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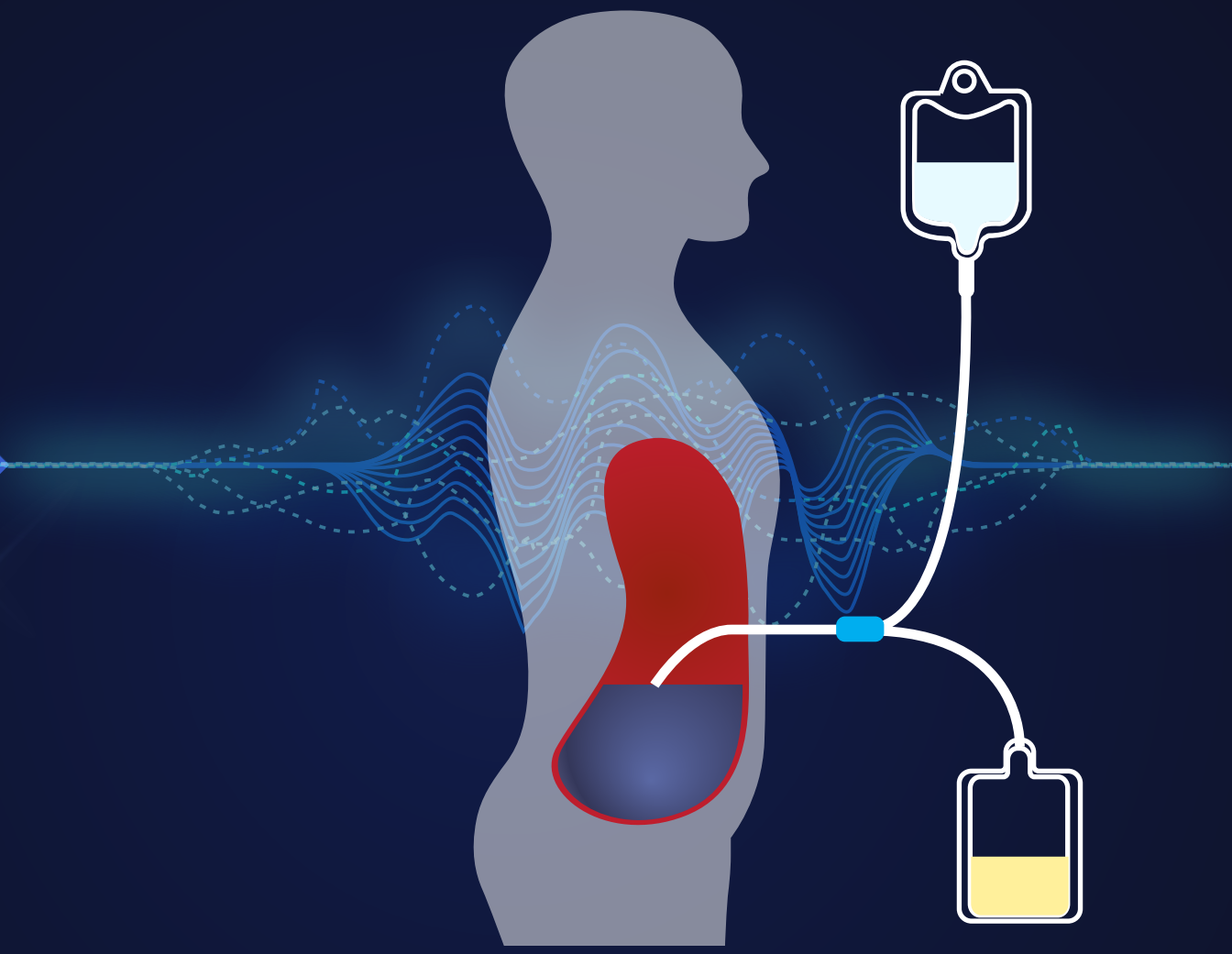

NATIONAL PERITONEAL DIALYSIS

Quality Standards

2020

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Quality Standards

2020

Medical Development Division
Ministry of Health

Malaysian Society of Nephrology

This document was developed by the Malaysian Society of Nephrology in collaboration with the Medical Services Unit, Medical Development Division, Ministry of Health Malaysia and the Drafting Committee for Peritoneal Dialysis Quality and Standards.

