The Indigent Patient

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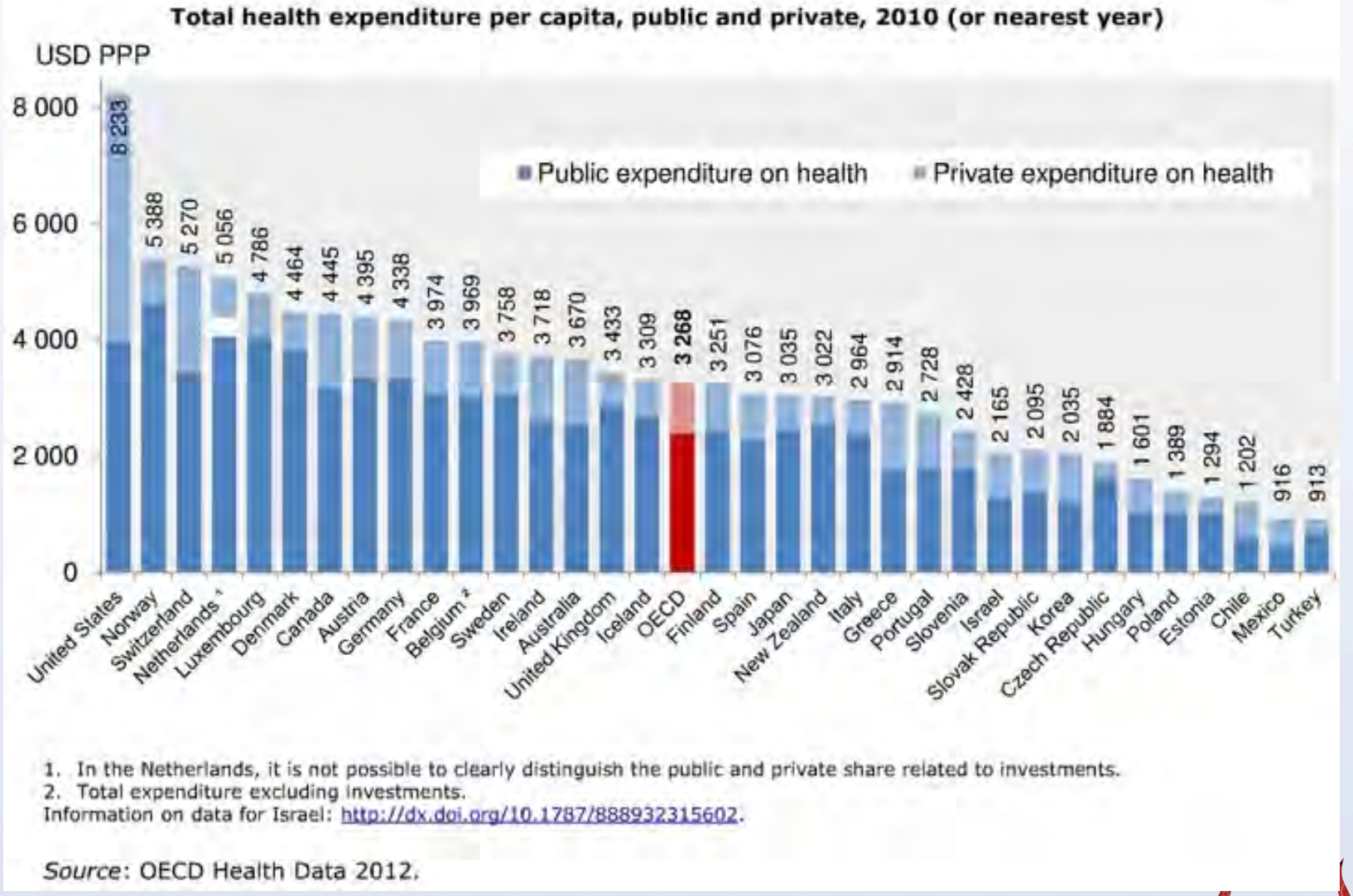
US spends two-and-a-half times the OECD average



1. In the Netherlands, it is not possible to clearly distinguish the public and private share related to investments.
2. Total expenditure excluding investments.

Information on data for Israel: http://dx.doi.org/10.1787/888932315602.

Source: OECD Health Data 2012.

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Where the United States health system does LESS than other countries

	United States	Rank compared with OECD countries	OECD average
Practising physicians	2.4 per 1000 population	26th	3.1 per 1000 population
Doctor consultations	3.9 per capita	29th	6.4 per capita
Hospital beds	3.1 per 1000 population	28th	4.9 per 1000 population
Hospital discharges	131.0 per 1000 population	26th	155.1 per 1000 population
Average length of stay in hospitals	4.9 days	29th	7.1 days

Source: OECD Health Data 2012.

