

# ETHICAL ISSUES IN RESPONSE PERTAINING TO PEDIATRICS

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# Disclosure Statement

- ⦿ No financial relationships to disclose
- ⦿ No off-label use of medications and or equipment will be discussed

# During Disasters

- ⦿ Ethically conflicting situations will need to be faced
- ⦿ Best to develop an ethically sound plan beforehand

# Ethical Issues in Disaster Medicine

- Duties of healthcare workers
- Vulnerable populations
- Community participation
- Common good vs. individual autonomy
- Informed consent and assent
- Treatment refusal
- Disaster triage / surge
- Resource (re)allocation
- Altered / crisis care standards
- Vaccinations
- Palliative support for those 'beyond emergency care'
- Disease surveillance
- Isolation and quarantine
- Religious, cultural, and linguistic differences
- Risk communication
- Relations with media
- Relations with industry
- Obligations to healthcare workers
- Participation of healthcare workers in war crimes / torture
- Disaster research
- Ethics review in public health

# The Problem

Emergency preparedness for vulnerable populations raises challenging ethical questions

These challenging questions are applicable across the broad range of disaster victims. *All victims will become and be seen as vulnerable.*

# Objectives

- Participants will gain an understanding of:
  - The basic philosophical foundations of bioethics and their relevance to moral quandaries in pediatric MCEs.
  - Approaches to healthcare resource allocation in pediatric MCEs advocated in selected jurisdictions.
  - Contingency and crisis standards of care in MCEs advocated by the Institute of Medicine (IOM).
  - The expected competencies in disaster ethics now advocated by the World Health Organization (WHO).

# Agenda

- ⦿ Ethical basis for moral decisions
- ⦿ Ethical questions in pediatric disasters
- ⦿ Ethical approaches / ethical models
- ⦿ Ethical thinking for moral decision making
- ⦿ Ethical dilemmas in pediatric disasters
- ⦿ Ethical responses to pediatric dilemmas

# Ethical Basis for Moral Decisions

## The Western Tradition

# Ethics

- Ethics is the study of standards of conduct and moral judgment, or a system or code of morals
  - Ethics is how *we* as a society should act
  - Morals is how *I* as a person should act

# Bioethics

- ◎ Steinbock D, London AJ, Arras JD. *Ethical Issues in Modern Medicine: Contemporary Readings in Bioethics*, 8 ed. New York: McGraw-Hill, 2013.
  - ‘Bioethics is a study of moral conduct, of right and wrong. As such, it is inescapably normative.’
- ◎ Beauchamp TL, Childress JF. *Principles of Biomedical Ethics*, 7 ed. New York: Oxford University Press, 2012.
  - ‘We primarily use philosophical reflection on morality . . . .’

# 'Philosophical Tennis'

- ◎ Cahill T. *Heretics and Heroes: How Renaissance Artists and Reformation Priests Created Our World*. New York: Random House LLC, 2013.
  - 'His nickname is **Plato**, which means "broad". He's an immensely confident, if unsmiling, Athenian ... . [He] lobs his serve ... with a glowering power ... .'
  - 'His serve is answered by his graceless opponent ... . And yet his challenger – his name is **Aristotle**, son of a provincial doctor – manages to persist.'
  - 'To this day, it may be asked of anyone who cares about ideas: **Are you a Platonist or an Aristotelean?**'

# Deontology vs. Teleology

## ⦿ Deontology (Platonist)

- ‘Kantianism’: grandest intentions
- The means justify the ends (rule based)
- ‘Impartial rule theory’ (Clouser and Gert)
- *Philosophers?*

## ⦿ Teleology (Aristotelean)

- ‘Utilitarianism’: greatest happiness
- The ends justify the means (outcome based)
- ‘Principlism’ (Beauchamp and Childress)
- *Clinicians?*

# Prehistory vs. Sociobiology

- ◉ Wilson EO. *The Meaning of Human Existence*. New York: Liveright Publishing Corporation, 2014.
  - ‘... [D]uring the habilene period\*, a conflict ensued between individual-level selection, with individuals competing with other[s] ... in the same group ... , and group-level selection, with competition among groups ... . The latter promoted altruism and cooperation among all group members ... [and] led to innate group-wide morality and a sense of conscience and honor.’
  - ‘The competition between the two forces can be succinctly expressed as follows: within groups, selfish individuals beat altruistic individuals, but groups of altruists beat groups of selfish individuals. Or, risking oversimplification, individual selection promoted sin, while group selection promoted virtue.’
  - ‘So it came to pass that humans are forever conflicted by their prehistory of multilevel selection.’

\*Era of human ancestor *Homo habilis*, from roughly 2.8 to 1.5 million years ago

# The Classical Tradition

## Aeschylus (c524-c455 BCE)

### ● *Prometheus\* Bound*†

- ‘Hearken to the miseries that beset mankind. They were witless erst‡ and I made them to have sense and be endowed with reason. ...’
- ‘Though they had eyes to see they saw in vain; they had ears but heard not. But, like to shapes in dreams, throughout their length of days without purpose they wrought all things in confusion. ... They had no sign either of winter or of flowery spring or of fruitful summer, whereon they could depend, but in everything they wrought without judgment, until such time as I taught them to discern the risings of the stars and their settings. Aye, and numbers, too, chiefest of sciences, I invented for them, and the combining of letters, creative mother of muses’ arts, wherewith to hold all things in memory. ... ‘Twas I and no one else that contrived the mariner’s flaxen-winged car to roam the sea. ... If ever man fell ill, there was no defence, but for lack of medicine they wasted away, until I showed them how to mix soothing remedies wherewith they now ward off all their disorders. ...’
- ‘Hear the sum of the whole matter in the compass of one brief word – every art possessed by man comes from Prometheus.’

\*Ancient Greek titan punished for sharing fire, and other wisdom of the gods, with humans

†Possibly written by his son, Euphorion ‡Wiktionary: adverb, archaic; long ago, formerly

# The Classical Tradition

## Hippocrates (c460-c370 BCE)

### ◎ First Precept

- ‘First, do no harm’ (*Primum non nocere*)
  - The first precept? *Well, not exactly!*
- First do some good, then do no harm!
  - *‘As to diseases, make a habit of two things – to help, or at least to do no harm.’*

### ◎ First Aphorism

- Also rarely quoted in its entirety!
  - *‘Life is short, but art long; the crisis fleeting; experience perilous, and decision difficult. The physician must not only be prepared to do what is right himself, but also to make the patient, the attendants, and the externals cooperate.’*

# The Classical Tradition

(c469-c399, c427-c347, c384-c322 BCE)

- ◎ Socrates → Plato → Aristotle
  - Inquiries → dialogues → treatises\*
- ◎ Plato: four cardinal virtues
  - Courage, temperance, justice, prudence
- ◎ Aristotle: *Nicomachean<sup>†</sup> Ethics*
  - Focus on what is virtuous, beautiful, good; ‘We are not studying in order to know what virtue is, but to become good, for otherwise there would be no profit in it.’ (*NE* II.2)

\*From notes of lectures at Lyceum †Edited by or dedicated to his son Nicomachus

# The Judaic Tradition

(c1440-c1400 BCE)

- ◎ *Genesis* 1:26 (KJV)
  - ‘And God said, Let us make mankind in our image...’
- ◎ *Genesis* 2:16 (KJV)
  - ‘And the Lord God commanded the man...’
- ◎ *Genesis* 4:9 (KJV)
  - ‘And the Lord said unto Cain, Where is Abel thy brother? And he said, I know not: Am I my brother’s keeper?’
- ◎ *Genesis* 6:9 (KJV)
  - ‘... and Noah walked with God.’
- ◎ *Genesis* 12:1 (KJV)
  - ‘Now the Lord said unto Abram...’
- ◎ *Genesis* 15:2 (KJV)
  - ‘And Abram said, Lord God...’

# The Judeochristian Tradition

- *Hillel the Elder* (c110 BCE-c10 CE)

- ‘That which is hateful to you, do not do to your fellow. That is the whole Torah; the rest is the explanation; go and learn.’

- *Mark 12:30-31* (KJV) (c66-c70 CE)

<sup>30</sup> And thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind, and with all thy strength: this is the first commandment.\*

<sup>31</sup> And the second is like, namely this, Thou shalt love thy neighbour as thyself.† There is none other commandment greater than these.’

- *Mishnah Sanhedrin 4:9* (completed 217 CE)

- ‘Whoever destroys a soul, it is considered as if he destroyed an entire world. And whoever saves a life, it is considered as if he saved an entire world.’

