

**ARMED CONFLICTS**  
**and**  
**PEDIATRIC DIALYSIS and RENAL TRANSPLANT PATIENTS**

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Armed conflicts influence millions of civilians even during 21<sup>st</sup> century.

United Nations Children's Fund (UNICEF) reports that 1 of every 10 children live in regions affected by armed conflicts.

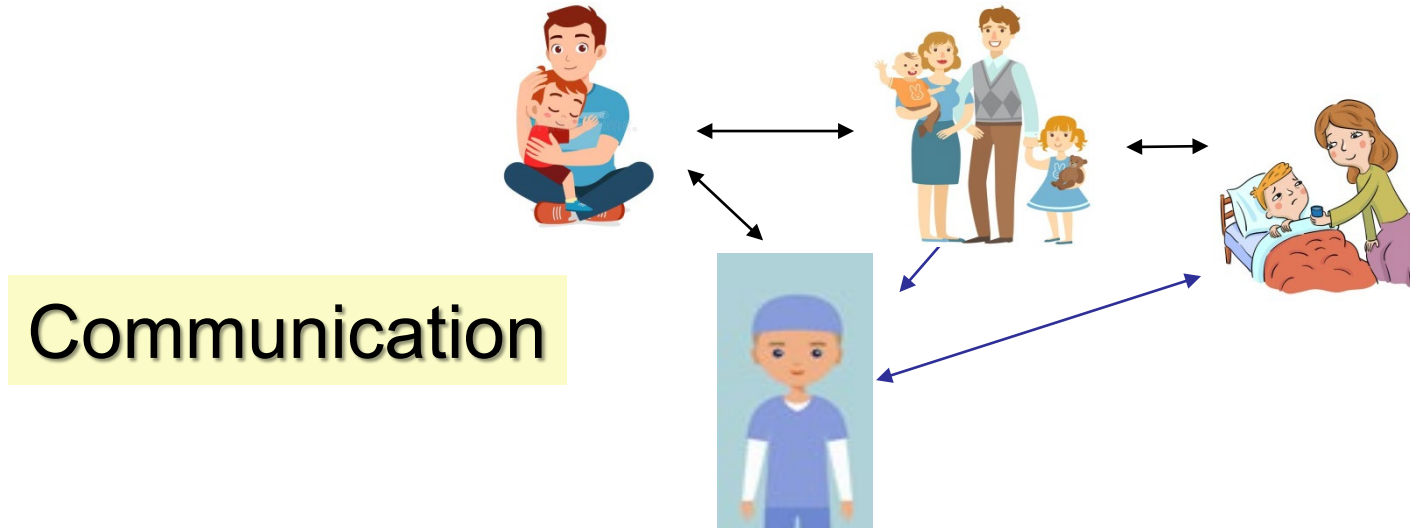
During wars, the infrastructural damage, disruption of health care centers, insufficient supplies for peritoneal- and hemo- dialysis applications and medication unavailability threaten the life of pediatric patients on renal replacement therapy.

This slideshow has been prepared in order to help our colleagues and patients, who try to cope with these problems.

# ARMED CONFLICTS and PEDIATRIC DIALYSIS and RENAL TRANSPLANT PATIENTS

## Overall Measures

Establish a communication network between patient families/caregivers and healthcare personnel



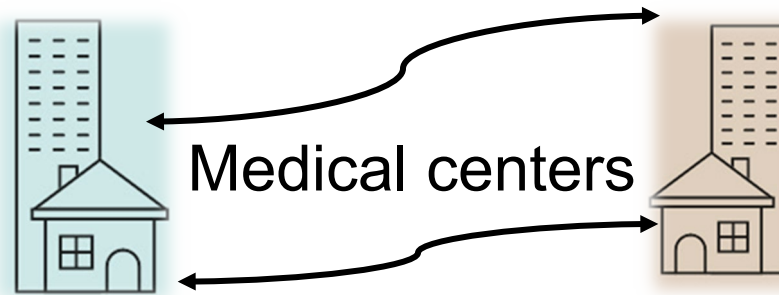
Communication

- Get regular information about status of your patients
- Provide feedback about functional status of your center
- Suggest alternative healthcare centers, if needed

