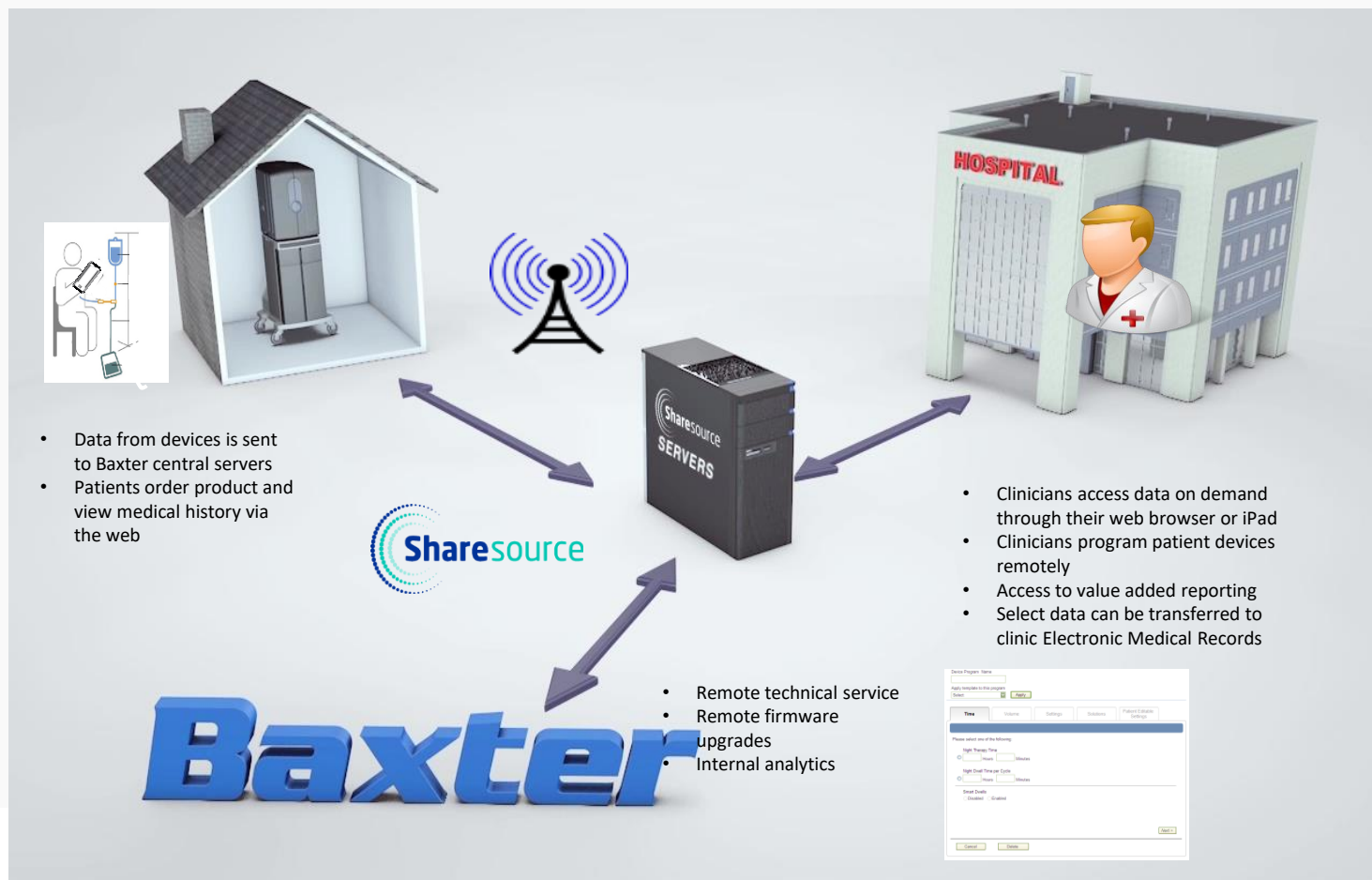


# 掌握居家治療的關鍵

**D**eliver取得 **A**ccuracy正確性 **T**ruth真實性 **A**nalyze分析



腹膜透析患者遍佈全台，  
治療場所位於病患家中，  
雲端資訊不遺漏。



# 雲端醫療系統協助醫護人員管理透析患者



## Daily therapy tracking

Ability to set clinic level alerts regarding patient therapy

See therapy trends by weeks and months

Legend							
25 July 2011 - 31 July 2011							
Patient	Monday 25	Tuesday 26	Wednesday 27	Thursday 28	Friday 29	Saturday 30	Sunday 31
<b>Carrel, Stella A.</b> (HHD) 27 January 1924 Clinic Patient ID: 669-6749 Baxter Patient ID: 34279736	✓		✓		✓		
<b>Cleary, Bill M.</b> (HHD) 27 August 1946 Clinic Patient ID: 669-6749 Baxter Patient ID: 34279776	✓	✓	✓		✓	✓	!!
<b>Dublin, Alex</b> (HHD) 27 January 1924 Clinic Patient ID: 669-6749 Baxter Patient ID: 34279865		✓	✓	✓	!	!!	
<b>Robertson, Randi</b> (HHD) 27 January 1924 Clinic Patient ID: 669-6749 Baxter Patient ID: 34279867	✓		✓	✓	✓		✓
<b>Stiles, Samantha</b> (HHD) 27 January 1924 Clinic Patient ID: 669-6749 Baxter Patient ID: 34279543	✓	✓	✓	✓		!!	
<b>Allen, John</b> (PD) 27 January 1924 Clinic Patient ID: 669-6749 Baxter Patient ID: 34276235	✓	✓	✓	✓	✓	✓	✓
