



Dose of Medicine

For GURPS

by Eric Funk

GM to Player 1: *"That last shot hit your character in the kidney, for net 6 points of damage."*

Player 2: *"Since combat is now over, my character binds the wound."* (**Player 2 rolls against First Aid, and succeeds.**)

GM secretly rolls a 6, and says to the players: *"All the damage is healed."*

* * *

While *GURPS* is a system with extensive combat skills and fighting systems, it spends relatively few pages on mundane, healing-related skills. A great many PCs are involved in accidents or violence, and not all are lucky enough to escape uninjured. Without magical healing, one must recover hit points "the old fashioned way." This article attempts to expose details of mundane medical skills in a modern (early TL8) light.

When two page references are given, they are *GURPS Third Edition/Fourth Edition*.

At The Scene of Injury

First Aid

Many occupations demand training in First Aid, such as lifeguard, fireman, nursing home volunteer, and daycare worker. Many organizations, such as large schools, amusement parks, and megacorps keep trained medical staff on hand for minor emergencies. The real-life first-aid skill covers surface wounds, literally. It stops surface bleeding, deals with minor burns, gives the knowledge to perform Artificial Respiration, apply splints, react properly if the victim has been poisoned, and help save choking victims and those with symptoms of exposure to extreme temperatures (such as heat stroke and hypothermia). Modern urban first aid is designed to stabilize the patient, and let them survive the trip to a hospital (or at least until an ambulance arrives). From the description, however, it would not do much for blunt trauma or actual Crushing damage (pp. 56/195, 424) but does allow one to perform CPR (CardioPulmonary Resuscitation) (p. CI50). This skill is critical if the optional bleeding rules are used (p. 130/420). At TL8+, this skill also gives the knowledge of basic healing Wonder Drugs such as Hypercoagulin, Morphazine, Neurovine, Superstim (see pp. UT97-98 for details and more drugs), Ursaline, and Wideawake (see pp. UTT 89-91).

In theory, the First Aid skill should only treat one hit point per wound for Impaling wounds, and half of Cutting wounds (round up). Full-body damage such as concussion or lightning could be healed as per "normal" rules. Use of the "Advanced Healing System" and "Partial Injuries" rules on pp. CII155-157 are excellent guides.

As a new rule, one might consider any extra damage due to Vital hit multipliers (including, but not limited to the Kidneys and the Jaw) as "unhealable" by natural means; this is similar to Unhealing hit points from the disadvantage on p. CII106/B160 (but see Surgery, below). This could reflect the situation when a medic tells someone out in the field: "The wound has been patched up, but it won't heal right until treated at a hospital."

Modifiers: +1 for a small first aid kit (1 lb), +2 for a "crash kit" (10 lbs), or +3 for an ambulance or better (From THS).

(Air) Ambulance Ride

Ambulance medics are the first-responders who deal with the injured. Injured persons may not be allowed to leave the scene on their own if their total injuries exceed one hit point of damage. If the person's injury is exactly 1 HP, then one will be strongly encouraged to come to a hospital for treatment. Unconscious and injured people will be taken to a hospital to be checked out. Unable to prescribe medication themselves, medics with only "basic" certification must telephone (or otherwise get direct approval from) a medical doctor to administer any drug more complex than aspirin. Those with "advanced" training may directly dispense medication from a narrow list (such as blood thinners, pain killers, and antihistamines). Once on the road, trained drivers must circumnavigate traffic, pedestrians, and any genre-specific hazard on the way to the hospital. Typically an ambulance has a crew of two, one veteran, and the other a rookie, who typically take turns driving unless the patient is critical. As a rule, medical doctors do not travel in ambulances, but may be present during patient transfers, or in some air ambulance rides to rural areas. In rural areas, there is usually only one ambulance per hospital, and an estimate in urban areas is one per 20,000 persons. (This is typical for most North American areas. For areas of denser population, such in Europe, the ambulance ratios should be increased.)

