Cough and Cold
Therapeutic Class Review (TCR)

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FDA-APPROVED INDICATIONS[1]

Cough and cold formulations are available for use in the treatment of the signs and symptoms of the common cold, sinusitis, allergies, and cough. They come in various combinations from simple cold formulations, narcotic cough and cold formulations, to non-narcotic cough and cold formulations. The simple cold formulations are available as prescription generics which are combined in one of the following manners with several of the available ingredients: antihistamine-only, antihistamine-decongestant, decongestant-expectorant, and expectorant-only. There are many narcotic cough and cold formulations available as prescription generics which are combined in one of the following manners with several of the available ingredients: antitussive-anticholinergic, antitussive-antihistamine-decongestant, antitussive-decongestant-expectorant, and antitussive-expectorant. Lastly, there are many non-narcotic cough and cold formulations that are available as prescription generics which are combined in one of the following manners with several of the available ingredients: antitussive-antihistamine, antitussive-antihistamine-decongestant, antitussive-antihistamine-decongestant-expectorant, antitussive-decongestant, antitussive-decongestant-expectorant, and antitussive-expectorant.

Current products are listed in Appendix A.

OVERVIEW

The common cold is a viral illness that affects persons of all ages prompting frequent use of over-the-counter (OTC) and prescription medications and alternative remedies.[2] Adults in the United States (US) experience 2 to 3 colds per year, and the incidence in children is even greater.[3] At least 200 identified viruses can cause the common cold. The viruses often implicated include rhinoviruses, coronaviruses, parainfluenza viruses, respiratory syncytial virus, adenoviruses, and enteroviruses. Although histologic effects on the nasal epithelium may vary, any of the viruses can cause vasodilation and hypersecretion, leading to the common cold syndrome, which includes nasal congestion, nasal discharge, postnasal drip, throat clearing, sneezing, and cough.

Acute cough has been characterized as a cough lasting 3 weeks or less, sub-acute cough lasts 3 to 8 weeks, and chronic cough lasts over 8 weeks.[4] Causes of acute cough include the common cold or other respiratory tract infection, and allergic rhinitis. Subacute cough remains after the initial cold or respiratory infection is over. Causes of chronic cough include asthma, chronic bronchitis, and chronic obstructive pulmonary disease (COPD). Cough may also be associated with factors such as gastroesophageal reflux disease (GERD), medication side effects, pulmonary embolism, smoking, and lung cancer; cough due to these conditions will not be addressed in this class review.

Common cold, or upper respiratory tract infection, is the third most common reason for physician visits, with cough being a common presenting symptom.[5] In 2017 American College of Chest Physicians (ACCP) updated their clinical practice guidelines on the cough. The ACCP suggests against use of OTC cough and cold medicines and nonsteroidal anti-inflammatory drugs (NSAIDs) in adults and pediatric patients until these products have demonstrated that they decrease cough severity or time to cough resolution. In pediatric patients (≤ 18 years of age), ACCP suggests use of honey in patients to relieve cough over diphenhydramine, or no treatment, but does not recommend honey over dextromethorphan. Notably, honey should not be used in infants less than 1 year of age and children less than 2 years of age should not be given dextromethorphan for cough. Codeine-containing medications should be avoided in pediatrics due to the potential for serious adverse effects.[6]

There are a variety of prescription and OTC cough and cold combination products. The focus of this review will be on the prescription products with emphasis on the component ingredients. There are also numerous generic products available.