\*Citing *Deuteronomy 6:4-5* (KJV) †Citing *Leviticus 19:18* (KJV)

# The Islamic Tradition

(revealed to Muhammad c609-c632 CE)

- ◎ *Qur'an 3:185*
  - 'No soul can die except by God's permission.'
- ◎ *Qur'an 5:35*
  - 'If anyone killed a person ... it would be as if he killed all of mankind. And if anyone saved a life it would be as if he saved the lives of all mankind.'
- ◎ *Qur'an 33:26*
  - 'It is not fitting for a believer, man or woman, when a matter has been decided by God and his Prophet, to have any option about the decision. If anyone disobeys God and His Apostle, he is indeed on a clearly wrong path.'
- ◎ *Qur'an 36:79*
  - 'He will give them life who created them for the first time ... .

# Medieval to Middle Ages

- ◎ Averroes\* of Andalusia (1126-1198 CE)
  - Defender of Aristotelian philosophy against Ash'arism†
  - 'Founding father of secular thought in Western Europe'
- ◎ Thomas of Aquinas (1225-1274 CE)
  - Synthesis of classical ethics, Christian theology
  - 'First principles of action' based on 'natural law'
  - 'Virtue denotes a certain perfection of a power'
  - 'All acts of virtue are prescribed by the natural law'

\*Abu I-Walid Muhammad Ibn Ahmad Ibn Rusd †An Islamic philosophical school based on revelation

# Renaissance to Reformation

- ◎ Spread of literacy
  - Johannes Gutenberg (1398-1468)
    - Printing press (1439)
- ◎ Challenge of doctrine
  - Martin Luther (1483-1546)
    - *Ninety-Five Theses* (1517)
- ◎ Theory → observation, experiment
  - Francis Bacon (1561-1626)
    - The Scientific Method
- ◎ Revelation → realism, reason
  - René Descartes (1596-1650)
    - 'Cogito ergo sum'

# Entitlement to Enlightenment

## ◎ 'Kantianism'

- Immanuel Kant (1724-1804)
  - *Groundwork of the Metaphysic of Morals* (1765)
    - **Categorical imperative:** 'Act only according to that maxim whereby you can at the same time will that it should become a universal law without contradiction.'

## ◎ 'Utilitarianism'

- Jeremy Bentham (1748-1832)
  - *Introduction to the Principles of Morals and Legislation* (1789)
    - **Utility principle:** 'Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. ... By the principle of utility is meant that principle which approves or disapproves of every action ... according to [its] tendency ... to augment or diminish the happiness of the party whose interest is in question: or, what is the same thing in other words ... to promote or to oppose ... happiness.'
- John Stuart Mill (1806-1873)
  - *Utilitarianism* (1861)
    - 'It is quite compatible with the principle of utility to recognize ... that some kinds of pleasure are more desirable and more valuable than others.'

# Eighteenth and Nineteenth Centuries

- ◎ John Gregory (1724-1773)
  - *Lectures on the Duties and Qualifications of a Physician* (given 1766 through 1773)
    - Moral duty ‘to acknowledge and rectify mistakes’\*
    - ‘No established authority ... to refer ... doubtful cases’\*
    - ‘Lay medicine open to the public’\*
  - An approach not widely supported in its day
- ◎ Thomas Percival (1740-1804)
  - *Medical Ethics* (published 1803)
    - ‘Reinterpretation of Hippocratic guild ethos’\*
    - Largely advocated professional self-regulation
    - More ‘medical etiquette’ than ‘medical ethics’
  - *AMA Code of Medical Ethics*, adopted 1847

\*Boyd KM: Medical ethics: principles, persons, and perspectives: from controversy to conversation. *J Med Ethics* 2005;31:481-486.

# Twentieth Century

- ◎ Principle of informed consent legally established
  - Schloendorff vs. Society of New York Hospital
    - 211 N.Y. 125, 105 N.E. 92 (1914)
- ◎ Wartime atrocities by Nazis and Unit 731
  - Nuremberg Code
    - <https://history.nih.gov/research/downloads/Nuremberg>
- ◎ World Medical Association
  - Declaration[s] of [Geneva and] Helsinki
    - <http://www.wma.net/en/30publications/10policies/b3/17c.pdf>
- ◎ Willowbrook, Tuskegee ‘experiments’
  - Belmont Report
    - <http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html>

# Belmont Report

<http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html>

- ◎ Respect for persons
  - ‘Individuals should be treated as autonomous agents’
  - ‘Persons with diminished autonomy are entitled to protection’
  - ‘To respect autonomy is to give weight to autonomous persons’ considered opinions and choices while refraining from obstructing their actions unless they are clearly detrimental to others’
  
- ◎ Beneficence
  - ‘(1) Do not harm’
  - ‘(2) Maximize possible benefits and minimize possible harms’
  
- ◎ Justice
  - ‘Fairness in distribution’
  - ‘What is deserved’

# Modern 'Principles' of Bioethics

- ◎ Modern Western bioethics is based on three (lately four) fundamental principles:
  - Respect for persons (Autonomy)
  - Beneficence (and Nonmaleficence)
  - Justice
- ◎ The relative priority of these principles may change with different circumstances
  - Pediatrics (and other vulnerable populations)
  - Disasters (and other austere environments)
  - Resources (staff, stuff, space, systems)

# Ethical Questions in Pediatric Disasters

## Are Children a *Uniquely* Vulnerable Population?

# Ethical Questions

- ⦿ In the midst of a disaster, how should limited resources be allocated?
- ⦿ To what extent should the needs of vulnerable populations be prioritized?
- ⦿ Should patients be selected for treatment based on their anticipated prognosis?
- ⦿ Should patients' social worth be considered in resource allocation decisions?

# 'Women and Children First?'

- ⊙ Arguments for prioritizing children
  - Children may have a better chance of survival
  - Societal role of children – symbols of hope, the future
  - Ethical principles – 'fair innings', life years saved
- ⊙ Arguments against prioritizing children
  - Possibility of fewer survivors
  - Discrimination / favoritism
  - Only the youngest would receive treatment
- ⊙ Age as a cutoff
  - Narrow developmental differences between age groups
  - Should teenagers be treated as adults or children?
- ⊙ American Academy of Pediatrics/Children's Health Fund Poll
  - 76% of Americans agree children should be given priority vs. adults
  - 75% believe children should be treated first for the same condition

# Fewer Resources for Children

- ◎ The Four S's
  - Staff (trained, pediatric capable personnel)
  - Stuff (age appropriate equipment, drugs)
  - Space (intensive, routine, family support)
  - *Systems (regionalization ≠ centralization)*
- ◎ EMSC Pediatric Readiness Project 2013\*
  - 69% of hospitals have necessary resources
    - 62% in low volume centers
    - 84% in high volume centers
  - Improved from 55% in 2003

\*[http://www.pediatricreadiness.org/State\\_Results/National\\_Results.aspx](http://www.pediatricreadiness.org/State_Results/National_Results.aspx)

# Richard J. McCormick, 1974\*

- ⦿ “First, ... ‘Children cannot be regarded simply as little people’ ... .  
Second, ... there is a limit to the usefulness of prior experimentation with animals and adults.”
- ⦿ “At this point, however, a severe problem arises. The legal and moral legitimacy of experimentation is founded above all on the informed consent of the subject.”
- ⦿ “But in [most] instances, the young subject is either legally or factually incapable of informed consent.”
- ⦿ “Furthermore, it is argued, the parents are neither legally nor morally capable of supplying this consent ... .”
- ⦿ Proposes that **proxy consent** must therefore be authorized

\*McCormick RA. Proxy consent in the experimental situation. *Perspect Biol Med* 1974;18:2-20.

# Paul Ramsey, 1976

- ◎ “To attempt to consent for a child to be made an experimental subject is to treat a child as not a child. It is to treat him as if he were an adult person who has consented to become a joint adventurer in the common cause of medical research. If the grounds for this are alleged to be the presumptive or implied consent of the child, that must simply be characterized as a violent and a false presumption.”
- ◎ “Nevertheless, in view of the necessity sometimes claimed for nontherapeutic research with uncomprehending subjects, several years ago I did explore ... an alternative position. If today we mean to give such weight to the research imperative, ... then we should not seek to give a principled justification of what we are doing with children. It is better to leave the research imperative in incorrigible conflict with the principle that protects the individual human person from being used for research purposes without either his expressed or correctly construed consent.”

\*Ramsey P. Nontherapeutic research in children. *Hasting Cent Rep* 1976;6(4):21-30.

# Pediatric Countermeasures Research

- ◎ Gutmann A\*. *NEJM*. 2013;368:1171-1173.
  - Review of ethics of research on AVA† in children
    - Operation 'Dark Zephyr': 2M children would be affected
    - AVA safely administered to 1M military recruits for >40 yr
    - No history of use in children, no understanding of effects
    - Commission's conclusion: 'Before pre-event pediatric trials can be considered, further steps must be taken, including additional research in adults, to help ensure that the research risks to children – who do not stand to benefit directly from participation in the study – can be reduced to a level posing no more than minimal risk to their health or well-being.'

