

APPENDIX C: IMPROVISED SOLUTIONS FOR PERITONEAL DIALYSIS

Starting Fluid	Addition(s)	Ending Concentrations
Potassium Free Solutions		
1 Liter ½ Normal Saline Na 77, Cl 77	40ml of 8.4% Bicarbonate 35ml of 50% Dextrose 60ml of 3% Saline	Na 130, K 0, Ca 0, Cl 95, bicarbonate 35, Osm 338, Dextrose 1.54%
1 Liter ½ Normal Saline Na 77, Cl 77	40ml of 8.4% Bicarbonate 60ml of 50% Dextrose 65ml of 3% Saline	Na 129, K 0, Ca 0, Cl 95, bicarbonate 34, Osm 388, Dextrose 2.57%
1 Liter ½ Normal Saline Na 77, Cl 77	43ml of 8.4% Bicarbonate 105ml of 50% Dextrose 75ml of 3% Saline	Na 130, K 0, Ca 0, Cl 94, bicarbonate 35, Osm 476, Dextrose 4.29%
Potassium Containing Solutions		
1Liter Lactated Ringers Na 130, K 4, Ca 2.7, Cl 109, Lactate 28, Osm 273	30ml 50% Dextrose	Na 126, K 3.9, Ca 2.6, Cl 106, Lactate 27, Osm 339, Dextrose 1.46%
1Liter Lactated Ringers Na 130, K 4, Ca 2.7, Cl 109, Lactate 28, Osm 273	53ml of 50% Dextrose 10ml of 3% Saline	Na 127, K 3.8, Ca 2.5, Cl 107, Lactate 26, Osm 392, Dextrose 2.49%
1Liter Lactated Ringers Na 130, K 4, Ca 2.7, Cl 109, Lactate 28, Osm 273	95ml of 50% Dextrose 25ml of 3% Saline	Na 128, K 3.6, Ca 2.4, Cl 109, Lactate 25, Osm 481, Dextrose 4.24%

*1L fluid bags may contain extra fluid (40-60ml), this additional volume is not included in these calculations as it will not make a significant clinical difference.

These suggested fluids are based on what is likely to be available in the forward deployed setting. In case other fluids need to be improvised, an example of how these solutions were derived may be instructive. These calculations are based on the total amount of the substance divided by the total volume. For example, the Na concentration in the first fluid in the table:

1. Total amount of Na: amount in ½ NS (77meq/L x 1L=77meq) plus amount in 8.4% bicarbonate (1000meq/L x 0.04L= 40meq) plus amount in 3% saline (513meq/L x 0.06L= 30.78meq). Therefore, total amount is 77+40+30.78=147.78. Note that there is no Na in 50% dextrose.
2. Total volume: Volume of ½ NS plus volume of 8.4% bicarbonate plus volume of 50% Dextrose plus volume of 3% saline. 1+0.04+0.035+0.06=1.135 L.
3. Dividing the total amount of Na (147.78 meq) by the total volume (1.135L) equals 130.20264 or about 130 meq/L.