PERITONEAL DIALYSIS (PD) – PERITONITIS MANAGEMENT AND TREATMENT

1. Purpose	A guideline and procedure for the early diagnosis of peritonitis and timely management with antimicrobial therapy according to best practice guidelines
2. Risk Rating	Medium
3. National Standards	1 – Clinical Governance 3 – Preventing and Controlling Infections 4 – Medication Safety 5 – Comprehensive Care
4. Employees it Applies to	Registered Nurses (RN) Medical Officers (MO)

5. PROCESS

Peritonitis is one of the main complications of PD. Early diagnosis, rapid intervention and treatment with antimicrobial therapy are necessary measures to prevent further complications and peritoneal membrane failure

Definitions

Peritonitis	Inflammation of the peritoneum, typically caused by bacterial infection
Recurrent peritonitis	Peritonitis episode that occurs within 4 weeks of completion of therapy of a prior episode but with a different organism
Relapsing peritonitis	Peritonitis episode that occurs within 4 weeks of completion of therapy of a prior episode with the same organism
Repeat Peritonitis	Peritonitis episode that occurs more than 4 weeks after completion of therapy of a prior episode with the same organism
Refractory Peritonitis	Failure of the PD effluent to clear after 5 days of appropriate antibiotics
Catheter-related Peritonitis	Peritonitis in conjunction with an exit-site or tunnel infection with the same organism

5.1 DIAGNOSING PERITONITIS

The presence of at least 2 of the following clinical signs and symptoms to confirm peritonitis:

- Cloudy peritoneal effluent and/or abdominal pain (may or may not be accompanied by constipation or diarrhoea, fever, nausea and/or vomiting)
- Peritoneal dialysate microscopy should demonstrate white cell count (WCC) > 100 x 10^ 6/L with > 50% polymorphonuclear (PMN) neutrophils (after a PD fluid dwell time of 2 hours)
- Note: For patients using automated peritoneal dialysis, >50% PMN is a strong indicator of peritonitis, even if total WCC is below 100 x 10^ 6/L
- Demonstration of bacteria on gram stain culture (although this is not required to make the diagnosis)

5.2 MANAGEMENT OF PERITONITIS PRESENTATION (refer to Treatment Flowchart 3 Appendix 3)

Note: PD catheter connection and exit site swab and/or dressing can be performed by (or under the supervision of) an accredited staff only

1. Upon patient presentation, collect PD fluid specimen for microscopy, culture, sensitivities (MCS), cell count and cell differential preferably before any antibiotic treatment is given as per PD SGH WPI 145 Peritoneal Dialysis –Fluid Specimen Collection via CAPD Freeline Solo Exchange or PD SGH WPI 146 Peritoneal Dialysis – Fluid Specimen Collection via Automated PD (APD)

   Note: If patient was given antibiotic/s prior to PD fluid specimen collection, note down all the antibiotics patient received on the pathology request form
2. Review PDC exit site and swab for MCS as per SGH CLIN 433 Peritoneal Dialysis (PD) Catheter Infection – Exit Site and Tunnel Infection Management and Treatment
3. Notify renal consultant and team to review patient during office hours or inform on-call renal consultant/registrar after-hours. Patients manifesting clinical signs and symptoms of peritonitis must commence empirical antibiotic treatment immediately
4. Symptomatic patient receiving empirical antibiotic treatment must be admitted (preferably in 4 South renal ward) for ongoing treatment
5. Notify PD CNC (page 1091) and PD unit (ext. 33770) of hospital admission
6. PD nurse to conduct a root cause analysis for any PD related infective episode, including a review of patient/carer's dialysis technique and hand hygiene practices. PD nurse to provide PD retraining as required

5.3 RECOMMENDED EMPIRIC ANTIBIOTIC THERAPY AND MANAGEMENT BEFORE ORGANISMS KNOWN (Refer to Treatment Flowchart 3 Appendix 3)

Note: Administer all IP antibiotics/antimicrobial treatment as per SGH CLIN443 *Peritoneal Dialysis – Intraperitoneal Additives and Antibiotics*

1. Initiate antimicrobial treatment as soon as possible after obtaining PD fluid specimen.
2. Start intraperitoneal (IP) antibiotic administration as per SGH CLIN443 *Peritoneal Dialysis – Intraperitoneal Additives and Antibiotics*:
   a) Cefepime 1g daily in a PD fluid bag

