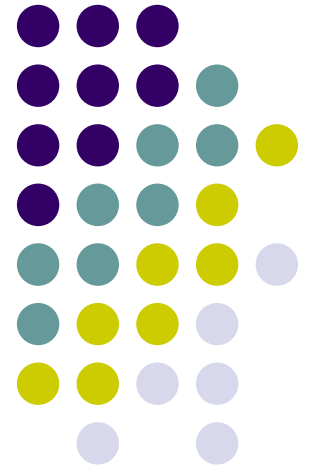


Clinical Pathways: A Mechanism for Patient safety and Service Efficiency

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- POW PACS established 1989
- Multiple research studies (RCT) resulted in hospital substitution services - HITH, Prevention of Admission, Day Only & Short Stay Surgery, Respiratory and Rehab outreach services (Caplan et al).
- Barriers broken down over time through evidence + beds access issues + technology + D.O.H and local organisation support
- Community Acute and Post Acute Care Services (CAPAC) recognition by NSW D.O.H early 2000's
- NSW DOH directive re avoidable admissions 2007 - selective DRG's



Patient considerations

- Patient safety & satisfaction paramount
- Thorough initial assessment to minimise risks and service gaps
- Best practice approach – not suboptimal or band aid when hospital bed demand↑
- Review by PACS team and Registrar & specialty team as required to monitor Tx progress

Service Efficiency



- Efficient service and competent clinicians are necessary to meet service demands and achieve best treatment outcomes
- No extra funds or resources available (to date) therefore must continually explore all options/remain flexible
- Communication and Collaboration with appropriate teams to develop clinical pathways (ready reckoners for RMO's)
- Streamlined approach simplifies discharge & Tx planning

The Process



- Gather research evidence and devise plan
- Medical Champion
- Approach the specialty teams – build rapport
- Form working party of relevant clinicians
- Experts determine inclusion and exclusion criteria for planned treatment
- Draw up pathway – develop template / poster

Ratification & resources



- Final draft – ‘Outpatient management’ plan for ‘inpatients’ status
- Drug and therapeutic committee review
- Hospital Practice Development review
- Clinical Pathway posters developed for ED and resource folders supplied to referral sources/wards
- Sell service and reinforce referral process
- Med Registrar/Med Director/RN clarify medical issues & liaise with appropriate teams & GPs

Pathways in place/development



- DVT pathway 02- doubles for PE, AF Mx – *no PBS recognition for clexane in Tx of PE and AF despite current practice
- **developed by Haematology, ED, PACS and Pharmacy**
- Simple Cellulitis pathway 03– p.o probenecid and iv cephazolin or b.d. iv cephalosporin
- **developed by ID, ED, PACS and Pharmacy**
- Pneumonia and COPD pathway 05- incorporates PSI in treatment plan
- **developed by Respiratory, ED and PACS**
- Anaphylaxis pathway/protocol 05 – emergency kit & drugs pathway
- **initially developed by HITH RCT steering committee 1995 and ongoing ratification by ED consultant**
- Currently developing UTI/Pyelonephritis pathway with Nephrology team and significant others to enhance service and meet avoidable admissions directive

CELLULITIS

Protocol for Management with Hospital in the Home (HITH)

CELLULITIS REQUIRING IV ANTIBIOTICS

EXCLUSIONS for HITH treatment

- Unsatisfactory IV access
- Less than 16 years old unless with parental consent.
- Resides outside catchment area (see below)
- No Phone access
- Suitable social supports in place, if required
- Unable to transfer and mobilise independently (with or without an aid)
- Unwillingness of Nursing Home to participate in HITH treatment (if applicable)
- Allergy to prescribed drug treatment
- Co-morbid condition requiring admission

PACS CATCHMENT AREA:

Banksmeadow, Beaconsfield, Bondi, Bondi Junction, Botany, Bronte, Centennial Park, Chifley, Clovelly, Coogee, Daceyville, Eastlakes, Hillsdale, Kingsford, Kensington, La Perouse, Little Bay, Maroubra, Matraville, Malabar, Mascot, Phillip Bay, Queens Park, Randwick, Rosebery, Pagewood, Waverley

EXCLUSIONS for oral Probenecid and once daily IVI Cephazolin treatment

- Allergy to Probenecid or Cephazolin
- Blood dyscrasias, renal uric acid stones or acute gout
- Renal dysfunction: creatinine level $>250\mu\text{mol/L}$ (or creatinine clearance of $<30\text{ mL/min}$)
- Liver function test (ALP, AST, ALT, GGT) greater than twice the upper limit of normal
- Consider possible interactions with other drugs the patient is taking. Probenecid may reduce the urinary excretion of a number of other drugs including NSAIDs and sulphonylureas. Caution should be used if patients are also on these drugs
- Patient or carer cannot administer oral medications