<b>Baumann, Harold C.</b> (PD) 27 January 1924 Clinic Patient ID: 669-6749 Baxter Patient ID: 34272395	✓	✓	✓	✓	✓	✓	✓
<b>Cutler, Niis</b> (PD) 27 January 1924 Clinic Patient ID: 669-6749 Baxter Patient ID: 34279843	✓	✓	✓	✗	✗	✗	✗
<b>Douglas, Larry F.</b> (PD) 27 January 1924 Clinic Patient ID: 669-6749	✓	!!	✓	✓	✓	✓	✓

Clinic Patient Dashboard



Patient Trending

Mark Flags Reviewed

Flags

!!

Drain Alert

!!

UF Alert

!

Treatment Paused

Treatment Time

Date11 March 2012

Start Time23:04

Device Program

Program NameWeekday

Therapy TypeHi-dose Tidal

Night Therapy Time10 hours 30 minutes

Total Therapy Volume12000 mL

Last Fill Volume2000 mL

Last Fill Same or DifferentSame

Total Percentage85%

Treatment Solutions

Red Line5000 mL, 2.5%

Blue Line6000 mL, 2.5%

Blue Line3000 mL, 1.5%

Day Treatment

Time Stamp (hh:mm:ss)CycleFill VolumeFill TimeDwell TimeDrain VolumeDrain TimeUFNotes

Day Target22000 mL11 m1 h 51 m2784 mL21 m230 mL

11:00:00Initial Drain---2132 mL21 m---

11:20:0412001 mL11 m1 h 53 m2784 mL21 m160 mL

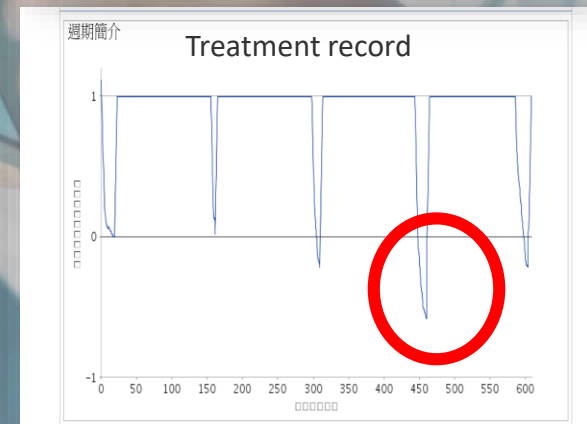
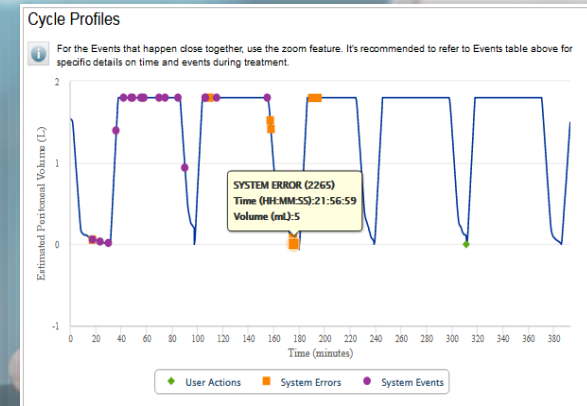
15:11:4421999 mL11 m1 h 50 m2784 mL21 m300 mL