"Young lady, I assure you I am an expert on humans!"
-- Dr. Zoidberg to Philip Fry, *Futurama*

Diagnosis is the skill to determine the extent and nature of illnesses, ailments, and the extent of injury. (Unfortunately, the description on p. 56/187 seems to contradict the use of First Aid to diagnose injury on p. AON80.) At a scene with multiple injuries, first aid responders must use a combination of "common-sense" First Aid (p. B56), and to a lesser extent, Diagnosis to get those most in need of care to a hospital first. Ambulances deliver based on hospital capacities and patient injury. E.g. Not all hospitals have burn wards or are equipped to perform heart surgery.

Modifiers: TL bonus of +TL/2 for having proper medical equipment (p. 56/187).

"Just a spoonful of sugar helps the medicine go down."
-- *Mary Poppins*

The two lists that follow describe a flow of skill rolls in a standard TL8 hospital.

Following a treatable illness (internal injury, poison) in a hospital:

1. The doctor sees the patient, and orders a blood test/x-ray/bacteria culture if the problem is not obvious.
2. If tests are needed, a lab technician uses Electronics Operation (Medical Equipment) to process the results and fill in reports correctly.

3. The doctor looks at the results, compares them with the symptoms the patient noted, and realizes the illness (using the Diagnosis skill).
4. Using the Physician skill, the doctor chooses the correct treatment, and orders the medication for the patient.
5. The pharmacist uses Professional Skill (Pharmacist) to prepare the medicine in the correct fashion if it does not come pre-packaged. A professional would also use their Biochemistry skill to make sure that the dosage is not likely to be dangerous.
6. The nurse receives the medicine, and also uses their Professional Skill (Nurse) to make sure the dosage is within safe limits, then again to apply it; the former is technically optional if time is of the essence. (Nurses use tables and experience to determine what constitutes safe doses of medication. Doctors use Physician.)

"I could have been a surgeon; I love taking things apart!"

--Mad Monty, *Muppets Treasure Island*, "A Professional Pirate"

Skills used in the process of performing a surgery in a hospital:

1. As above, for #1
2. As above, for #2
3. As above, for #3
4. The doctor realizes the problem is out of his field as a general practitioner and sends the data to the appropriate specialist (unless it's obvious, as per Diagnosis, p.B56).
5. The specialist examines the data (with their Diagnosis skill).
6. If the surgery is more than superficial, there will be at least one technician and/or nurse in the operating room (as well as an anesthesiologist, if necessary).
7. The surgeon operates, deciding many things about the patient's fate with a single roll against Surgery.
8. The surgeon, or someone else, performs First Aid to close the wound. A roll against Surgery may be used to speed healing of the incision wound (see "Surgery" above).
9. Finally, the surgeon, (or another medic) performs Diagnosis to make sure the patient is stable.
10. The patient returns at intervals to be examined with the Diagnosis skill to ensure the illness and surgery are healing.

Triage

Arriving at an emergency ward, the wounded are sorted and treated in priority of injury. If the person is not injured enough to be treated immediately, they will be asked to fill out forms and provide name, identification, and proof of insurance. If one is too injured, any companions not so will be asked to provide it for them. Among the forms may be a waiver that valuables should be sent to a safe location. Clothing and valuables are stored separately, the latter going to Security. Clothes are dropped off during the night shift. If one is injured seriously (or unconscious), requiring surgery, one's personal effects will be itemized by two staff members, and locked in a locker. ([Policies vary](#) from region to region. Also see Links, below.) Staff may not willingly release patients until the attending doctor (and/or surgeon who operated on them, if applicable) has examined their chart and signed their release. If one does not possess insurance, then making provision to pay will also be required.

"How is it, Doc?"

"Radical reconstructive surgery is the only option."

"The leg's that bad?"

"The leg's fine. I was talking about your face."

--"Doc" LaCroix and Sergeant Brutto, *Starship Troopers: Roughnecks*

Surgery requires someone else, or the same doctor, to properly Diagnose the problem first. Once the ailment is determined, only then can this skill treat problems. According to p. STM64/B223, all surgery causes damage, but it can also cure it. If the "unhealing" rule, above, is used, then a successful Surgery roll could change (margin of success) +1 hit points of "unhealable" damage to normal damage.