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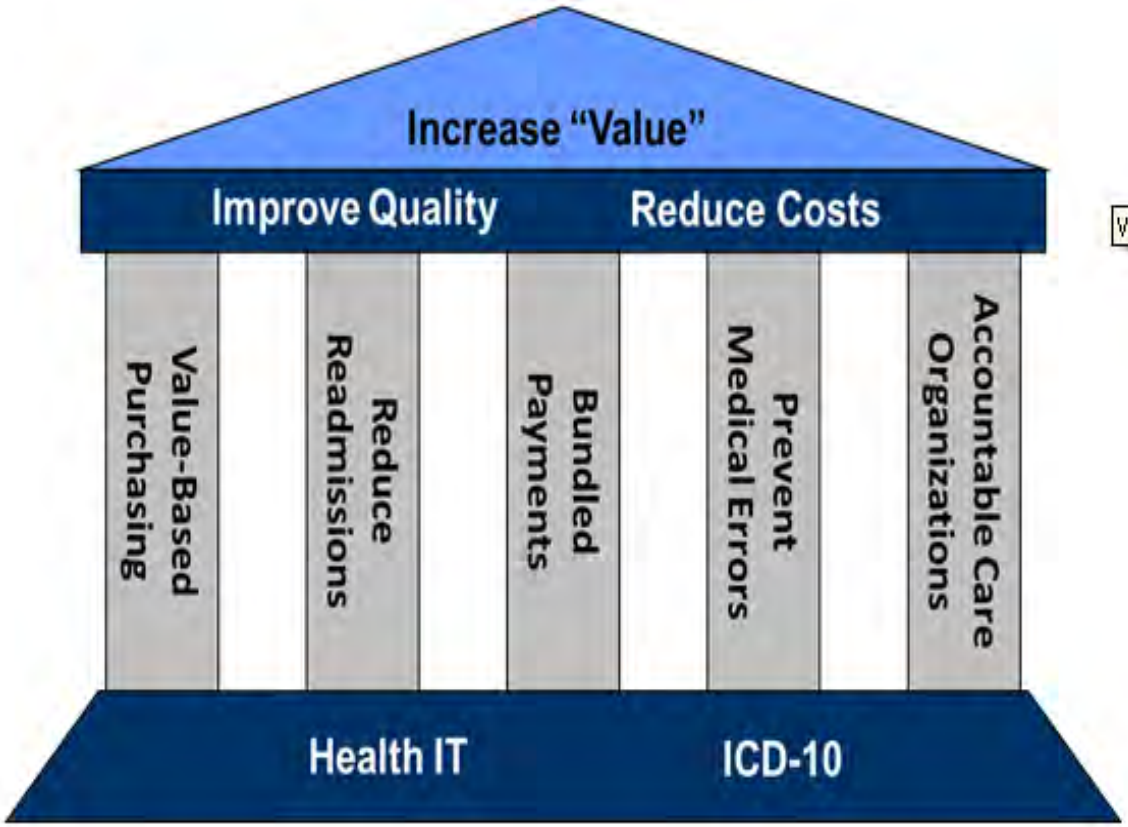
Value-Based Payment & Delivery Models



Value Based Purchasing Image

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Definition

- "OPAT" refers to the provision of IV antibiotic therapy in at least 2 doses on different days without intervening hospitalization
- Goals
  - Allow patients to complete treatment safely and effectively in the comfort of their home or another outpatient site
  - Avoid the inconveniences, complications, and expense of hospitalization

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History

- Initial studies from Minneapolis 1977- demonstrated feasibility for small group of patients

- 1982 Poretz DM, et.al. JAMA: home parenteral antibiotics service of a community hospital reported successful treatment of 150 pts with invasive infections, including osteomyelitis, bacteremia, septic arthritis, infected orthopedic appliance, pyelonephritis

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Background

- By 1998, ~ 250,000 individuals treated with outpatient IV antimicrobials annually, generating $2 billion in revenue

- Growth rate of practice estimated to be >10% annually:
  - increased emphasis on cost containment
  - availability of qd or bid antibiotics
  - technological advances in vascular access and infusion
  - increased acceptance by both pts and physicians,
  - increasing availability of structured services

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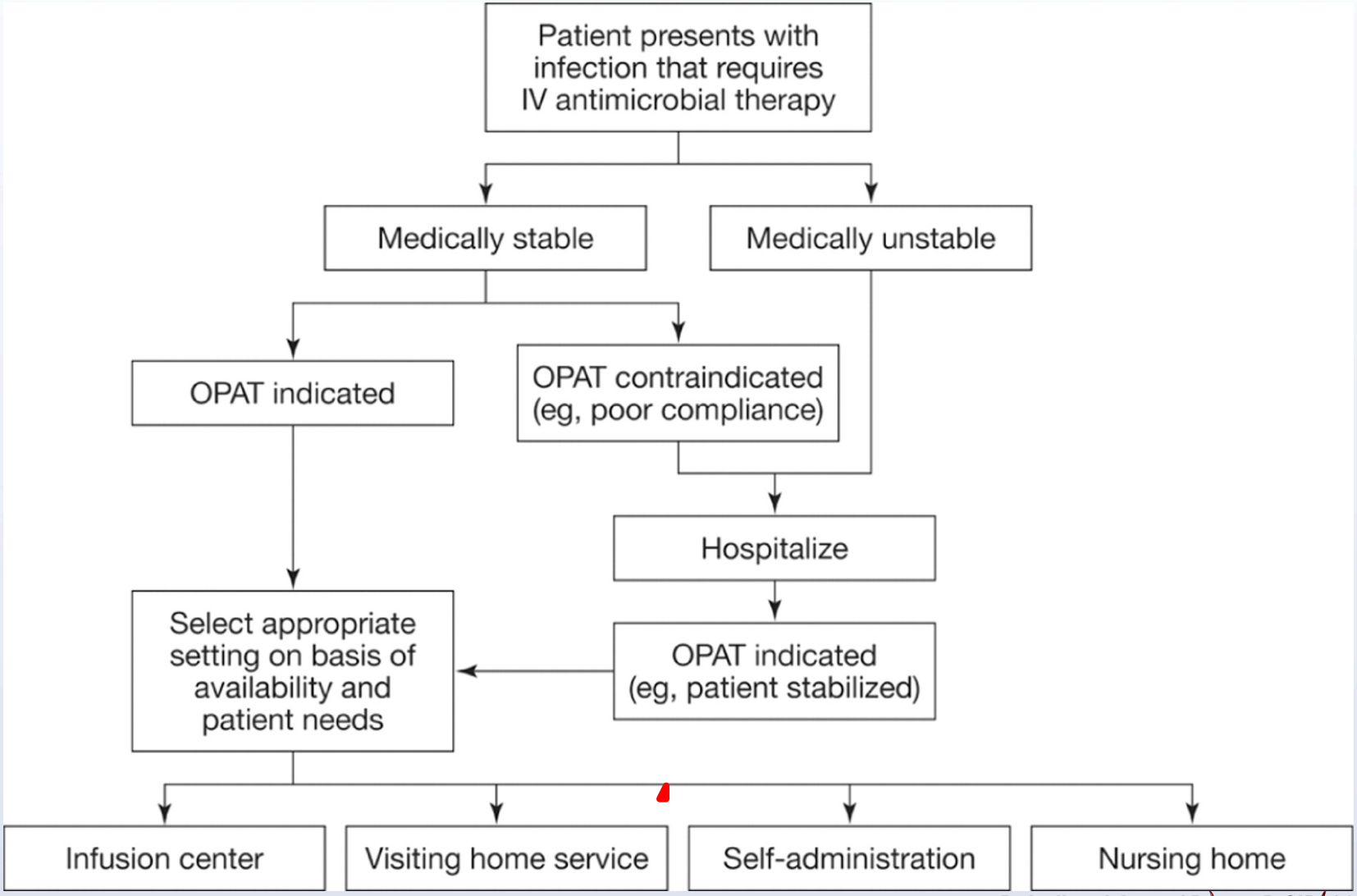
Models of outpatient parenteral antimicrobial therapy (OPAT) delivery.



