



# Dialysis Outside of a Clinic

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**I'M GOING TO VEGAS FOR A**



**CONFERENCE**



# Locations Dialysis can be performed...

- In-Center Facility
- Home Training
- Patients Home
- Nursing Home (SNF)
- Rehab Center
- Hospital
- Jail/Prison
- Anywhere with proper utilities...





# Executive Order

President Trump signed an executive order that will focus on moving more than 500,000 patients from incenter facilities to home.

Reasons for moving patient's home:

- \$\$ Less money is spent on Home patient treatments
- Health Benefits for the patients

# Regulations



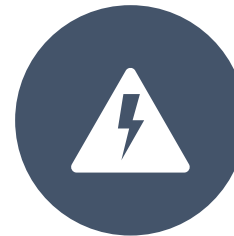
AAMI STANDARDS



CMS CONDITIONS  
FOR COVERAGE



PLUMBING CODES



ELECTRICAL CODES



CITY/COUNTY  
CODES AND  
REQUIREMENTS


# Policy and Procedure

- Meet IFU
- Must be for Incenter Use






V597

- (vi) Purchasing, leasing, renting, delivering, installing, repairing and maintaining medically necessary home dialysis supplies and equipment (including supportive equipment) prescribed by the attending physician.
- 





V581

- A dialysis facility that is certified to provide services to home patients must ensure through its interdisciplinary team, that home dialysis services are at least equivalent to those provided to in-facility patients and meet all applicable conditions of this part.
- 



V589

- To assess a patient's home dialysis environment, a home visit should be conducted at the initiation of home therapy and whenever a problem is identified with either patient health or equipment that could be related to treatment at home. Periodic routine replacement of equipment would not necessarily require a home visit be scheduled. The interdisciplinary team may designate the most appropriate staff member(s) to make the home visit(s).



V593

- The facility home training staff must conduct on-site evaluations of the home hemodialysis patient's water supply prior to selecting a water treatment system for home hemodialysis. There should be evidence the source water to be used meets the minimum requirements specified by the manufacturer of the water treatment components or of the integrated system, if such is in use. If the source water requirements are not met, there must be adequate pre-treatment of the source water to meet those requirements. Each home water treatment system must include either an RO or a DI treatment component or alternate technology that achieves AAMI standards, and a method to remove chlorine/chloramines.



V593

- The home patient's record must include review and acknowledgement of any problems with the source water, and a monitoring schedule for the source water. The patient's physician should demonstrate awareness of any issues with the source water, and the plan of care should address any issues with source water for the home HD patient



V593

- The home evaluation should address the storage of supplies, including dialysate concentrate(s). The storage area should provide a year-round environment that meets the manufacturer's recommendations for the storage of supplies.



V594

- testing of the water and dialysate system in accordance with—
- (A) The recommendations specified in the manufacturers' instructions; and
- (B) The system's FDA-approved labeling for preconfigured systems designed, tested, and validated to meet AAMI quality (which includes standards for chemical and chlorine/chloramine testing) water and dialysate.



V594

- A chemical analysis of the product water must be done at the start of home treatment and at least once a year near the end of the usability of any disposable component, or when any modifications are made to the treatment components (other than the replacement of disposable components), to ensure that AAMI-defined maximum allowable chemical contaminant levels are not exceeded




V595

- C.3.2 Drain If the home has a septic tank, the septic tank should be able to process the volume of water from a drain [that is one inch or larger in diameter]. It may not be possible to perform nocturnal hemodialysis in a home with a septic tank since this tank may not be able to support the volume of water delivered to it over an extended period (8 hours). Another possible limitation is that the septic system will be exposed to disinfectant chemicals (bleach, peracetic acid, hydrogen peroxide, etc.) which may kill the bacteria needed for the septic tank to function.





V595

- The facility home hemodialysis staff should be familiar with the recommendations in ANSI/AAMI RD52 Annex C, and the facility policies, procedures and practice must reflect those applicable to the home hemodialysis systems in use.
- 



V595

- Records of results of chemical and microbial testing of home hemodialysis water and dialysate should be available in the home setting and at the dialysis facility providing support; the log of these results may be included the patient's medical record or in a separate record.



