

INDIVIDUAL PREPARATION FOR Y2K

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I. Getting Started

A. Introduction

"There are no emergencies for those who are truly prepared."
James Talmadge Stevens

Somewhere between predictions of technological doomsday, and those who say that "Y2K" is the invention of rabid money hungry consultants--lies reality. In the absence of hard facts and data, we are left with only one option, to take precautions. When it comes to health and safety we must always err on the side of caution and skepticism, and take what we feel are necessary and appropriate steps to safeguard our family, friends and neighbors.

Preparing for worst doesn't mean you believe it will happen, it means only that you accept that the possibility of occurrence exists. You don't have to have proof your house will burn down before you buy fire insurance, nor that you will have an automobile accident to purchase car insurance. In the same way, you do not need to believe worst case Y2K scenarios will happen to take out another kind of insurance--emergency preparedness.

B. Assessment: How You Know What You Need

How do you know what you need? You can't answer that until you know what you have--in detail! You might want to enlist the aid of your children and make a game of it. See how many things they can find!

1. Your Home

a. Appliances, Equipment, Services and Utilities

a1. Step One -- First, let's find and make a list of all the things in your home:

1. Grab a pad of paper and a pen or pencils
2. Physically go to every room in your house.
3. Write down for each room: * Every appliance and fixture (medical devices, sink, tub, mirror, light, window, heater, fan, vent, etc.) * Everything else in the room (clothes, furniture, towels, medications, toothpaste, toilet brush, everything!) * Every utility and service in the room (natural gas, electric, water, batteries, etc.) * Don't forget to look in all the drawers, boxes, storage containers, and list everything you find.
4. Now do the same for every closet, cabinet, storage area, etc.,
5. Start another paper and walk around the exterior of your house and make a note what of where all the utilities enter your home and where the shut off valves are.
6. Make notes of what fixtures are used outside, the lights, security systems, sprinklers, etc.
7. Go to your garage, storage shed, under the porch, in the attic and crawl space, etc., and note everything you find, even the smallest items.
8. Now sit down and think about what services you have and list things like newspaper delivery, garbage and recycling, healthcare worker, perhaps grocery, laundry, transportation services, etc.
9. Once you get that done, set it aside, and take a break!

a2. Step Two -- Finding alternatives

1. Sit down with your lists and by color coding (with markers) or some other method, indicate which items listed are:
 - a) Not Essential (they are merely a convenience)
 - b) Essential but not critical (it would be difficult, but you could get by without it for a few days)
 - c) Critical (health and safety would be jeopardized if it weren't used/available as your situation currently exists)

2. Now, starting with 'Critical', indicate which items could not possibly work or be available if there was a loss of electricity, telecommunications, water or sanitation services. Mark these in red or put them on a fresh piece of paper marked "at risk" Do the same for the 'Essential' list
3. For all those marked or added to the 'at risk' category, you now need to find alternatives. For example, if you added heating to the list because it's electric, start brainstorming what alternatives are possible. Don't think about what you can and can't do at this point, just come up with ideas. Some alternatives for heat could be woodstoves, fireplace inserts, kerosene or propane heaters, solar or passive solar ideas, etc. Do this for all the items designated 'at risk'
4. Next step is to go back through it and select 2-3 of the most interesting or likely alternatives.
5. Now you must do the research and find out if you can implement it physically and financially. The best source of information on each alternative is a company that sells them. Don't rely on information from just one company. Talk to several, get brochures, talk to hardware stores, etc.
6. As you go through the list and decide which alternatives are right for you, begin to implement them. Again, make sure you've done your homework; and, keep in mind that usually the best solution is often the simplest, and low-tech. Low tech usually means there's less to fuss with if it breaks.
7. As you implement them, make sure you keep all manuals, learn how to use it properly and how to fix it, and always keep spare parts on hand and the proper tools.

Once you've got all your alternatives implemented, you can relax! Your home can now handle just about any type of emergency no matter when or what. The work you do here is not just for Y2K, but will help safeguard your home and family for years to come.

b. Food, etc.

Okay, now let's see what you need in the way of food and supplies. *The easiest way figure out what to buy is:

1. Save every receipt for everything you buy for 1 month, especially groceries
2. From the receipts make a list of what you buy, in what quantity, and for how much.
3. After you have that information, decide how much you want to buy in advance. If you want to stock supplies for 2 months, then double the items and figures you have and go buy them. Remember, you don't have to buy everything at one time, and always keep track of the expiration dates.
4. After you've laid in your extra supplies, keep them fresh by rotating them. Eat out of your long term storage and replace what you've used.
5. You can lengthen shelf life by making sure your supplies are kept in a cool, dry and preferably darkened place.

* For emergencies, remember that you don't necessarily need everything on the list. Also, avoid stocking up on special or luxury items, or those that have little or no nutritional value. For a list of what is considered minimum and essential, see section II. Food and other Basic Supplies.

2. Personal Assessment

Just as for your home, you need to list--for everyone in your home--any information that may be needed in an emergency. Include the following:

1. List all medications, over the counter and prescription, that all family members use. Don't forget emergency items such as medication for allergic reactions to bee stings
2. List any supplies used with them, such as needles, alcohol swabs, lancets, etc.
3. List all medical conditions, allergies, predispositions, surgeries, etc.

- 4. List all devices used at home or at a medical facility (e.g. dialysis machine, pacemaker, glucose testing equipment, inhalers, respirators, etc.). This includes wheelchairs (and if they are battery powered), stair lifts, automatic door openers, etc.