Paladino J A , and Poretz D CID. 2010;51:S198-S208

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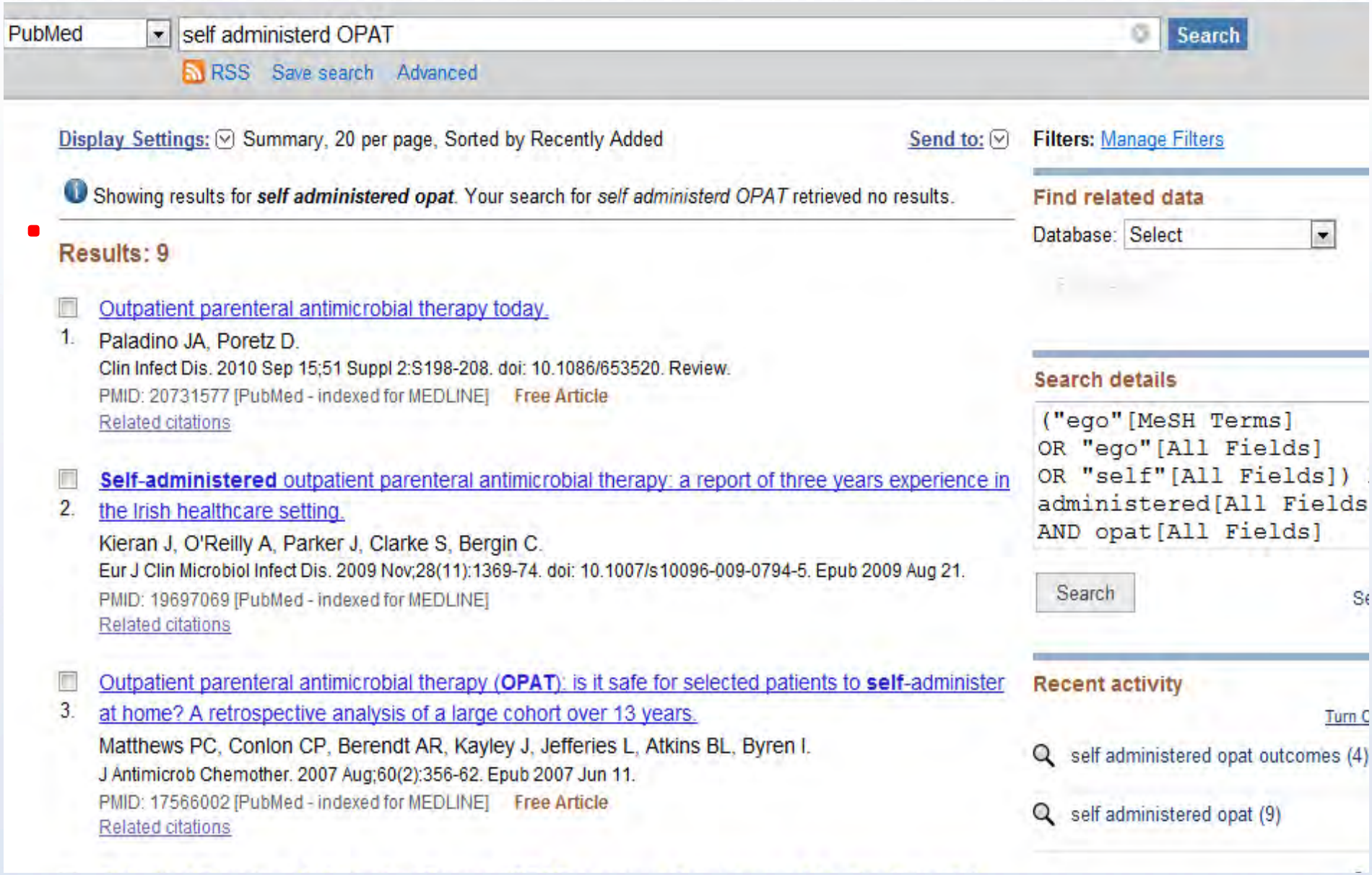
Clinical Infectious Diseases



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Optimizing Care and Resources?