**Example of Home Equipment**

# Equipment Selection



Equipment Selected must meet:



Regulatory requirements



Utility requirements



Manufacturer requirements

# Equipment Selection



Other things you may consider when selecting equipment:



Ability of the user



Cost



Maintenance



Disinfection

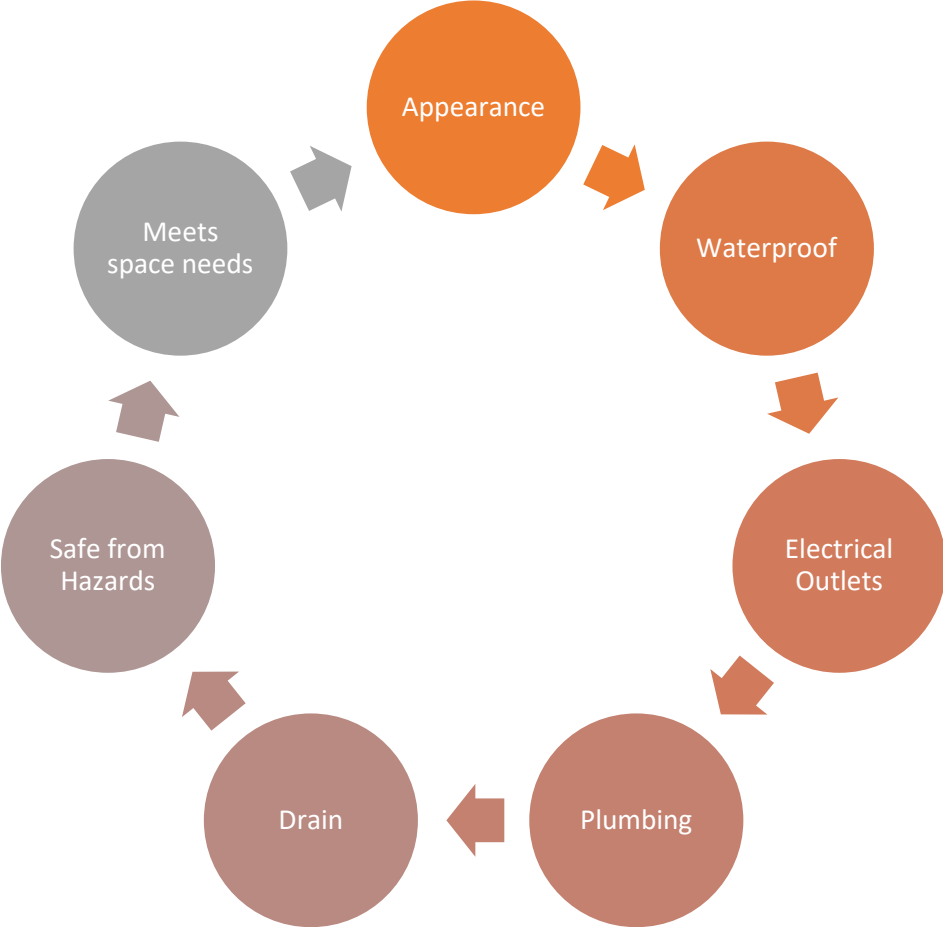


Location



Supply Delivery

# Physical Environment



# Evaluating the Home



# Key Components of a Technical Home Assessment

- Utilities
  - Water Supply
  - Drain
  - Power
- Environment
- Equipment Selection

***ANSI/AAMI RD52:2004, Dialysate for hemodialyzers ; Amendment 1—Annex C:  
Special considerations for home hemodialysis***