The size of the incision required should give a bonus to the Surgery roll. For example, if the surgeon is using an existing bullet wound, and a narrow enough tool to pull the bullet out, then a +2 bonus may be appropriate; perhaps a use of the Size column of the Speed/Range table with a -10 modifier could reflect this appropriately. If the surgeon is performing surgery with an optic cable and micro-tool, then there is almost no damage due to the operation. Futuristic and fantastic settings may have completely non-invasive methods available. Smaller wounds can translate to a faster recovery; see below.

Otherwise, if the doctor must look inside, and for cosmetic or torso incisions, the invasive procedure inflicts 1d or 2d damage for limb and torso operations respectively (see pp. STM64-65 for ideas). It suggests a successful Surgery roll reduce the number of dice by one, but add one damage point to the remaining dice (e.g.: 3d becomes 2d+1). A Critical Success on the Surgery roll reduces all dice to one point of damage each. The GM may reduce this by 1 or 2 per die for sterile conditions, such as a long-anticipated operation, or increase the damage by 1 or 2 per die for aggravated wounds that need to be scoured or debrided, such as wounds caused by fire or acid burns, gangrene, or radiation. Characters with Hemophilia (see p. 28/138) or Weak Immune System (see p. CI95/B158 -- "Susceptible to Disease 3") are at increased risk. If this is an operation to help correct damaged organs, the damage inflicted by the surgery is reduced by this amount (to a minimum of 1). At the end, the surgeon (or other attending doctor or nurse) may perform First Aid to heal the damage inflicted by the operation! (This is quickened in *Fourth Edition* by assuming that if the Surgery roll is successful, then the surgeon inflicts no net damage; see p. B223.)

In addition to all of this, if the "extra damage to the vital areas do not heal naturally" suggestion is used, the [degree of success]+1 could be the number of points of damage converted to "normal" damage. The GM may want to keep the exact roll a secret, not revealing the amount of "unhealing" damage transformed into "normal" damage, until the patient can heal no more. At this point, should the patient still have "unhealable" hit points, a successful Diagnosis roll would reveal that fact, but not the exact number. Crippled limbs may also be released to heal by this kind of operation, at the GM's whim.

Suture Self

Most First Aid courses do not teach a basic medic how to make stitches or form casts. It is then logical to assume this skill is taught in Surgery and Professional Skill (Paramedic), as most general practitioners, "advanced" medics, and nurses trained for emergency room and remote conditions know the basics of suturing. If the Physician skill is used, the margin of success (or failure) may be added (or subtracted) from the patient's HT roll to recover from that particular injury. At the GM's whim, the Cooking or Tailor skills (at skill -4) may be used if someone has First Aid at 12+. (An additional -2 should be added if the impromptu assistant operates without supervision, but the right tools; see p. B56/223 for tool penalties). Some Cooking techniques include sewing of meat, and may provide this default.

Ward Treatment

"By the skills of lord Elrond, you are beginning to mend."
-- Gandalf, *The Fellowship of the Ring*

Physician is the skill to identify and assign the proper treatment to a previously diagnosed ailment (see p. B 56/213). Those trained in this skill are also able to watch over healing patients, helping them heal faster (see p. B 128/424). In a world where magic works, possessing this skill at 15+ (Veteran/Well-Trained from p. B45/Expert on p. B172) would allow a non-mage to use a healing item or allow a mage to avoid the effects of a Critical Failure of the spell (see p. M50/B248).

"I've finished my nap! Die Drej!"

-- Gune, *Titan AE*

Resting

Part of healing is rest, preferably with an attending Physician (see p. B128/424). Unfortunately some people find the process of injury, treatment, as well as the waiting period while the body heals to be stressful. Combine this with the stress of missed work, inability to help family, and the financial burdens medical treatment can add, and some people break. If the patient has any of Rank, Status, Code of Honor, Miserliness, Overconfidence, Sense of Duty, Workaholic, On The Edge, Vow, and/or Delusions ("Invulnerable"), these might call a person to be literally restless to leave, and thus forfeit healing. A failed Will roll (with a -1 penalty for every -5 points of the above) could prevent a good night's sleep, and thus the opportunity to make a HT roll to regain lost hit points. Perhaps sedatives may help -- a light dose might add +1/2TL to the above Will roll, with no unusual side effects. A strong dose could add +TL to the roll, but a side effect on a Critical Failure may be an allergic reaction (or Addiction) to the drug, and that person gains a penalty instead of a bonus when that particular drug is used (starting with this treatment). Hospitals are a very different environment from most homes. Strange beds, food, staff, patients, and even plumbing can make it an awkward experience for many -- and that's during the day!