      OR

      Cefazolin 1g and Gentamicin 40mg in one bag as an alternative if patient considered high risk of staphylococcal infection or unwell. Continue with IP cefazolin 250mg in each CAPD bag for 4 × CAPD exchanges a day and IP gentamicin 40mg in one bag daily with monitoring of gentamicin level after every 3rd dose
   b) *Patients with history of chronic gastrointestinal condition and inflammation and/or patients with history of Pseudomonas or gram negative organism infection:* Consider a dual empiric therapy of cefepime 1g and gentamicin 40mg combined in a PD fluid bag daily with monitoring of gentamicin level after every 3rd dose
   c) *Patients with history of MRSA*: vancomycin 30mg/kg (maximum 2g) every 5-7 days depending on therapeutic level, and gentamicin 40mg combined in a PD fluid bag daily with monitoring of gentamicin level after every 3rd dose
3. Dwell IP antibiotics for at least 6 hours
4. Whilst organisms and sensitivities are not available, continue antibiotic treatment
5. Commence prophylactic antifungal treatment: oral Nystatin 500 000 units QID. Continue prophylactic antifungal treatment whilst patient is on antibiotics. For patient on vancomycin, continue prophylactic antifungal treatment for another 7 days after last dose of vancomycin.

5.4 RECOMMENDED ANTIMICROBIAL THERAPY AND MANAGEMENT AFTER ORGANISMS KNOWN

Table 1

1. Patients on antibiotic treatment for peritonitis should be assessed for clinical improvement and have a repeat PD fluid MCS and cell count at days 3 and 5
2. Re-evaluate treatment course after 5 days on appropriate IP antibiotics and repeat PD fluid MCS
3. Repeat PD fluid MCS, cell count and cell differential 7 days after completion of appropriate antibiotic therapy
4. Refer patient for urgent renal dietitian review as patients with ongoing peritonitis has a tendency to lose more protein during PD
5. Immediate PD catheter removal is recommended for:
   - Refractory peritonitis - patients with unresolved signs and symptoms of peritonitis (i.e. persisting cloudy effluent and elevated WCC > 100/µL) after 5 days on appropriate antibiotic treatment
   - Peritonitis in conjunction with an exit site or tunnel infection of same organism
   - Patients with intra-abdominal pathology/abscess
   - Peritonitis with multiple enteric or anaerobic organisms
   - Fungal peritonitis
   - Relapse peritonitis
   - Refractory PD catheter exit-site and tunnel infection
6. Consider PD catheter removal for:
   - Repeat peritonitis
   - Mycobacterial peritonitis
   - Multiple enteric organisms
7. Reinsertion of PD catheter may be considered 2 weeks after peritonitis treatment completion and resolution of infective symptoms (including fungal peritonitis)
8. Continue antifungal prophylaxis with nystatin (500 000 units orally QID) for the duration of antibiotic treatment. For patients on vancomycin, continue oral antifungal prophylaxis for another 7 days after last dose of vancomycin
9. Administration of oral quinolones (i.e. Ciprofloxacin) should be separated from sevelamer , calcium, oral iron, zinc preparations, sucralfate, magnesium-aluminium antacids, or milk by 2 hours to prevent chelation interactions reducing quinolone absorption (administer quinolone first)
10. Root cause analysis for every peritonitis episode should be conducted which may include reassessment and retraining of patient/carer's PD technique by the PD nurses
11. **Administer all IP antibiotics/antimicrobial treatment as per** SGH CLIN443 *Peritoneal Dialysis – Intraperitoneal Additives and Antibiotics*:

5.4.1 Staphylococcus aureus

Change to IP cefazolin 250mg in each CAPD bag for 4 × CAPD exchanges a day

OR

Change to another IP or IV antibiotic based on sensitivities

a) Review PDC exit site again and swab for MCS if necessary
b) For Staphylococcus aureus peritonitis, collect body swabs (i.e. nasal, groin, axilla and umbilicus) to determine if the patient is a carrier of this organism.
   - For nasal carrier, patient must commence on nasal mupirocin treatment immediately as per SGH CLIN 434 Peritoneal Dialysis (PD) – Nasal Swab And Mupirocin
   - For skin carrier, patient must undergo decolonisation as per SESLHDPR/681 *Staphylococcus aureus (MSSA and MRSA) decolonisation*
c) Refer to Table 1 and Treatment Flowchart 1 (Appendix 1) for subsequent management
d) If clinical signs and symptoms of peritonitis are resolving, continue antibiotic therapy for a total duration of 21 days on appropriate antibiotics