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FOREWORD

by the Director - General of Health, Ministry of Health, Malaysia

Peritoneal Dialysis (PD) was first introduced in Malaysia in the 1960's and PD growth has slowly but steadily increased. Over the past 20 years, PD penetration has contributed only 10% of the overall renal replacement therapy (RRT) for End Stage Kidney Disease (ESKD) compared to haemodialysis (HD) in Malaysia. Growth has occurred mainly within the public sector and accounts for 30% of all RRT in this sector.

Currently, efforts are being made by nephrologists to increase PD uptake in the country not only in public sector but also in non-governmental organisations (NGO) and the private sector. Health economic studies have shown that PD is more cost effective than HD in developing countries like Malaysia.

This is the first national PD quality standards document that has been prepared to provide recommendations for a PD unit to fulfill and adhere to. This document will also serve as guidance for enforcement units such as CKAPS *(Cawangan Kawalan Amalan Perubatan Swasta)*. It is important that the recommendations are appropriate for the local setting from both quality standards and economic perspective.

I hope that in years to come, PD will not only become more attractive for patients to choose as their dialysis modality but also be taken up by NGOs and the private sector. It is my sincere hope that this document will contribute to better quality of care for PD patients in this country.

Datuk Dr Noor Hisham bin Abdullah
Director – General of Health
Ministry of Health Malaysia

FOREWORD

by the Deputy Director - General of Health (Medical), Ministry of Health, Malaysia

It is my pleasure to introduce the National Peritoneal Dialysis Quality Standards 2020 that has been meticulously prepared by the nephrology committee. I am proud to see the nephrology team to set a standard for the practice of Peritoneal Dialysis (PD) in Malaysia. The development of these national standards for PD care is timely as the nephrology community strives to increase the penetration of PD therapy in the country.

As healthcare professionals, it is our duty to continually improve ourselves and ensure that the standard of treatment and care extended to the patients adheres to a strict international standard. The Ministry of Health has always encouraged all personnel to keep improving their level of care and to follow the standards put forth by our peers in the international arena. Therefore, I am glad to see the nephrology have taken it upon themselves to create a standard, which will guide the practice of Peritoneal Dialysis (PD) amongst the doctors at the national level, encompassing all the practitioners both in public as well as in the private sector.

Lastly I would like to congratulate the nephrology committee on the job of publishing this national standard. I wish them all the best in the implementation of the policy.

Thank you.

Datuk Dr Hj Rohaizat bin Hj Yon
Deputy Director - General of Health (Medical)
Ministry of Health, Malaysia

FOREWORD

by the President of Malaysian Society of Nephrology

Peritoneal dialysis (PD) is an important modality for the treatment of end stage kidney disease (ESKD). Clinical advantages of PD over haemodialysis (HD) include better preservation of residual renal function, lesser risk of acquiring blood-borne viral infections, lesser requirement for erythropoesis stimulating agents, better haemodynamic stability and more flexibility for patients. It is useful for patients living in remote areas and those with difficulty in travelling to dialysis centres, and it is more cost-effective than building multiple small HD centres. As PD is a home-based therapy, infra-structure and staff requirements are less. Health economic and budget impact studies in Malaysia have shown that PD is a more sustainable dialysis option as compared to HD, especially in the face of an ever-rising annual incidence of persons with ESKD.

Since the introduction of PD almost a century ago, there have been considerable improvements in the design of PD catheters and PD systems (connectology and PD solutions). Nevertheless, problems with PD persist including peritonitis and high technique failure rates.

It is therefore important that PD units maintain a high standard to improve the outcomes of PD patients. The development of these national standards for PD care is timely as the nephrology community strives to increase the penetration of PD therapy in the country.

In the process of preparing this document, several discussions have been held with the participation of private and public sectors as well as non-governmental organisations. I would like to express my sincere gratitude to the working committee, reviewers and colleagues from the private, public and NGO sectors for their important contributions towards developing this standard.

DR SUNITA BAVANANDAN
President
Malaysian Society of Nephrology

CONTENTS

GLOSSARY OF TERMS AND DEFINITIONS

For the purpose of this standard, the auxiliary verb:

- “shall” means that compliance with a requirement or a test is mandatory for compliance with this standard;
- “should” means that compliance with a requirement or a test is recommended but is not mandatory for compliance with this standard;
- “may” is used to describe a permissible way to achieve compliance with a requirement or test.