\*Chair, Presidential Commission for the Study of Bioethical Issues

†Anthrax vaccine adsorbed

# Pediatric Countermeasures Research

- Gutmann A\*. *NEJM*. 2013;368:1171-1173.
  - Review of ethics of research on other MCM‡ in children
    - Commission's conclusion: 'Pre-event pediatric research on medical countermeasures is ethical, in general, only if it presents no more than minimal risk to study participants. Minimal risk is comparable to that which healthy children living in a safe environment routinely face in everyday life or during a routine medical examination.'
    - Commission's rationale: '... the research involves the potential treatment or prevention of a highly disabling or lethal condition that no one has yet contracted; it aims to determine how best to treat a condition resulting from an event whose likelihood of occurring is unknown; and though knowledge gained could be useful for future treatment, we hope never to have an occasion to use it.'

\*Chair, Presidential Commission for the Study of Bioethical Issues

‡Medical countermeasures

# Pediatric Countermeasures Research

- Gutmann A\*. *NEJM*. 2013;368:1171-1173.
  - Review of ethics of research on other MCM‡ in children
    - Further rationale: “To be ethical, research involving children must generally pose no greater than minimal risk to participants unless the research presents the prospect of direct benefit.
    - One exception: “A minor increase over minimal risk—which is still very limited and poses no substantial risk to health or well-being—is permissible only when research is likely to yield generalizable knowledge about [the] participants’ specific condition. ... [O]nly when unusual circumstances prohibit completion of such testing in consenting adults can pre-event research in children involving ‘a minor increase over minimal risk’ proceed to ... review [, and only if such] a ‘narrow’ expansion of minimal risk ... still ‘poses no significant threat to the child’s health or well-being.’”

\*Chair, Presidential Commission for the Study of Bioethical Issues

‡Medical countermeasures

# Pediatric Countermeasures Research

- Gutmann A\*. *NEJM*. 2013;368:1171-1173.
  - Review of ethics of research on other MCM‡ in children
    - Commission's prerequisites: "Minimal-risk pre-event testing ... may be made possible through age-deescalation studies ... [provided that] prior testing such as modeling, testing in animals, and testing in adults ... first identif[ies], delineate[s], and characterize[s] research risks ... [and then only under the following circumstances: the] proposed research presents a 'reasonable opportunity' to address a 'serious problem' ... [, is] of 'vital importance' to addressing the problem ... [and that a] rigorous set of conditions [are] satisfied to justify a determination that the research adhered to 'sound ethical principles.' "

\*Chair, Presidential Commission for the Study of Bioethical Issues

‡Medical countermeasures

# Pediatric Countermeasures Research

- ◎ Gutmann A\*. *NEJM*. 2013;368:1171-1173.
  - Review of ethics of research on other MCM‡ in children
    - Commission's conditions: “ ... fall into five categories: an ethical threshold of acceptable risk and adequate protection from harm, ethical study and trial design, post-trial requirements to assure ethical treatment of children and their families, community engagement, and transparency and accountability. Finally, the Commission reiterated the importance of informed parental permission and meaningful and developmentally appropriate assent by children.”

\*Chair, Presidential Commission for the Study of Bioethical Issues

‡Medical countermeasures

# Pediatric Countermeasures Research

- Gutmann A\*. *NEJM*. 2013;368:1171-1173.
  - Review of ethics of research on other MCM‡ in children
    - Belated alternative: “... post-event research ... planned in advance when a relatively untested medical countermeasure is administered to children in an emergency, ... [provided that] adequate processes [are] in place for informed parental permission and meaningful assent by children; the research design [is] scientifically sound; enrolled children ... have ... the best available care; there [are] adequate plans for compensating anyone injured by research; and provisions [are] made to engage communities throughout the course of research.”

\*Chair, Presidential Commission for the Study of Bioethical Issues

‡Medical countermeasures

# Ethical Approaches / Ethical Models

## Good Bioethics Begins With Good Medical Facts

# Ethical Approaches / Models

Velasquez et al: *Thinking Ethically: A Framework for Moral Decision Making*

<http://www.scu.edu/ethics/publications/iie/v7n1/thinking.html>

## ◎ Traditional approaches

- ‘Teleological’ approach (ends-based)
  - ‘Utilitarianism’ (Bentham, Mill)
- ‘Deontological’ approach (means-based)
  - ‘Principlism’ (Kant → Beauchamp & Childress)

## ◎ Contemporary approaches and duties

- Rights based
- Fairness or Justice based
- Common Good based
- Virtue based
- *To care*
- *To share*
- *To conserve*
- *To preserve*

# Ethical Approaches / Models

## ⦿ Utilitarian approach

- Designed to determine what actions provide the greatest 'happiness'
- Ethical actions providing the greatest balance of good over evil
- *'The greatest good for the greatest number'*

# Ethical Approaches / Models

## ⦿ Principlist approach

- A blending of four key ‘principles’ as a guide to moral action (Beauchamp and Childress)
- Criticized as too ‘abstract’ to replace moral theory and rules (Clouser and Gert)
- *Challenging to apply in pediatrics*
  - Rational and emotional immaturity
  - Can parents determine ‘best interest’?
  - No greater than minimal risk absent benefit
  - No benefit without access to care

# Ethical Approaches / Models

## ⦿ Rights approach

- Focused on individual's right to choose
  - Different rights: truth, privacy, not to be injured
- People have dignity based on their ability to choose freely
- Violation of human dignity to use people in ways they do not freely choose
- *'Does the action respect the moral rights of everyone?'*

# Ethical Approaches / Models

- ◎ Fairness or Justice approach
  - ‘Equals should be treated equally and unequals unequally’ (Aristotle)
  - Favoritism and discrimination are considered to be unfair, unjust, and wrong
  - *‘Does the action treat everyone the same way?’*
    - ‘Fair’, ‘equal’, ‘equitable’ – not always the same!

# Ethical Approaches / Models

## ◎ Common Good approach

- A society is a group of individuals whose own good is linked to the good of the community as a whole
- There are ‘certain general conditions that are ... equally to everyone’s advantage’ (John Rawls)
- Considers social policies, systems, institutions that are beneficial to all members of the community
  - Accessible healthcare, effective public safety
- Furtherance of common good and goals
  - ‘Tragedy of the Commons’ (Garrett Hardin)
- *‘Does the action serve the best interests of the entire community?’*

# Ethical Approaches / Models

- ◎ Virtue approach
  - Based upon ideals toward which we should strive
  - Attitudes or character traits permitting individuals to be and act to our highest potential
  - *‘Does the action bring about the wisest balance between competing interests?’*
    - Best possible result vs. best result possible

# Ethical Thinking for Moral Decision Making More Than Just Getting The Facts

# Ethical Considerations

- ◎ Disaster ethics must be addressed prior to the medical disaster
  - Reduces ethical challenges in disaster responses
  - Should be evidence based to the extent possible
  - Ideally requires legal sanction to preclude legal liability