5.4.2 Methicillin Resistant Staphylococcus Aureus (MRSA) or Methicillin Resistant Staphylococcus Epidermidis (MRSE) Peritonitis (including Non-resolving Gram Positive Organism Peritonitis), Coagulase-Negative Staphylococcus, Staphylococcus epidermidis and other Gram Positive Organisms (including multiple gram positive organisms)

Note: for Coagulase-Negative Staphylococcus – a total of 14 days of appropriate antibiotic treatment)

a) Stop IP Gentamicin
b) Continue with or start IP vancomycin 30mg/kg (up to a maximum of 2g) every 5 – 7 for 21 days
   - Check trough vancomycin level on day 5 – 7
   - Patient should receive another dose if trough serum levels is <15mg/mL
   - Timing of repeated dosing should be based on trough serum level and is likely to be every 5 – 7 days. Levels are not required if dosing is weekly.
c) Consult Infectious Disease team for adjuvant treatment advice
d) Collect body swabs (i.e. nasal, groin, axilla and umbilicus) to determine if patient is a MRSA carrier.
e) If MRSA +ve, patient must undergo decolonisation as per SESLHDPR/681 Staphylococcus aureus (MSSA and MRSA) decolonisation
f) Refer to Table 1 and Flowchart 1 (Appendix 1) for subsequent management
g) If clinical signs and symptoms of peritonitis are resolving, continue antibiotic therapy for a total duration of 21 days on appropriate antibiotics

5.4.3 Streptococcus Peritonitis

a) Commence preferred IP antibiotic treatment of ampicillin 250 mg in each CAPD bag for 4 x CAPD exchanges a day, everyday
b) Refer to Table 1 and Treatment Flowchart 1(Appendix 1) for subsequent management
c) If clinical signs and symptoms of peritonitis are resolving, continue IP antibiotic therapy for a total duration of 14 days on appropriate antibiotics

5.4.4 Enterococcus Peritonitis susceptible to ampicillin

Ampicillin 250mg in each CAPD bag for 4× CAPD exchanges a day, everyday for 14 days if clinical signs and symptoms of peritonitis are resolving

5.4.5 Enterococcus resistant to ampicillin

a) Continue with or start IP Vancomycin 30mg/kg (up to a maximum of 2g) at least weekly for 21 days.
   - Check trough Vancomycin level on day 5
   - Patient should receive another dose if trough serum level is <15mg/mL
   - Timing of repeated dosing should be based on trough serum level and is likely to be every 5-7 days. Levels are not required if dosing is weekly.

b) For severe peritonitis, add IP Gentamicin 40mg in a PD fluid bag daily for 21 days as adjunctive treatment

c) For Vancomycin resistant Enterococcus (VRE) please contact Infectious diseases team for appropriate agent

d) Refer to Table 1 and Treatment Flowchart 1 (Appendix 1) for subsequent management

e) If clinical signs and symptoms of peritonitis are resolving, continue antibiotic therapy for a total duration of 21 days on appropriate antibiotics

5.4.6 Corynebacterium Peritonitis

a) Treat with IP antibiotic base on susceptibilities for 21 days

b) Consult Infectious Disease/Microbiology team for treatment advice

c) Refer to Table 1 for subsequent management

d) For relapsing Corynebacterium peritonitis, continue with or start IP Vancomycin 30mg/kg (up to a maximum of 2g) at least weekly for 21 days
   - Check trough Vancomycin level on day 5
   - Patient should receive another dose if trough serum levels is <15mg/mL
   - Timing of repeated dosing should be based on trough serum level and is likely to be every 5-7 days. Levels are not required if dosing is weekly.

5.4.7 Other Gram Negative Organisms (including Citrobacter, Enterobacter, E.Coli, Klebsiella, Proteus, Providentia, Serratia etc)

a) Adjust or change IP antibiotic treatment based on susceptibilities and/or discuss with ID/Microbiology.

b) If cefepime is indicated, continue with IP Cefepime 1g daily

   Or

c) If ceftazidime is indicated:
   - Commence IP Ceftazidime 1g loading dose and
   - Continue with daily maintenance dose of IP Ceftazidime 250mg in each CAPD bag for 4 x CAPD exchanges a day

d) Refer to Table 1 and Treatment Flowchart 2 (Appendix 2) for subsequent management

e) If clinical signs and symptoms of peritonitis are resolving, continue antibiotic therapy for a total duration of 21 days on appropriate antibiotics.