Day Average---2000 mL11 m1 h 52 m2567 mL21 m225 mL

Night Treatment

Time Stamp (hh:mm:ss)CycleFill VolumeFill TimeDwell TimeDrain VolumeDrain TimeUFNotes

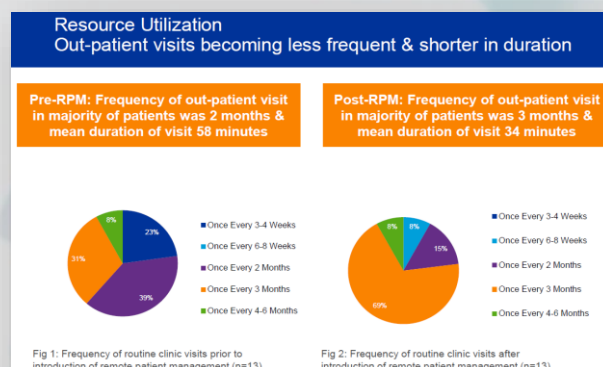
Treatment Details



# 雲端醫療系統遠距照護病人 及早發現問題並介入



歐美及亞太地區均有相當使用經驗



**Post versus Pre RPM initiation trend to less resource utilization:**  
Pre-RPM hospitalization rates 0.78 admissions per patient-year  
• Immediately post-RPM rates 0.61  
• Two years post-RPM rates 0.56

Sanabria, Bunch, Aldana *et al.* Abstract 55th EDTA-ERA Conference 2018

**Post versus Pre RPM initiation more pre-emptive actions:**

- Post-RPM 2.1-fold increase in prescription adjustments
- Post-RPM 0.7-fold decrease in clinic visits

## Efficiency of care

Bunch *et al.* in press; BMC Nephrology

Remote Patient Management in an Automated Peritoneal Dialysis Program in Colombia

**Running title:** Remote Patient Management in automated peritoneal dialysis.

**Post versus Pre RPM initiation more pre-emptive actions:**

- Post-RPM 25% increase in prescription adjustments
- Post-RPM 29% increase in pre-emptive consults

## Efficiency of care / better resource utilization

Original Paper

Blood Purification

Blood Purif 2018;46(11):1111-1117  
DOI: 10.1159/0004877703

Received January 30, 2018  
Accepted February 12, 2018  
Published online April 26, 2018

**Remote Monitoring of Automated Peritoneal Dialysis Improves Personalization of Dialytic Prescription and Patient's Independence**

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Grazia Maria Virzi<sup>a,b</sup> Francesco Garzotto<sup>a,b</sup> Caterina Riello<sup>a,b</sup>  
Massimo de Cal<sup>a,b</sup> Mitchell H. Rosner<sup>c</sup> Claudio Ronco<sup>a,b</sup>

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1. 優化醫護端和病人的溝通
2. 降低患者住院率及非預期就醫狀況
3. 提升醫師與護理師間溝通效率
4. 與國際接軌即時性的軟體更新
5. 治療數據快速匯出，學術研究領域的藍海