PHARMACOLOGY

Drug Type	Mechanism of Action	Examples
Anticholinergics	Competitively blocks the muscarinic receptors, primarily M2 and M3, and causes the drying effect on mucus membranes.	homatropine, methscopolamine, scopolamine
Antihistamines (first generation)	Competitively antagonize the effects of histamine on H_1-receptors in the GI tract, uterus, large blood vessels, and bronchial smooth muscle; Blockade of H_1-receptors also suppresses the formation of edema, flare, and pruritus that result from histaminic activity; H_1-antagonists also possess anticholinergic properties in varying degrees	brompheniramine, carbinoxamine, chlorpheniramine, clemastine, cyproheptadine, dexbrompheniramine, dexchlorpheniramine, diphenhydramine, doxylamine, hydroxyzine, promethazine, pyrilamine, triprolidine
Antitussives (opiate)	Directly act on receptors in the cough center of the medulla; These agents may also have a drying effect on the respiratory tract and increases the viscosity of bronchial secretions; Cough suppression can be achieved at lower doses than those required to produce analgesia; The most significant adverse effect associated with opiate agonist use is respiratory depression which results from a decreased sensitivity to carbon dioxide in the brainstem; Opiates cause generalized central nervous system (CNS) depression; Additive sedative effects are possible with other agents that can lead to CNS depression	codeine, dihydrocodeine, hydrocodone
Antitussives (non-opiate)	Dextromethorphan is a non-competitive antagonist of N-methyl-D-aspartate (NMDA) receptors in the brain and spinal cord; It acts on the cough center in the medulla to raise the threshold for coughing by decreasing the excitability of the cough center; It is the d-isomer of levorphanol but has none of the analgesic, respiratory depressive, or sedative effects associated with opiate agonists Carbetapentane and chlophedianol appear to work directly on the cough center of the medulla, thereby suppressing the cough reflex; Carbetapentane has atropine-like and anesthetic actions, producing a drying effect of respiratory mucus secretion; In addition, it possesses mild bronchodilatory actions, and does not affect respiratory volume	carbetapentane, chlophedianol, dextromethorphan
Decongestants	Phenylephrine possesses both direct and indirect sympathomimetic effects, primarily as a post-synaptic alpha-adrenergic agonist, producing potent vasoconstriction; An indirect effect due to the release of norepinephrine plays a small role in the overall action of phenylephrine; Constriction of blood vessels leads to reduced blood flow to the nose, decreased amount of blood in the sinusoid vessels, and decreased mucosal edema, which relieves nasal congestion; Phenylephrine does not affect the beta receptors in the heart or lungs Pseudoephedrine is a sympathomimetic amine that causes the release of norepinephrine, leading to vasoconstriction and a decrease in nasal and sinus congestion	phenylephrine, pseudoephedrine*
Expectorants	Loosens and thins sputum and bronchial secretions to ease expectoration	guaifenesin

* Many products containing pseudoephedrine have been reformulated due to increased regulatory restrictions on the sale and distribution of the drug, likely due to its notable use as a precursor in the illicit synthesis of methamphetamine.

PHARMACOKINETICS

Due to the various product formulations and varying component ingredients in the cough and cold products, the specific product information should be consulted to evaluate pharmacokinetics.

CONTRAINDICATIONS/WARNINGS

In January 2007, the Centers for Disease Control and Prevention (CDC) warned caregivers and healthcare providers (HCPs) of the risk for serious injury or fatal overdose from the administration of cough and cold products to children and infants less than 2 years of age.[7] This warning followed an investigation of the deaths of 3 infants less than 6 months of age that were attributed to the inadvertent inappropriate use of these products. The symptoms preceding these deaths have not been clearly defined, and there is a lack of conclusive data describing the exact cause of death. The report estimated that 1,519 children less than 2 years of age were treated in emergency departments (EDs) during 2004 and 2005 for adverse events related to cough and cold medications.

In October 2007, the Food and Drug Administration (FDA) Nonprescription Drug Advisory Committee and the Pediatric Advisory Committee recommended that nonprescription cough and cold products containing pseudoephedrine, dextromethorphan, chlorpheniramine, diphenhydramine, brompheniramine, phenylephrine, clemastine, or guaifenesin not be used in children less than 6 years of age.[8] In January 2008, the FDA issued a Public Health Advisory recommending that OTC cough and cold products not be used in infants and children less than 2 years old.[9,10,11] The FDA recommends that if parents and caregivers use cough and cold products in children older than 2 years, labels should be read carefully, caution should be used when administering multiple products, and only measuring devices specifically designed for use with medications should be used. While some combination cough/cold products containing these ingredients are available by prescription only and are not necessarily under scrutiny by the FDA, clinicians should thoroughly assess each patient's use of similar products, both prescription and nonprescription, to avoid duplication of therapy and the potential for inadvertent overdose.