- Iodized Salt--1 pound
- Soybeans--10 pounds
- Vitamin C**--15 grams

* Buy in nitrogen-packed cans
 ** Rotate every two years

Once you've made your lists, discuss with your doctor:

1. How you can order enough medication and supplies in advance and store it safely
2. How to handle the medical conditions, etc., in an emergency. Do you need to purchase additional equipment, or get training
3. Find out from the manufacturers of the devices if they will work without error through the date change. Also, find out from your doctor what you can do if the device doesn't work properly or fails. There may be alternatives you can use in an emergency.
4. Make sure all the equipment you use has spare parts, and that you know how to fix them, and have the proper tools on hand.
5. Discuss all of the above with family members. Even children as young as 8 can take and learn first aid classes, and know what to do in an emergency.
6. Practice fixing equipment, and test any emergency plans and training.

Also include:

- Ready-to-eat canned meats, fruits and vegetables
- Canned juices, milk, soup (if powdered, store extra water)
- Staples--sugar, pepper
- Vitamins
- Ready-to-eat cereals and uncooked instant cereals (in metal containers)
- Dry, crisp crackers (in metal container)
- Potatoes (fresh or dried flakes)
- Foods for the elderly or those on special diets
- Comfort/stress foods-- cookies, hard candy, sweetened cereals, lollipops, instant coffee, tea bags, cocoa, chocolate bars, canned nuts
- High energy foods--peanut butter, jelly, crackers, granola bars, trail mix
- Vegetable oils
- Dried spices (garlic, onion, oregano, chili powder, etc.)
- Baking powder
- Beans
- Non-carbonated soft drinks
- White rice
- Bouillon products
- Dry pasta

For more info on medical and dental concerns, please see section V. Health.

II. Food and Other Basic Supplies

A. Food

Some good books on food storage, self-sufficiency, etc: (These can be found at local bookstores, libraries or ordered on-line through our website.)

- How to Develop a Low-Cost Family Food-Storage System, by Anita Evangelista
- The Busy Person's Guide to Preserving Food, by Janet Bachand Chadwick
- Root Cellaring : Natural Cold Storage of Fruits and Vegetables, by Mike Bubel, Nancy Bubel
- Container Vegetables : The Easy Way to Garden, by Sam Cotner

1. What to do when (Courtesy of FEMA)

If the Electricity Goes Off...

FIRST, use perishable food and foods from the refrigerator. THEN use the foods from the freezer. To minimize the number of times you open the freezer door, post a list of freezer contents on it. In a well-filled, well-insulated freezer, foods will usually still have ice crystals in their centers (meaning foods are safe to eat) for at least three days. FINALLY, begin to use non-perishable foods and staples.

2. What you need

Long-term Food Supplies (Courtesy of FEMA)

The best approach is to store large amounts of staples along with a variety of canned and dried foods. Bulk quantities of wheat, corn, beans and salt are inexpensive and have nearly unlimited shelf life. If necessary, you could survive for years on small daily amounts of these staples.

Stock the following amounts per person, per month:

- Wheat--20 pounds
- Powdered Milk (for babies and infants)*-- 20 pounds
- Corn--20 pounds

If these staples comprise your entire menu, you must eat all of them together to stay healthy. To avoid serious digestive problems, you'll need to grind the corn and wheat into flour and cook them, as well as boil the beans, before eating. Many health food stores sell hand-cranked grain mills or can tell you where you can get one. Make sure you buy one that can grind corn.

If you are caught without a mill, you can grind your grain by:

- a) filling a large can with whole grain one inch deep,
- b) holding the can on the ground between your feet and,
- c) pounding the grain with a pipe.

3. Ways to Supplement Your Long-term Stockpile (Courtesy of FEMA)

The above staples offer a limited menu, but you can supplement them with commercially packed air-dried or freeze-dried foods and supermarket goods. Rice, popcorn and varieties of beans are nutritious and long-lasting. The more supplements you include, the more expensive your stockpile will be.

The following is an easy approach to long-term food storage:

1. Buy a supply of the bulk staples listed above.
2. Build up your everyday stock of canned goods until you have a two-week to one-month surplus.
3. Rotate it periodically to maintain a supply of common foods that will not require special preparation, water or cooking.
4. From a sporting or camping equipment store, buy commercially packaged, freeze-dried or air-dried foods. Although costly, this will be your best form of stored meat, so buy accordingly.

4. Storage

No power means no refrigerators or freezers. Prepackaged foods store best, as they won't spoil until opened. Cans, boxed food, beans, pasta, etc., will all survive without refrigeration. Military rations (MRE's) can be bought at Army Surplus stores, and camp food (dried and dehydrated) at a camping supply store. NOTE: MRE's were designed as short term emergency rations; not meant to be eaten for an extended period of time. Do not rely on them as your sole source of food as they have been known to cause digestive problems.

Milk may be purchased in cans, vacuum packed containers, or in powder form. Eggs can be bought in a powdered form (canned), though the taste can leave something to be desired. Baby formula

can be bought canned or powdered (check the expiration dates carefully). Word of caution --if you do purchase canned perishables, be sure they are sized for use. You won't be able to store opened cans of milk, etc., without risking food poisoning if you don't have refrigeration. Another benefit of canned foods is that they don't require cooking, water or special preparation; they just usually taste better with it.

One option for keeping foods cold are coolers, though you need a ready source of ice. However, those that live in cold climates have an advantage. If the temperature outside is consistently below 40 degrees, a Styrofoam cooler outdoors will work well for items like milk, margarine, cheese, etc. Just protect it from animals and curious passerby's.

Store wheat, corn and beans in sealed cans or plastic buckets. Buy powdered milk in nitrogen-packed cans. Leave salt and vitamin C in their original packages. Use ONLY food grade plastic containers for long-term food storage.

Storage Tips (Courtesy of FEMA)

- Keep food in the driest and coolest spot in the house--a dark area if possible.
- Keep food covered at all times.
- Open food boxes or cans carefully so that you can close them tightly after each use.
- Wrap cookies and crackers in plastic bags, and keep them in tight containers.
- Empty opened packages of sugar, dried fruits and nuts into screw-top jars or air-tight cans to protect them from pests.
- Inspect all food containers regularly for signs of spoilage, and before use.
- Use foods before they go bad and replace them with fresh supplies, dated with ink or marker.
- Place new items at the back of the storage area and older ones in front.