# Ethical Considerations

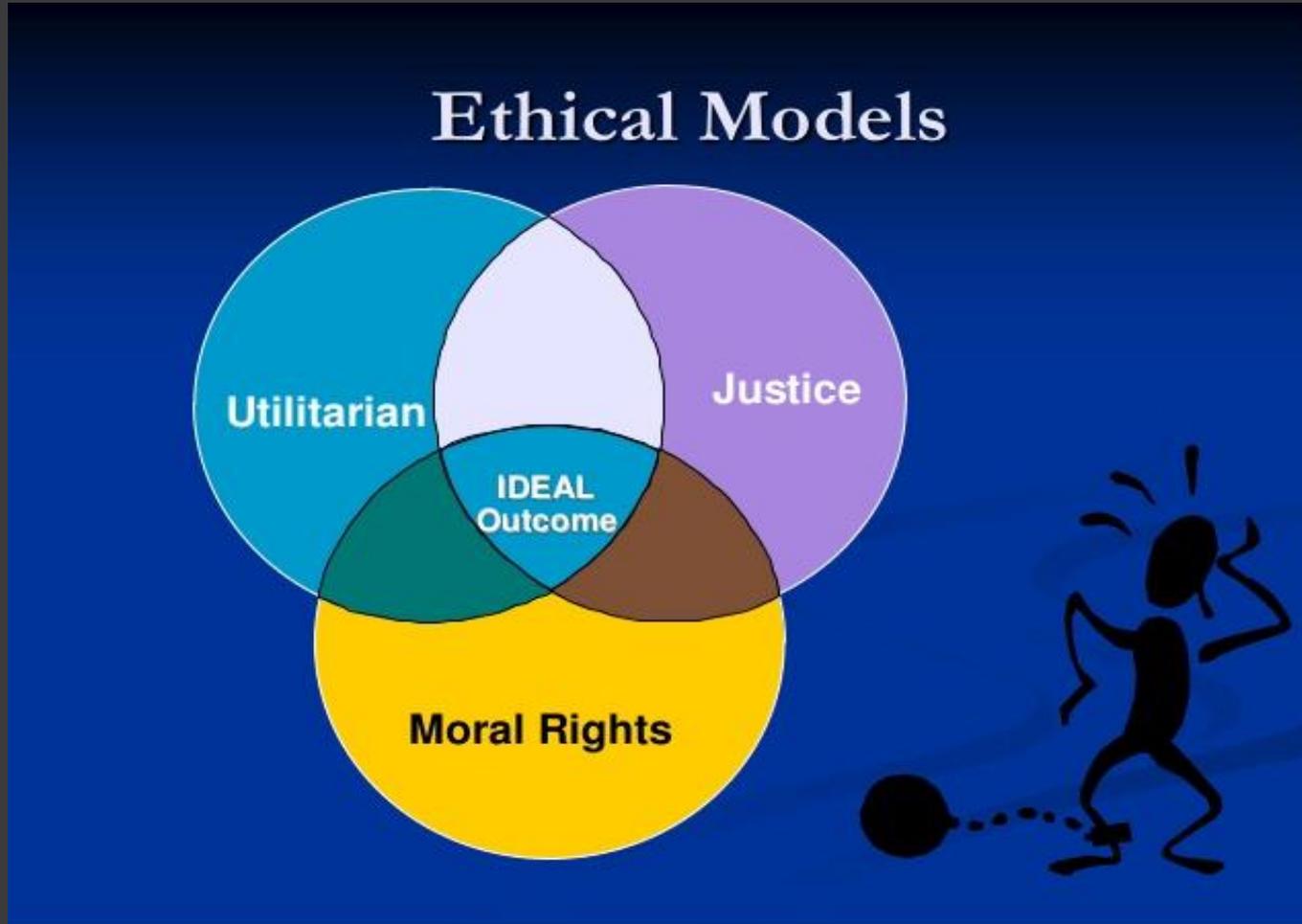
## ⦿ Disaster situations:

- Are related to public health ethics as well as medical ethics
- Will require greater effort to achieve a balance than in routine care
  - Collective vs. individual rights

# Ethical Difficulties with Moral Decisions

- ⦿ Conflicted, and likely will not satisfy everyone
- ⦿ ‘One size-fits-all’ answers are rarely found
- ⦿ Multiple loyalties of decision makers
- ⦿ No one ethical model is ideal

# Balance Will Be Required!



# Ethical Dilemmas in Disaster Medicine

## Finding The Ideal Balance

# Medical Triage: Critical Question

- ⦿ When and how to apply disaster triage?
  - Only when patients' needs exceed available resources, and reallocation is insufficient to preclude their rationing
- ⦿ Current disaster triage:
  - Based chiefly on the concept of utilitarianism
  - Aims to maximize benefit to the society, often at the expense of individual needs
  - May not be acceptable to all in modern society
  - *Community consultation is essential*

# Medical Triage

*WMA Statement on Medical Ethics in the Event of Disasters (1994-2006)*

<http://www.wma.net/en/30publications/10policies/d7/index.html.pdf>

- ‘Triage must be carried out systematically, taking into account ... medical needs, medical intervention capabilities, and available resources.’
- Triage may pose an ethical problem owing to the limited treatment resources immediately available in relation to the large number of ... persons in varying states of health.’
- ‘Patients whose condition exceeds ... available ... resources ... may be classified as “beyond emergency care”.’
- ‘The physician must show such patients compassion and respect for their dignity.’
- ‘The physician should ... set an order of priorities for treatment that will save the greatest number of lives and restrict morbidity to a minimum.’
- ‘In selecting the patients who may be saved, the physician should consider only their medical status, and should exclude any other consideration based on non-medical criteria.’

# Who Consents (And Assents)?

WMA Declaration of Lisbon on the Rights of the Patient (1981-1995)

<http://www.wma.net/en/30publications/10policies/l4/index.html.pdf>

## ○ Informed Consent

- 'If the patient is ... unable to express his/her will, informed consent must be obtained, whenever possible, from a legally entitled representative.'
- 'If a legally entitled representative is not available, but a medical intervention is urgently needed, consent of the patient may be presumed ... .'
- 'If a patient is a minor ... , the consent of a legally entitled representative is required in some jurisdictions. Nevertheless the patient must be involved in the decision-making to the fullest extent allowed by his/her capacity.'

## ○ Treatment Refusal

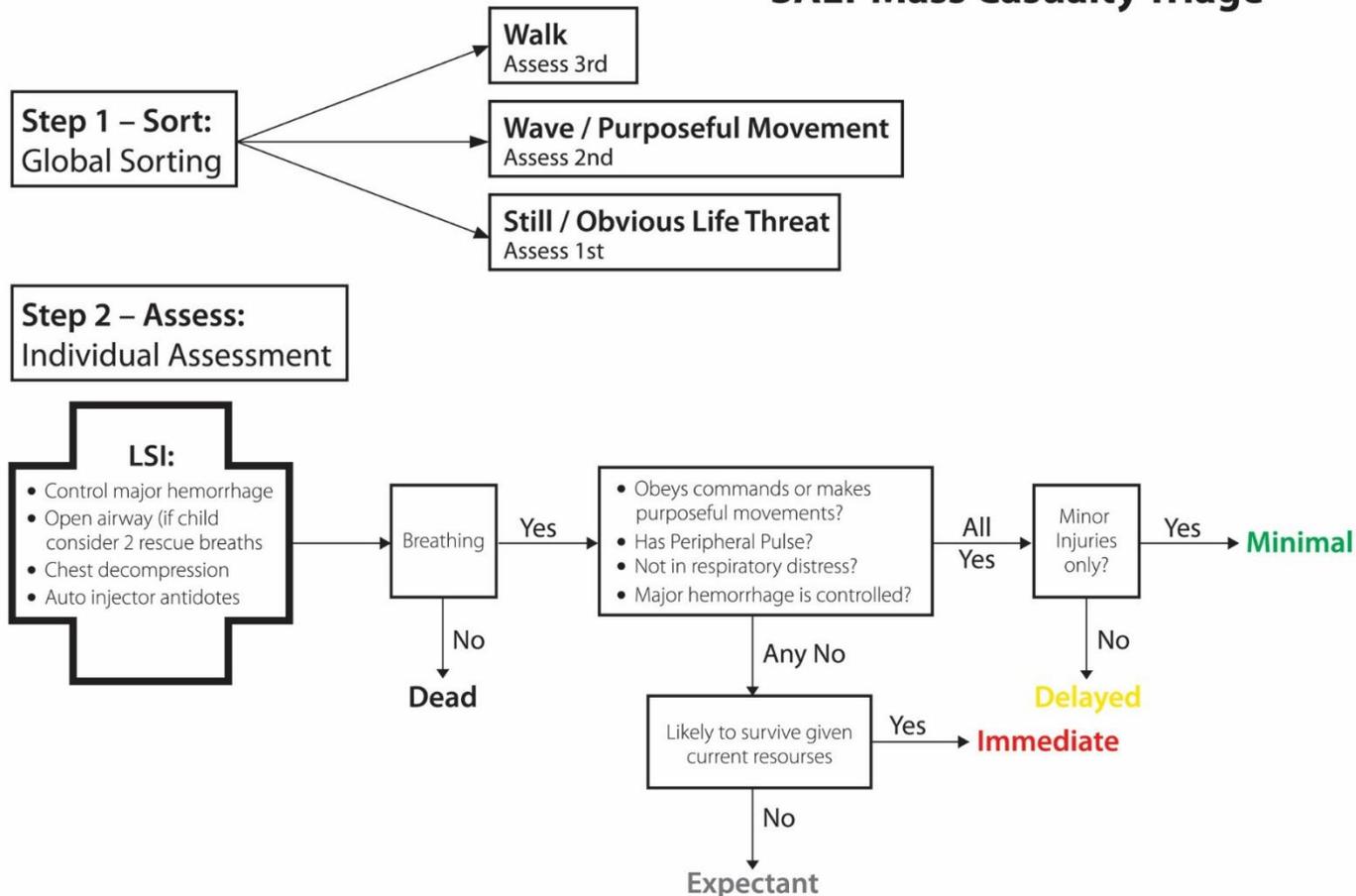
- *The patient's right to refuse treatment during a disaster may conflict with the physician's duty to protect public health (e.g., communicable diseases).*
- 'If the patient's legally entitled representative ... forbids treatment which is, in the opinion of the physician, in the patient's best interest, ... [i]n case of emergency, the physician will act in the patient's best interest.'
- '... [T]reatment against the patient's will can be carried out only in exceptional cases, ... if conforming to the principles of medical ethics.'