Unlucky individuals may become *Addicted* to medications, with disadvantage values varying from -5 to -10 for cost, and those that qualify as "highly addictive" are almost certainly "Illegal" to possess without a prescription (see p. B30/122). Some may even develop Delusions regarding this, such as "I have chronic pain," "I have no problem," or "I can stop any time I want." Recovery from Addictions might follow the "Attending Physician" rules from p. B128/424 (even if the attending expert is using the Psychology skill), giving the patient a +1 or +2 to HT rolls to recover, perhaps at the increased roll rates on the table. This advanced rate represents cutting edge hospital care, with state of the art drugs and therapy. For those that cannot afford this (or choose to visit local priests or counselors), rolls are made at the increased rates, but replace "days" with "weeks" or "months." Meditation (M/H) (see p. C1142/B207) may be of use in entering a state of rest. This is why doctors and nurses are trained in Psychology: to help patients get the correct mindset to heal.

Illnesses

In addition to plagues (pp. B133-134) and diseases (pp. CII167-174/B442-444), many people catch colds, fevers, and nausea. One way to model this may be to allow a roll versus HT every month, adding modifiers for Disease Resistance and +1/2TL if medical care is available (penalties may be added for smokers, and Overweight persons, and Fit already contains a bonus). On a Critical Failure, the patient gains a secondary infection, and loses a point of HT (Attribute), and requiring hospital treatment to correct it. If the roll fails by 1/2TL (but not Critically), then the illness contracted can quickly be cured by modern medicine (in 2d days). Any other normal Failure could require 4d days to work it out (see "Immunity," p. B133/443).

"Can you get me some of those Flintstones chewable morphine?"

-- Bart Simpson, *The Simpsons*

Pharmacy (Synthetic) (p. C1150/B213) is the occupational skill of mixing and dispensing medication. To be taught this skill in a formal institution, the technician must gain a broad skill in

Biochemistry (at least skill 12). The Research skill is not required to allow the pharmacist to research names of doctors, medical centers, the illness in question, and if indicated, proof of insurance coverage. This should be available in commercial databases, causing problems for Zeroed characters and those with false identities. To become a professional pharmacist requires years of training, varying on the level of independence their (future) position allows.

"X-ray, give me an X-ray, or at least a shot of morphine!"

-- Buaku, *Dominion Tank Police*

Electronics Operation (Medical Equipment)

Skills in GURPS are broad enough that skill Electronics Operations (Medical Equipment) allows one to use all medical equipment *designed* between 1950 and 2001 are TL7. This means that the same skill could operate cutting edge x-ray equipment in 1951, and "old" MRI equipment in 2030. For characters with medical technology skills, the GM may want to allow "Optional" specializations to the "required" specialization, such as Electronics Operation (Medical Equipment)(X-Ray)/TL (p. B43/189). This may look complex, but it reflects the specialization that most (if not all) medical technicians take. A short list of some modern "optional" specializations may include CAT (Computerized Axial Tomography), Dental, Dialysis, Emergency, MRI (Magnetic Resonance Imaging), Operating Room, Ward, and X-Ray. Accordingly, Diagnosis, Surgery, and even the Physician skills of doctors working in a large facility are likely to be [specialized](#).

Electronics (cybernetics) and Mechanic (cybernetics) (p. CY17) are counted as useful skills for a doctor that works with cybernetics on a regular basis (even in TL7 for pacemakers and electronic prosthetics, or earlier in a Steampunk campaign).

Cast of Thousands

(Unless otherwise specified, all skills should have some time invested in them.)

Emergency Medical Technicians ("basic" medic)

DX: 11 **IQ:** 11.

Skills: Administration-9, Diagnosis-10, First Aid-14, Electronics Operation (Medical Equipment)-13, Physiology-9, Professional Skill (Paramedic)-12, Psychology-9.