# Water Supply/Quality



# Water Pressure



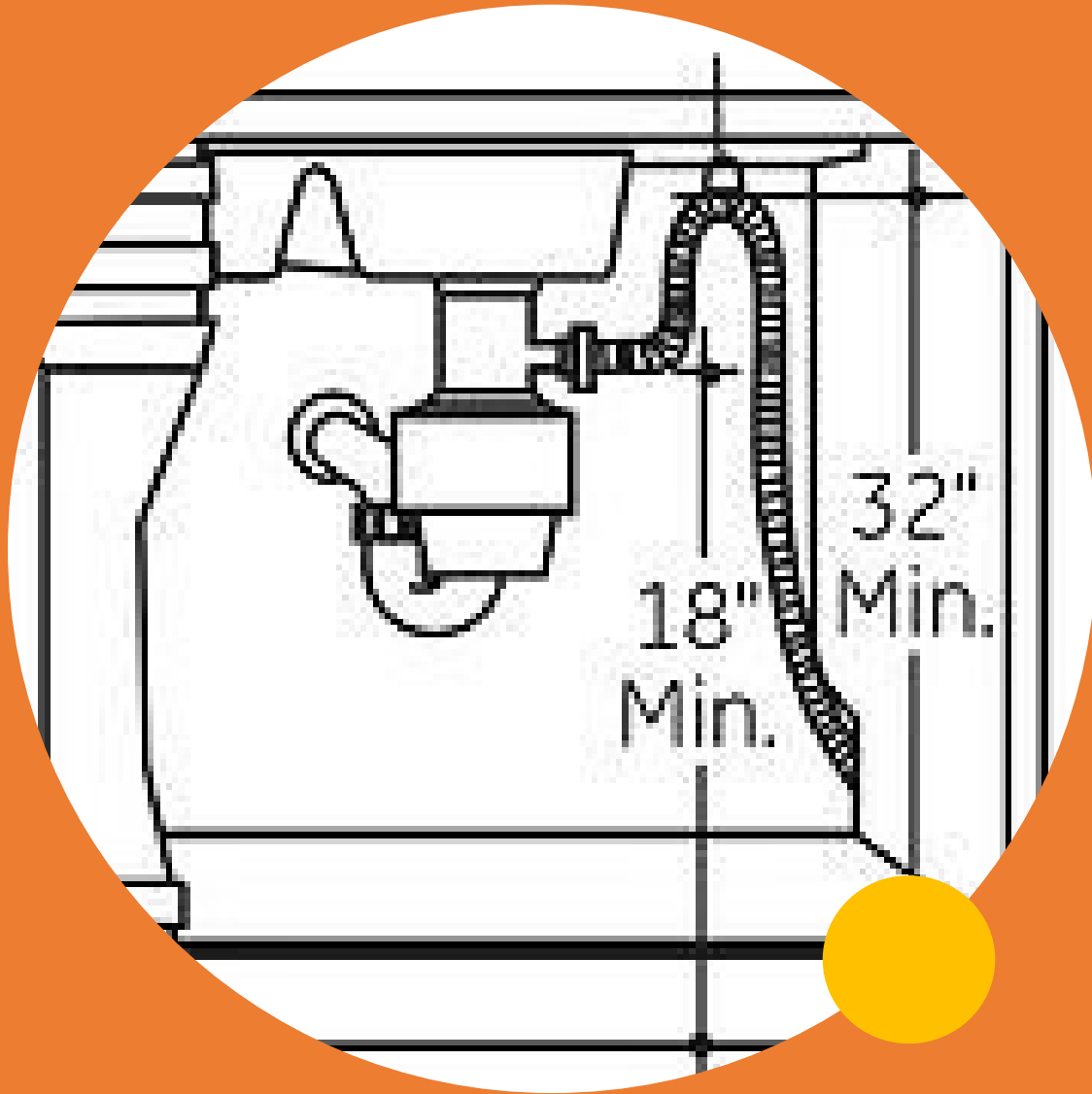
# Instructions for Use



	2018 AAMI Standard Limits	Units	11/7/2018	
			Results	Diff.
Aluminum	0 - 0.01	mg/L	0.338	NA
Antimony	0 - 0.006	mg/L	<0.005	NA
Arsenic	0 - 0.005	mg/L	<0.002	NA
Barium	0 - 0.1	mg/L	0.031	NA
Beryllium	0 - 0.0004	mg/L	<0.0004	NA
Cadmium	0 - 0.001	mg/L	<0.0010	NA
Calcium	0 - 2	mg/L	19.01	NA
Chromium	0 - 0.014	mg/L	<0.005	NA
Copper	0 - 0.1	mg/L	<0.005	NA
Fluoride	0 - 0.2	mg/L	0.8	NA
Lead	0 - 0.005	mg/L	<0.002	NA
Magnesium	0 - 4	mg/L	1.624	NA
Mercury	0 - 0.0002	mg/L	<0.0002	NA
Nitrate	0 - 2	mg/L	<0.20	NA
Potassium	0 - 8	mg/L	3.847	NA
Selenium	0 - 0.09	mg/L	<0.005	NA
Silver	0 - 0.005	mg/L	<0.003	NA
Sodium	0 - 70	mg/L	25.999	NA
Sulfate	0 - 100	mg/L	14.3	NA
Thallium	0 - 0.002	mg/L	<0.002	NA
Zinc	0 - 0.1	mg/L	<0.005	NA

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Contaminant	Source Water (mg/L)
Aluminum	0.2
Chloramines	4.0
Free Chlorine	4.0
Total Chlorine	4.0
Copper	1.3
Fluoride	4.0
Lead	0.015
Nitrates (as N)	10
Sulfate	250
Zinc	5
Calcium	No Limit
Magnesium	No Limit
Potassium	No Limit
Sodium	No Limit
Antimony	0.006
Arsenic	0.01
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Mercury	0.002
Selenium	0.05
Silver	0.1
Thallium	0.002