5. Purchase

Most of us buy our food at supermarkets. If there is a breakdown in the supply chain, we could experience shortages or store closures. The best alternative is, of course buying what you need ahead of time. Start laying in non perishable basics today, such as toilet paper, tissue, dry and can goods, etc.

The cheapest way to purchase goods are by case-lot. It's not always easy to find, but talk to the managers of your favorite store, and see if they'll do so. If the local market closes, you may be able to turn to the local barter market. For more information about it, see section VII.E. Barter.

6. Preservation

For favorite foods such as strawberries, bananas, etc., you might consider purchasing far in advance and dehydrating. Today's dehydrator's are simple to use and very effective. Storage can be as simple as ziplock bags or vacuum seal jars. To extend shelf-life, you can store dehydrated foods in your freezer until needed. Rehydration is simply a matter of adding water, or you can eat them as is, or add to your morning cereal, or in your baking. Many good dehydrators can be bought at stores such as Target or KMart.

You can also use your dehydrator or oven to make jerky. If you're more ambitious, you can try canning. However, make sure you follow directions carefully to avoid any contamination or later spoilage. Your local library should have plenty of books available on both methods.

7. Preparation

You can treat emergency situations as an unplanned camp out. A propane or kerosene stove works fine for most stove-top cooking. The only problem is enough fuel, and proper ventilation. Fire danger increases as well. Make sure you have one or more multi-use fire extinguishers always close at hand--small canister, ABC type. (These can be purchased at most hardware stores.) Also, never leave an open flame unattended, especially when small children are nearby.

An outdoor charcoal or propane grill can do double duty, as well as your woodstove and fireplace (as long as it is wood burning). You can also heat food with candle warmers, non-electric chafing dishes and fondue pots. Canned foods can be eaten right out of the can and don't require cooking, water or special preparation (though it may affect taste). If you heat the food while in the can, be sure to open the can first and remove the label. Putting a sealed can on an active woodstove, for instance, and may give you a very explosive and messy surprise!

Most camping supply stores have quite a wide variety of devices with which you can cook--from solar, to the old sterno cans. Ask them for what would be appropriate for your needs. Also, make any purchases well in advance. Prices may go up, and availability may go down as "the day" approaches.

B. Basic Supplies

You might want to store the following in large covered plastic storage bins until needed.

Supplies

Mess kits, or paper cups, plates and plastic utensils (you don't want to waste drinking water washing dishes!) Disposable baby bottle liners Flashlight and extra batteries Non-electric can opener, utility knife Matches (a waterproof container is useful as well) Aluminum foil (better than dirtying pans) Plastic storage containers Needles, thread Medicine dropper Shut-off wrench (to turn off household gas and water) Candles, lamps and lamp oil Battery operated smoke alarm Plastic sheeting (in case of leaks, etc.)

Sanitation

Toilet paper, towelettes (especially for babies) Soap, liquid detergent (antibacterial soap that doesn't use water is available) Feminine supplies Personal hygiene items (especially deodorant!) Baby needs (diapers, ointments, etc.) Contact lenses and solution Denture needs Extra eyeglasses Plastic garbage bags, ties, various sizes (for personal sanitation uses, etc.) Plastic buckets with tight lids (serve as great potties!) Disinfectant Household chlorine bleach Room deodorizer (spray or solid. No wall plug-ins!)

Pets

Food (canned and dried) Chew toys Vitamins Litter Bedding

III. Water

A. What you need

A normally active person needs to drink at least two quarts of water each day. Hot environments and intense physical activity can double that amount. Children, nursing mothers and ill people will need more. Store one gallon of water per person per day (two quarts for drinking, two quarts for food preparation/sanitation). And don't forget your pets need clean drinking water as well.

B. Water Treatment (Courtesy of FEMA)

There are 3 main methods for treating water, boiling, disinfection and distillation. For additional methods of purification, contact your local Red Cross.

1. Boiling

Boiling is the safest method of purifying water. Bring the water to a rolling boil for 10 minutes, keeping in mind that some water will evaporate. Let the water cool before drinking or storing. Boiled water will taste better if you put oxygen back into it by

pouring it back and forth between two containers. This will also improve the taste of stored water.

2. Disinfection

Before storing your water, treat it with a preservative, such as chlorine bleach, to prevent the growth of microorganisms. Use liquid bleach that contains 5.25 percent sodium hypochlorite and no soap. Some containers warn, "Not For Personal Use". You can disregard these warnings only if the label states sodium hypochlorite is the only active ingredient; and if you use only the small quantities in these instructions.

Add four drops of bleach per quart of water (or two scant teaspoons per 10 gallons), and stir. Seal your water containers tightly, label them and store them in a cool, dark place.

3. Distillation

Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt and other impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up when the lid is upside-down (make sure the cup is not dangling into the water) and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled. Store as directed.

C. Storage

Store water in thoroughly washed plastic, fiberglass or enamel-lined metal containers. Never use a container that has held toxic substances, because tiny amounts may remain in the container's pores. Sound plastic containers, such as soft drink bottles, are good. You can also purchase food-grade plastic buckets or drums. Avoid using containers that will decompose or break, such as milk cartons or glass bottles. Rotate stored water every 6 months.

D. Sources of Drinking Water

Two good sources of water is large containers you can purchase at your grocery store, and from your own tap. Since there is some debate of the purity of tap water, make sure you treat it before storing it long-term.

Hidden Water Sources in Your Home (Courtesy of FEMA)

If a disaster catches you without a stored supply of clean water, you can use water in your hot-water tank, in your plumbing and in ice cubes. As a last resort, you can use water in the reservoir tank of your toilet (not the bowl), but purify it first (see Storage and Treatment).

Water beds hold up to 400 gallons, but some water beds contain toxic chemicals that are may not be fully removed by many purifiers. If you designate a water bed in your home as an emergency resource, drain it yearly and refill it with fresh water containing two ounces of bleach per 120 gallons. You may use the water for toilet flushing only.