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CHAPTER 1
INTRODUCTION

1.1 Operational Definitions

1.1.1 Peritoneal Dialysis (PD) Training Centre

An accredited training PD centre shall:

a. Have fulltime Nephrologist cover
b. Have a minimum of 2 (two) PD nurses with recognized Renal Post Basic*/equivalent certificate from an accredited college and minimum of 2 year experience in PD
c. Have at least 100 PD patients
d. Have PD catheter surgery services
e. Have access to an accredited lab able to perform standard tests
f. Be involved in quality improvement and audits
g. Be compliant to the National PD Quality Standards
h. Achieve a minimum peritonitis rate <1 in 33 per patient months (<0.03 episode per month)
i. Meet the requirements under Private Care Facility Act and be licensed (for Private and NGO centre)

1.1.2 PD centre

An accredited PD centre shall:

a. Have fulltime nephrologist cover
b. Have a minimum of 2 (two) PD nurses with recognized Renal Post Basic*/equivalent certificate from an accredited college and minimum of 1 year experience in PD
c. Have at least 50 PD patients
d. Have access to PD catheter surgery services
e. Have access to an accredited lab able to perform standard tests
f. Be involved in quality improvement and audits
g. Be compliant to the National PD Quality Standards
h. Achieve a minimum peritonitis rate <1 in 24 per patient months (<0.04 episode per month)
i. Meet the requirements under Private Care Facility Act and be licensed (for Private and NGO centre)

1.1.3 **PD unit**

An accredited PD unit shall:

a. Have fulltime nephrologist cover
b. Have a minimum of 2 (two) PD nurses with recognized Renal Post Basic*/equivalent certificate from an accredited college and minimum of 1 year experience in PD
c. Have access to PD catheter surgery services
d. Have access to an accredited lab able to perform standard tests
e. Be involved in quality improvement and audits
f. Be compliant to the National PD Quality Standards
g. Aim to achieve a minimum peritonitis rate <1 in 24 per patient months (<0.04 episode per month)
h. Meet the requirements under Private Care Facility Act and be licensed (for Private and NGO centre)

1.1.4 **PD Satellite Unit**

A PD satellite unit can be located in any of the following:

a. A district hospital
b. A government health clinic (Klinik Kesihatan)
c. An existing HD unit
d. A community dialysis centre

The PD satellite unit should be affiliated with, and have a prior mutual understanding with an accredited PD centre. A PD satellite unit shall provide holistic care either on their own or with their affiliated PD centre for the management of PD patients including administrative duties, day-to-day troubleshooting for problems (e.g. constipation, leaking, poor outflow, uncomplicated peritonitis, and non-infectious complications of PD). It must comply with PD quality standards.

1.1.5 **Paediatric PD Centre**

a. Have fulltime paediatric nephrologist cover
b. Have a minimum of 1 (one) PD nurse with recognized Renal Post Basic*/equivalent certificate from an accredited college and minimum of 1 year experience in PD
c. Have at least 10 PD patients
d. Have access to PD catheter surgery services
e. Have access to an accredited lab able to perform standard tests
f. Be involved in quality improvement and audits
g. Be compliant to the National PD Quality Standards
h. Achieve a minimum peritonitis rate <1 in 24 per patient months

(<0.04 episode per month)

i. Meet the requirements under Private Care Facility Act and be licensed (for Private and NGO centre)

1.1.6 **Paediatric PD Unit**

a. Have fulltime paediatrician cover
b. Have a minimum of 1 (one) PD nurses with recognized Renal Post-Basic*/equivalent certificate from an accredited college and minimum of 1 year experience in PD
c. Have affiliation with a paediatric PD center
d. Have access to an accredited lab able to perform standard tests
e. Be involved in quality improvement and audits
f. Be compliant to the National PD Quality Standards
g. Aim to achieve a minimum peritonitis rate <1 in 24 per patient months (<0.04 episode per month)
h. Meet the requirements under Private Care Facility Act and be licensed (for Private and NGO centre)

1.2 Objectives & Scope

1.2.1 Objectives

The purpose of this standard document is to define the requirements for peritoneal dialysis (PD) units to achieve the acceptable minimum level of quality, performance, safety and reliability of services provided.