# Ethical Responses to Disaster Dilemmas

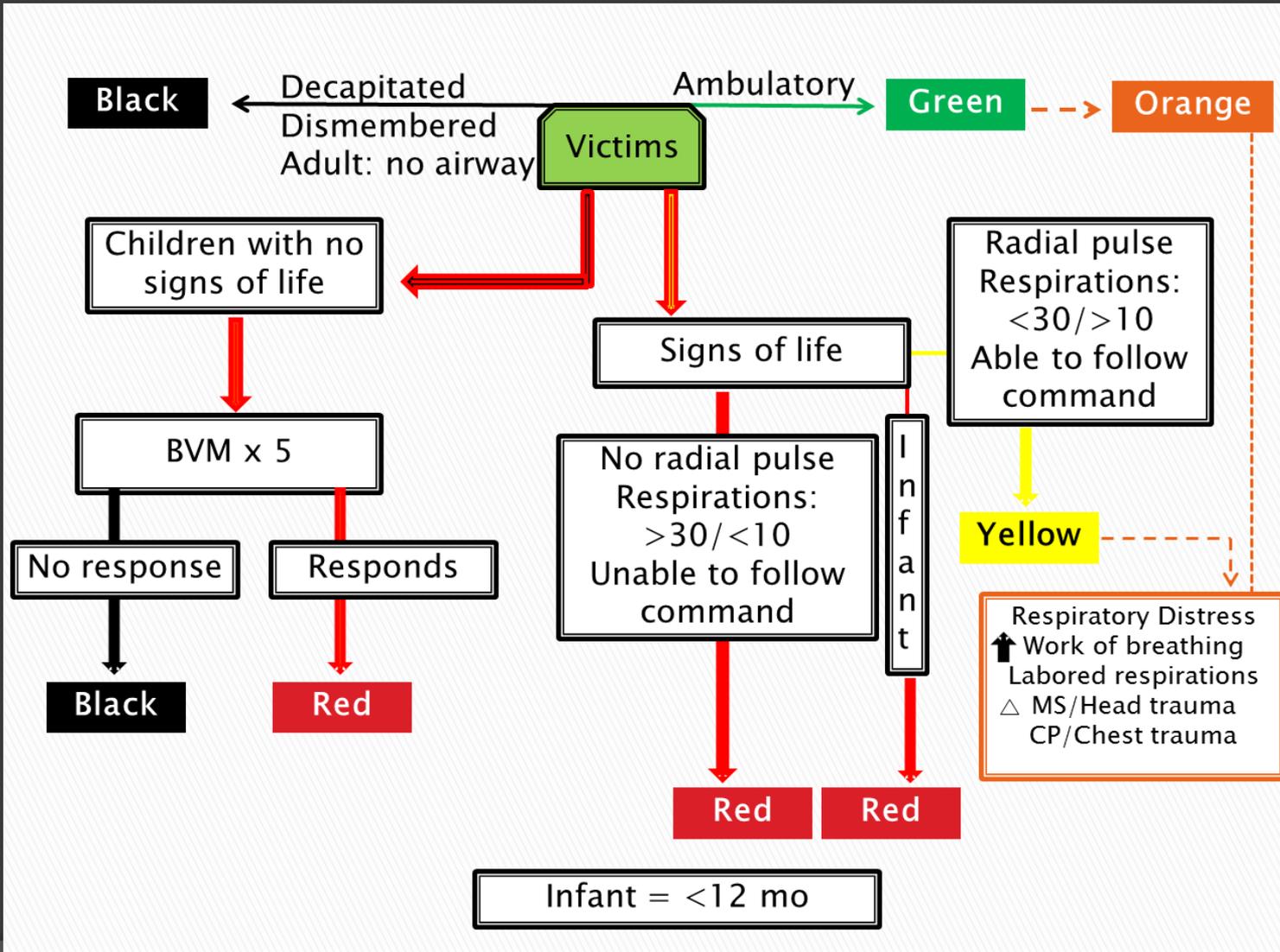
## Different Communities, Distinctive Solutions

# Prehospital Triage – SALT

## SALT Mass Casualty Triage



# Prehospital Triage – START



# Bioevent Triage

Burkle FM: *EMCNA* 2002;20:409-436

- ⊙ Counterintuitive goals of triage in bioevents
  - *Primarily to prevent secondary infections*
  - *Secondarily to control primary infections*
- ⊙ ‘Minimum Qualifications for Survival’ (MQS)\*
- ⊙ ‘SEIRV’ Bioevent Triage Methodology
  - Susceptible but not exposed: info from media
  - Exposed but not infected: info from ‘PHAP†’
  - Infected: PCP‡ → home; 911 → hospital
  - Removed by death or recovery: info to relatives
  - Vaccinated or protected by medication: reassure

\*Defined by regional Health Emergency Operations Center (HEOC) based on availability of resources immediately or readily deployable

†Public Health Answering Point

‡Primary Care Provider

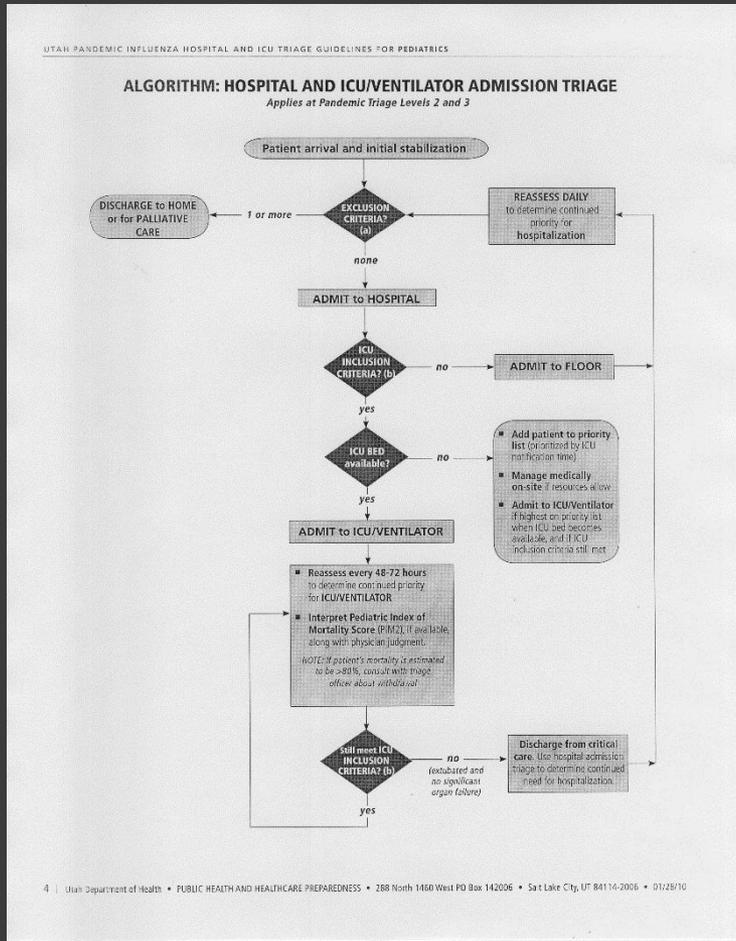
# So What About Vaccinations?

## Jacobson vs. Massachusetts, 197 U.S. 11 (1905)

- Henning Jacobson, a Swedish immigrant and minister in Cambridge, Massachusetts, refused during a smallpox outbreak to comply with a city order that all adults be vaccinated, claiming a vaccine made him, and his son, sick as children, and further refused to pay the \$5 fine.
- All state appellate courts rejected his appeals, as did the U.S. Supreme Court, holding that ‘the police power of a state must be held to embrace, at least, such reasonable regulations established directly by legislative enactment as will protect the public health and the public safety.’
- Justice John Marshall Harlan delivered the opinion of the Court, holding also that a state may infringe upon personal liberties when ‘... the safety of the general public may demand ...’, since ‘there are manifold restraints to which each person is necessarily subject for the common good.’
- Yet, the Court also held that while individuals could be compelled to pay a fine, they could not be forcefully vaccinated, thus establishing the legal precedent, regarding restrictions, that their ‘... general terms should be so limited ... as not to lead to injustice, oppression or absurd consequence.’