In January 2008, a FDA panel recommended that nonprescription cold medicines should not be given to children under 2 years old due to the risk of serious and potentially life-threatening adverse reactions. Research has shown that these products offer little to no benefit in this patient population, and may increase the risk of poisoning.[12] In 2008, manufacturers of cough and cold products modified their labels to increase the age recommended warnings for use in children and infants to less than 4 years of age versus the previous warning in children and infants less than 2 years of age, making this a more stringent warning than the FDA advisory.[13,14] Manufacturers also introduced child-resistant packaging and new measuring devices for use with the products. Alternatives for this patient population include acetaminophen or ibuprofen which can be used to minimize pain and fever, and saline nasal sprays which can be used to clear nasal passages. A cool mist vaporizer is also an option for congestion and mentholated rubs for cough in children 2 years of age and older.[15]

A retrospective review of OTC cough and cold medication ingestions reported to US poison centers between 2000 and 2010 revealed that unintentional ingestions of these medications decreased by 33.4% and therapeutic errors by 46%.[16] Healthcare facility referrals declined for unintentional ingestions (28.9% in patients less than 2 years of age, 19.9% in ages 2 to 5 years, [p<0.0001]) and therapeutic errors (59.2% in children less than 2 years of age; p<0.0001). In addition, among children less than 2 years of age, ED visits related to cough and cold medication decreased from 4.1% of all adverse drug event ED

visits before the 2007 manufacture's voluntary market withdrawal of infant cough and cold medications to 2.4% afterward. Similarly, among children aged 2 to 3 years, ED visits related to cough and cold medication adverse drug events decreased from 9.5% of all adverse drug event ED visits before the labeling revision announcement to 6.5% afterward.[17]

In 2015, the FDA announced they were investigating possible risks of using codeine-containing medications to treat cough and cold symptoms in patients less than 18 years old due to the risk of serious side effects, including slowed or difficult breathing.[18] Due to the serious risks associated with the use of codeine-containing products in children, the FDA subsequently issued a drug safety communication regarding the use of codeine on April 20, 2017.[19] Product labeling for all codeine-containing products was updated to add a contraindication alerting that codeine should not be used to treat pain or cough in children younger than 12 years. A warning was added to recommend against the use of codeine-containing products in adolescents between 12 and 18 years who are obese or have conditions such as obstructive sleep apnea or severe lung disease, which may increase the risk of serious breathing problems. Additionally, the warning regarding breastfeeding was strengthened to state that breastfeeding is not recommended with use of codeine-containing products due to the risk of serious adverse reactions in breastfed infants, which can include excess sleepiness, difficulty breastfeeding, or serious breathing problems that could result in death. In January 2018, the FDA issued an additional drug safety communication for prescription opioid cough and cold products limiting their use to adults (aged 18 years and older) due to the risks of these medicines outweighing their benefits in children younger than 18 years old.[20] The FDA also required the addition of safety information about the risks of misuse, abuse, addiction, overdose, death, and slowed or difficult breathing to the Boxed Warnings for prescription cough and cold medicines containing codeine or hydrocodone.

In September 2020, the FDA issued a drug safety communication regarding the consumption of greater than recommended doses of OTC diphenhydramine.[21] Consuming greater than the recommended dose can result in serious health issues such as heart problems, seizures, coma, and potentially death.

Some pyrilamine products may contain phenylalanine. These products should not be used in patients with phenylketonuria (PKU).