- 36 yo HM with h/o femur fracture s/p ORIF
- Post-op course c/b infection
- Re-admitted to Ortho service and taken to OR for partial removal of hardware
- Started on IV Vancomycin and Zosyn following surgery
- Operative tissue cultures positive for MSSA
- IV Zosyn discontinued and pt kept on IV Vancomycin monotherapy with plan to treat for 6 wks
- Spanish speaking; completed 8th grade; works for construction company; no illicit drug history/tobacco or alcohol use
- ***Uninsured***

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Project Need

- Pts with infections requiring long term antibiotics typically receive concentrated diagnostic and therapeutic services in the first several days- then remain in the hospital with low intensity needs/antimicrobial infusions

- While insured pts may be d/c early to home with nursing assistance or to a lower cost nursing facility to complete treatment, unfunded pts usually remain in hospital

- Burden on safety-net hospitals; decreases availability of acute beds for pts presenting with more severe needs
- Parkland's ED cares for > 500 patients/day of whom many are placed on a wait list pending bed availability

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Setting and Intervention

- >800 bed safety-net hospital serving Dallas, TX, launched the Self-Administered Outpatient Parenteral Antibiotic Therapy Program (S-OPAT) transition of care model in 2009

- Developed as an alternative for uninsured patients to complete long-term antibiotic therapy at home comparable to services received in traditional healthcare associated OPAT (H-OPAT) settings

- Allows pts to self-infuse antibiotics at home after completing an inpt evaluation (patient education and competency assessment). Patients are then transitioned from the hospital into a dedicated post-discharge OPAT clinic, and followed weekly by nurses for PICC line care and at fixed intervals by physicians to assess clinical response to therapy

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OPAT Vision Statement

- "The OPAT program partners with patients as they *transition* to the community through the use of *non-traditional methods* and *antimicrobial stewardship* to improve patient care outcomes and provide *value based care* that reduces hospital readmissions and maximize hospital resources"

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Best Practice Methods

- Established a dedicated multidisciplinary OPAT team: Physician, Pharm D, Care Management, Transitional care RN

- Developed effective multilingual patient education material at the appropriate level of health literacy and employ the "teach back method" for bedside teaching
- Developed a standardized core competency tool to test and record patient's ability to self-administer IV antibiotics and ensure safe discharge from the hospital into OPAT program

- Developed an improved electronic referral flow sheet to include all members from the multi-disciplinary team

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OPAT Multi-Disciplinary Team

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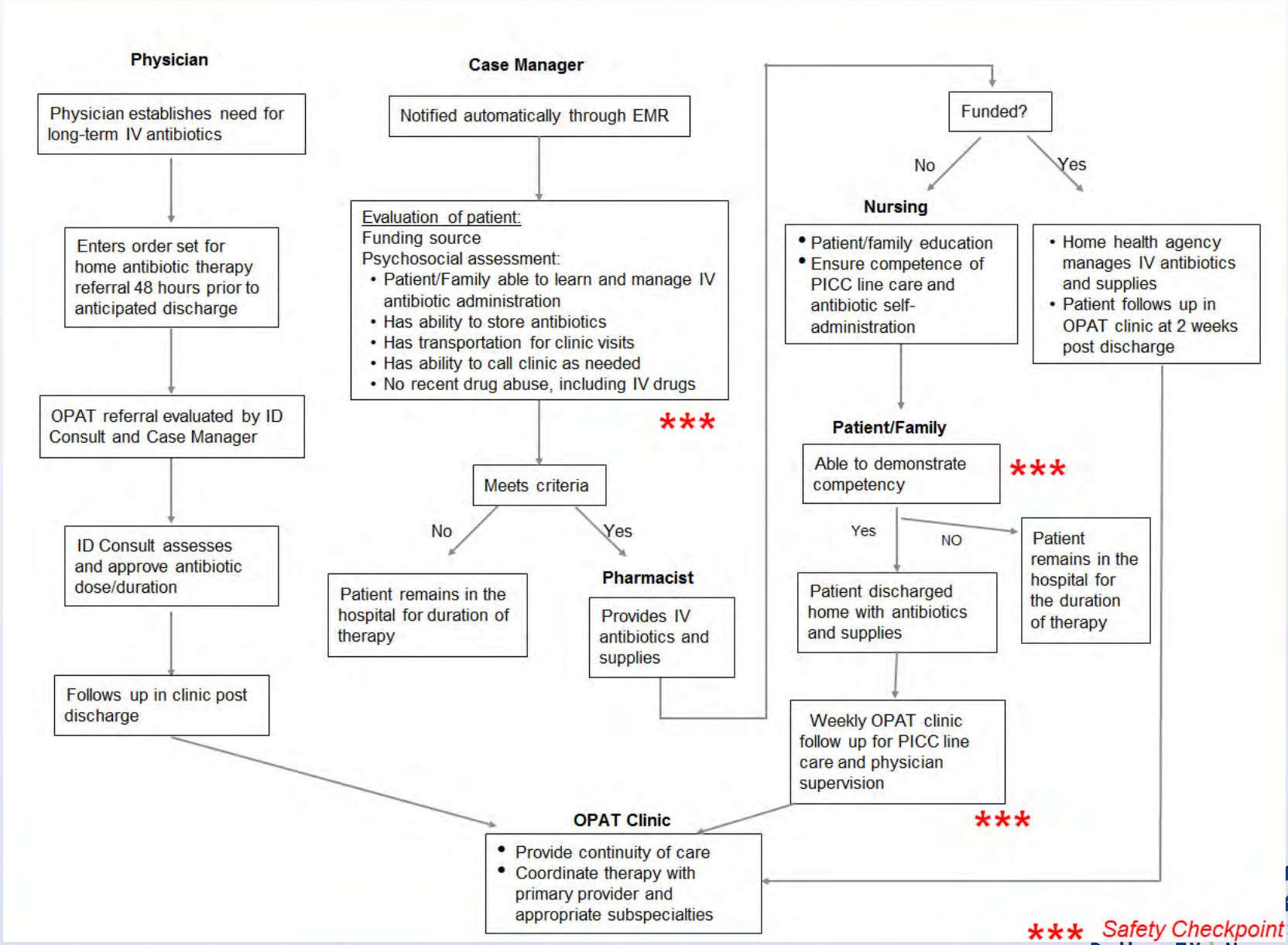
Incorporating Patient Safety into Transition of Care