# Pandemic Triage – Utah 2010

[http://extras.mnginteractive.com/live/media/site297/2010/0506/20100506\\_021026\\_04b\\_PEDIATRIC\\_PANDEMIC\\_TRIAGE\\_JANUARY1010.pdf](http://extras.mnginteractive.com/live/media/site297/2010/0506/20100506_021026_04b_PEDIATRIC_PANDEMIC_TRIAGE_JANUARY1010.pdf)



- Exclusion criteria
  - DNR, coma, RTS <2, burn <50% survival, N/TCA, conditions with 18-24 month estimated fatality rate >80%
- Inclusion criteria
  - ARF with need for MV, shock with need for vasopressor/inotrope
- Time trials
  - Reassess and recalculate PIM2 every 48-72 hr → consider discharge if estimated fatality rate >80%

# Pandemic Triage – Michigan 2014

[https://www.michigan.gov/documents/mdch/Planning\\_for\\_Children\\_in\\_Disasters\\_15\\_495237\\_7.pdf](https://www.michigan.gov/documents/mdch/Planning_for_Children_in_Disasters_15_495237_7.pdf)

Table 16: Critical Care Triage Tool – PEDIATRIC PATIENTS (<18 yrs.)

Color Code	Initial Assessment		48 Hour Assessment		120 Hour Assessment	
	Criteria	Priority/Action	Criteria	Priority/Action	Criteria	Priority/Action
Blue	Exclusion Criteria* or PELOD $\geq$ 33*	Medical Mgmt. +/- Palliate & d/c	Exclusion Criteria or PELOD > 33 or PELOD 21-33 & no $\Delta$	Palliate & d/c from CC	Exclusion Criteria ** or PELOD > 33 ** or PELOD 21-33 no $\Delta$	Palliate & d/c from CC
Red	PELOD < 21 or Single Organ Failure	Highest	PELOD < 33 and decreasing	Highest	PELOD < 33 and decreasing progressively	Highest
Yellow	PELOD 21-33	Intermediate	PELOD < 21 no $\Delta$	Intermediate	PELOD < 21 minimal decrease (< 3 point decrease in past 72 hrs.)	Intermediate
Green	No significant organ failure	Defer or d/c, reassess as needed	No longer ventilator dependent	d/c from CC	No longer ventilator dependent	d/c from CC

\*If exclusion criteria or PELOD > 33 occurs at any time from the initial assessment to 48 hours change triage code to Blue and palliate.

\*\* If exclusion criteria or PELOD > 33 occurs at any time from 48 – 120 hours change triage code to Blue and palliate.  $\Delta$  = change CC = critical care d/c = discharge

**Blue:** High probability of mortality; should be discharged from critical care and should receive medical management and palliative care as appropriate.

**Red:** Highest priority for critical care.

**Yellow:** Intermediate priority for critical care.

**Green:** Low probability of mortality; defer admission/ discharge from critical care.

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## Exclusion criteria

- PELOD  $\geq$ 33, severe trauma, severe burn\*, cardiac arrest, metastatic cancer, advanced/irreversible immunocompromise, severe or irreversible neurologic condition, end stage organ failure

## Inclusion criteria

- PELOD <21 with single organ failure, PELOD 21-33

## Time trials

- PELOD >33, or 21-33 and no change, at 48 and 120 hr

\*>40% TBSA, severe inhalation

# Pandemic Triage

Toitzis et al: *PCCM* 2015;16:e207-e216

## Evidence-Based Pediatric Outcome Predictors to Guide the Allocation of Critical Care Resources in a Mass Casualty Event\*

Philip Toitzis, MD<sup>1</sup>; Gerardo Soto-Campos, PhD<sup>2</sup>; Evelyn M. Kuhn, PhD<sup>3</sup>; Ryan Hahn, DO<sup>4</sup>; Robert K. Kanter, MD<sup>5,6</sup>; Randall C. Wetzel, MD<sup>8,9</sup>

**Objective:** ICU resources may be overwhelmed by a mass casualty event, triggering a conversion to Crisis Standards of Care in which critical care support is diverted away from patients least likely to benefit, with the goal of improving population survival. We aimed to devise a Crisis Standards of Care triage allocation scheme specifically for children.

**Design:** A triage scheme is proposed in which patients would be divided into those requiring mechanical ventilation at PICU

\*See also p. 682.

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<sup>2</sup>Virtual PICU Systems LLC, Los Angeles, CA.

<sup>3</sup>National Outcomes Center, Children's Hospital of Wisconsin, Milwaukee, Wisconsin.

<sup>4</sup>Pediatric Critical Care Medicine, Department of Pediatrics, Virginia Tech Carilion School of Medicine, Roanoke, VA.

<sup>5</sup>National Center for Disaster Preparedness, Columbia University, New York, NY.

<sup>6</sup>Department of Anesthesiology Critical Care Medicine, Children's Hospital of Los Angeles, Los Angeles, CA.

This work was performed at the Rainbow Babies and Children's Hospital, Virtual PICU Systems, LLC, Children's Hospital of Wisconsin, and Children's Hospital of Los Angeles.

Supported, in part, through a contract with the Ohio Hospital Association. Presented, in part, at the Annual Congress of the Society of Critical Care Medicine, San Francisco, CA, January 2014.

Dr. Toitzis is employed by the University Hospitals of Cleveland/Case Medical Center. His institution received grant support from the Ohio Hospital Association/Ohio Department of Health. Dr. Kuhn has disclosed other support from VPS, LLC (contract between VPS, LLC and Children's Hospital and Health System). Dr. Kanter consulted for the National Center for Disaster Preparedness, lectured for the University of Michigan and the University of Oregon, and received support for travel from the National Center for Disaster Preparedness. His institution received grant support from the Baton Rouge Area Foundation. Dr. Wetzel received royalties from Elsevier, William and Wilkins, LWW (multiple textbook assignments), lectured for the University of Utah (Key Note Symposium Speaker and Visiting Professor), and received support for article research from the State of Ohio. His institution received grant support from the State of Ohio (research funding for developing triage schemes) and the Whittier Foundation (research funding for VPCU). The remaining authors have disclosed that they do not have any potential conflicts of interest.

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Pediatric Critical Care Medicine

www.pccmjournal.org

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presentation and those not, and then each group would be evaluated for probability of death and for predicted duration of resource consumption, specifically, duration of PICU length of stay and mechanical ventilation. Children will be excluded from PICU admission if their mortality or resource utilization is predicted to exceed predetermined levels ("high risk"), or if they have a low likelihood of requiring ICU support ("low risk"). Children entered into the Virtual PICU Performance Systems database were employed to develop prediction equations to assign children to the exclusion categories using logistic and linear regression. Machine Learning provided an alternative strategy to develop a triage scheme independent from this process.

**Setting:** One hundred ten American PICUs

**Subjects:** One hundred fifty thousand records from the Virtual PICU database.

**Interventions:** None.

**Measurements and Main Results:** The prediction equations for probability of death had an area under the receiver operating characteristic curve more than 0.69. The prediction equation for belonging to the low-risk category had lower discrimination.  $R^2$  for the prediction equations for PICU length of stay and days of mechanical ventilation ranged from 0.10 to 0.18. Machine learning recommended initially dividing children into those mechanically ventilated versus those not and had strong predictive power for mortality, thus independently verifying the triage sequence and broadly verifying the algorithm.

**Conclusion:** An evidence-based predictive tool for children is presented to guide resource allocation during Crisis Standards of Care, potentially improving population outcomes by selecting patients likely to benefit from short-duration ICU interventions. (*Pediatr Crit Care Med* 2015; 16:e207–e216)

**Key Words:** intensive care unit length of stay; intensive care unit mortality; mass casualty; palliative care; pandemic preparedness; triage

Although no regional or national emergency has ever overwhelmed American hospitals in the era of modern critical care medicine, federal planners assume the likelihood of massive patient surges in future natural or man-made

## ● Evidence-based MCE PICU triage scheme

- Excludes high and low risk patients from PICU
- Divides patients into two groups: those who need MV vs. those who do not
- Identifies patients with highest fatality risk
- Good discrimination for mortality risk, but poor correlation for LOS, MVDs

# Medical Surge

Kanter et al: *DMPHP* 2009;3:S166-S171

## Special FOCUS

### Mass Critical Care: Pediatric Considerations in Extending and Rationing Care in Public Health Emergencies

Robert K. Kanter, MD, and Arthur Cooper, MD, MS

#### ABSTRACT

This article applies developing concepts of mass critical care (MCC) to children. In public health emergencies (PHEs), MCC would improve population outcomes by providing lifesaving interventions while delaying less urgent care. If needs exceed resources despite MCC, then rationing would allocate interventions to those most likely to survive with care. Gaps between estimated needs and actual hospital resources are worse for children than adults. Clear identification of pediatric hospitals would facilitate distribution of children according to PHE needs, but all hospitals must prepare to treat some children. Keeping children with a family member and identifying unaccompanied children complicate PHE regional triage. Pediatric critical care experts would teach and supervise supplemental providers. Adapting nearly equivalent equipment compensates for shortages, but there is no substitute for age-appropriate resuscitation masks, IV/suction catheters, endotracheal/gastric/chest tubes. Limitations will be encountered using adult ventilators for infants. Temporary manual bag valve ventilation and development of shared ventilators may prolong survival until the arrival of ventilator stockpiles. To ration MCC to children most likely to survive, the Pediatric Index of Mortality 2 score meets the criteria for validated pediatric mortality predictions. Policymakers must define population outcome goals in regard to lives saved versus life-years saved. (*Disaster Med Public Health Preparedness*. 2009;3(Suppl 2):S166-S171)

Concepts for mass critical care (MCC) in public health emergencies (PHEs) were recently developed and enumerated in reports from the Task Force for Mass Critical Care<sup>1</sup> and the Task Force on Life and the Law of the New York State Department of Health.<sup>2</sup> Neither of these reports focus on children.