DRUG INTERACTIONS[22]

Drug Type	Anticholinergics	Antihistamines	Antitussives (opiate)	Antitussives (non-opiate)	Decongestants	Expectorants
CNS depressants (e.g., alcohol, sedatives, anxiolytics, etc.)	--	✓	--	--	--	--
Monoamine oxidase inhibitors (MAOIs)	--	✓	--	--	--	--
Tricyclic antidepressants	✓	✓	--	--	--	--
Alpha blockers	--	--	--	--	✓	--
Beta blockers	--	--	--	--	✓	--
Centrally acting antihypertensives	--	--	--	--	✓	--
Antidiabetic agents	--	--	--	--	✓	--
Ototoxic medications (e.g., aminoglycosides)	✓	✓	--	--	--	--

Concurrent administration of methscopolamine nitrate with phosphodiesterase type 5 (PDE-5) inhibitors (e.g., sildenafil, vardenafil) has been shown to potentiate hypotension due to the nitrate. Therefore, the concurrent use of these agents with products containing methscopolamine nitrate is not recommended.

ADVERSE EFFECTS[23,24]

Drug Type	Anticholinergics	Antihistamines	Antitussives (opiate)	Antitussives (non-opiate)	Decongestants	Expectorants
Drowsiness	✓	✓	✓	✓	✓	✓
Xerostomia	✓	✓	--	--	✓	--
Nausea	✓	--	✓	✓	✓	✓
Tachycardia / Palpitations	✓	--	--	--	✓	--
CNS depression	✓	✓	✓	✓	✓	--
Respiratory depression	✓	--	✓	✓	--	--

✓ = Reported

Adverse effects are reported above as a class effect due to the multiple ingredients contained in the products. Adverse effects have been taken from package inserts or other reliable databases and are not meant to be comparative or all inclusive.

SPECIAL POPULATIONS[25,26]

Pediatrics

Many of the products in this category are approved for use in children as young as 2 years of age. Use of prescription opioid cough and cold products are limited to adult patients aged 18 years and older due to the risks of these medicines outweighing their benefits in children younger than 18 years of age. Please consult the individual prescribing information for specific product information.

Pregnancy

Pregnancy category depends upon the component ingredients. Consult the individual package inserts for specific product information.

Renal Impairment

Dosage adjustment may be warranted; however, specific guidelines in renal impairment are not available. Consult the individual package inserts for additional information.

Hepatic Impairment

Specific guidelines for dosage adjustments in patients with hepatic impairment are not available. Lower doses may be warranted due to metabolism of any one of the ingredients in a given product.

Geriatrics

The elderly are more susceptible to the anticholinergic effects of antihistamines. Reduced initial dosages may be needed.

DOSAGES[27,28]

Drug (Products containing drug)	Maximum Recommended Daily Dose		Availability
	Adult	Child	
Anticholinergics			
homatropine	9 mg	Safe and effective use has not been established in children	Tablet and syrup formulations
methscopolamine	12.5 mg	Safe and effective use has not been established in children	Tablet, chewable tablet, and syrup formulations
scopolamine	2.4 mg	Safe and effective use has not been established in children	Tablet and solution formulations
Antihistamines			
brompheniramine	24 mg	Ages: 6 to 11 years: 8 mg to 12 mg 2 to 5 years: 4 mg	Tablet, capsule, solution, syrup, and suspension formulations
carbinoxamine	32 mg	Ages: > 6 years: 24 mg 3 to 6 years: 16 mg 2 to 3 years: 8 mg	Solution, suspension, syrup formulations
chlorpheniramine	24 mg	Ages: ≥ 12 years: 24 mg ≥ 6 years: 12 mg 2 to 5 years: 6 mg	Suspensions, solutions, extended-release tablets, chewable tablets Extended release formulations are not recommended for children under age 6 years
clemastine	2 mg	Ages: ≥ 12 years: 2 mg < 12 years: safe and effective use has not been established	Tablet and caplet formulations
cyproheptadine	32 mg	Ages: ≥ 15 years: 32 mg 7 to 14 years: 16 mg 2 to 6 years: 12 mg	Syrup and tablet formulations
dexbrompheniramine	12 mg	Ages: 6 to 11 years: 6 mg 1 to 5 years: safe and effective use has not been established	Tablets, extended-release tablets, and syrup formulations