To use the water in your pipes, let air into the plumbing by turning on the highest (elevation) faucet in your house and draining the water from the lowest one.

To use the water in your hot-water tank, be sure the electricity or gas is off, and open the drain at the bottom of the tank. Start the water flowing by turning off the water intake valve and turning on a hot-water faucet. Do not turn on the gas or electricity when the tank is empty.

Do you know the location of your incoming water valve? You'll need to shut it off to stop contaminated water from entering your home if you hear reports of broken water or sewage lines. Also, in cold climates frozen pipes may burst if there is no heat. Shut

off the water and drain the pipes if there's a strong possibility of this occurring.

Emergency Outdoor Water Sources (Courtesy of FEMA)

If you need to find water outside your home, be sure to purify the water before drinking it. Avoid water with floating material, an odor or dark color. Use saltwater only if you distill it first. You should not drink flood water.

Rainwater Streams, rivers and other moving bodies of water
Ponds and lakes Natural Springs Snow

E. Waste Water

Wastewater and sewage treatment facilities are highly automated and environmental emissions monitoring and control systems depend on year-2000-vulnerable embedded controls. Malfunctions due to year 2000 problems could lead to polluting releases and emissions that could endanger local residents. One mission-critical program where work on year-2000 issues was lagging, according to a recent status report, is the pump-station network--a system that monitors stations to keep track of sewage and waste-water flows.

Be wary of tap water, and "gray" water used for outside purposes. Home water testing kits can help you check. The best defense is a store of emergency water.

IV. Sanitation and Refuse

As for solid waste, expect delays in garbage collection, etc. Rodents can be a major health threat where garbage accumulates; so make sure you have enough sturdy, lidded containers to hold refuse produced over a 2 week period. Be prepared to keep your yard clean if other peoples refuse finds its way to you.

Don't allow garbage to accumulate outside your home. In some rural areas, trash can be a particular attractant for a variety of wildlife--some dangerous. Store paper and other flammables away from any heat sources or open flames. See also sanitation supplies. If waste builds up, consider burying bags in pits and use lime to cut down on smell and contamination.

As for personal waste, use water straight from the tap to flush the toilet after every use. Don't use your drinking water if you can help it. Filling up the bathtub ahead of time should provide enough water for a week or more. If your shower works, don't let all the water drain afterwards. Bleach can be used to deodorize and disinfect the toilet when added to the water; just don't let your pets use it for drinking!

If the local sewage system fails, consider buying chemical or composting toilets. Portable ones are great for camping and can be used in RV's. Outhouses may be an alternative in rural areas, but they must be built and the waste treated properly to avoid health problems and contamination.

V. Health

A. First Aid and Other Training and Books

Maintaining you health is extremely important during an crisis, and minimizes the need to call for emergency services. We strongly urge you do the following:

- 1) Take at least a Basic First Aid course, with more Advanced courses later
- 2) Learn CPR
- 3) Take an EMT course, if possible

- 4) Take a fire safety course
- 5) Become and Office of Emergency Management volunteer (most OEM offices are listed in the City or County sections of your phone book)
- 6) Take the FEMA Independent Study Courses on disaster preparedness, disaster assistance, etc., for the general public at no cost. Go to:
<http://www.fema.gov/emi/ishome.htm> or call your nearest FEMA office.

Many of these courses are available from the Red Cross, local community colleges and fire departments. Some are available on the internet.

Recommended books on the subject: (Check local bookstores, libraries or ordered on-line at our website.)

- Emergency Medical Treatment : Infants, Children, and Adults. A Handbook on What to Do in an Emergency to Keep Someone Alive Until Help Arrives, by Stephen N. Vogel, David H. Manhoff
- Where There Is No Dentist, by Murray Dickson
- The MERCK Manual of Medical Diagnosis and Therapy Disaster Blaster : A Kid's Guide to Being Home Alone by Karin Kasdin, Laura Szabo-Cohen

B. First Aid Kit

Put together a basic first aid kit. You can obtain a basic first aid manual from your local American Red Cross chapter. Include the following:

- Sterile adhesive bandages in assorted sizes
- 2-inch sterile gauze pads (4-6)
- 4-inch sterile gauze pads (4-6)
- Hypo allergenic adhesive tape
- Triangular bandages (3) 2-inch sterile roller bandages (3 rolls)
- 3-inch sterile roller bandages (3 rolls)
- Scissors
- Tweezers
- Needle
- Moistened towelettes
- Antiseptic
- Thermometer
- Tongue blades (2)
- Tube of petroleum jelly or other lubricant
- Assorted sizes of safety pins
- Cleansing agent/soap
- Latex gloves (2 pair)
- Sunscreen Non-prescription drugs
- Aspirin or non-aspirin pain reliever
- Anti-diarrhea medication
- Antacid (for stomach upset)
- Syrup of Ipecac (use to induce vomiting if advised by the Poison Control Center)
- Laxative
- Activated charcoal (use if advised by the Poison Control Center)

B. Medical and Dental Care

Try to schedule needed exams, tests, etc., with results returned well before the end of 1999. If your doctor has not paid attention to the Y2K problem, he may "misplace" your medical records. Get hard copies of your medical file, x-rays, etc. If you require medication, ask if the Doctor will give you a prescription in advance. Some HMO's will not allow a doctor to write advance prescriptions. You'll need to discuss alternatives with your provider and local pharmacy.

Consider postponing any elective surgery just before or just after the turn of the century. Elective surgery (cosmetic, e.g., liposuction, face lifts, etc.) meaning not required for treatment of a life or health threatening or sustaining condition.

The greatest concern in an emergency is reaching someone who can help. If the phone lines are down, you might be able to reach emergency services by CB. However, even if phones work,

there's no guarantee that the machines and equipment emergency personnel use will work, and correctly. That leaves it up to you.