1.2.2 Scope

The standard covers essential aspects of PD treatment including physical facilities, equipment, consumables, human resource, training & monitoring of PD patients, infection control measures, quality measures, home visits and disaster management for PD.

CHAPTER 2
PHYSICAL FACILITIES

2.1 Introduction

The PD unit can be either a stand-alone unit or part of a haemodialysis (HD) unit. The PD unit should be in a clean enclosed area. There shall be adequate space and facilities for all PD activities to be performed for the required volume of work. This includes:

i) A compulsory area for:

- PD exchange
- Treatment/procedure
- Effluent disposal
- Nurses counter

ii) Access to:

- Safe Record-keeping area
- Storage area/room
- Clinical waste / sluice room
- Toilet
- Janitor Room

2.2 PD Exchange Area

2.2.1 There shall be adequate space for PD exchange: with a minimum area of 4.0m^2 per PD exchange station

2.2.2 Each PD exchange area should have a table, chair and drip stand

2.2.3 Adequate wash basins with elbow-tap should be provided for maintenance of good hand hygiene. It is recommended for a minimum of one wash basin for 4-6 PD exchange stations

2.3 PD Procedure Area

2.3.1 There shall be facilities and equipment for the treatment and care of

PD patients commensurate with the clinical procedures conducted within PD facilities (e.g exit site care, change of transfer set, PET and Kt/V testing)

2.3.2 An area to accommodate an examination couch is required for examination and treatment, with a minimum area of 6.0m^2

2.4 Consultation Room

Each PD unit needs to have access to a consultation room

2.5 Effluent Disposable System

The PD effluent should preferably drain into the sewerage system

CHAPTER 3
EQUIPMENT

a) The following equipment is required for PD Training:

- Blood Pressure (BP) set
- Thermometer
- Weighing Scale: Standing and Sitting
- Hanging scale
- Drip stand
- Dressing Trolley
- PD exchange chair
- PD exchange table
- Bins for clinical waste, sharp and general waste

b) The following equipment should be made accessible:

- Oxygen supply
- Emergency Cart (Trolley)
- Defibrillator or Automated External Defibrillator (AED)
- Electrocardiograph (ECG) machine
- Non-Invasive Blood Pressure (NIBP) Monitoring set
- Volumetric Infusion pump (optional)
- Glucometer
- PD cycler (optional)
- Wheelchair
- Refrigerator
- Storage Cabinet for consumables and record keeping
- Examination couch
- Computer with Internet connectivity

CHAPTER 4

PD CONSUMABLES

- Mask
- Disposable sterile gloves
- Dressing set
- PD catheter clamp
- Transfer set or equivalent
- Titanium connector or equivalent
- Sterile gauze & cotton
- On & off tray (for transfer set exchange)
- Hand rub
- Povidone Iodine
- Copper sulphate
- Alcohol 70% solution
- Alcohol Swab
- Water for injection
- Heparin
- Gentamicin and/or Mupirocin cream
- Syringes
- Scissors
- Needles
- Venofix
- Plaster
- IV Drip Tubing
- Surgical blade
- Specimen bottle for blood
- Specimen bottle for PD fluid
- Culture bottles
- Spillage kit

CHAPTER 5
PERITONEAL DIALYSIS (PD) TRAINING

- A PD centre should have their own Standard Operating Procedure (SOP) on PD training eg : Ministry of Health Malaysia PD SOP
- Patients can be trained in the PD training centre, PD centre, PD unit or satellite unit or in their own homes
- The PD trainer must be a qualified PD nurse (see Human resources chapter)

CHAPTER 6
HUMAN RESOURCES

6.1 Introduction

This section defines the pre-requisite qualifications and responsibilities of the key personnel of a PD unit

6.2 Person-in-charge (PIC)

6.2.1 **Definition**

The person-in-charge (PIC) as defined in the Private Healthcare Facilities And Services Act 1998 means a person possessing such qualification, training and experience as may be prescribed and who shall be responsible for the management and control of the private healthcare facility or service to which a license or registration relates. The PIC is the person held legally responsible in the Act to manage, control, maintain and operate the PD unit and punitive measures may be taken against the PIC who violates the Act.