Dosages (continued)

Drug (Products containing drug)	Maximum Recommended Daily Dose		Availability
	Adult	Child	
Antihistamines (continued)			
dexchlorpheniramine	12 mg	Ages: >12 years: 12 mg 6 to 11 years: 6 mg 2 to 5 years: 3 mg	Extended release tablet and oral solution formulations Extended release tablets are not recommended for use in children 3 to 5 years of age
diphenhydramine	300 mg	Ages: ≥ 6 years: 300 mg	Tablet and suspension formulations
doxylamine	60 mg	Ages: ≥ 12 years: 60 mg 6 to 11 years: 30 mg 2 to 5 years: 15 mg	Suspension and chewable tablet formulations
hydroxyzine	400 mg	Ages: ≥ 6 years: 100 mg < 6 years: 50 mg Infants: safety and efficacy have not been established	Tablets, capsules, and solution formulations
promethazine	100 mg	Ages: Adolescents: 100 mg ≥ 2 years: lesser of 25 mg/dose or 1.1 mg/kg/dose	Tablets and syrup formulations
pyrilamine	No maximum dosing information available	Ages: 6 to 11 years: 100 mg 2 to 5 years: 50 mg	Tablet, syrup, suspension, and chewable tablet formulations
triprolidine	10 mg	Ages: ≥ 12 years: 10 mg 6 to 11 years: 5 mg 4 to 5 years: 3.75 mg 2 to 3 years: 2.5 mg 4 months to 1 year: 1.25 mg	Tablet, solution, and suspension formulations
Antitussives (opiate)			
codeine	360 mg	Ages: Use limited to patients > 18 years	Tablet, capsule, syrup, and solution formulations
dihydrocodeine	90 mg	Use limited to patients > 18 years	Syrup and solution formulations
hydrocodone	30 mg (as an antitussive)	Use limited to patients > 18 years	Capsule and syrup formulations

Dosages (continued)

Drug (Products containing drug)	Maximum Recommended Daily Dose		Availability
	Adult	Child	
Antitussives (non-opiate)			
carbetapentane	240 mg	Ages: 6 to 12 years: 120 mg 4 to 5 years: 30 mg 2 to 3 years: 15 mg	Tablets, capsules, extended-release capsules, and suspension formulations
chlophedianol	100 mg	Ages: 6 to 11 years: 50 mg	Solution formulations
dextromethorphan	120 mg	Ages: 6 to 11 years: 60 mg 2 to 5 years: 30 mg	Tablet, chewable tablet, suspension, and solution formulations
Decongestants			
phenylephrine	60 mg	Ages: 6 to 12 years: 30 mg 4 to 5 years: 15 mg	Tablet, chewable tablet, solution, and syrup formulations
pseudoephedrine	240 mg	Ages: 6 to 11 years: 120 mg 4to 5 years: 60 mg	Chewable tablet, capsule, solution, suspension, and syrup formulations
Expectorants			
guaifenesin	2,400 mg	Ages: 6 to 11 years: 1,200 mg 2 to 5 years: 600 mg	Extended-release capsule, tablet, solution, suspension, and syrup formulations

CLINICAL TRIALS

Search Strategy

Studies were identified through searches performed on PubMed and review of information sent by manufacturers. Search strategy included the FDA-approved use of all drugs in this class. Randomized, comparative, controlled trials comparing agents within this class for the approved indications are considered the most relevant in this category. Studies included for analysis in the review were published in English, performed with human participants, and randomly allocated participants to comparison groups. In addition, studies must contain clearly stated, predetermined outcome measure(s) of known or probable clinical importance, use data analysis techniques consistent with the study question, and include follow-up (endpoint assessment) of at least 80% of participants entering the investigation. Despite some inherent bias found in all studies, including those sponsored and/or funded by pharmaceutical manufacturers, the studies in this therapeutic class review were determined to have results or conclusions that do not suggest systematic error in their experimental study design. While the potential influence of manufacturer sponsorship and/or funding must be considered, the studies in this review have also been evaluated for validity and importance.