Take an advanced first aid class, CPR, etc. Learn especially how to tell the difference between life threatening or non-life threatening condition. When in doubt, however, always err on the side of caution.

Ask your Doctor and Dentist what to do in a variety of situations, such as a knocked-out tooth, fever, broken bones, falls, etc. Make sure you have all the medications needed, extra prescriptions filled, etc. Learning how to deal with such situations yourself will reduce the likelihood of panic, and increase the chances of survival for the ill or injured person.

If ambulances can't be contacted, you'll need to transport the person yourself, properly and safely. Make sure you know the location of the nearest emergency facilities, and try to contact them before you go. Check with such places before the turn of the century to see what their contingency plans are in the event ambulance service, emergency personnel, communications, and power failures.

Remember, don't expect the same quality of care you are used to if there is a general emergency in your community. Try to help out, not demand immediate treatment.

To prepare for medical situations in advance, we advise the following:

1. Stock up on needed Medications
2. Get copies of all medical and dental records, including x-rays
3. Get inoculations for tetanus, flu, pneumonia, and those you would get if you were to travel to a third world country (diphtheria, cholera, dysentery, hepatitis, etc.)
4. If you have any medical or dental problems that you've been putting off taking care of, do so now. Especially dental. Many people died during the middle ages, not from the plague, but because of infection from neglected teeth and gun.
5. Make sure you are fully briefed on any medical conditions you have and know how to take care of yourself in an emergency when services are not readily available.

C. Medical Devices

If you or anyone you know is dependent on medical devices, it is important to contact the manufacturer. Get their assurance -- in writing -- that the device will function correctly and safely. Also, speak to the Physician and express your concerns about the devices. Ask the Physician what alternatives there are to electronic or electrical medical devices, or what you can do if the device fails for any reason. Education is really your only option in this area.

According to FEMA, anyone requiring any type of life support that uses electricity should register with their local Emergency Management office -- regardless of possible circumstances.

Devices that may be affected include:

- infusion pumps in intravenous drips
- heart defibrillators •pacemakers
- intensive care monitors
- MRI's CT and PET scans
- dialysis, chemotherapy and radiation equipment
- laboratory, radiology and other diagnostic systems
- monitoring and control systems, including environmental and safety equipment

D. Medical Conditions

The frail elderly, people with particular medical problems need a caregiver, and people with handicaps--must make special plans for their safety in the event Y2K related emergency service failures occur.

Those who have the following conditions may be especially at risk and should take special precautions:

Acute or chronic respirator illnesses Heart ailments Unstable or juvenile diabetes Dependence on tube feeding Epilepsy Tracheotomies Urinary catheters Colostomies Dialysis - dependence

E. Pharmacies and Medication

Your pharmacy maintains its records on computers, as most businesses; and they are subject to the same problems. If you take medication regularly, ask your doctor to write you an additional prescription. Pharmacies may experience any number of problems or delays filling prescriptions.

Potential problems: prematurely expired prescriptions, old file information no longer current, recently changed medications or dosages, etc. They may also "lose" your information, or have trouble processing it with your insurance carrier. Don't forget to bring cash with you when it's time to purchase.

If you do get medication during and immediately after the date change, review the information on the prescription carefully. Check your name, drug name, dosage, quantity, expiration, etc., are accurate. Errors are still possible, and It a good habit to practice regardless.

VI. Communication/Entertainment

A. Phone

Communication is extremely important, often invaluable--especially in emergencies. If there are phone communication failures, you could be cut-off from emergency medical, police, and fire services. Therefore, prepare as if you will have no communication. See Emergency Medical and Dental Care for specific details.

One way of maintaining some form of contact within your family or the outside world is--a CB Radio and/or a family channel walkie-talkie. Of course, you must make sure that none of these will be affected by the Y2K problem. As a backup, you can always use children's walkie-talkies, as they are the most likely to work. However, they are only toys. Don't count on them for any significant use. (And make sure you have adequate batteries! See Radio for more details.)

B. Pager

If phones are not working, it likely pagers aren't either. We could not come up with anything that for as a substitute (signal flares, maybe? Pacifiers?).

C. Television

If there are power failures, plan for life with no television for at least a couple of days. If you have young children, this may affect you more than those who don't. Prepare by having plenty of games available, and be willing to play. This may be a good time to read to them, teach a new craft, etc. Do expect to be the sole source of entertainment for yourself and your family.

D. Radio

During any sort of an emergency, information becomes extremely important. Radio is more likely to be available. Make sure you have a portable battery operated AM/FM radio with good reception, and enough battery power to last at least a week of

continuous play. How many batteries you will need will depend on the type of radio you have. Check with the manufacturer or test it yourself. By inserting fresh batteries and leaving it on, you can time how long the radio will operate and buy batteries accordingly.

If a family member will be away for more than a couple of hours, they should have a means to communicate with them (i.e., walkie-talkie, CB, etc.).

1. Ham Radio

Ham radio equipment can operate on electricity, batteries, or solar units. With batteries and portable solar units, the transmitters and receivers can be carried from place to place, so that Ham operators can be "stationed" in various locales during an emergency. Hand-held devices are also available.

For more information on Amateur Radio see:

- (1) Beginner's Guide to Ham Radio, on-line at: <http://www.irony.com/ham-howto.html>
- (2) Amateur Radio Relay League, Colorado Public Info Coordinator, Erik Dyce, Phone: (303) 751-4605
- (3) Section 25.4. "Amateur Radio" (Cassandra Project research available at our website)

E. Other

Entertainment systems, walkmans, VCR's, etc., may or may not be affected directly by Y2K problems, but may make sure they can run on batteries. Do not rely on these to entertain you. Nothing like having a few simple (non-electronic) instruments around for fun.