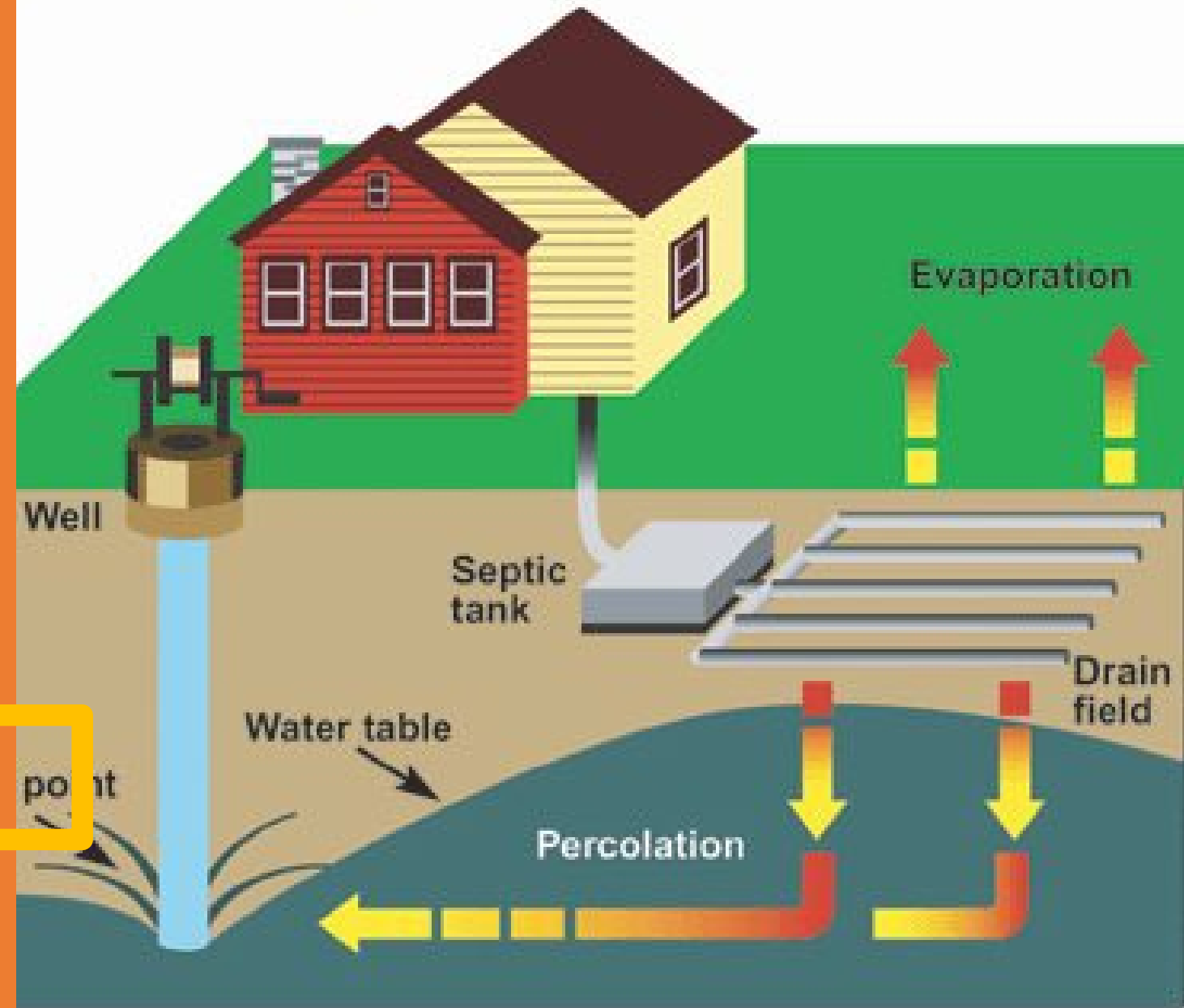


Drains



# Septic

ptic effluent percolates to the water table





**Electrical**











1:04

Wednesday, March 16



