| **Author, Year** | **Leader of Engagement** | **Study Location** | **Study design** | **Type of mass casualty event** | **Engagement Strategy** | **Who Engaged Whom** | **Findings (Outcome)** | **Outcome Modulators****(Facilitators or Barriers)** | **Quality score (of 4)** |
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| Albanese, 2007153 | Providers | CT (state level) | Observational, 2 post-tests | Radiological, nuclear | Enrollment, education, training and exercise of qualified laboratory staff for preparing biodosimetry specimens (to test radiation exposure) | State biodosimetry laboratory *engaged* hospital and commercial laboratories statewide | Augmentation of critical laboratory capacity, skills retained 6 months after training (functional drill):30 of 33 labs were qualified; Staff in 30 labs were trained22 of 30 labs volunteered to participate in surge network 79 personnel trained to date in 19 of these labs 37 participated in drill: (a) every specimen met standards; (b) average turnaround time (specimen preparation) = 199 minutes | *Facilitators:* most laboratories were already qualified because of existing equipment; education allayed safety concerns*Barrier:* Many laboratories had safety concerns (before training) | 4 |
| Dayton, 2008193 | Providers | Central Brooklyn, NY | Descriptive – surge plan development | All-hazards | Organization of de novo regional hospital planning group and cooperative hospital level surge planning for central Brooklyn | Hospitals *engaged* city PH to develop planning group; new hospital consortium organization *engaged* individual hospitals | De novo planning group created; surge space/beds designated at each hospital to meet regional needs (+22% beds: 987 baseline to 1207 surge); protocol for notification and plan activation developed | *Facilitators:* Willingness of hospitals to plan cooperatively; national standards provided planning target | 4 |
| Grier, 2006186 | Providers, Policy makers | CA, FL, IL, OR, LA, MO (state level in each) | Case studies – planning process | Unspecified | 1. Top-down county planning model, master Mutual Aid Agreement (CA, IL)
2. Decentralized regional planning (FL, LA)
3. Decentralized rural planning (OR)
4. Hospital-directed tiered regional planning model (IL, LA, MO)
5. Third-party directed planning model (MO)
 | 1. State PH *engaged* local PH, hospitals
2. Hospitals, state hospital association *engaged* hospitals
3. Regional medical center *engaged* hospitals
4. Designated regional hospital *engaged* hospitals
5. State PH and designated hospital *engaged* hospitals
 | Multiple surge capacity planning models based on plans in 8 localities in 6 different US states | *Facilitators:* Planning centered on hospitals (no major mix of organizational cultures); third-party-directed planning model minimized competition among hospitals*Barriers:* Culture differences between PH and hospitals, competition among hospitals | 4 |
| Kanter, 2009189 | Providers | US (experts drawn from different states) | Descriptive – planning process | Unspecified | Systematic development of consensus on appropriate pediatric crisis standards of care through modified Delphi process involving hospital pediatricians | Hospital pediatric leaders *engaged* other acute care hospital-based pediatricians | Consensus on non-ICU interventions but not on ICU interventions | *Facilitators:* Structured process, conducted via email (cheap, efficient), anonymity of experts, flexible approach, use of established scoring system as endpoints*Barriers:* No face-to-face discussion among experts, no full consensus on some elements, need to coordinate with government regulations potentially over-rides expert consensus | 3 |
| Kelen, 2006191 | Providers | MD | Descriptive – planning process | Unspecified | Development of evidence-based “reverse triage” classification system through systematic expert consensus process using formally-defined real-time anonymous virtual network | Academic medical center leaders *engaged* 39 clinician and non-clinician experts | Evidence-based 5-category patient classification system based on agreed-upon risk tolerance levels | *Barriers:* absence of evidence that expert opinion-based system would result in safe practice; did not include experts from broad range of hospital types | 4 |
| Lurie, 2008194 | Providers | 2 US localities and 3 regions (not specified) | Tabletop exercises | Pandemic influenza | Pilot testing of local, regional and national level tabletop exercises for the Veterans Health Administration (VHA) | Central federal health provider agency (VHA) *engaged* local and regional VA hospitals and non-hospital facilities, local hospitals, state and local PH and local first responders | Tested tabletop exercise templates for local and regional use by VA system, engaging government and public and private providers  | *Facilitators:* ability to share and use exercise templates across VA system nationwide, VA engagement with local communities, mutual respect between local VA providers and their communities, integrated VA health system with electronic health records and hotlines enable patient flow managementBarriers: unclear who decides on resource sharing between VA and local facilities, different levels of care between VA and local hospitals, organizational culture differences between VA and local providers (command vs. collaboration) | 4 |
| Terriff, 2001192 | Providers | Spokane, WA (regional level) | Descriptive – planning, tabletop exercise | Biological | Pharmacy-led development of regional pharmaceutical preparedness policies and procedures (protocol) for response to BT event -- pre-911 | Hospital pharmacy department, county EMS and Army *engaged* first responders, hospitals, non-hospital facilities, FEMA, USPHS, FBI, and state PH | Technical documentation & city-wide policy and protocol for medical management of BT (obtaining antidotes), including plan for local stockpiles, resource sharing across region (city) | *Facilitator:* Initiative of pharmacy department in one hospital and interest of all participants in city-wide planning | 4 |