5.4.8 Stenotrophomonas Peritonitis

a) Adjust or change IP antibiotic treatment based on susceptibilities
b) Add oral trimethoprim/sulfamethoxazole 160 mg / 800 mg BD
c) a)b) Consult Infectious Disease/Microbiology team for treatment advice
d) Assess for clinical improvement and repeat PD fluid MCS and cell count at days 3 and 5
    - If improving, refer to flowchart 2
    - If no improvement by day 5, consider PD catheter removal

5.4.9 Pseudomonas Peritonitis without PD catheter exit site or tunnel infection

a) Continue with IP Cefepime 1 g daily and add oral Ciprofloxacin 500 mg daily depending on susceptibilities.
b) Refer to Table 1 and Treatment Flowchart 2 (Appendix 2) for subsequent management
c) If clinical signs and symptoms of peritonitis are resolving, continue dual antibiotic therapy for a total duration of 21 days on appropriate antibiotics

5.4.10 Pseudomonas Peritonitis with or following a PD catheter exit site or tunnel infection

a) Arrange for immediate PD catheter removal.
b) Continue with dual treatment of IP Gentamicin 40 mg daily and Ceftazidime (1g loading dose and subsequent daily dose of 1g/day divided into 250 mg/bag) whilst PD catheter is insitu and depending on susceptibilities
c) Refer to Table 1 and Treatment Flowchart 2 (Appendix 2) for subsequent management
d) Continue with oral or systemic antibiotics based on sensitivity for 14 days from time of PD catheter removal

5.4.11 Fungal Peritonitis

a) Stop empiric IP antibiotics
b) Arrange for urgent PD catheter removal
c) Commence parenteral echinocandins
d) Stepdown to IP fluconazole appropriate if organism is susceptible/if PD catheter is still insitu.
e) Continue with the appropriate oral or systemic antifungal treatment based on susceptibilities for 14 days from the time of PD catheter removal. Contact ID / Microbiology for advice on agent to use.

5.4.12 No Growth (Culture Negative) Peritonitis

a) Confirm if patient is on any antibiotic treatment at time of PD fluid collection for MCS. If previous peritonitis episodes are with no growth, the microbiologist should be informed of the details of the patient and further cultures can be obtained
a) Continue with daily IP Cefepime 1g
b) At day 3, repeat clinical assessment and send PD effluent again for MCS, cell count with differential and fungal cultures
c) If clinical signs and symptoms of peritonitis are resolving, continue IP Cefepime 1g daily for a total duration of 14 days
d) If clinical signs and symptoms of peritonitis are not improving or not resolving after 5 days, repeat clinical assessment and send PD effluent again for special culture of unusual causes

i.e. legionella, mycoplasma, mycobacteria, nocardia, viral and other fastidious bacteria and consider immediate PD catheter removal

5.4.13 Polymicrobial Peritonitis (Multiple enteric organisms or mixed gram–negative/ gram– positive)

a) Continue with or start IP Vancomycin 30mg/kg (up to a maximum of 2g) at least weekly for 21 days
   - Check trough Vancomycin level on day 5
   - Patient should receive another dose if trough serum level is <15mg/mL
   - Timing of repeated dosing should be based on trough serum level and is likely to be every 5-7 days. Levels are not required if dosing is weekly.

b) Add IV or oral Metronidazole as a second antibacterial agent and either gentamicin or cefepime to cover gram negatives

c) Refer to Table 1 and Treatment Flowchart 2 (Appendix 2) for subsequent management

d) If clinical signs and symptoms of peritonitis are resolving, continue dual antibiotic therapy for a total duration of 21 days on appropriate antibiotics

e) For multiple enteric organisms, likely source is intra-abdominal pathology:
   - Arrange for an abdominal CT scan and surgical assessment
   - PD catheter removal should be considered. Continue IV antibiotics for 14 days from time of PD catheter removal

5.4.14 Mycobacterial (M) Peritonitis

a) Treatment for M. Tuberculosis (TB) Peritonitis is to be based on general protocols for TB treatment and as per NSW Health PD2014_050 Principles for the Management of Tuberculosis in New South Wales
   - Start treatment with four anti-TB agents: Rifampicin, Isoniazid, Pyrazinamide and Ofloxacin
   - Stop pyrazinamide and ofloxacin after 2 months
   - Continue anti-TB treatment of rifampicin and isoniazid for 12 – 18 months
   - Pyridoxine (50 – 100 mg/day) should be given to avoid isoniazid-induced neurotoxicity

b) Treatment and duration of treatment for non-TB mycobacteria peritonitis is to be based on sensitivities and in consultation with the Infectious Diseases team
   - PD catheter removal is necessary

