

## Appendix B: EMS Systems Coping Strategies for Drug Shortages

Strategy	Advantages	Disadvantages	Considerations
Utilization of expired medications	<ul style="list-style-type: none"> <li>• Dosing consistency</li> <li>• Immediate availability</li> <li>• Reduces unnecessary waste</li> <li>• Data supporting efficacy</li> </ul>	<ul style="list-style-type: none"> <li>• Potential regulatory non-compliance issues</li> <li>• Public perception and mistrust</li> <li>• Fear of potential liability</li> <li>• Impracticality of testing for efficacy of expired medication</li> </ul>	<ul style="list-style-type: none"> <li>• Inventory management practices should be examined and refined to minimize the amount of expired drugs on hand.</li> <li>• Determine the regulatory requirements of, and level of enforcement discretion being exercised by your jurisdictions professional board.</li> <li>• Establish clear documented institutional guidance and authority governing this practice.</li> <li>• Contact the drug manufacturer to learn more about the stability characteristics as a means to make a more informed decision on a drug by drug basis.</li> <li>• Maintain patient record documentation including a reference to a clinical assessment determination of medical necessity and that patient benefit clearly outweighed known theoretical risk(s)</li> </ul>
Utilization of Compounded Medications	<ul style="list-style-type: none"> <li>• Immediate availability</li> <li>• Addresses medical needs of certain special populations</li> </ul>	<ul style="list-style-type: none"> <li>• Increased expense</li> <li>• Shorter shelf-life (possible waste)</li> <li>• Not widely or readily available to all (geographic and regional limitations)</li> <li>• Potential for human error (possible impact on patient safety thus increasing liability)</li> <li>• State based restriction</li> </ul>	<ul style="list-style-type: none"> <li>• Contact the compounding company to identify testing procedures, product effectiveness, manufacturing practice, and safe utilization.</li> <li>• Contact your State Board of Pharmacy to identify regulations, best practice, and use of compounded drugs. As well as legal ramifications.</li> </ul>

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Conservation Including Tiered Utilization (priority given to select patients with medical necessity)	<ul style="list-style-type: none"> <li>• Conservation of a scarce resource</li> <li>• Life threatening situations treated first</li> <li>• Treatment with the same drug</li> </ul>	<ul style="list-style-type: none"> <li>• Possible perceptions of inequity</li> <li>• Need for strong ethical framework</li> <li>• Sub-optimal treatment</li> <li>• Fear of increased exposure to liability and potential litigation</li> </ul>	<ul style="list-style-type: none"> <li>• Exercise extreme caution in establishing an ethical framework. Including consideration of legal ramifications and liability.</li> </ul>
Substitution: Utilization of a different drug from the same class or a different drug from a different class	<ul style="list-style-type: none"> <li>• Allows for timely treatment , no delay in foregoing drug administration</li> <li>• May reduce the potential for inappropriate hoarding f preferred medication in limited supply</li> </ul>	<ul style="list-style-type: none"> <li>• Provider lack of familiarity of and/or professional competence with alternative drugs leading to possible medication errors</li> <li>• Increased possibility for jeopardizing patient safety</li> <li>• Imperative need for additional clinician education and training that carry extra cost and commitment.</li> <li>• Burden of increased procurement costs and storage space</li> <li>• Increased liability</li> </ul>	<ul style="list-style-type: none"> <li>• Consider and become familiar with specific laws and guidelines governing drug substitution.</li> <li>• Implement additional training protocol to increase practitioner knowledge and comfort ability and reduce error potential when utilizing substitution.</li> <li>• Consider financial strategies for mitigation of increased cost in procurement of drugs that may be utilized.</li> </ul>
Sparing: Using multi-dose vials of medications on multiple patients	<ul style="list-style-type: none"> <li>• Readily available drug of choice</li> <li>• Decrease costs</li> <li>• Reduction of product waste</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for product contamination</li> <li>• Dosing errors</li> <li>• Potential for diversion</li> <li>• Establishing guidelines and improved practices for proper vial storage after opening</li> <li>• Maintain increased documentation requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Patient safety and the safety of the provider should be of the highest concern. Utilizing proper sterile technique and implementing safe practice protocol for administration are essential.</li> <li>• 100% assurance of sterility is impossible.</li> </ul>