| Buehler, 2006187 | Policy makers | GA (metro-politan level) | Descriptive -- case study of operational partnership | Unspecified | Public health-business partnership for mass dispensing | State and local PH and voluntary business coalition *engaged* local PH, schools, businesses  | 1200 business volunteers participated in 3 mass dispensing drills at public and business sites | *Facilitators:* Personal relationships, business commitment to service, strategic engagement by senior business and government officials, business model, conceptual link between business and community continuity, links to multiple government agencies *Barriers:* government procurement regulations; potential shifts in government priorities; different management styles; occasional government disorganization; confidentiality of proprietary information; liability; ongoing differences in perspective | 4 |
| Dausey, 2006195 | Policy makers | Three US metropolitan areas (not specified) | Tabletop exercises | Pandemic influenza | Development and pilot testing of tabletop exercise template for local level governments and providers  | State PH and RAND *engaged* local PH & elected officials, hospitals and private practitioners, law enforcement | Tested tabletop exercise template applicable to localities across the U.S. | *Facilitators:* Excellence of technical partner, willingness of participants | 4 |
| Ginter, 2010188 | Policy makers | AL, MI, FL, LA, TN | Descriptive – planning process | All-hazards (“natural and manmade”) | Organization of five neighboring states into a voluntary disaster pediatric surge network | 2 state PH and regional PH preparedness center *engaged* pediatric hospitals and major clinics, state PH, and emergency responders | Established pediatric surge network, operational handbook, formal MOU | *Facilitators:* “Highly-reliable organization” model previously established and adaptable to surge network development*Barriers:* Planning process is time-consuming (5 yrs), inter-state agreements are more complicated than intra-state ones | 4 |
| Koh, 2006190 | Policy makers | Boston, MA | Descriptive – surge plan development, observational testing | Unspecified | Incorporation of CHCs into surge plan, with training for CHCs and three event-based tests  | City PH & state primary care association *engaged* hospitals, CHCs, EMS in planning; City PH, EMS & academia *engaged* CHCs in training and first responders, hospitals and CHCs in tests of plan | Surge-related roles and responsibilities for CHCs delineated in plan; plan tested in city-wide preparation for Democratic National Convention and 2 outbreak investigations (e.g., screened 1500 persons for TB in one investigation) | *Facilitators:* CHCs were willing to participate and some were already integrated with nearby hospital; excellent academic partner provided high quality technical assistance*Barriers:* Variability in CHC sizes and resources precluded “one size fits all” approach; CHC staff had limited time & resources for training, testing | 4 |
| Levin, 2009185 | Policy makers | MA (state level) | Descriptive – planning process | Pandemic influenza | State level planning to establish framework and ethical principles to guide development of altered standards of care protocols | State PH and academia *engaged* local PH, hospitals, non-hospital healthcare facilities, other health agencies, non-government entity, general public | Consensus state-level framework (guidelines) and decision making protocol for altered standards of care (ASC); 4 goals, 7 principles – decision-making protocol to determine ASC | *Facilitators:* Excellence of academic institution; involvement of ethicists, legal counsel, and broad stakeholder base | 3 |
| Moser, 2005196 | Policy makers | Utah (regional level) | Descriptive – planning process | Unspecified | Broadly inclusive regional hospital level planning process to identify 1250 additional (surge) beds state-wide; regional approach to be replicated throughout state | State PH and state university medical center *engaged* multiple hospital and non-hospital facilities, professional associations, state and local PH, transit, EMS and church groups | State coordinating group identified broad range of public and private sector task force members and created regional surge plan through systematic iterative process | *Facilitators:* Broadly inclusive and iterative process; begin with small group; identify key personnel early; use prominent players for credibility; central planning office | 3 |
| Vawter, 2010179 | Policy makers | MN (state level) | Descriptive – planning process | Pandemic influenza | Developing proposed ethical frameworks and procedures for rationing scarce health resources within a state  | State government, university and health care ethics center *engaged* local governments, experts, general public and a few (not many ) health care providers (hospital, non-hospital, other) | Decision tools – ethics guidance: Multiple ethical frameworks for setting rationing priorities (for vaccine, N95 respirators, surgical masks, antiviral drugs for prophylaxis and for treatment, mechanical ventilators) -- principles, objectives, general strategies | *Facilitators:* involvement of ethicists, extensive public input, specific resource items*Barriers:* resulted in decision tool (not plan); one size does not fit all; very few providers were reported as involved | 3 |