Patient Education

Giving Your IV (Intravenous) Antibiotics Through Your PICC Line At Home

Parkland Patient Education

IH-IV-195
R.D. 3/11
Page 1 of 7

Your doctor wants you to have antibiotics through your PICC line at home. These antibiotics treat the infection in _____. You will need to give yourself these antibiotics for _____ weeks.

During this time, you will have appointments at the Parkland clinic. It is very important for you to come to these clinic appointments because this is when we will check your blood, and check to be sure you are getting the right amount of the antibiotic. We will also put a fresh, sterile (no germs) dressing over your PICC line 1 (one) time each week at your clinic appointment. Your nurse will check that there is no infection at the place where the tube goes into your body.

Your first appointment is:_____.
If you cannot come to this appointment, call 214-590-5061 to make another appointment.

Getting ready to give your antibiotic through your PICC line:

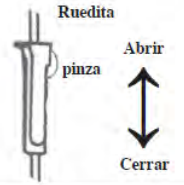
1. Clean off a clean, dry, flat place with alcohol, to put your supplies on, or put clean, dry paper towels down before you put your supplies down.

2. The supplies you will need to give your antibiotic through your PICC line are:
   - IV medicine bag
   - IV tubing
   - IV tubing Extension set
   - The blue Microclave cap
   - 2 pairs of gloves
   - Alcohol pads

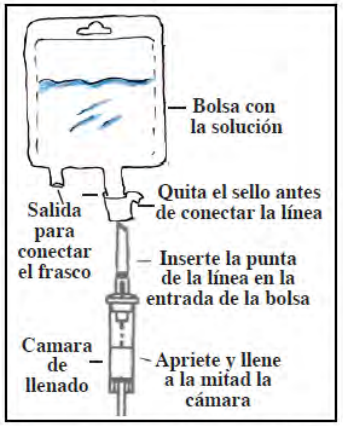
3. Always wash your hands before you flush the catheter, or give your antibiotics. Handwashing is **the most important** way to prevent infection!
   - Wash your hands with soap and water for 15 seconds. Then rinse and dry with a paper towel or clean cloth towel.
   - You can also use an alcohol hand rub instead of washing your hands.

_____. Revise usted mismo y asegurarse de que está claro o transparente y que no tiene manchas o partículas flotando en él. Si no es claro, no lo use, tráigalo a la clínica en la próxima cita. Utilice otra bolsa que está claro.

Mantenga este antibiótico en el refrigerador? Sí o No



- Cierre la pinza en el tubo o línea y ponga la punta en el puerto en de salida de la bolsa intravenosa de antibióticos.
- Apriete la cámara de goteo para iniciar el flujo del antibiótico IV. Llene la cámara de goteo a la mitad.
- Cuelgue la bolsa a un nivel más alto que su cabeza.
- Abra lentamente la pinza para que el IV antibióticos llene el tubo o línea. Esto empuja todo el aire del tubo.
- Cierre la válvula con la ruedita o disco.



Recuerde - no deje que la punta del tubo toque nada.

El nombre de su antibiótico IV, que debe ser mezcla es: _____. Después de haberlo mezclado, verifique y asegurarse de que está claro o transparente y que no tiene manchas o partículas flotando en él. Si no está claro o transparente, no lo use. Tráigalo a la clínica en su próxima cita. Utilice otra bolsa que está claro.

Mantenga este antibiótico en el refrigerador? Sí o No

- Mezcle cada dosis al momento antes de usarlo.

(continúa)