# 醫病共享決策E化系統，為末期腎臟病患者，高效建立醫病溝通，



取代傳統手寫問卷  
影片互動有效溝通



模組系統化SDM系統  
UID管理病患保障個資



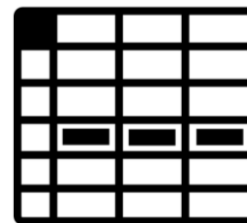
運用資訊科技技術  
提升醫護管理效率



亦提供安裝版功能

# 醫病共享決策E化系統，自動生成統計圖表，有效解決醫護端管理痛點

每年新增透析病患高達12,000人  
估計每年需進行透析療法決策病患高達上萬人



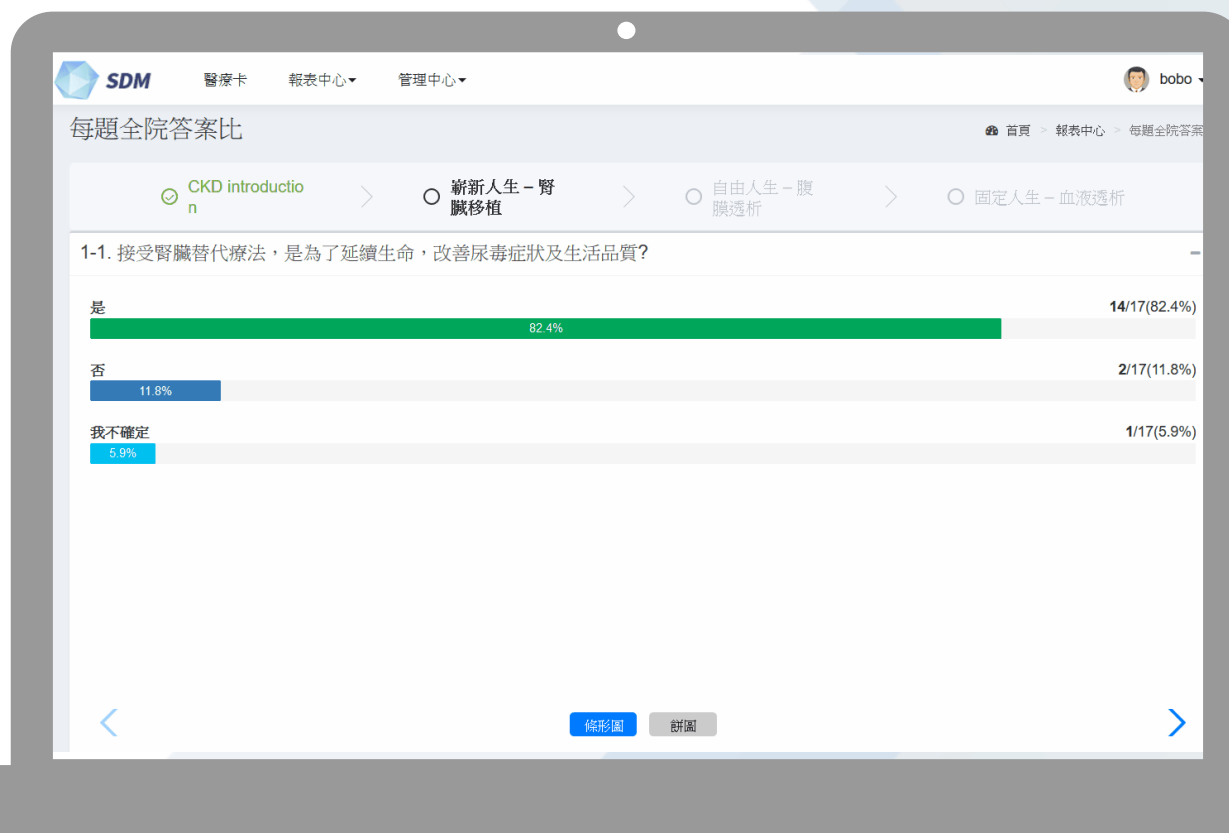
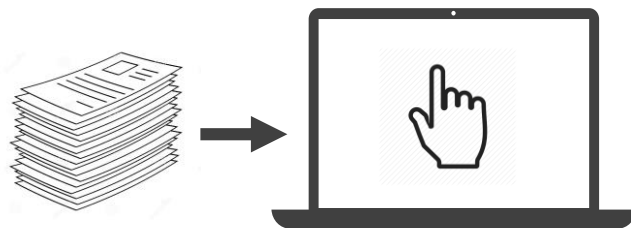
資訊視覺化圖表



運用資訊科技技術  
提升醫護管理效率



創造通訊傳播加值  
發展醫療資料經濟





## President Trump signs executive order to overhaul kidney care



Margaret Trey | The BL - 07/15/19, 21:07



President J. Donald Trump on July 10, signed executive order to revamp kidney care that would allow more Americans with kidney failure a chance for home dialysis and early transplants, July 11, 2019.

President Donald Trump's executive order to transform kidney care lays out ambitious goals for shifting 80% of patients currently on kidney dialysis out of high-cost clinic settings to more convenient and cost-effective home care by the end of the next decade.

居家透析相較於門診透析  
更方便且更具成本效益

# 百特雲端醫療應用發展



**腹膜透析雲端醫療平台:** 讓醫護更有效率病人管理



**醫病共享決策E化系統:** 優化醫病溝通與資訊對等



**透析中心雲端醫療平台:** 整合醫療資訊管理

**Thank You**