6.2.2 **Qualification**

- The PIC of a PD unit shall be a nephrologist

6.2.3 **Responsibilities**

Responsibilities of the PIC shall include (but not limited to):

- Ensuring proper functioning and maintenance of the facility and equipment
- Ensuring that the centre complies to the norms and standards required
- Ensuring patients are reviewed 3 monthly with documented clinical care
- Ensuring that there is a standing arrangement with other medical practitioners to provide essential life-saving measures and emergency procedures on any person requiring such treatment or services in the event that the PIC is not available in stand-alone units or centres

- Ensuring the safety of patients and staff of the PD unit
- Periodic review of policies and procedures
- Performing quality assurance activities including submission of data to National Renal Registry

6.3 Nephrologist

6.3.1 **Definition**

A nephrologist is a physician who has completed a recognised post-graduate training in nephrology in an accredited center and is registered with the National Specialist Register

6.3.2 **Qualifications**

A nephrologist shall be registered and comply with the conditions stipulated in the National Specialist Register

6.3.3 **Responsibilities**

Responsibilities of the nephrologist shall include (but not limited to):

- Providing advice on the facilities, equipment and staffing requirements of the PD unit
- Providing advice on policies and standards for PD treatment in conformity with the requirements of the regulations and/or any nationally accepted guidelines
- Plan clinical management of the dialysis patients
- Prescribing PD treatments
- Reviewing each individual patient at least once in every 3 months. Such review shall be comprehensive and shall include but is not limited to clinical examination, review of blood and other test results and medications
- Recommending changes or modifications to treatment as deemed necessary from time to time in order to maintain the quality of care

6.4 Registered Nurse/Medical Assistant

6.4.1 **Qualifications**

The registered nurse/medical assistant in a PD centre/unit should have credentialing or privileging. The criteria for this are as follows:

i) Those with recognized post basic renal certificate/ advanced

diploma/equivalent with at least 6 months training and working experience in an accredited PD training centre. May be credentialed or privileged to work in the PD centre/unit

ii) Those with recognised post basic renal certificate/advanced diploma/equivalent but no previous PD experience must work at least 2 months in an accredited PD training centre and complete the National Credentialling Committee log book either:

iii) Those without post-basic certificate have to work a minimum of 4 months in an accredited PD training centre.

Proficiency of staff performance for required skills must be assessed based on observation by an assessor. The assessor shall be a holder of a recognized Renal Post Basic nursing certificate or equivalent from an accredited institution and have at least 2 years of working experience in the PD unit, and a credentialed Nephrologist with PD experience at least 2 years.

The validity of the credentialing/privileging is for 3 years. Privileging is only valid in the centre in which it was granted.

6.4.2 **Responsibilities**

Responsibilities of the trained registered nurse/medical assistant shall include (but not limited to):

- performing PD patient training
- performing PD exchanges, PD adequacy test, peritoneal equilibrium test(PET)
- monitoring of PD patients
- administration of antibiotics for PD related infections
- supervision of other PD staff
- care of dialysis equipment and systems
- education and training of PD patients and their families
- home visit (optional)

6.4.3 **Staff-to-patient ratio**

i) An adequate number of staff is required in the facilities to ensure care and treatments are performed safely and effectively

ii) For every twenty-five (25) PD patients, there shall be at least one privileged registered nurse/ medical assistant (1 nurse: 25 patients). This ratio is subjected to PD Centres and PD Units

iii) For PD satellite units: the ratio is 1 nurse: 35 patients

CHAPTER 7
MONITORING OF DIALYSIS PATIENTS

7.1 Monitoring of new PD patients

On completion of PD training, the patient should be reviewed at 2 weeks and 1 month.

The PD treatment shall be monitored closely, with particular attention to:

- PD technical problems e.g. leaking, exit site infections
- Vital signs: blood pressure, pulse and temperature
- Ultrafiltration and target dry weight assessment

7.2 Records of dialysis treatments

Each dialysis treatment shall be recorded in the patient PD treatment record book or an electronic record

7.3 Long-term monitoring of dialysis patients

Patients should be monitored at least every 3 months

7.3.1 Blood Investigations

Blood investigations shall be performed at regular intervals or more frequently if necessary. The minimum frequency is listed in Appendix 1.