Useful Skills: Area Knowledge, Driving, Running, Survival, Traps.

Paramedic ("advanced" medic)

DX: 11 **IQ:** 12.

Skills: Administration-11, Area Knowledge (City)-10, Diagnosis-12, Driving-12, First Aid-16, Electronics Operation (Medical Equipment)-15, Physiology-10, Professional Skill (Paramedic)-15, Psychology-11.

Useful Skills: Body Language, Running, Survival, Traps.

Beginning Nurse

IQ: 11.

Skills: Administration-10, Anthropology (Sociology)-13/7, Chemistry-12, Biochemistry-10, Diagnosis-12, First Aid-14, Electronics Operation (Medical Equipment)-12, Professional Skill (Nurse)-12, Psychology-10.

Experienced nurses also pick up Body Language, Detect Lies, and other social skills. Emergency room nurses also learn Professional Skill (Paramedic) to deal with trauma patients.

Doctor (just out of medical school)

IQ: 12. Surgeons should also have Increased Manual Dexterity +2, DX 12 or some combination thereof.

Skills: Administration-10, Anthropology (Sociology)-10, Biochemistry-11, Chemistry-13, Diagnosis-14, Electronics Operation (Medical Equipment)-13, First Aid-14 (free from Physician, but possibly higher, default to be traded later), Physician-14, Physiology-12, Professional Skill (Doctor)-12, Psychology-10, Research-12, Surgery-10 and either Fast-Talk (Medical) or Savoir-Faire (Medical).

Some doctors will also have studied Botany, Forensics, Genetics, Pathology, Poisons or Zoology. Less ideal doctors may have studied an unrelated "Minor" such as Physical Education. Surgeons will, of course, have trained their Surgery and Physiology skills to high levels, usually specializing in one body location. See the Medical Examiner on p. CO49 for one example. Their degree should be the accumulation of years of study of Biochemistry, First Aid, and Physiology. Physician, Diagnosis, and Surgery are studied by shifting defaults (p. B45/173) from First Aid and Physiology.

These templates all reflect minimal beginning skill levels, and experienced professionals in a high-learning environment will have their primary skills at much higher levels, up to 15 or 16. In order to survive to be veterans, they will probably also have higher Attributes, particularly IQ. For comparison, all the military templates in *GURPS Special Ops* (pp. 56-69) only have ½ character point invested in First Aid. Only the "Medic" MOSs have Diagnosis, only a few of those have Surgery, and none have Physician.

"With great power comes great responsibility."
--Spider-Man

Hippocratic Oath

Classically, this [oath](#) was demanded of all physicians. Most [modern versions](#) are loosely worded, and thus less restricting. In classic times, the former may be worth perhaps -10 points. In some contemporary liberal areas, including some regions of the United States, the classic oath may be worth up to -15 points because of its restrictions. The modern may only be worth a Quirk if one follows only the literal wording, or -5 if one attempts to follow the spirit of the wording. Beyond being versions of Sense of Duty, Honesty, and/or Vow, it may be appropriate for the doctor to take Contacts, Allies, Dependents and/or perhaps a Patron (a senior doctor/professor).

Hospitals

Many metropolitan medical centers are miniature cities in themselves, with everything from temporary apartments, restaurants, laundry services, machine shops, power plants, and research labs to internal television and radio stations. In cinema, many also include black labs performing research on experimental drugs, bio-agents, cybernetics, biomods, and genetic engineering.

In many (Atomic) Horror settings, the hospital becomes one of the last places of refuge during a crisis due to the ability to house a number of patients, the emergency supplies, as well as the emergency power systems provide light. A typical emergency system provides three to 30 minutes of battery power, plus six to 48 hours of diesel. An emergency power system provides anywhere from 250kW for a small rural hospital to over 6MW for an urban complex. (This may be of particular interest to *Draw Power* mages, time travelers, and Gadgeteers in a hurry.) In a post-cataclysm situation, the tanks are only likely to contain fuel if the generators are prevented from activating when external power fails. Fire laws in many areas require hospitals to be built with the equivalent of Heavy or Total Compartmentalization and Full Fire Suppression Systems, which limit the spread of fires (pp. VE20 and VE65, respectively).