SUITABLE FOR PROBENECID AND CEPHAZOLIN

UNSUITABLE FOR PROBENECID

MANAGEMENT

1. Patient to be reviewed by Registrar (HITH classified inpatients) prior to Post Acute Care Services (PACS) being contacted - ext. 22470, 0830 - 2030, 7 days, or after hours on 0411464603
2. Take bloods for FBC, EUC & LFTs, blood cultures and wound swab as appropriate
3. Complete HITH Medical management form
4. Complete medical treatment form as advised (see below)
5. PACS will follow up HITH patient at home for ongoing monitoring of care (EUC, FBC, LFT as directed)
6. ID Clinic review as indicated

TREATMENT DAILY P.O. PROBENECID AND IV CEPHAZOLIN

1. Administer 1g of p.o. Probenecid 30 minutes prior to intravenous bolus.
2. Administer Cephazolin 2g IV bolus.
3. Observe for drug reaction (at least 30 minutes post IV).
4. Write medication charts and internal scripts for -
 - a. Oral Probenecid 1g daily for 7 days
 - b. Cephazolin 2g IV bolus in 20mL of sterile water for injection daily for 7 days
 - c. Normal saline 10mL IV flush daily for 7 days

Advise patient to take Probenecid at least 30 minutes prior to administration of the parenteral antibiotics

TREATMENT FOR BD IV CEPHAZOLIN

1. Administer Cephazolin 2g IV bolus.
2. Observe for drug reaction (at least 30 minutes post IV).
3. Write medication charts and internal scripts for -
 - a. Cephazolin 2g IV bolus in 20mL of sterile water for injection BD for 7 days
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CELLULITIS REQUIRING IV ANTIBIOTICS



EXCLUSIONS for oral Probenecid and once daily IV Cephazolin treatment

- . Allergy to Probenecid or Cephazolin
- . Blood dyscrasias, renal uric acid stones or acute gout
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- . Consider possible interactions with other drugs the patient is taking.
- . Probenecid may reduce the urinary excretion of a number of other drugs including NSAIDs and sulphonylureas. Caution should be used if patients are also on these drugs
- . Patient or carer cannot administer oral medications

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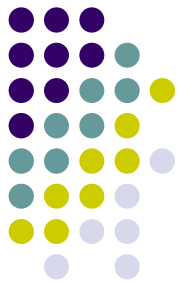
**Suitable for
Probenecid And
Cephazolin**

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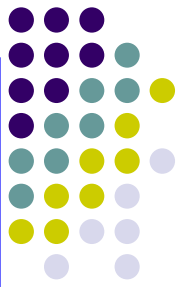
**Unsuitable for
Probenecid**

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MANAGEMENT

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2. Take bloods for FBC, EUC & LFTs, blood cultures and wound swab as appropriate
3. Complete HITH Medical management form
4. Complete medical treatment form as advised (see below)
5. PACS will follow up HITH patient at home for ongoing monitoring of care (EUC, FBC, LFT as directed)
6. ID Clinic review as indicated



**TREATMENT
DAILY ORAL
PROBENECID AND IV CEPHAZOLIN**

- 1. Administer 1g of po Probenecid 30 minutes prior to intravenous bolus.**
- 2. Administer Cephazolin 2g IV bolus.**
- 3. Observe for drug reaction (at least 30 minutes post IV).**
- 4. Write medication charts and internal scripts for -**
 - a. Oral Probenecid 1g daily for 7 days**
 - b. Cephazolin 2g IV bolus in 20mL of sterile water for injection daily for 7 days**
 - c. Normal saline 10mL IV flush daily for 7 days**

Advise patient to take Probenecid at least 30 minutes prior to administration of the parenteral antibiotics

**TREATMENT
FOR BD IV
CEPHAZOLIN**

- 1. Administer Cephazolin 2g IV bolus.**
- 2. Observe for drug reaction (at least 30 minutes post IV).**
- 3. Write medication charts and internal scripts for –**
 - a. Cephazolin 2g IV bolus in 20mL of sterile water for injection BD for 7 days**
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Pathway results



Cellulitis Pathway :

- Efficacy of Cellulitis pathway confirmed by local evidence (2003/04) received award from POW Research Forum (TOW awards)
- Clinical visits reduced to daily approx 8.5% remain b.d mostly due to < renal function
- Twice yearly satisfaction surveys – March 07 affirm 91 % report d/c at right time 3% too late, 3% unsure and 3% too early
- 48% d/c equally from ED or hospital ward and 4% GP referral
- Average age > 70 and pt comments report preference for home based care vs. hospital

Outcomes



- All current pathways proved successful. KPI's = outcomes, los, pt satisfaction, bed access, costs
- Patients receive streamlined discharge and treatment as part of standardised best practice
- Timely discharge facilitation minimises risk of nosocomial infections & adverse events
- Referring teams enabled by pathways
- PACS team members assisted by pathway
- Specialists teams supportive of process - best practice guidelines/ annual review
- Bed managers always happy with available beds