7.3.2 Dialysis Adequacy

- Dialysis adequacy must be assessed at least 3 (three) monthly
- One of the parameters for dialysis adequacy assessment is Kt/V which should be done at least every six (6) monthly. The target delivered Kt/V should aim for more or equal than 1.7
- UF should also be monitored regularly to ensure patients achieve their target dry weight

7.3.3 **Peritoneal Equilibration Test (PET)**

- All PD centres/unit are should perform the PET at least once year

7.3.4 **PD-related infections**

- All PD centres/units should monitor their PD peritonitis and exit site infection (ESI) rates
- A PD centre should aim for a minimum peritonitis rate of less than 1 episode per 24 patient-months (0.04 episodes per month)

CHAPTER 8
INFECTION CONTROL MEASURES

8.1 Introduction

8.1.1 All PD units shall have stringent measures to minimize the risk of cross-infection amongst PD patients

8.2 Measures to prevent transmission of infection

8.2.1 Infection Control Precautions for all patients

Staff working in PD unit shall ensure implementation and adherence to strict infection control procedures designed to prevent cross-infection. Refer to Appendix 3 for suggested infection control measures

8.2.2 Infection Control Training and Education

Training and education is recommended for both staff members and patients (or their family and care givers) (Refer to Appendix 4).

8.2.3 Measures for preventing cross infection

Patients with high risk of infection (Hepatitis B, C and HIV) will require special precautions in disposal of their PD effluent (Refer PD SOP Ministry of Health Malaysia).

8.3 Prevention and Control of Hepatitis B infection

8.3.1 Testing for hepatitis B

The following patients shall be tested for HBsAg:

- New patients with an unknown viral status
- Patients who were negative for anti-HBs with history of recent transfusion of blood/ blood products

8.3.2 **Serology Testing**

- If HBsAg (and anti-HBs) is negative, it shall be re-tested at least every six (6) months
- Patients require vaccination if HBsAg and anti-HBs are both negative. (Refer to section 8.3.3 for vaccine schedule)
- Anti-HBs shall be repeated at least yearly in patients who have responded to hepatitis vaccination
- If anti HBs<10 mIU/ml a booster dose should be given

8.3.3 **Vaccination Schedule**

- A four (4) doses double-strength vaccination schedule is recommended at zero (0), one (1), two (2) and six (6) months according to manufacturer's recommendations
- Serum anti-HBs shall be checked one to two (1-2) months after completion of the vaccination course
- Those that do not develop anti-HBs response (<10mIU/ml) after primary vaccination shall be re-immunised. Re-immunisation consists of one to three (1-3) doses, after which if they remain negative, they are unlikely to respond to additional doses

8.3.4 **Seroconversion**

The licensee/person-in-charge shall notify Ministry of Health of any Hepatitis B seroconversion

8.4 Prevention and Control of Hepatitis C infection

8.4.1 **Testing for hepatitis C**

The following patients shall be tested for anti-HCV antibody:

- New patients with an unknown viral status
- Patients with history of recent transfusion of blood/ blood products

8.4.2 **Serology testing:**

- Anti-HCV screening should be made with immunoassay test (e.g. ELISA) and/or nucleic acid testing (NAT)
- In anti-HCV negative patients, immunoassay shall be repeated at least every 6 months
- If anti-HCV is indeterminate, confirmation can be made with nucleic acid testing (NAT) or Hepatitis C Antigen testing

- Confirmed Hepatitis C infected patients do not require repeated anti-HCV test

8.4.3 **Seroconversion**

The licensee/ person-in charge shall notify the Ministry of Health of any Hepatitis C seroconversion

8.5 Prevention and Control of HIV infection

8.5.1 Patients shall be tested for anti-HIV antibody and/or NAT before initiating PD treatment

8.5.2 In HIV positive patients, proper management of PD dialysate and disposables needs to be followed (Refer PD SOP Ministry of Health Malaysia)

8.5.3 In HIV negative patients, serologic test shall be performed at least every 6 months

8.5.4 The licensee/person-in charge shall notify the Ministry of Health of any cases of HIV seroconversion

8.6 Screening and Vaccination of Staff

8.6.1 PD staff should be screened for blood-borne viruses before working in the PD unit

8.6.2 Staff who are HBsAg negative shall be vaccinated:

- if anti-HBs is non-reactive, a full course of vaccination shall be given
- Anti-HBs should be retested 1-2 months after the last dose of the hepatitis vaccine
- if post-vaccination anti-HBs is < 10 mIU/ml, the vaccine series should be repeated and antibody retested 1-2 months after second series
- if post-vaccination anti-HBs antibody is >= 10 mIU/ml, periodic testing or booster doses of vaccination are not required

CHAPTER 9

OUTCOME MEASURES AND QUALITY INITIATIVES IN DIALYSIS

9.1 Reporting to National Renal Registry

All centres shall submit data to NRR in a specified format.