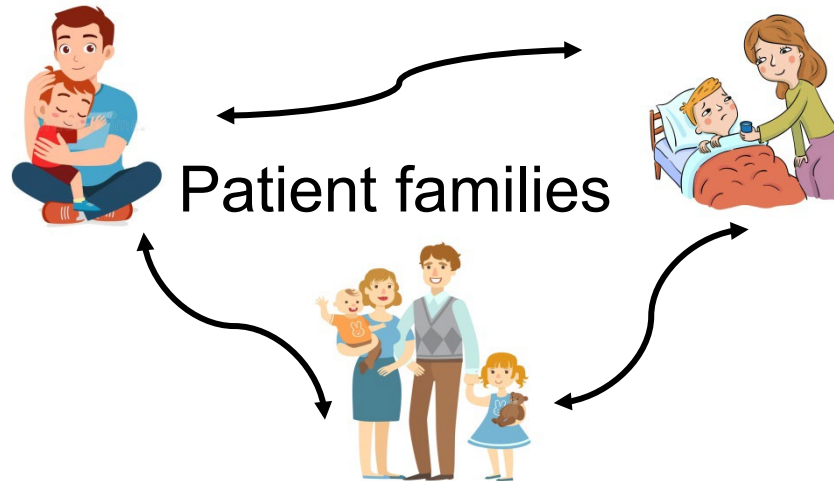
# ARMED CONFLICTS and PEDIATRIC DIALYSIS and RENAL TRANSPLANT PATIENTS

## Overall Measures

Collaboration



Collaboration of patient families and healthcare teams is vital for the most effective usage of manpower and supplies

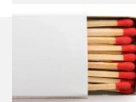
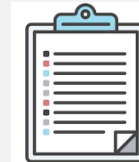


# ARMED CONFLICTS and PEDIATRIC DIALYSIS and RENAL TRANSPLANT PATIENTS

## Emergency bag /supplies

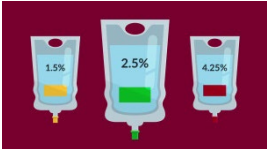

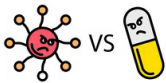





### Prepare an emergency bag

- Emergency phone list
- A list of medicines and dosages
- Two-week supply of medicines
- Thermometer
- Sphygmomanometer
- Hand sanitizer
- Masks
- Flashlight
- Battery powered radio
- Batteries
- Matches, candles



# ARMED CONFLICTS AND PEDIATRIC DIALYSIS and RENAL TRANSPLANT PATIENTS

## Keep supplies










Peritoneal dialysis (PD) Patients	Hemodialysis (HD) Patients	Transplant (Tx) Patients
<ul style="list-style-type: none"> <li>• PD solutions </li> <li>• Mini caps </li> <li>• Prophylactic antibiotics</li> </ul> <p>✓ (For use in case of insufficient dialysis) </p> <p><b>Extra Medicines</b></p> <ul style="list-style-type: none"> <li>• Anti-potassium drugs</li> <li>• Sodium-bicarbonate</li> <li>• Antihypertensives</li> <li>• Phosphate binders</li> </ul>	<p>✓ (For use in case of insufficient dialysis)</p> <p><b>Extra Medicines</b></p> <ul style="list-style-type: none"> <li>• Anti-potassium drugs</li> <li>• Sodium-bicarbonate</li> <li>• Antihypertensives</li> <li>• Phosphate binders</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>	<p>✓ ( In case of unavailable medicines)</p> <p><b>Alternative Medicines</b></p> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>• Tacrolimus             <ul style="list-style-type: none"> <li> Cyclosporine</li> </ul> </li> <li>• Mycophenolate mofetil             <ul style="list-style-type: none"> <li> Azathiopirine</li> </ul> </li> <li>• Steroids</li> </ul>