The general concepts of MCC apply across all ages. When a patient surge exceeds the usual intensive care capacity, MCC extends essential lifesaving interventions to larger numbers by delaying or forgoing less urgent treatment. It is recommended that if fully developed, the concept of MCC should triple each hospital's intensive care unit (ICU) capacity for up to 10 days.<sup>3</sup> When resources are inadequate over a wide geographical area despite MCC approaches, rationing is necessary. Rationing provides palliative care to those likely to die regardless of therapy, and allocates MCC to patients with a high probability of surviving as a result of these interventions. This article extends the work of the recent task forces on MCC as it applies to the care of children.

#### PEDIATRIC NEEDS AND RESOURCES IN PHEs

##### Pediatric Critical Care Needs

Historically, as many as 30% of hospitalized victims of PHEs have required intensive care.<sup>3-5</sup> Some Department of Homeland Security National Planning Scenarios anticipate critical care needs that far exceed the entire national critical care capacity.<sup>1</sup>

Children account for 6.8%, 6.6%, 6.9%, and 7.2% of the population in the categories, birth to 4 years, 5 to 9 years, 10

to 14 years, and 15 to 19 years, respectively.<sup>6</sup> If a public health emergency affects all ages equally, then children would account for 20% or 28% of the disaster victims, classified as 14 years and younger, or 19 years and younger, respectively. The clinical needs of vulnerable pediatric populations can be expected to be overrepresented in PHEs, however, as a result of immature immune defenses, susceptibility to traumatic injury, and inability to protect themselves in dangerous environments. In addition, children may be disproportionately involved in an accident involving a school, as a result of a natural pathogen mainly affecting infants or children, or in a terrorism-related event intentionally targeting children.<sup>7,8</sup> Irrespective of underlying cause, the younger the patient, the more age specific are the needs for care.

#### PEDIATRIC CRITICAL CARE RESOURCES

Planners should be aware of local definitions of "pediatric" capability and capacity. Capability refers to the actual availability of services to meet specific types of patient needs (eg, pediatric trauma and critical care). The capability to provide age-specific services may be identified according to self-report, by accreditation (an impartial agency certifies that specified services are available at a hospital), or by designation (a government authority identifies specified hospitals that should be used for specified types of patients).<sup>9</sup> Capacity refers to the maximum number of patients that can be served, dependent on staffing, equipment, supplies, and space. Empirical and functional definitions of peak capacity are more meaningful than administrative bed counts.

- Medical resource gaps are larger for children than they are for adults
- All hospitals must be prepared to resuscitate and stabilize children
- No validated predictors of pediatric survival in mass casualty events
- Reallocation of care before rationing of care

# Medical Surge

Kanter et al: *DMPHP* 2009;3:27-32

## RESEARCH

### Developing Consensus on Appropriate Standards of Disaster Care for Children

Robert K. Kanter, MD, John S. Andrade, MD, Nancy M. Boeing, RN, MS, James Callahan, MD, Arthur Cooper, MD, MS, Christine A. Lopez-Dwyer, RN, MS, James P. Marcin, MD, MPH, Foliaoluwa O. Odebiye, MD, MPH, Anne E. Ryan, RN, MS, Thomas E. Terndrup, MD, and Joseph R. Tobin, MD

#### ABSTRACT

**Background:** Neither professional consensus nor evidence exists to guide the choice of essential hospital disaster interventions. The objective of our study was to demonstrate a method for developing consensus on hospital disaster interventions that should be regarded as essential, quantitatively balancing needs and resources.

**Methods:** A panel of pediatric acute care practitioners developed consensus using a modified Delphi process. Interventions were chosen such that workload per staff member would not exceed the previously validated maximum according to the Therapeutic Intervention Scoring System. Based on published models, it was assumed that the usual numbers of staff would care for a disaster surge of 4 times the usual number of intensive care and non-intensive care hospital patients.

**Results:** Using a single set of assumptions on constrained resources and overwhelming needs, the panel ranked and agreed on essential interventions. A number of standard interventions would exceed crisis workload constraints, including detailed recording of vital signs and fluid balance, administration of vasoactive agents, invasive monitoring of pressures (central venous, intraarterial, intracranial), dialysis, and tube feedings.

**Conclusions:** The quantitative methodology and consensus development process described in the present report may have utility in future planning. Groups with appropriate expertise must develop action plans according to authority within each jurisdiction, addressing likely disaster scenarios, according to the needs in each medical service region, using available regional resources, and accounting for the capabilities of each institution. (*Disaster Med Public Health Preparedness*. 2009; 3:27-32)

**Key Words:** critical care, Delphi consensus process, disaster, hospital, pediatric, standards

Existing hospital resources in many regions would be overwhelmed in responding to major disasters,<sup>1</sup> especially if large numbers of children were involved.<sup>2-4</sup> One strategy to extend resources is to alter standards of care.<sup>5-9</sup> By limiting care to only immediately essential interventions, and delaying or forgoing less essential interventions, lifesaving care may be extended to more than the usual number of patients.

Other authors have proposed interventions that should be provided when circumstances require altering standards of disaster care,<sup>7-9</sup> but they provided no information on their methods to quantitatively match overwhelming needs and constrained resources. Methods suitable for reaching professional consensus on appropriate disaster standards have not been reported. A sustained alteration in standards of care would represent a virtually unprecedented shift for clinicians, public officials, patients, and families.

No evidence, professional consensus, or regulatory procedures exist to guide clinicians and decision makers in altering standards of care in disasters.<sup>10</sup> The lack of a legal framework or professional consensus on appropriate standards of care in disasters leaves clinicians vulnerable to criminal charges and civil suits when usual standards of care cannot be provided.<sup>11</sup> The failure of government, professional organizations, and researchers to take a more active leadership role in defining appropriate disaster standards of care may be viewed as collective denial in the face of disturbing choices.

In this study, our objectives are to explore the feasibility of using a quantitative framework for analyzing the balance between overwhelming needs and limited resources, and to describe the application of a standard consensus development method in proposing appropriate standards of disaster care. Using a single set of assumptions about disaster needs and resources,

- PICU interventions
  - Mechanical ventilation
  - Volume resuscitation
  - Multiple IV medications
  - Complex wound care
  - Artificial airway care
  - Parenteral / enteral nutrition
- Non-PICU interventions
  - Oxygen administration
  - Fluid administration
  - Scheduled medications

Disaster Medicine and Public Health Preparedness

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# Medical Surge

Kissoon et al: *PCCM* 2011;12:S103-S179

## Executive Summary

### Deliberations and recommendations of the Pediatric Emergency Mass Critical Care Task Force: Executive summary

Niranjan Kissoon, MD, FRCPC(C), FAAP, FCCM, FACPE; for the Task Force for Pediatric Emergency Mass Critical Care

(*Pediatr Crit Care Med* 2011; 12[Suppl.]:S103-S108)

Key Words: children; critical illness; pandemic; pediatric emergency mass critical care; treatment; triage

Despite difficult challenges during responses to the terrorist attacks of September 11, 2001, Hurricane Katrina, and the 2009 Pandemic Influenza A(H1N1) and severe acute respiratory syndrome outbreaks, no North American emergency to date has overwhelmed intensive care unit (ICU) services on a widespread basis since the modern development of the field of critical care. However, planners have recognized that in a future public health emergency we may not be so fortunate. To deal with very large emergencies involving many patients whose survival depends on immediate access to intensive care, an international Task Force for Mass Critical Care proposed recommendations in January 2007 to extend critical care resources for the adult population, referred to as the Emergency Mass Critical Care (EMCC) approach (1-5).