9.2 Peritonitis Episodes

- Peritonitis episodes should be monitored monthly
- Cumulative Peritonitis rates should not exceed 1: 24 PD patient – months or monthly rates < 0.04

9.3 Dialysis Adequacy

- Dialysis adequacy shall be assessed with Kt/V
- Aim for Kt/V ≥1.7

9.4 Incident Reporting to Ministry of Health

- All hepatitis and HIV seroconversion

CHAPTER 10

DIALYSIS DISASTER QUALITY MANAGEMENT

10.1 Mitigation phase

- The centre should prepare a standard operating procedure (SOP) on Dialysis Disaster
- Patient data should be regularly updated inclusive of latest blood parameter, medication lists and contact numbers
- Dialysis equipment and disposables should be readily available to be transferred to safe places if needed

10.2 Preparedness phase

- Medical records and dialysis equipment should be placed in safe areas
- Patients and relatives should receive information on the nearest Dialysis Disaster Relief Centers and mode of safe transfer
- Regular communications with the relevant authorities should be observed in preparation of evacuation

10.3 Response

- PIC and PD staff should ensure patients receive uninterrupted PD treatment throughout the disaster period
- Patient whereabouts should be tracked and be documented
- Ensure dialysis equipment and patients' clinical records are stored in a safe place and review the need to relocate.
- Continuously communicate with the relevant authorities on latest disaster situation.
- PIC/PD nurse should provide latest information on the PD unit status with regards to the patients, staff, damages and utilities disruptions to the relevant health authorities

10.4 Recovery phase

- Assessment of facility and equipment damages should be made and documented

CHAPTER 11
HOME VISIT

11.1 Each PD unit is encouraged to have a home visit programme

11.2 The home visit shall be done by the PD nurse

11.3 During the home visit, the PD nurse needs to observe and monitor:

- home environment
- PD exchanges
- PD record book
- PD solution and medication storage

In addition, the PD nurse should provide health education

(Refer PD SOP Ministry of Health Malaysia)

Appendix 1

Laboratory investigations schedule for PD patients

Laboratory Investigation	Tests	Minimum Frequency
Haematological	Full blood count Iron Study: (Ferritin, TSAT)	3 monthly 6 monthly
Biochemistry	Renal Function Test Liver Function Test : (Albumin, ALT, ALP) Calcium, phosphate Fasting iPTH Fasting Serum Lipid Blood sugar HbA1C	3 monthly 3 monthly 3 monthly 6 monthly 6 monthly 3 monthly 6 monthly (diabetics)
Virology	HBs Ag Anti HBs titre Anti HCV Anti HIV	6 monthly Yearly 6 monthly (in patients Hepatitis C negative) 6 monthly (in patients HIV negative)

*ALP=alkaline phosphatase, ALT=alanine transaminase, anti-HBs=anti-hepatitis B surface, anit-HBsAg=hepatitis B surface antigen, anti-HCV=anti-hepatitis C, anti-HIV=anti-human immunodeficiency virus, HbA1C=glycosylated haemoglobin, PTH=intact parathyroid hormone, TSAT=transferrin saturation

Appendix 2

Calculation of peritonitis and exit site infection (ESI) rate

Method 1: Peritonitis and Exit Site Infection (ESI) Rate: One Episode per number of patient months

STEP 1

Total number CAPD/APD patient days at risk/30.4 days per month = patients month experience

Example: 2000 days/30.4 days per month = 65.8 months experience

STEP 2

Number of patient months/number of episodes of peritonitis/ESI = 1 episode per number of patient month

Example: 65.8 months/2 episodes = 32.9 or 1 episode every 32.9 patient months

Method 2: Peritonitis and Exit Site Infection (ESI) Rate: Episodes per patient year

STEP 1

Total number CAPD/APD patient days at risk/365 days per years experience = patients years experience

Example: 2000 days/365 days per year = 5.5 years experience

STEP 2

Number of episodes of peritonitis/number of years experience = Episodes per patient year

Example: 2 episodes peritonitis/5.5 patient years = 0.36 episodes per patient year.