# ARMED CONFLICTS and PEDIATRIC DIALYSIS PATIENTS

## Protection from high blood potassium and fluid overload

### Dietary measures

Applies to the patients with no (or limited) dialysis possibilities

Decrease potassium	Decrease salt	Decrease fluids
<ul style="list-style-type: none"><li>Avoid high potassium containing foods </li><li>Boiling of vegetables and discarding the boiling water will reduce the potassium content </li><li>Check labels of ready-to-eat foods for potassium content</li></ul>	<ul style="list-style-type: none"><li>Cook without salt </li><li>Use pepper, herbs, garlic or citrus to add flavour </li><li>Choose whole foods, cut back processed meats</li><li>Check labels of ready-to-eat foods for sodium content</li><li>Discard the water of canned foods and wash them </li></ul>	<ul style="list-style-type: none"><li>Use small or half full glasses </li><li>Divide your fluid allowance into parts </li><li>Chewing gum, licking ice or lemon help decrease thirst </li><li>Good oral hygiene help get rid of dry mouth </li></ul>

# ARMED CONFLICTS and PEDIATRIC DIALYSIS CENTERS

## Preparation

	Peritoneal Diaysis (PD) Patients	Hemodialysis (HD) Patients
Training of patients/ families/ caregivers	<ul style="list-style-type: none"><li>• for manual exchanges</li><li>• for dietary measures in case of limited dialysis possibility</li><li>• for use of extra medications in case of limited dialysis possibility</li><li>• for emergencies</li></ul>	<ul style="list-style-type: none"><li>• for emergency get off HD machine</li><li>• for dietary measures in case of limited dialysis possibility</li><li>• for use of extra medications in case of limited dialysis possibility</li><li>• for emergencies</li></ul>
Supplies (Storage)	<ul style="list-style-type: none"><li>• manual exchange bags (in addtion to machine-bags)</li><li>• transfer sets</li><li>• catheters (in various sizes)</li><li>• keep in different places (centers)</li></ul>	<ul style="list-style-type: none"><li>• dialyzers (in various sizes)</li><li>• dialysis concentrates</li><li>• other equipment used during HD</li><li>• medications used during HD</li><li>• keep at different places (centers)</li></ul>



# ARMED CONFLICTS and PEDIATRIC DIALYSIS CENTERS

## Consider new drugs / dosage modifications

Applies to the patients with no (or limited) dialysis possibilities

Risk of hyperkalemia	<ul style="list-style-type: none"><li>• Warn the patients for dietary measures</li><li>• Consider anti-potassium drugs</li><li>• Consider to stop ACE i / ARB's</li><li>• Prevent acidosis</li></ul>
Risk of acidosis	<ul style="list-style-type: none"><li>• Plan to use sodium bicarbonate</li></ul>
Risk of volume overload / Hypertension	<ul style="list-style-type: none"><li>• Warn the patients for decreasing salt and fluid consumption</li><li>• Check antihypertensive treatment of the patient</li></ul>
Risk of hyperphosphatemia	<ul style="list-style-type: none"><li>• Check anti phosphate treatment of the patient</li><li>• If needed, increase the dosage of anti phosphate drugs or add new drugs</li></ul>

# ARMED CONFLICTS and PEDIATRIC DIALYSIS/TRANSPLANTATION CENTERS

## Consider treatment modifications

Peritoneal Diaysis	<p>If the patient is on Automated Peritoneal Dialysis (APD):</p> <ul style="list-style-type: none"><li>• Connect patients for longer time periods to the cyclor, make continuous exchanges; so that you can use the whole volume of big solution bags</li><li>• If needed, consider manual exchanges (CAPD)</li></ul>
Hemodialysis	<p>If dialysis facilities are limited:</p> <ul style="list-style-type: none"><li>• Determine patients, who can tolerate lower doses of dialysis</li></ul> <p>If shorter or infrequent dialysis sessions are mandatory:</p> <ul style="list-style-type: none"><li>• Consider running the blood pump at maximum (tolerated) speed.</li><li>• Consider using dialysers with the largest (tolerated) surface areas</li></ul>
Transplantation	<ul style="list-style-type: none"><li>• Consider switching among immunosuppressants in case of unavailability</li><li>• Switch from MMF to AZA, tacrolimus to cyclosporine or vice versa</li><li>• If these are impossible, consider adding steroids to the patients with steroid-free regimens or increase dosage of steroids</li></ul>