VII. Financial

A. Banks/Financial Records

Keep hardcopies of all bank statements, Social Security earnings profile, mortgage, car and rent payments, IRA's, etc. Keep canceled checks or carbons. It extremely important that you get hardcopy receipts for your records because if there is ever any question about an account the burden of proof--as always--will be on you.

B. Getting Paid

"The best defense is a good offense." Because most accounting systems are automated, expect some interruptions or problems with paychecks, gov't benefits, etc. If you live from paycheck to paycheck like many people, you may be severely hit if the money does not post to your account as scheduled. However, preparing in will make it easier to get through periods when income may be interrupted. Getting checks delivered by mail rather than by automatic payment to your account will not ensure you will receive it.

C. Paying Bills

Do not count on your bills, mortgage, etc., being paid for you if you have automatic payment. Pay them manually at least 3-4 months in advance, for a 2 month period, extending into February of 2000. Make sure you keep track of all payments and have hardcopy receipts. If there's a problem, it'll be up to you to prove you made the payment.

If there are penalties associated with pre or advance payments, discuss this with your creditor. Ask if they will waive penalty fees even if only for a few months. If they won't, try to work out an agreement of suspending any late fee penalties if automatic payments fail to work. Get any and all agreements in writing.

D. Cash

Cash is often best in an emergency. Expect prices to go up, especially if there are shortages of any goods like food. Put any cash in a safe place in a non-obvious, readily accessible location, to pay for emergency needs. As difficult as it can be, set some cash aside for emergencies. Checks may or may not be accepted, nor may credit nor debit cards. For more info about cash or barter see Cash.

How much should you set aside? Monitor your expenditures for a month, all of them, even the incidental. The easiest way to do this is keep every single receipt (making sure you ask for them!) for everything you buy, and every bill you pay; and have the other members of the family do the same. At the end of a month, tally them. Barring unusual expenses, that will give you a approximation of how much you spend in a month. You can then decide if you want to set aside more or less as your finances permit.

Expect prices to go up if shortages occur. Inflation is caused by many things -- not the least of which is greed. Make sure you know more than one source to purchase goods, and that they are reliable. However, do expect there to be shortages. Even with enough money it just may not be available to buy. The best hedge against inflation and price hikes is purchasing needed items in advance. Don't allow yourself to be caught short.

E. Barter

If you aren't able to put aside as much cash as you like, look into the barter economy. Barter is common practice in many areas. Read up on barter at your local library and acquire goods or list services you may be able to use as currency.

For more information about bartering, we recommend visiting-

"Les French" (one of the oldest bartering networks) at <http://www.lesfrench.com/html/tutorial.htm> "Trade World" at <http://www.thetradeworld.com/> "The Barter Station" provides barter services at no charge at <http://www.solutions-4u.com/barter/aboutbs.htm> and, "Survival Bartering", by Duncan Long (Paperback, Published by Loompanics Unlimited, ISBN: 0915179377), retails for about \$8.00 -- is a good starter book.

F. Credit and Debit Cards

Even if retailers have managed to work out their problems with credit cards using "00" in the expiration date, they still need power, and for the telephones to be working. The stores need to be open and operating and willing to accept them. Debit cards to have the same liabilities as credit cards. Expect to use cash or barter for most purchases.

VIII. Power, Heat and Light

A. Alternative Power Sources

1. Generators

Generators can be expensive, temperamental, and noisy. The power generated is often not 'clean' with frequent spikes and surges that can damage equipment. Fuel needs to be stored for it, which can be hazardous, and many fuels don't store well long term. Because of these reasons, unless there is a clear medical need for one, we suggest looking for low tech alternatives such as woodstoves, kerosene heaters, propane refrigerators, etc. If you need a generator, the best source of information is the Virginia Cooperative Extension's "Select the Right Portable Generator" on-line at <http://www.ext.vt.edu/pubs/disaster/490-303/490-303.html>.

2. Solar

Solar use is on the rise. There are many good companies out there. A search on the internet will list many. Solar can be expensive to install, and it does need to be maintained. Batteries, converters, etc., are some of the peripheral equipment that may be needed. Solar is a good long term solution if you wish to reduce your reliance on the electric grid.

There are many companies and sources of information on-line about solar energy. Use the keywords solar energy in your favorite search engine to get a list.

B. Heat

In cold climates, lack of heat can be life threatening. The ill, the elderly and small children are particularly susceptible. The same is true of very hot climates. If the power goes off, it likely you will not be able to heat your home if you use electric, or electric fired gas or oil. If power does not go off, you may still be vulnerable if your home temperature control system shuts down.

If you depend on air-conditioners, etc., you face the same problems. A cool, darkened basement may be good refuge during the heat of the day. Also, battery powered fans should help keep the air circulating, making you feel more comfortable if not cooler.

Always drink plenty of water to combat dehydration in hot climates, and dress accordingly. Restrict activity to the cooler parts of the day. Cover the inside of windows with aluminum foil to reflect the heat away from the house, or use a blanket or sheets. You can also rig a shelter on the shady side of the house using a large tarp; or rig a tarp to shade the front of the house to keep interior heat down.

If heat is cut off, a fireplace, wood stove, or freestanding kerosene or propane heater may be used as an alternate heat source. Since heat circulation without fans is difficult, restrict heating to one or two rooms of the house and shut the doors on the rest. Try not to enter or exit the house from the room of the source of your primary heat. However, do make sure there is adequate ventilation to prevent the build up of carbon monoxide, other gases or smoke. Buy a battery powered carbon monoxide detector.

Pile up mattresses, sleeping bags, thick blankets and pillows across from the heat source, but not too near it. Expect to wear additional clothes indoors, such as sweaters or sweatshirts, and thick socks--even to bed. If you have children, have them sleep together, between you and your spouse, and/or with the family pet. Dogs, in particular, are great sources of heat (ever hear of a 3 dog night?). They are also great alarm systems if there are any problems in the night.