5.4.15 SARS-CoV-2 COVID 19

a) For COVID 19 positive or suspected patients:
   - Don PPE as per Chapter 4 Clinical Excellence Commission COVID-19 Infection Prevention and Control Manual For acute and non-acute healthcare settings V1.
   - For appropriate disposal of PD fluid:
     - Consult the Infection Control CNC
     - Refer to Australian Guidelines for the Prevention and Control of Infection in Healthcare (2019) and NSW Health PD2020_049 Clinical and Related Waste Management for Health Services

5.5 RECURRENT, REFRACTORY, RELAPSING, REPEAT and CATHETER – RELATED PERITONITIS TREATMENT

1. Arrange for urgent PD catheter removal to preserve the peritoneum
2. Continue with the appropriate oral or systemic antibacterial treatment based on sensitivity for 14 -21 days from time of PD catheter removal
3. Schedule reinsertion of PD catheter 2 weeks after peritonitis treatment completion & resolution of infective symptoms

6. Cross References	Clinical Excellence Commission *COVID-19 Infection Prevention and Control Manual* National COVID-19 Clinical Evidence Taskforce Australian Clinical Practice Guidelines *Australian guidelines for the clinical care of people with COVID-19* Australian Guidelines for the Prevention and Control of Infection in Healthcare Australian Commission on Safety and Quality in Health Care *National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines* NSW Health *PD2020_049 Clinical and Related Waste Management for Health Services* NSW Health PD2013_043 *Medication Handling in NSW Public Health Facilities* NSW Health PD2017_013 *Infection Prevention and Control Policy* NSW Health PD2014_050 *Principles for the Management of Tuberculosis in New South Wales* NSW Health PD2016_058 *User applied Labelling of Injectable Medicines, Fluids and Lines* SESLHDPD/271 *Aseptic Technique* SESLHDPR/681 *Staphylococcus aureus (MSSA and MRSA) decolonisation* SGH CLIN443 *Peritoneal Dialysis – Intraperitoneal Additives and Antibiotics* SGH-TSH CLIN027 *Aseptic Technique - Competency and Education Requirements* SGH CLIN *Peritoneal Dialysis – Intraperitoneal Antibiotics Dosage, Duration, Compatibility And Stability* SGH CLIN 443 *Intraperitoneal Additives and Antibiotics* SGH CLIN 433 *Peritoneal Dialysis (PD) Catheter Infection – Exit Site and Tunnel Infection Management and Treatment* SGH CLIN 434 *Peritoneal Dialysis (PD) – Nasal Swab And Mupirocin* SGH WPI 145 *Peritoneal Dialysis –Fluid Specimen Collection via CAPD Freeline Solo Exchange* SGH WPI 146 *Peritoneal Dialysis –Fluid Specimen Collection via Automated PD (APD)*
7. Keywords	Peritonitis, Infection, Peritoneal dialysis, Peritonitis management

