



## U.S. Illnesses and Deaths Associated With Compounded or Repackaged Medications, 2001-Present

Pew's drug safety project has identified over 25 reported compounding errors or potential errors associated with 1,076 adverse events, including 90 deaths, since 2001. Because many such events may go unreported, this list is probably an underestimation. Contamination of sterile products was the most common error, though others were the result of pharmacists' and technicians' miscalculations and mistakes in filling prescriptions.

Year	Reported cases	Reported deaths	Adverse events	Compounding error	Product	States
2013	1		Bacterial bloodstream infection	Contamination <sup>1</sup>	Mineral IV injection	CA
2013	17	2*	Bacterial bloodstream infection	Bacterial contamination <sup>2</sup>	IV infusion (calcium gluconate)	TX
2013	6		Fever, flu-like symptoms, soreness at injection site	Unknown <sup>3</sup>	Injection (methylcobalamin)	TX
2013	5		Serious eye infections	Bacterial contamination <sup>4</sup>	Eye injections (intravitreal bevacizumab [Avastin] injections)	GA, IN
2013	26		Skin and soft tissue infections	Bacterial and fungal contamination <sup>5</sup>	Injections (preservative-free methylprednisolone acetate)	AR, FL, IL, NC
2012-13	753	64	Fungal meningitis and other infections	Contamination <sup>6</sup>	Injections (preservative-free methylprednisolone acetate)	FL, GA, ID, IL, IN, MD, MI, MN, NC, NH, NJ, NY, OH, PA, RI, SC, TN, TX, VA, WV
2012	47		Fungal eye infection; vision loss in majority of cases	Contamination <sup>7</sup>	Eye injections (brilliant blue-G [BBG] retinal dye and triamcinolone)	CA, CO, IL, IN, LA, NC, NV, NY, TX
2012	7		Bacterial bloodstream infection	Contamination <sup>8</sup>	IV solution (fentanyl)	NC
2011	9		Bacterial eye infection, and 1 case of meningitis and encephalitis; 4 cases of loss of eyesight	Contamination <sup>9</sup>	Eye injections (intravitreal bevacizumab [Avastin] injections)	TN
2011	12		Bacterial eye infection; 3 patients had eye removals	Contamination <sup>10</sup>	Eye injections (intravitreal bevacizumab [Avastin] injections)	FL
2011	5		Blindness	Unintended presence of another medication <sup>11</sup>	Eye injections (intravitreal bevacizumab [Avastin] injections)	CA
2011	19	9	Bacterial bloodstream infection	Contamination <sup>12</sup>	Parenteral nutrition solution	AL
2009-10	5		Bacterial eye infection	Unknown <sup>13</sup>	Eye injections (intravitreal bevacizumab [Avastin] injections)	TN

Year	Reported cases	Reported deaths	Adverse events	Compounding error	Product	States
2010	1	1	Fatal overdose	Dose of sodium 60 times stronger than ordered <sup>14</sup>	IV solution (sodium chloride)	IL
2009	9		Eye inflammation; at least 1 case of vision loss	Unknown <sup>15</sup>	Eye injection (preservative-free hyaluronidase)	
2007	3	3	Fatal overdose	Dose of colchicine 8 times stronger than labeled concentration <sup>16</sup>	IV solution (colchicine)	OR, WA
2007	8	1	Bacterial bloodstream infection	Contamination <sup>17</sup>	IV solution (fentanyl)	CA, MD
2006	1	1	Fatal overdose	Dose of sodium chloride stronger than ordered <sup>18</sup>	Chemotherapy infusion	OH
2006	1	1	Fatal overdose	Dose of zinc 1,000 times stronger than ordered <sup>19</sup>	Neonatal parenteral nutrition solution	NV
2005	2		Bacterial bloodstream infection	Contamination <sup>20</sup>	IV flush vials (preservative-free heparinized saline)	
2005	19	1	Bacterial bloodstream infection, sepsis	Contamination <sup>21</sup>	IV solution (magnesium sulfate)	CA, MA, NJ, NY, NC, SD
2004-06	80		Bacterial bloodstream infection	Contamination <sup>22</sup>	IV flush syringes (heparinized saline)	MI, MO, NY, SD, TX, WY
2004-05	6		Bacterial eye infection; all cases had partial or complete loss of vision; 2 patients had eye removals	Contamination <sup>23</sup>	Eye solution (trypan blue)	DC, MN
2004-05	11 <sup>†</sup>	3	Systemic inflammatory response syndrome	Contamination <sup>24</sup>	Heart infusion (cardioplegia)	VA
2004	2		Bacterial bloodstream infection	Contamination <sup>25</sup>	IV flush syringes (heparin-vancomycin)	CT
2002	6	1	Fungal meningitis and sacroiliitis	Contamination <sup>26</sup>	Spinal injections (methylprednisolone acetate)	NC
2001	11	3	5 cases of meningitis; 5 cases of epidural abscess; 1 patient had an infected hip joint	Contamination <sup>27</sup>	Spinal or joint injections (betamethasone)	CA
2001	4		Bacterial bloodstream infection	Contamination <sup>28</sup>	IV infusion (ranitidine)	MO
<b>Total</b>	<b>1,076</b>	<b>90</b>				

\* CDC has not conclusively linked these deaths to the drug in question. See more details: <http://emergency.cdc.gov/HAN/han00353.asp>.

† One cluster of three cases during Aug. 31 to Sept. 7, 2005, and eight earlier cases during Dec. 29, 2004, to Sept. 7, 2005.

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