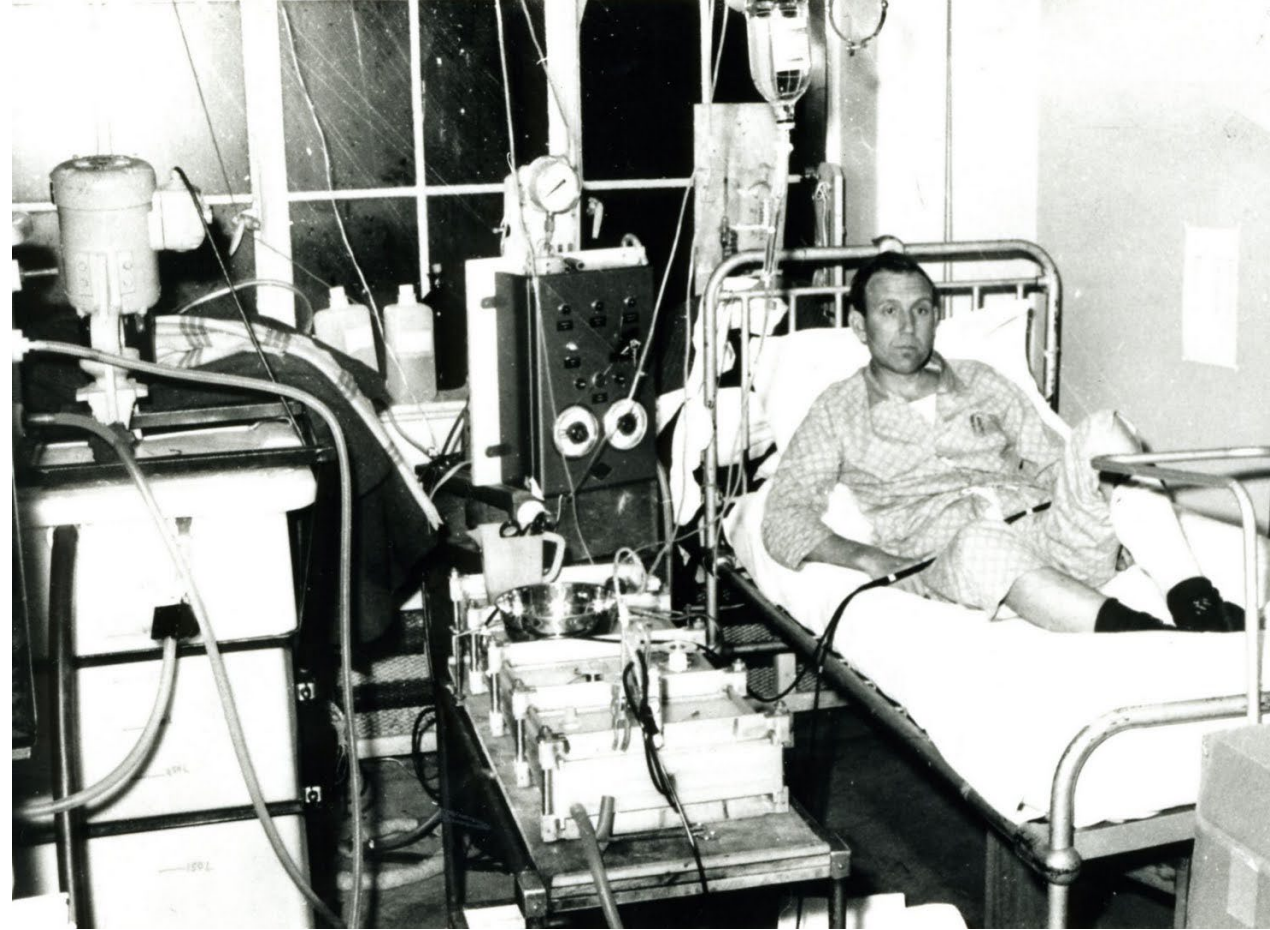
grandma 2m ago

can you stop unplugging my dialysis  
machine to charge your phone

slide to reply

# Environment





Treatment Area