The EMCC approach triples critical care capabilities for a period of up to 10

days in a very large public health emergency by focusing on immediately life-saving interventions, while delaying or forgoing less urgent care. Crisis standards of care in a large public health emergency would attempt to optimize population outcomes, rather than use unlimited efforts to maximize survival of each individual. Available resources would be substituted or adapted for equivalent or nearly equivalent unavailable resources. Resources would be conserved, reused, and reallocated to those patients most likely to benefit from them. Modest increases in stockpiles and major changes in the organization of care would be essential. While planners in the field acknowledge that mass critical care is a reasonable concept, we lack evidence that such an approach is feasible. However, failure to begin operational planning for mass critical care guarantees a failed response. As public health emergency planners begin to consider the EMCC framework, it is urgent that pediatric implications be detailed for integration into these developing plans. This supplement represents the discussions of a multidisciplinary panel convened by the Oak Ridge Institute for Science and Education (supported financially by the Centers for Disease Control and Prevention), and provides guidance for pediatric EMCC (PEMCC).

Work of the PEMCC Task Force was directed by a 17-member Steering Committee selected on the basis of their expertise and experience, and included representatives from the Task Force for Mass Critical Care, World Federation of Pediatric Intensive and Critical Care Societies, American Academy of Pediatrics, American College of Critical Care Medicine, American College of Emergency

Medicine, Royal College of Physicians (Canada), and National Commission on Children and Disasters, as well as several unaffiliated disaster preparedness experts. This Steering Committee led development of all manuscripts and selected individuals for the PEMCC Task Force. The full PEMCC Task Force comprised 44 experts from fields including bioethics, pediatric critical care, pediatric trauma and surgery, neonatology, obstetrics, general pediatrics, emergency medicine, pediatric emergency medicine, disaster preparedness and response, emergency medical services (EMS), infectious diseases, toxicology, military medicine, nursing (including critical care nursing), pharmacy, veterinary medicine, information sciences, public health law, maternal and child public health, and local, state, and federal government emergency planning and response agencies.

Priority topics were organized on the basis of MEDLINE and Ovid database literature searches, bibliographies, state and federal government planning documents, after-action reports of recent medical responses to catastrophes, and through participation in local, state, and federal government working groups on hospital and disaster preparedness. Where evidence was available, it was utilized in formulating recommendations. Where evidence was lacking, recommendations represent expert opinion. Wherever possible, recommendations are consistent with and easily integrated into prior recommendations of the adult Task Force for Mass Critical Care. The Steering Committee produced draft outlines by synthesizing information obtained in the evidence-gathering process and convened October 6-7, 2009, to review and

## ● CDC-sponsored Pediatric Emergency Mass Critical Care (PEMCC) Task Force: Key Recommendations

- Region wide planning
- 'At least double PICU bed capacity, at least triple PICU capability'
- 'Prepare to deliver PEMCC for 10 days without ... assistance'

Vice President, Medical Affairs, British Columbia Children's Hospital and Suney Hill Health Centre; BCCCH and UBC Global Child Health, Department of Paediatrics and Emergency Medicine, University of British Columbia, Child and Family Research Institute, Vancouver, British Columbia, Canada.

The Pediatric Emergency Mass Critical Care Task Force meeting was supported, in part, by the Centers for Disease Control and Prevention.

Disclaimer: The views expressed in this article are those of the authors and do not represent the official position of the Centers for Disease Control and Prevention.

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S103

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# Altered / Crisis Standards of Care

- Goal
  - To saving the most lives during a pediatric MCE
    - This may require reallocation of resources across the spectrum of care
- Institute of Medicine (IOM)
  - Three levels of care in disasters
    - Conventional (routine)
    - Contingency (reallocation)
    - Crisis (rationing)
- Transition to altered / crisis standards of care
  - The 'choice' may be 'forced' by the emerging situation
    - Failure to adapt standards of care may result in greater morbidity and mortality

Incremental changes to standard of care



Usual patient care provided

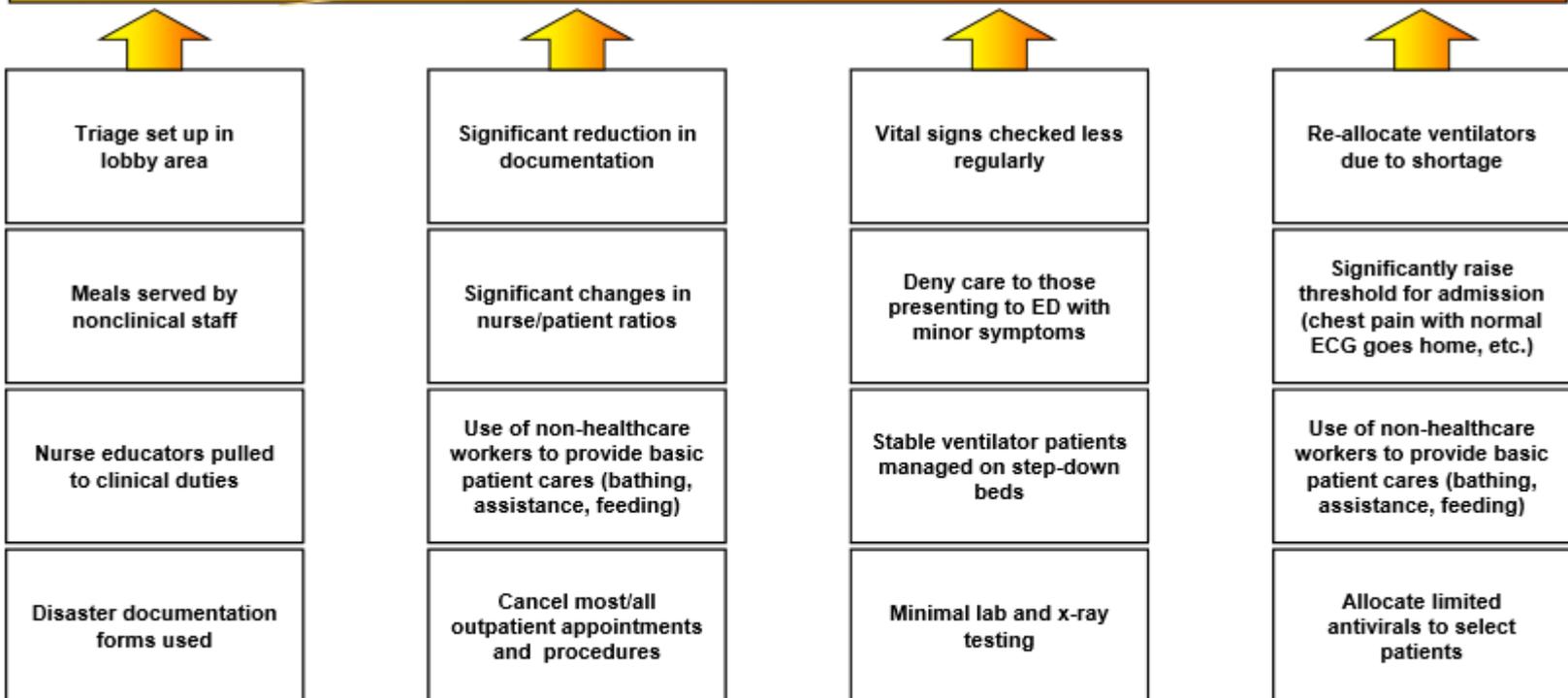
Austere patient care provided

Low impact administration changes

High-impact clinical changes

Administrative Changes to usual care

Clinical Changes to usual care



Need increasingly exceeds resources



# Reallocation of Scarce Resources

- ⦿ Must be
  - Fair
  - Clinically sound
  - Open and transparent
  - Accepted by the public as such
- ⦿ Intimately tied to previously developed Altered / Crisis Standards of Care

# WHO Disaster Ethics Manual

**Training  
manual**

Ethics in research, surveillance  
and patient care in epidemics,  
emergencies and disasters



**DRAFT**  
**17 April 2015**

- ◎ Seven core competencies
  - Understand boundaries between public health research and practice
  - Define processes for ethics review in public health
  - Identify tensions between common good and individual autonomy in
    - Public health surveillance
    - Research / clinical trials
  - Explain how publication ethics relates to public health
  - Define ethical criteria for triage, resource allocation, standard of care
  - Discuss professional duties of health care workers

Questions?

# Summary

- ⦿ Ethical and moral decision making during disasters is often fraught with difficulty
  - Good bioethics begins with good medical facts – which may be in short supply early on
- ⦿ Reallocation of scarce healthcare resources should always precede their rationing
- ⦿ Triage and surge guidelines should be determined before disaster strikes
- ⦿ Ethical and moral issues require deliberation and appropriate community engagement
  - Keeping a careful eye on the medical facts – and the religious, cultural, and linguistic milieu