Adventure Seeds

- While recovering or otherwise spending a lot of time in a hospital, one has the opportunity to hear the story of pretty much any kind of person. Tales of ghosts, treasure maps, or small clues to people's histories can be gleaned from odd connections.
- In a *Cops* or *In Nomine* campaign, the heroes realize they must closely guard (or deeply interrogate) a patient in the upper floors of a hospital while remaining undercover. This could require careful planning or calling in favors, as visiting hours may be limited and people are everywhere.
- In a secret-magic campaign, a PC (or important NPC) is critically injured in an accident or battle with the monster of the week. Before the wizards can help them, medics rush the patient to a hospital. By the time the mages arrive, they find the patient is in critical condition, being prepared for surgery. Can they sneak in, find their ally, and cast the spell without being kicked out? Healing spells from *GURPS Magic* may only take one second, but *Succor* from the ritualistic *Path of Health* takes 5d minutes . . . (see p. SPI95).
- While police take the metahuman criminal Knife Man into custody after the heroes subdue him, medics note the extent of the bleeding injuries our heroes have sustained. They insist with all their will that hospital treatment is necessary. How will these supers react, especially with the gathered crowd watching?
- Stranded in the wilderness after the group's vehicle is disabled, there is certain danger miles away across the countryside. Perhaps it is an evil Scientist who has flown to where their M-Ray is, or the heroes have learned where the bugs are coming from, or some other Great Revelation. Time is of the essence, and since their Patron is incommunicado, helicopter rental companies won't take credit cards over the phone; they might have to fake an emergency call to get an air ambulance . . . Follow-up adventures may involve dealing with criminal charges for misuse of the ambulance system.
- Many people die every year from improper doses of medicine. Perhaps a close/important NPC becomes violently ill (or dies) after receiving a cutting-edge treatment. Is it the beginnings of a *Cabal* or *Illuminati* campaign?
- There is an [emergency](#) and people need help! The medic teams will need help to get to people and get out through rubble and throngs of people. Less scrupulous characters may take advantage of the emergency situation and steal an ambulance and use its "right of way" to get away with . . . murder?

Links and Resources

Templates

- **Doctor:** *Horror Third Edition* p. 11
- **Hazardous Area Rescue Worker:** *Covert Ops* p. 119
- **Medical Examiner:** *Cops* p. 49

- **Pathologist:** *Undead* p. 102
- **Physician:** *Greece* p. 69
- **Special Ops Medical MOS:** *Special Ops* pp. 57-69
- **Street Doctor:** *Rogues* p. 108
- **"Powered by GURPS" Templates**
- **Doctor and Medical Technician:** *GURPS Traveller* p. 96
- **Doctor (Basic & Advanced):** *Blue Planet* p. 23
- **Igor:** *Discworld Also* p. 60
- **Mad Doctor:** *Discworld Also* p. 56
- **Medic MOS:** *GT: Ground Forces* p. 59
- **Medic MOS:** *WWII* p. 54

Medical Certifications

- *GURPS Prime Directive* p. 46
- *GURPS Traveller: Far Trader* p. 85
- *GURPS Horseclans* p. 59

Pyramid Links

- "[The Twenty-Five Points Gang](#)" by Stephen Dedman for a 25-point street doctor
- "[Bam! Pow! Ouch! Damage, Healing, And Fatigue For GURPS Supers](#)" by Stephen Dedman
- "[Supporting Cast: Franz Anton Mesmer](#)" for a variant on Yin-Yang Healing/Chi Treatment and his work with the healing power of magnets.
- "[Omniscient Eye: How Did They Heal Bones In the Old Days?](#)" by David M. Finch
- "[Mariel O'Malley, psionic doctor](#)" by Brandon Cope
- "[Tis but a Scratch!](#)" by Stephen Dedman
- "[What, Me Heal?](#)" by Aaron Rosenberg

"Real" World

- *Chicago Hope/E.R.*
- *General Hospital* (and virtually any soap opera)
- *M.A.S.H.*
- "[Tiny Robotic Arms reduce risk and recovery time in surgery.](#)"
- [STARS](#)
- [United Kingdom's National Health Service](#)

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