1. Prepare Your House

Winterize your house, barn, shed or any other structure that may provide shelter for your family, neighbors, livestock or equipment. Install storm shutters, doors and windows; clear rain gutters; and repair roof leaks. Check the structural ability of the roof to sustain unusually heavy weight from the accumulation of snow or water, if drains on flat roofs do not work. Keep plywood, plastic sheeting, lumber, sandbags and hand tools on hand and accessible.

2. Dress Properly

If you go outside for any reason, dress for the season, and expected and changing conditions. If the weather changes, you don't want to be caught in the open with little protection. For cold weather, wear several layers of loose-fitting, lightweight, warm clothing rather than one layer of heavy clothing. Outer garments should be tightly woven and water-repellent. Mittens are warmer than gloves. Wear a hat. Cover your mouth with a scarf to protect your lungs from extremely cold air. Wear sturdy, waterproof boots in snow or flooding conditions.

C. Light

Though not necessary to our physical survival, light is very important to our emotional health and stability. Light sources include: candles, hurricane lamps, flashlights, battery powered camping lights, etc. Fireplaces and wood stoves can also make cozy evening light. Don't expect to light a room to the degree you are used to with electric light. It won't hurt your eyes to use subdued lighting, even for an extended period of time.

Make sure any open flame is well away from children, pets, or flammables, and secure from accidental contact. Always keep a fire extinguisher close at hand. For safety, use a flashlight when using the stairs or accessing darkened cabinets or rooms.

If you need light close to children (to change diapers, etc.), battery powered is by far the safest. You might consider giving them their own small flashlights for fun and as a way to make them feel more secure (but have plenty of batteries!). Light sticks are marvelous as they are easy to carry, tough, and safe to play with. Be sure they are non-toxic.

Whatever light source(s) you use, be sure you have an adequate supply of fuel or batteries. Store them where easily accessible, safe, and away from children and pets.

IX. Safety and Security

A. Safety is best accomplished through prevention. Do everything you can to prevent accidents, injuries and fires in your home. Check for frayed or loose rugs, unnecessary objects on stairs, halls and walkways, and protruding objects on walls (that may be missed in the dark), to name a few.

In the Home

If you use candles, place them in a safe place away from any flammable material. Be sure all children know the dangers of candles, chafing dishes, potpourri scent pots, the fireplace and space heaters. Never leave children alone near an open flame nor with matches. Keep clutter away from the stove while cooking. If grease catches fire, do not throw water on it. Cover the pan with a lid. Be careful. Moving the pan can cause the fire to spread. Never pour water on grease fires, nor try to beat it out with a towel. Always keep an A-B-C fire extinguisher close to hand. Do not store combustible materials in closed areas or near a heat source. In order to avoid injury, turn pot handles away from the edge on the stove, and never wear loose clothing while cooking. Don't leave cooking food unattended for extended periods of time, since this is the most common cause of cooking-related fires. Only burn wood in the fireplace, and small amounts of paper at a time to avoid a chimney fire. Have your chimney cleaned and flue checked before using. Buy a battery operated smoke detector. If you already have detector, clean and test it. A working smoke detector can double your chances of survival. Practice home fire drills. Designate two exits from every room, make sure all family members are aware of an outside meeting place, and get out quickly. If your house catches fire, **DO NOT ATTEMPT TO PUT IT OUT**. Fire spreads faster than you can possibly imagine -- a matter of seconds. Evacuate immediately. Contact the local fire department **AFTER** you have left the building. Even if you can't reach the fire department, do not try to put out the fire yourself. **NEVER** go back in to a burning building to retrieve belongings or pets.

B. Security

Security systems include CCTV, motion and heat detectors, and pressure pads to name a few. These systems all depend on electricity--whether from the grid or backup power systems. Since backups kick in if the power goes out, make sure your backup system will function. The only way to know is to ask the manufacturer. Don't assume anything, and get it in writing.

If the security system is for your home or office, be prepared to make a physical inspection of the site to ensure security if power fails. It is also possible to hire temporary security personnel. Security specialists are available for advice, though hiring their services can be expensive. Your local Police department is probably the best source of information if you have questions or special needs. Don't forget, however, that in an emergency, home or office security is not a police priority, so don't expect it.

Install residential steel doors--with Class I or II deadbolts, good locks on your windows, sliding doors and gates, and motion detection lighting (see Light for more info). Talk to your local hardware store or locksmith for more information about securing your home. There are now very good exterior solar lights that are equipped with motion detectors. Many last a week or more without charging.

If valuables are a concern, remove them from your home or business. Bank vaults are still the safest place to keep them. However, use vaults only if you won't need the items for a week or so. Office equipment is usually covered by insurance if stolen; however, don't expect replacements for at least 4 - 8 weeks, if not longer. Check with your insurance agent on this, never make assumptions.

If security is still a concern, consider a watch dog or manual alarm devices. {Teenagers seem to be very clever at rigging their rooms to prevent unwanted parental intrusion.} The best security is probably a well-lit area, the presence of a number of people, and the possibility of animal protection. Dogs, "Beware of Dog" signs, very large bones and food bowls left where they can be easily seen, are proven deterrents.

1. Electronic Locks

If electronic locks rely on electricity, it's likely they either won't open--possibly locking a person in or out; or fail in "safe mode" by releasing the lock. If this is the case, security is in question. Check to see if there is a manual override; if there is, make sure you have the key or information to use it. If not, you may need to force the door if entry or egress is necessary. Prevention is also an option.

If you feel it's likely the lock will fail, you can keep the door open or block the locking mechanism from engaging. This may cause an alarm to go off. It's best to notify police and fire in advance that you will be testing, or be prepared to explain it to them when they show up!

2. Key Cards or Code Locks

Key cards are likely to suffer the same problems as electronic locks. Locks into which you punch a code, may also fail to operate, depending on whether they are manual or electronic. Refer to Electronic Locks for more detail.