This class contains a vast number of combination cough and cold products whose constituent ingredients are available both as prescription and over-the-counter medications. All products contained in this monograph have supporting evidence related to the safety and efficacy of their constituent ingredients.

There are numerous placebo-controlled studies available, but none that are comparative to other agents within this class.

META-ANALYSIS

A 2005 Cochrane Review suggested caution in determining clinically significant benefits of any of the non-antibiotic treatments of the common cold other than first-dose decongestants and antihistamine-decongestant combinations.[29] The review included comparison of several products, including echinacea, heated humidifier air, dextromethorphan, guaifenesin, vitamin C, zinc lozenges, and 2 combination antihistamine-decongestant products. Dexbrompheniramine 6 mg in combination with pseudoephedrine 120 mg was administered twice daily for 1 week in 1 study. Another study evaluated loratadine 5 mg in combination with pseudoephedrine 120 mg twice daily for 4 days. The authors concluded that most non-antibiotic treatments for the common cold are probably not effective; however, dextromethorphan, guaifenesin, combination antihistamine-decongestants, first-dose nasal decongestants, and, possibly, zinc lozenges show promise.

A 2012 Cochrane Review on the efficacy of OTC medications to treat an acute cough included 26 trials with antitussives, expectorants, mucolytics, antihistamines, antihistamine-decongestant combinations, and other combinations versus placebo with variable results.[30] The review could not confirm clear evidence of efficacy of OTC medications to treat an acute cough. A 2007 meta-analysis was done to assess the efficacy of oral phenylephrine 10 mg as a nasal decongestant in the symptomatic relief from the common cold.[31] To be included in the analysis, studies had to have a single-dose, randomized, placebo-controlled design; involve an orally-administered product in which phenylephrine 10 mg was the sole active ingredient; enroll patients with acute nasal congestion due to the common cold; evaluate nasal airway resistance as the efficacy endpoint; and have sufficient data points to allow re-analysis and/or meta-analysis of phenylephrine 10 mg and placebo. Eight studies met the inclusion criteria, involving seven cross-over studies of 113 subjects. Significant differences in favor of phenylephrine were seen in four of the 8 studies ($p \leq 0.05$). Phenylephrine was significantly more effective than placebo at the primary time points (45, 90, 120, and 180 minutes). This meta-analysis and re-analysis support the effectiveness of a single oral dose of phenylephrine 10 mg as a decongestant in adults with acute nasal congestion associated with the common cold.

SUMMARY

The common cold induces acute cough by directly irritating the upper airway structures. Viral infections of the airway can produce the common cold syndrome including rhinosinusitis. Active treatment of the symptoms associated with cough and cold may include combination products containing anticholinergics, first-generation antihistamines, opiate and non-opiate antitussives, decongestants, and expectorants. The available data do not result in any differentiation among the drugs in their particular class. These products are available in various combinations and individually as both prescription and OTC products. Awareness of the active ingredients is critical in ensuring proper dosing, patient safety, and effective use of these products.