8. Document Location	Renal, Peritoneal Dialysis
9. External References	1. Ballinger, A. P., Suetonia; Wiggins, Kathryn; Craig, Jonathan; Johnson, 2. David; Cross, Nicholas; Strippoli, Giovanni (2014). Treatment for peritoneal dialysis-associated peritonitis. *Cochrane Database of Systematic Reviews*, 4. doi: 10.1002/14651858.CD005284.pub3 3. Bannister, D. K., Acchiardo, S. R., Moore, L. W., & Kraus, A. P., Jr. (1987). Nutritional effects of peritonitis in continuous ambulatory peritoneal dialysis (CAPD) patients. *Journal of the American Dietetic Association*, 87(1), 53-56. 4. Bender F., Bernardini, J., Piraino, B. (2006) Prevention of Infectious Complications in Peritoneal Dialysis: Best Demonstrated Practices. *Kidney International* 70: S44-S54, 5. Campbell, D. J., Johnson, D. W., Mudge, D. W., Gallagher, M. P., & Craig, J. C. (2014). Prevention of peritoneal dialysis-related infections. Nephrology Dialysis Transplantation. doi: 10.1093/ndt/gfu313 6. Cho, Y., & Johnson, D. W. (2014). Peritoneal Dialysis–Related Peritonitis: Towards Improving Evidence, Practices, and Outcomes. *American Journal of Kidney Diseases*, 64(2), 278-289. doi: http://dx.doi.org/10.1053/j.ajkd.2014.02.025 7. Crabtree J., Shrestha B., Chow K., et al. (2019) Creating and Maintaining Optimal Peritoneal Dialysis Access in the Adult Patient: 2019 Update. *Peritoneal Dialysis International*;39(5):414-436. doi:10.3747/pdi.2018.00232 8. Dombros, N., Dratwa, M., Feriani, M., Gokal, R., Heimburger, O., Krediet, R., . . . Verger, C. (2005). European best practice guidelines for peritoneal dialysis. 4 Continuous ambulatory peritoneal dialysis delivery systems. *Nephrology Dialysis Transplantation*, 20 Suppl 9, ix13-ix15. doi: 10.1093/ndt/gfi1118 9. Jiwakanon, S., & Mehrotra, R. (2013). Chapter 33 – Nutritional Management of End-Stage Renal Disease Patients Treated with Peritoneal Dialysis A2 - Kopple, Joel D. In S. G. Massry & K. Kalantar-Zadeh (Eds.), *Nutritional Management of Renal Disease* (Third Edition) (pp. 539-561): Academic Press. 10. Johnson, H., Garg, M., Shantikumar, S., Thachil, J., Rai, B., Aboumarzouk, O. M., Hashim, H., & Philip, J. (2021). COVID-19 (SARS-CoV-2) in Non-Airborne body fluids: A systematic review & Meta-analysis. *Turkish journal of urology*, *47*(2), 87–97. https://doi.org/10.5152/tud.2021.20586 11. Li, P. K.-T., Szeto, C. C., Piraino, B., de Arteaga, J., Fan, S., Figueiredo, A. E., . . . Johnson, D. W. (2016). ISPD Peritonitis Recommendations: 2016 Update on Prevention and Treatment. *Peritoneal Dialysis International*, 36(5), 481-508. doi: 10.3747/pdi.2016.00078 12. Li, P. K., Szeto, C., Piraino, B., Bernardini, J., Figueiredo, A., Gupta, A., Johnson, D., Kuijper, E., Lye, W., Salzer, W., Shaefer, F., and Struijk, D. G. (2010). Peritoneal Dialysis – Related Infections Recommendations 2010 Update. *Peritoneal Dialysis International*, 30(4), 393-423. doi: 10.3747/pdi.2010.00049 13. Lo, M. W., Mak, S. K., Wong, Y. Y., Lo, K. C., Chan, S. F., Tong, G. M., Wong, A. K. (2013). Atypical mycobacterial exit-site infection and peritonitis in peritoneal dialysis patients on prophylactic exit-site gentamicin cream. *Peritoneal Dialysis International*, 33(3), 267-272. doi: 10.3747/pdi.2011.00184 14. Mahoney, M. V. G. (2015). Clarification of

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10. Consumer Advisory Group (CAG) approval	Not applicable
11. Implementation and Evaluation Plan	**Implementation:** The document will be published on the SGH-TSH business rule webpage and distributed via the monthly SGH-TSH CGD report. **Evaluation:** IMS+ Monitoring.
12. Knowledge Evaluation	**Q1: What are the initial signs and symptoms of peritonitis?** *A1: Peritonitis may present with cloudy peritoneal fluid and/or abdominal pain with or without nausea, vomiting, diarrhoea and fever* **Q2: What is the management of patients with suspected peritonitis?** *A2: Review patient, collect PD fluid specimen for MCS, cell count & differential, a review of their PDC exit site ± swab for MCS, commence empiric IP antibiotic and prophylactic anti-fungal*