C. Weapons

Whether or not to 'arm' yourself for crisis situations is a hotly debated topic. The only one who can decide if the benefits are worth the risk is you--but only if you're done the necessary research. If you believe that just having the weapon in your house makes you safe(r), then more research and study is needed. It takes many hours of professional training to use a weapon safely, correctly, and under stressful conditions or in crisis situations. If you wish to buy guns, it is absolutely essential that you spend the time and money on good weapons handling, maintenance, training and regular practice.

We recommend as an alternative working with your neighbors and local police department to establish block watches, and develop contingency plans for possible security situations. Don't overlook the fact that the best security is often the simplest--attentive neighbors, good doors, locks, lights, a dog, etc.

X. Transportation

A. Auto

Anyone who says software in cars isn't a problem has forgotten the recent General Motors Corp. recall. About 292,860 Pontiacs, Oldsmobiles and Buicks from the 1996 and 1997 model years were recalled due to an engine software problem. GM said a faulty engine system sequence can cause a backfire during start-up, possibly resulting in a cracked intake manifold which could erupt in a fire.

Could your car fail to function? Once again, you'll need written assurance from the manufacturer. Even with that, start considering alternate transportation such as bicycles, low-tech motorcycles, low-tech cars, etc. Of course, walking is a healthy alternative. If you live in a rural area, horses and carts might be an option.

Another aspect may be unavailability of fuel. Gas stations may experience a variety of electrical or electronic problems, and/or delays in fuel delivery. Storing gas can be extremely expensive and hazardous, and we don't recommend it.

B. Public Transportation

Buses will probably experience the same problems as cars; as will busses, trolley's, light rail, etc. Alternate transportation would be the same as above.

C. Airplanes

Several airline companies have publicly announced that they may not fly if they are not confident that EVERY aspect of flight control, monitoring, communication, etc., will function and correctly at the turn of the century. Don't plan plane trips over the century change, or--if you do--leave at least 2 weeks ahead of time, and plan an extended stay. Florida may be nice!

Also, several insurance companies such as Lloyds of London have said they may not insure air carriers if compliance at every phase of a trip can not be proven. This will effectively ground airplanes more surely than the possibility of controller problems.

D. Train

The rail industry is already experiencing severe problems due to computer malfunctions, not related to Y2K. Don't expect trains to be anymore likely to run than other public transportation. Beware of rail crossings. It has been reported that some microprocessor-based gate and signaling controls have experience Y2K problems during testing.

E. Traffic Systems

Many traffic systems are microprocessor controlled. If driving, treat every light as if it were a stop sign--even if green. Also be wary of Express Lanes that use gates to control the flow of traffic. Personally, I'd avoid them completely. As a pedestrian, distrust crossing lights and fall back on 'looking both ways' first.

XI. Misc.

A. Your Neighborhood

The best security is a prepared neighbor. Talk to your neighbors. You don't have to convince them Y2K is a problem. Merely explain that it's something you're concerned about, and give them info or videos to review when they wish. Let them know that you

are preparing, and if they wish to talk about it, they're welcome to talk to you any time.

If several neighbors become interested, then start holding regular meetings. Discuss some of the problems Y2K may cause and how you can pull together to handle them, and how you can share resources to help those of you who are physically or financially unable to do preparedness.

B. Your Community

Offer your services to the local Police, Fire and Emergency Services. You can assist by helping to raise funds for compliant equipment, alternative and/or backup energy and communication sources and equipment, etc. Get several neighbors together and go speak at city council meetings, public hearings and other functions.

C. Some Final Thoughts on Preparedness

Many people who prepare for Y2K are labeled at 'survivalists', 'alarmists' or worse. They see no difference between taking prudent precautions and extreme lifestyle changes. Those of us who prepare are in good company! Let me close with a quote from Sen. John Glenn that, while not Y2K related, does speak to preparedness.

"...The greatest antidote to worry, whether you're getting ready for a space flight or facing a problem of daily life, is preparation. The more you prepare, the more you study, the more you think, the more you try to envision what might happen and what your best response and options are, the more you are able to allay your fears about the future..."

Obviously, there's a limit to how well you can prepare for everything, because our lives are continually made up of unforeseen events. That's why I stressed so much to my own children the value of education--this encapsulated experience of everyone who has lived before us. It enabled them to have as much preparation as possible for the unknowns that are in the future for all of us."

Senator John Glenn, 25 Oct 1998, Parade

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Many of the preparations have been extremely impressive. American businesses and government have spent an estimated \$100 billion to get ready for Y2K problems, and tens of thousands of Americans will be working this weekend to cope with crises as they unfold. Yes, historians ARE fascinated by the fact that we spent \$100 BILLION to get ready for a small programming inconvenience. CNN.Â In September, Gartner surveyed 14,000 "general public" individuals in 21 countries and found that a large percentage of respondents plan to stock up on cash and food, which could cause shortages, he said. For example, 55% of respondents say they plan to withdraw cash to last between two and six weeks, when normal behavior is to get cash for four or five days. Some individual banks were spending up to \$100 million. BELLOVIN: The biggest immediate threat would have been to financial transactions"imagine if banks and ATMs stopped working. Other potential problems would be in the nuisance category, like VCRs.Â BELLOVIN: For the Y2K New Year"Ms, I was in Tel Aviv, visiting my wife"Ms cousins. I got to watch the countdown clock to midnight being displayed on the side of a skyscraper downtown. PAUL INGEVALDSON (senior vice president of technology for Ace Hardware Corp."Ms global operations): It was by no means a somber night. "Individual Preparation for Y2K" Paloma O"Riley The Cassandra Project PO Box 8 Louisville, CO 80027-0008 <http://CassandraProject.org/home.htm>. The Small Business Administration. <http://www.sba.gov/y2k>.Â Web users can find additional articles and information by entering the keyword "Y2K" into any Internet search engine, such as AltaVista, Yahoo, Lycos, or Excite. Prepared by Cathy Falcon Bowen, assistant professor and extension specialist, consumer issues programs, Department of Agricultural and Extension Education.