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LABEL NAME	GENERIC NAME	MANUFACTURER	DRUG TYPE	PROVIDER SYNERGIES BRAND NAME ROUTE
CAPCOF LIQUID	chlorpheniramine/PE/codeine	CAPITAL PHARMAC	SSB	CAPCOF LIQUID OTC (ORAL)
CODEINE-GUAIFEN 10-100 MG/5 ML	codeine phosphate/guaifenesin	generic	GEN	GUAIFENESIN/CODEINE LIQUID OTC (ORAL)
GUAIATUSSIN AC LIQUID	codeine phosphate/guaifenesin	HI-TECH/AKORN C	GEN	GUAIFENESIN/CODEINE LIQUID OTC (ORAL)
GUAIFEN-CODEINE 100-10 MG/5 ML	codeine phosphate/guaifenesin	generic	GEN	GUAIFENESIN/CODEINE LIQUID OTC (ORAL)
GUAIFEN-CODEINE 200-20 MG/10ML	codeine phosphate/guaifenesin	PHARM ASSOC INC	GEN	GUAIFENESIN/CODEINE LIQUID OTC (ORAL)
VIRTUSSIN DAC LIQUID	pseudoephed/codeine/guaifen	VIRTUS PHARMACE	GEN	GUAIFENESIN/PSE/CODEINE SYRUP OTC (ORAL)
HISTEX-AC SYRUP	triprolidine/phenyleph/codeine	ALLEGIS PHARMAC	SSB	HISTEX-AC SYRUP OTC (ORAL)
HYDROCODONE-CHLORPHEN ER SUSP	hydrocodone/chlorphen p-stirex	generic	GEN	HYDROCODONE/CHLORPHENIRAMINE SUSPENSION ER 12H (ORAL)
HYDROCODONE-HOMATROPINE SOLN	hydrocodone bit/homatrop me-br	generic	GEN	HYDROCODONE/HOMATROPINE SYRUP (AG) (ORAL)
HYCODAN 5 MG-1.5 MG/5 ML SOLN	hydrocodone bit/homatrop me-br	GENUS LIFESCIEN	GEN	HYDROCODONE/HOMATROPINE SYRUP (ORAL)
HYDROCODONE-HOMATROPINE SOLN	hydrocodone bit/homatrop me-br	generic	GEN	HYDROCODONE/HOMATROPINE SYRUP (ORAL)
HYDROMET 5 MG-1.5 MG/5 ML SOLN	hydrocodone bit/homatrop me-br	ACTAVIS/TEVA	GEN	HYDROCODONE/HOMATROPINE SYRUP (ORAL)
HYDROCODONE-HOMATROPINE 5-1.5	hydrocodone bit/homatrop me-br	generic	GEN	HYDROCODONE/HOMATROPINE TABLET (AG) (ORAL)
HYDROCODONE-HOMATROPINE 5-1.5	hydrocodone bit/homatrop me-br	generic	GEN	HYDROCODONE/HOMATROPINE TABLET (ORAL)
M-CLEAR WC LIQUID	codeine phosphate/guaifenesin	R.A.MC NEIL CO.	SSB	M-CLEAR WC LIQUID OTC (ORAL)
M-END PE LIQUID	brompheniramine/p-eph/codeine	R.A.MC NEIL CO.	SSB	M-END PE LIQUID OTC (ORAL)
NINJACOF-XG LIQUID	codeine phosphate/guaifenesin	CENTURION LABS	SSB	NINJACOF-XG LIQUID OTC (ORAL)
POLY-TUSSIN AC LIQUID	brompheniramine/p-eph/codeine	POLY PHARMACEUT	SSB	POLY-TUSSIN AC LIQUID OTC (ORAL)
PROMETHAZINE-CODEINE SOLUTION	promethazine HCl/codeine	generic	GEN	PROMETHAZINE/CODEINE SYRUP (ORAL)
PROMETHAZINE-CODEINE SYRUP	promethazine HCl/codeine	generic	GEN	PROMETHAZINE/CODEINE SYRUP (ORAL)
PROMETHAZINE VC-CODEINE SOLN	promethazine/phenyleph/codeine	PHARM ASSOC INC	GEN	PROMETHAZINE/PHENYLEPHRINE/CODEINE SYRUP (ORAL)
PROMETHAZINE-PE-CODEINE SYRUP	promethazine/phenyleph/codeine	HI-TECH/AKORN C	GEN	PROMETHAZINE/PHENYLEPHRINE/CODEINE SYRUP (ORAL)