Common



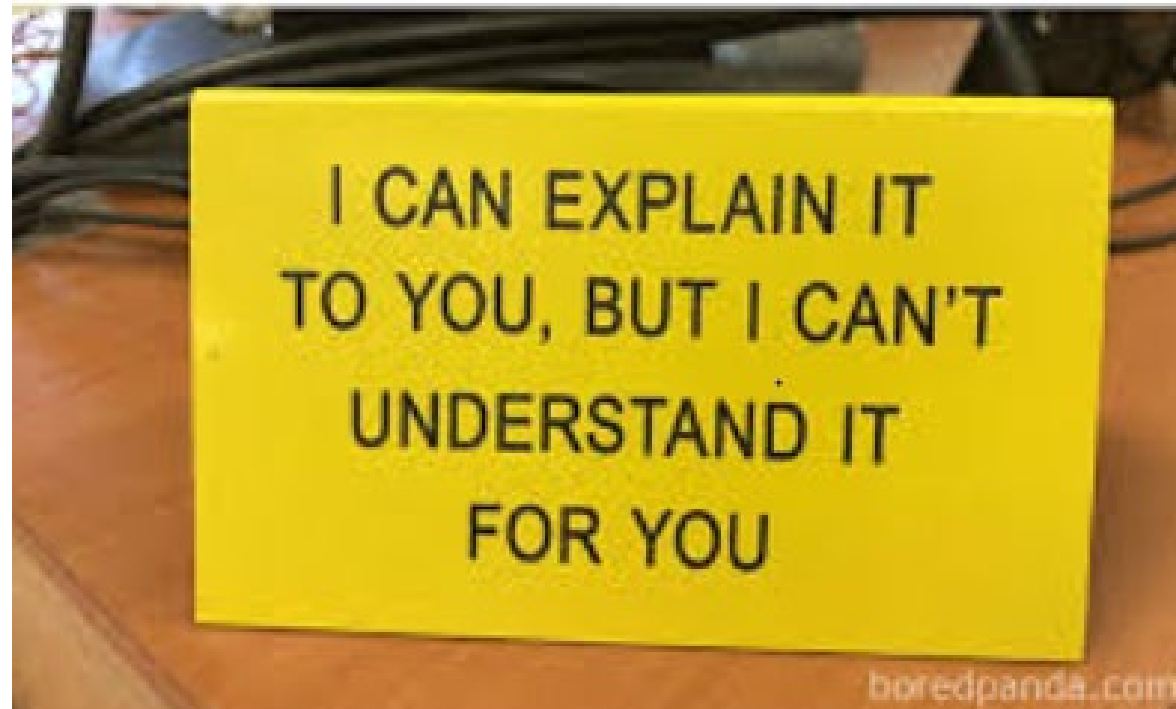


# Water Quality



# Finding the right candidates

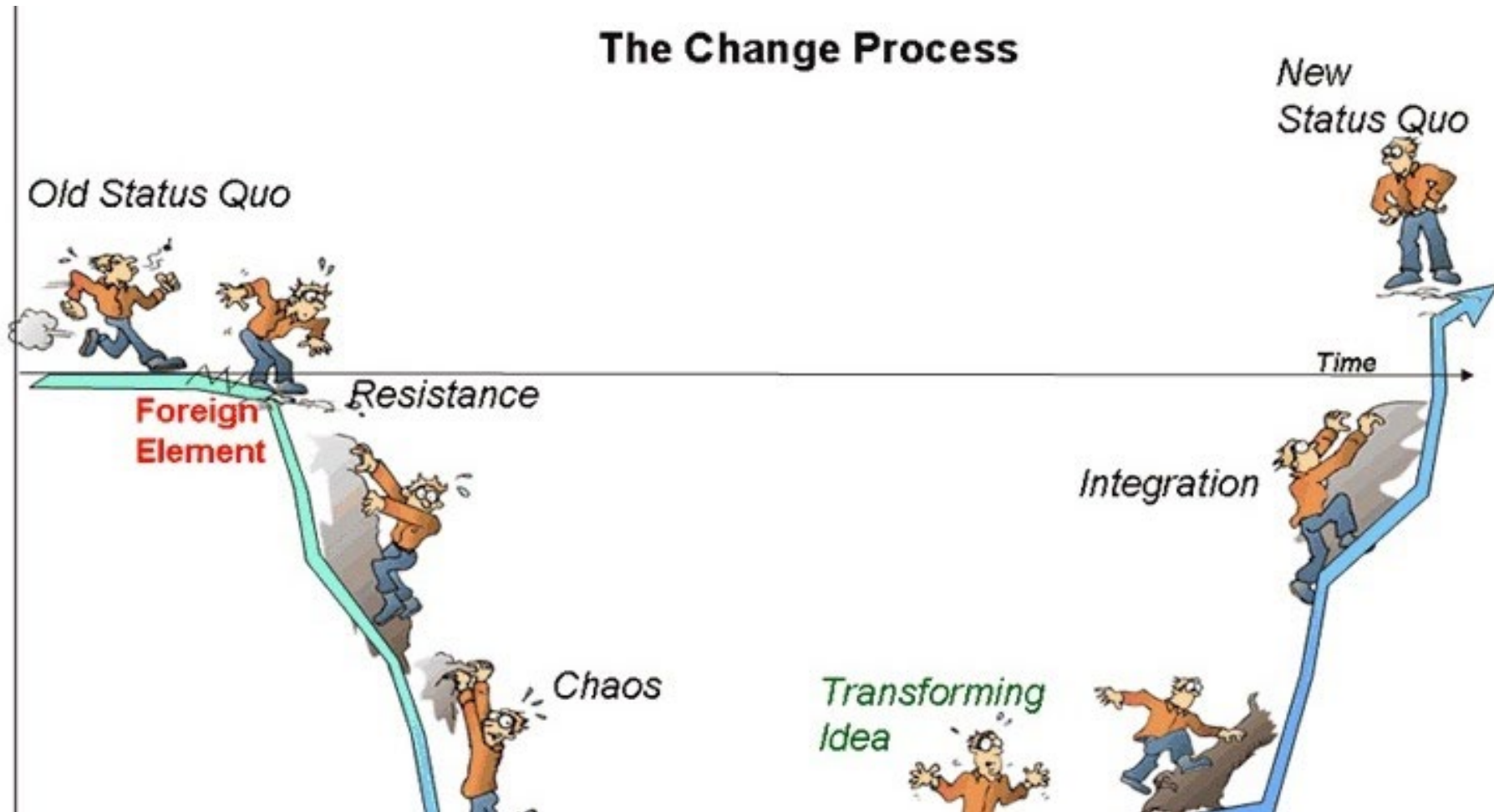
When the patient's family is testing your  
last nerve



# Staffing



# Resistance to Change





Questions?

*The only way to do great work is  
to love what you do.*



*-Steve Jobs*