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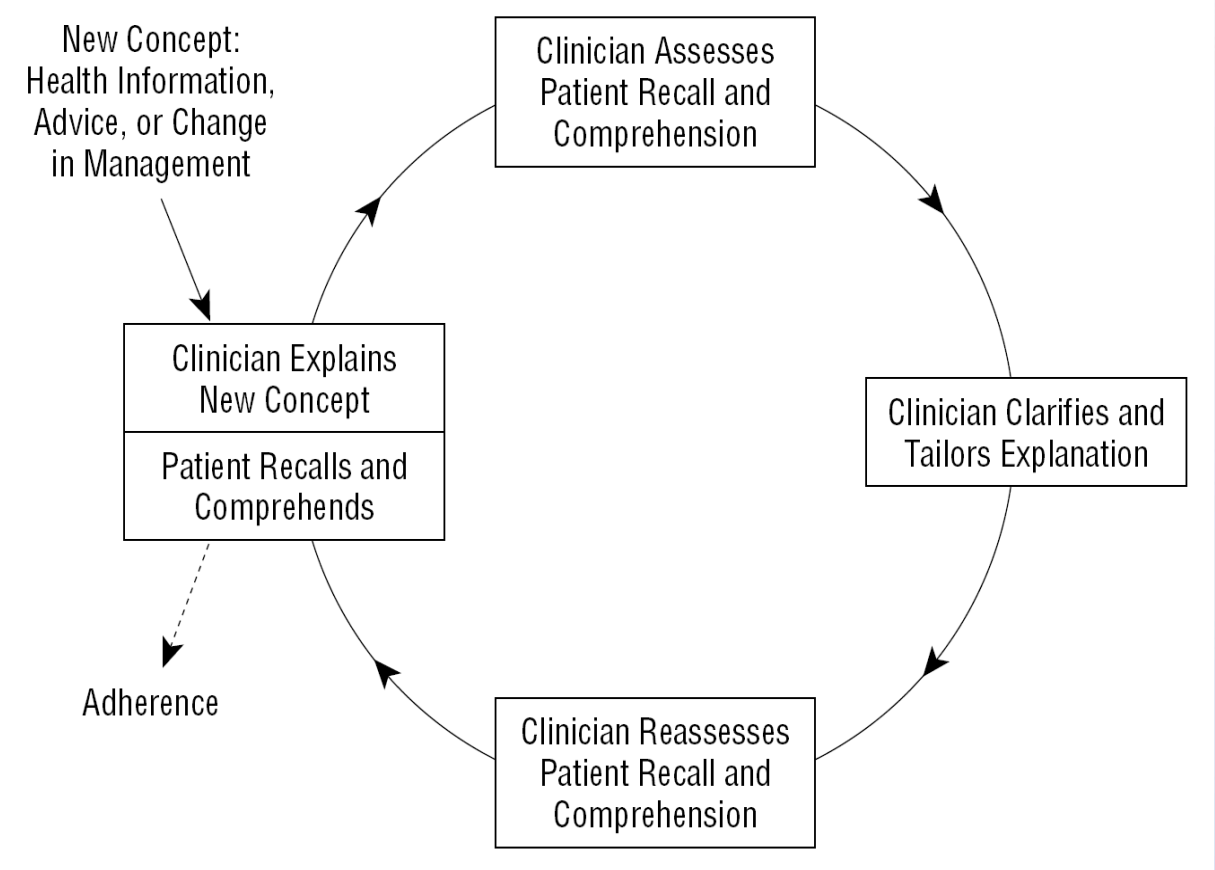
Best Practice Methods

Teach-Back: Closing the Loop



Schillinger D, Piette J, Grumbach K, Wang F, Wilson C, Daher C, Leong-Grotz K, Castro C, Bindman A. Closing the Loop Physician Communication With Diabetic Patients Who Have Low Health Literacy. Arch Intern Med/Vol 163, Jan 13, 2003

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PATIENT/FAMILY COMPETENCY

Patient/Family must complete minimum of two return demonstrations. MUST show at least one satisfactory return demo.
Patient discharge is to be canceled if patient/caregiver is unable to demonstrate a competency marked with an **.

Caregiver Name: _____ Relationship to Patient: _____

S = Satisfactory N = Needs more practice U = Unsatisfactory

Nurse to date and initial items

ITEM	INITIAL DEMO BY	RETURN DEMO	RETURN DEMO	RETURN DEMO
Date of demonstration				
State reason for IV antibiotics: "Treat infection in _____"				
State length of treatment: _____ weeks				
State reason for clinic visits and frequency ("PICC dressing change, lab work; weekly")				
Locate phone number to order antibiotic (last page handout "MAR"; 214 590-8711 option "home antibiotics)				
Clean flat surface with glass cleaner/alcohol and/or lay out clean paper towel for equipment				
Identify equipment used: PICC line, IV tubing, extension set, adaptor, alcohol pad, IV med bag**				
State why washing hands important when accessing line				
Demonstrate proper handwashing or use of alcohol hand rub**				
Check the label on med bag (patient name, med name, exp. date)				
Label IV tubing/check label on IV tubing; change every 3 days or if spikes have touched anything				
Check med: clear without anything in it				
Mix powdered medicine into bag, if provided**				
Close roller clamp of IV tubing				
Take cover off outlet port of med bag				
Spike bag with IV tubing without touching spike to anything				
Squeeze the drip chamber until half full of liquid				
Hang bag above patient's head				
Open the roller clamp and let the fluid fill the tubing				
Close roller clamp of IV tubing and put on gloves				