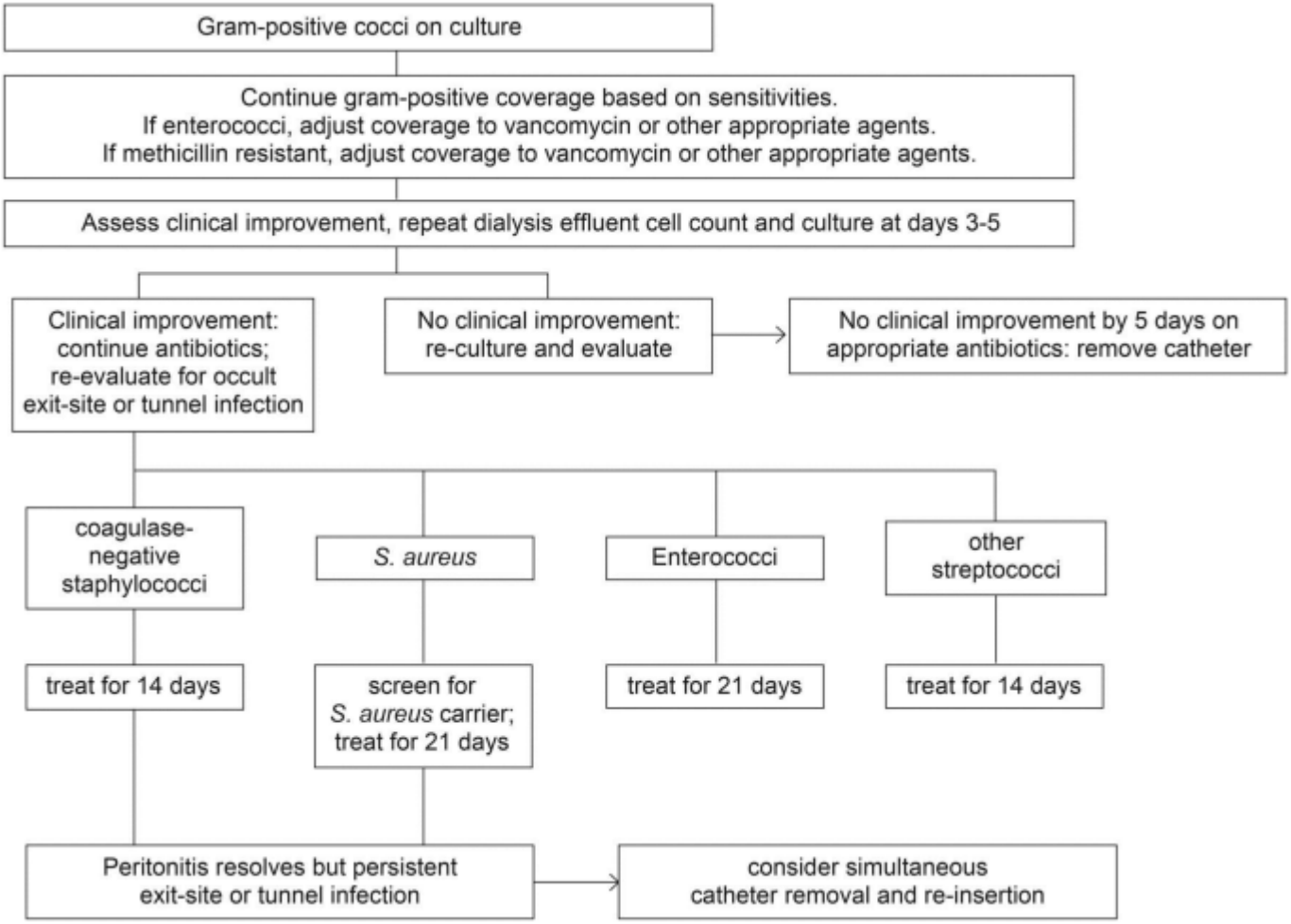
	treatment and admit in 4S renal ward for ongoing management if unwell **Q3: When would empiric antibiotic therapy commence?** *A3: Preferably after exit site swab and PD fluid specimen are collected for MCS & cell differential on symptomatic patients.* **Q4: What are the indications for PD catheter removal?** *A4: Immediate removal for patients with intra-abdominal pathology/abscess or multiple enteric or anaerobic organisms or refractory PD catheter exit-site and tunnel infection. Urgent removal is also indicated for catheter-related, fungal, refractory, relapsing and repeat peritonitis*
13. Who is Responsible	Director of St George and Sutherland Renal Service Nurse Manager, Medicine

Approval for: **PERITONEAL DIALYSIS (PD) – PERITONITIS MANAGEMENT AND TREATMENT**	
Specialty/Department Committee	Peritoneal Dialysis Committee Chairperson: Franziska Pettit, Staff Specialist Date: 04.07.2021
Nurse Manager (SGH)	Christine Day, Nurse Manager Medicine Date: 05.08.2021
Medical Head of Department (SGH)	George Mangos, Department Head Renal Services Date: 29.07.2021
Safe Use of Medicines Committee (SGH)	Chairperson: A/Prof Winston Liauw Date: 05.10.2021
Antimicrobial Stewardship (AMS)	Chairperson: Pam Konecny Date: 12.11.2021
Executive Sponsor	George Mangos, Department Head Renal Services Date: 29.07.2021
Contributors to ClBR	**Contribution**: Dr Franziska Pettit, Staff Specialist, Dr George Mangos, Department Head Renal Services, Suman Adhikari, Senior Pharmacist, AMS & Critical Care Dr Mark Brown, Medical Director Division of Medicine Dr Sunil Badve, Staff Specialist