Appendix 3

Infection Control precautions for all patients
(Adapted from CDC guidelines)

- Proper hand hygiene technique
- Wash hands after gloves are removed and between patient contacts, as well as after touching blood, body fluids, secretions, excretions, and contaminated items
- A sufficient number of sinks with warm water and soap shall be available to facilitate hand washing
- If hands are not visibly soiled, use of a waterless antiseptic hand rub can be substituted for hand washing
- Prepare medications in a room or area separated from the patient treatment area and designated only for medications
- Do not handle or store contaminated (used supplies, used equipment, blood samples, or biohazard containers) in areas where medications and clean (unused) equipment and supplies are handled
- Deliver medications separately to each patient. Common carts shall not be used within the patient treatment area to prepare or distribute medications
- If trays are used to distribute medications, clean them before using for a different patient
- Intravenous medication vials labelled for single use, including erythropoietin, shall not be punctured more than once. Once a needle has entered a vial labelled for single use, the sterility of the product can no longer be guaranteed
- Residual medication from two or more vials shall not be pooled into a single vial
- If a common supply cart is used to store clean supplies in the patient treatment area, this cart shall remain in a designated area at a sufficient distance from patient stations to avoid contamination with blood. Such carts shall not be moved between stations to distribute supplies
- Staff members shall not eat, drink, or smoke in the dialysis treatment area
- Between uses of medical equipment (e.g scissors, haemostats, clamps, stethoscopes, blood pressure cuffs), clean and apply a hospital disinfectant (i.e., low level disinfection); if the item is visibly contaminated with blood, use a tuberculocidal disinfectant (i.e. intermediate-level disinfection).
- For a blood spill, immediately clean the area with a cloth soaked with a tuberculocidal disinfectant or a 1:10 dilution of household bleach (300-600 mg/L free chlorine) (i.e., intermediate-level disinfection). The staff member doing the cleaning shall wear gloves, and the cloth shall be placed in a bucket or other leak proof container.
- Housekeeping staff members in the dialysis facility shall promptly remove soil and potentially infectious waste and maintain an environment that enhances patient care
- All disposable items shall be placed in bags thick enough to prevent leakage.

Appendix 4

Recommended training on Infection Control in dialysis
(Adapted from CDC guidelines)

Staff Training

Training and education for all employees at risk for occupational exposure to blood shall be provided at least annually, given to new employees before they begin working in the unit, and documented. At a minimum, they shall include information on the following topics:

- Proper hand hygiene technique
- Proper use of protective equipment
- Modes of transmission for blood borne viruses, pathogenic bacteria, and other microorganisms as appropriate
- Infection control practices recommended for PD unit and how they differ from Standard Precautions recommended for other health-care settings
- Proper handling and delivery of patient medication
- Centralised record keeping to monitor and prevent complications, including routine serologic testing results for HBV and HCV, Hepatitis B vaccination status, episodes of bacteraemia and loss of access caused by infection and other adverse events

Patient and Family Member Training

Training and education of patients (or care-givers for patients unable to be responsible for their own care) regarding infection control practices shall be given on initiation of peritoneal dialysis and at least annually thereafter. The following topics shall be addressed:

- Personal hygiene and hand hygiene technique
- Patient responsibility for proper care of the PD access and recognition of signs of infection, which shall be reviewed each time the patient has a PD-related infection rather than change in PD access (change refer to removal and reinsertion of catheter / means change in condition of PD access i.e. ESI or peritonitis)
- Recommended vaccinations

References

1. Standard Operating Procedure Rawatan Peritoneal Dialisis. Kementerian Kesihatan Malaysia 2015.
2. Renal Replacement Therapy. Clinical practice Guidelines. Ministry of Health Malaysia 2017.
3. Centers for Disease Control and Prevention: Infection Control Requirements for Dialysis Facilities and Clarification Regarding Guidance on Parenteral Medication Vials - MMWR August 15, 2008 / 57(32); 875-876

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