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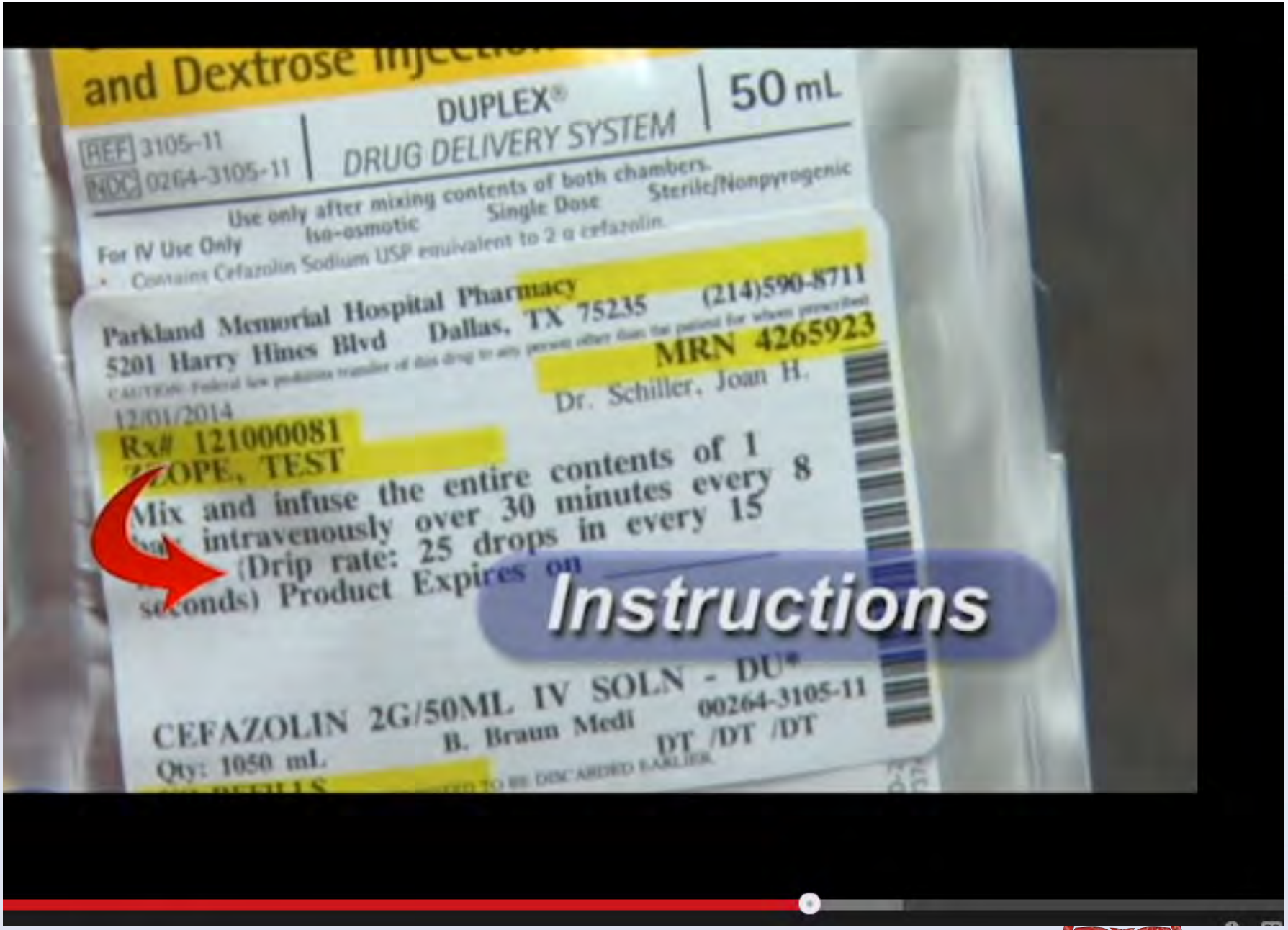

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Getting to Parkland
Getting Around Parkland
Patient Information & Tools
Patient Care Services
Social Work
Pastoral Care
Parkland Community Health Plan
Health Insurance Marketplace
Parkland Research
Pharmacy
» Getting Your Medicine
» Mail Order Pharmacy
» Pharmacy Help
» **Educational Videos**
Police Department

Educational Videos

Leer esta en español

Whether you are prescribed pills or an injectable medication, correctly using your prescription drugs can be a difficult process. To help you understand your medication and treatment, Parkland is providing educational videos that show every step you need to follow for some of the most common medications.

Click the sections below to see the educational video of your choice.

Allergies to Drugs

Diabetes

Home Intravenous Antibiotic Administration

Pill Boxes

Find us...
I'm trying to contact...
Hospital hours
Pay my bill
Our clinics

Hip Clinic

The Parkland hip team provides expert care for patients in any age group.

Parkland Orthopaedic Hip Clinic

Medical Excellence

OPAT patient video.mp4

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Quality Improvement Study

- Aim:
- Determine whether indigent, often poorly educated and mostly non-English-speaking pts in our
- (S-OPAT) program can administer IV antibiotics at home as safely and effectively as traditionally accepted models of outpatient care available to patients with funding for healthcare services
- (H-OPAT)

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Outcomes

- Safety/Effectiveness: We compared 30-day readmission rates for patients treated in S-OPAT with those patients treated in H-OPAT

- Resource utilization: We calculated total number of hospital bed days saved as reflected by number of days a patient required parenteral antibiotic therapy as an outpatient under the S-OPAT program

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Self-Administered Outpatient Antimicrobial Infusion by Unfunded Patients

Kavita P. Bhavan MD, L. Steven Brown, M.S., Robert W. Haley, MD

METHODS: We compared 30-day readmission and 1-year all-cause mortality of OPAT patients treated in our program with those of funded patients receiving conventional third-party administration, all discharged from Parkland Hospital in fiscal years 2010 to 2013. Data were collected from the electronic medical record and the U.S. Census. Multivariable proportional hazard regression models included covariates and a propensity score for selection to OPAT or funded administration

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RESULTS:

- Of the 1168 patients discharged to receive outpatient antimicrobial therapy, 944 (81%) were managed in the OPAT program and 224 (19%) by funded third party services
- In multivariable proportional hazards regression models controlling for confounding and selection bias, the 30-day readmission rate was 47% lower in the OPAT group (adjusted hazard ratio, 0.53; 95% CI 0.35 to 0.81; P=0.003), and the 1-year mortality rate did not differ significantly between the groups (adjusted hazard ratio, 0.86; 95% CI, 0.37-2.00; P=0.73). The OPAT program shifted a median 26 days of inpatient infusion per OPAT patient to the outpatient setting, preventing 27,666 inpatient days over 4 years and freeing an average 26 hospital beds per day

CONCLUSIONS: Self-administered OPAT can be a safe and effective model of treatment for a select group of unfunded, medically stable patients to complete extended courses of intravenous antimicrobial therapy at home.

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Demographics
(Under journal review- please do not distribute)

Table 1. Association of patient characteristics with outpatient antimicrobial management alternative and the two outcome measures.