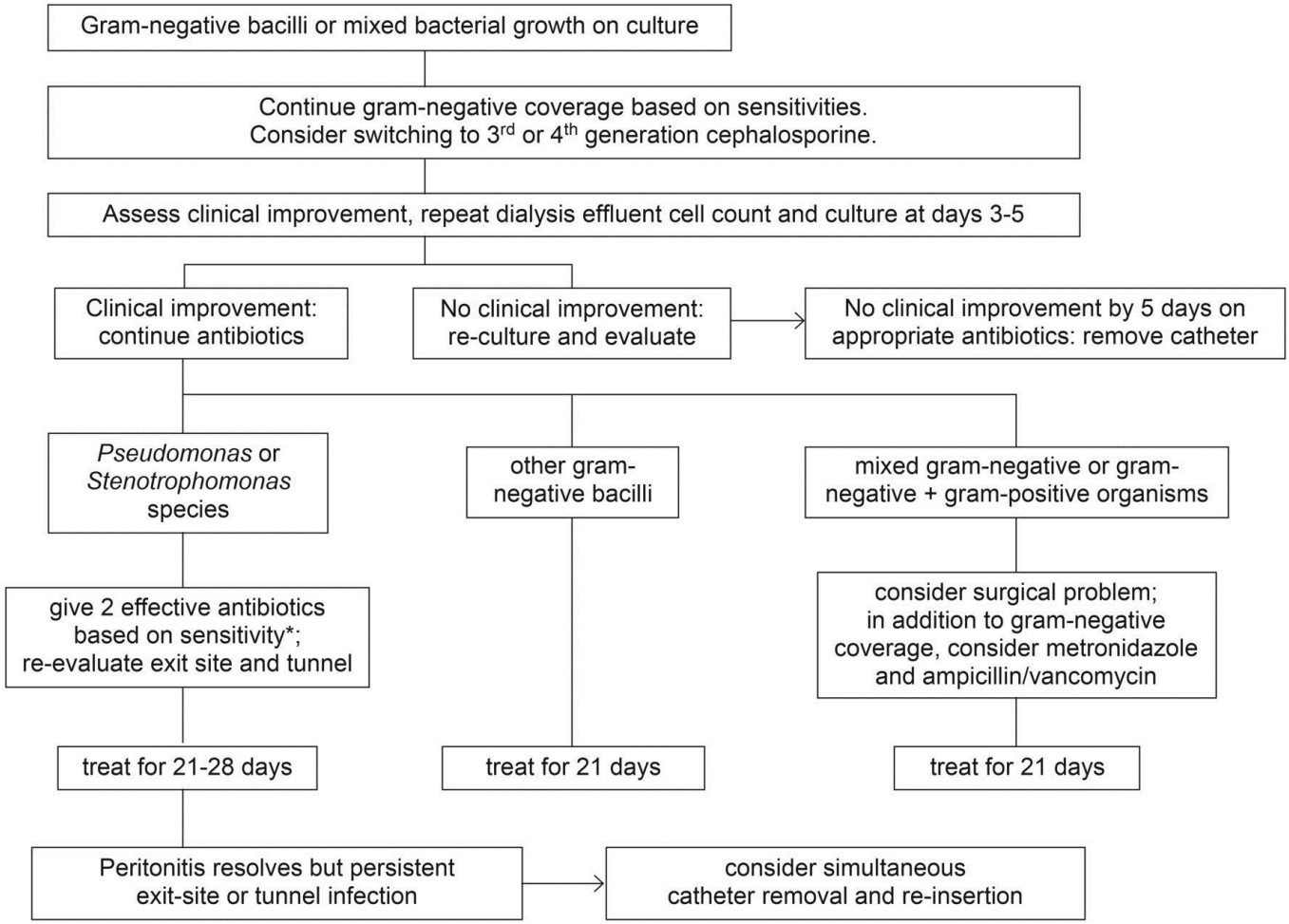
Revision and Approval History				
Revision Date	Revision number	Reason	Coordinator/Author (Position)	Revision Due
May 2018	0		Anna Claire Cuesta (PD CNC)	May 2021
Sep 2021	1	Review – Major	Anna Claire Cuesta (PD CNC)	Sep 2024

General Manager's Ratification
Name: Paul Darcy (SGH) Date: 29.09.2021

Appendix 1 – Treatment Flowchart 1



Appendix 2 – Treatment Flowchart 2



Appendix 3 – Treatment Flowchart 3