	Outpatient antimicrobial management			Readmitted within 30-days of discharge			Died within 1 year of discharge		
Variable	OPAT Clinic (n=944)	Funded services (n=224)	P value	Yes (N=211)	No (N=957)	P value	Yes (N=61)	No (N=1107)	P value
Age (years)			<0.001			0.45			0.02
16-24	36 (3.8)	3 (1.3)		4 (1.9)	35 (3.7)		0 (0)	39 (3.5)	
25-44	266 (28.2)	33 (14.7)		58 (27.5)	241 (25.2)		13 (21.3)	286 (25.8)	
45-64	513 (54.3)	100 (44.6)		114 (54.0)	499 (52.1)		28 (45.9)	585 (52.8)	
≥65	129 (13.7)	88 (39.3)		35 (16.6)	182 (19.0)		20 (32.8)	197 (17.8)	
Gender			0.87			0.65			0.33
Male	583 (61.8)	137 (61.6)		133 (63.0)	587 (61.3)		34 (55.7)	686 (62.0)	
Female	361 (38.2)	87 (38.8)		78 (37.0)	370 (38.7)		27 (44.6)	421 (38.0)	
Race/ethnicity			<0.001			0.89			0.14
White Non-Hispanic	213 (22.6)	73 (32.6)		56 (26.5)	230 (24.0)		12 (19.7)	274 (24.8)	
Hispanic	461 (48.8)	43 (19.2)		88 (41.7)	416 (43.5)		35 (57.4)	469 (42.4)	
Black Non-Hispanic	236 (25.0)	100 (44.6)		60 (28.4)	276 (28.9)		12 (19.7)	324 (29.3)	
Other	34 (3.6)	8 (3.6)		7 (3.3)	35 (3.7)		2 (3.3)	40 (3.6)	
Language			<0.001			0.85			0.02
English	599 (63.5)	197 (88.0)		147 (70.0)	649 (67.8)		34 (55.7)	762 (68.8)	
Spanish	322 (34.1)	24 (10.7)		60 (28.4)	286 (29.9)		27 (44.3)	319 (28.8)	

Development of a Propensity Score

- Multivariate analysis was done to adjust for possible confounding; Propensity score was calculated to control for selection bias
- Propensity score developed from multivariate logistic regression model predicting OPAT vs HH membership
- Variables in Propensity score model: payor group, disease group, fiscal year, age, central core, language, BMI, DM, and CRI
- Area under ROC curve= 0.91
- Propensity score is the probability of being in the OPAT group contingent on the variables in the model

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30 Day Re-admissions
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	Model 1			Model 2		
Variable	aHR	95% CI	P*	aHR	95% CI	P*
Outpatient IV support			0.002			0.003
Funded outpatient services	1.00			1.00		
OPAT	0.59	0.42 to 0.82	0.002	0.53†	0.35 to 0.81	0.003
Funding source			0.001			0.001
Medicare, private insurance, charity	1.00					
Self-pay	1.75	1.25 to 2.47	0.005	1.64	1.15 to 2.32	0.006
Medicaid	1.62	1.15 to 2.28	0.001	1.74	1.21 to 2.49	0.003

Model 1 controls for confounding with covariates
Model 2 controls for selection bias with the propensity score and for confounding.

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1-yr Mortality
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Table 4. Multivariable proportional hazards regression models of 1-year mortality.

Variable	Model 1 aHR	Model 1 95% CI	Model 1 P	Model 2 aHR	Model 2 95% CI	Model 2 P*
Outpatient IV support						
Funded services	1.00			1.00		
Self-administered OPAT	0.94	0.45 to 1.96	0.87	0.86†	0.37 to 2.00	0.73
Funding source						
Medicare, Medicaid, private, Charity	1.00			1.00		
Self-pay	4.23	2.47 to 7.23	<0.001	5.48	3.09 to 9.73	<0.001

Model 1 controls for confounding with covariates;
Model 2 controls for selection bias with the propensity score and for confounding.

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Resource Utilization
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Table 5. Impact of the Outpatient Parenteral Antimicrobial Therapy Clinic on the hospital's inpatient bed utilization.

Fiscal year of index hospital discharge	OPAT patients	Median days of outpatient therapy per patient	Total days of outpatient therapy for all OPAT patients*	Average in-patient hospital beds avoided per day
2010	104	17	2,211	6.1
2011	231	27	6,848	18.7
2012	305	27	9,112	24.9
2013	304	29	9,495	26.0
All years	944	26	27,666	

***Before the OPAT clinic was started, all of these days would have been spent just receiving antimicrobial infusions in the hospital.**

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Lessons Learned

- A multi-disciplinary approach involving close collaboration of Infectious Disease specialists, Clinical Pharmacy specialists, Physician Assistants, Case Management , OPAT Transitional Care Nurses and utilization of electronic medical record (EMR) has been critical to the successful implementation of this transition of care model

- S-OPAT model delivers *safe and effective care* outside of the hospital setting, thus avoiding the inconveniences, complications, and costs of hospitalization. More importantly, S-OPAT exemplifies patient-centered care that empowers patients to complete therapy safely in the comfort of their home, surrounded by family and with minimal interruption in their daily lives

Summary

- Decreased length of stay (LOS)
- Reduces risk of nosocomial exposure with shortened LOS and transition to home setting
- Safe and Effective
- Gives patient choice
- Implications for other resource limited settings to think *'outside the box'* of the hospital to deliver care and improve resource utilization

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Future Directions

- Expand services to increase access to care
- Track patient outcomes for QI
- Publish data >1000 pts treated in program demonstrating safety, efficacy and cost savings
- CMS 1115 Waiver: Apply Process Improvement Methodology to Improve Quality/Efficiency
- Parkland experience: participation on *Infectious Diseases Society of America* panel to update United States guidelines for OPAT services

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