

THE ADVANCED PRACTICE RESPIRATORY THERAPIST

A New Physician Extender



Information Booklet Developed by the North Carolina Respiratory Care Board

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BACKGROUND / SUMMARY

By 2030, the United States expects a shortfall of 1,300 to 12,000 cardiologists and pulmonologists. This alarming prediction becomes more concerning with the fact that the Centers for Disease Control and Prevention identifies three of the top five leading causes of death as diseases of the cardiopulmonary system. The American Association for Respiratory Care (AARC) has advocated for cardiopulmonary health for nearly 80 years through its support of the profession and the respiratory therapists that make patient lives better every day. It is this constant growth that leads us to the Advanced Practice Respiratory Therapist (APRT) (AARC, 2022).

The APRT is an educated and trained advanced practice health care professional with a scope of practice beyond a registered respiratory therapist. More specifically, an APRT is a “skilled person, qualified by academic and clinical education to provide diagnosis and treatment of respiratory diseases and disorders to patients under the supervision and responsibility of a licensed doctor of medicine or osteopathy.” The requisite education and training of an APRT will allow for higher level physician collaboration in the responsibilities that include assessing, diagnosing, managing, and treating patients across the full spectrum of cardiopulmonary disease – both in the inpatient and outpatient settings (AARC, 2022).

By definition, an APRT may only perform medical acts, tasks, or functions in accordance with state licensing laws as defined by the North Carolina Respiratory Care Board (NCRCB). The NCRCB limits the role of the APRT to the “application or implementation of advanced respiratory care techniques, procedures, pharmacological agents or devices, which are ordered or delegated by a supervising physician acting with authority in any health care setting, and which are appropriate to an advanced respiratory care practitioner’s education, training, experience, and level of competence and within the limitations set forth by the supervising physician and in accordance with rules adopted by the Board.” In short, these advanced practitioners will be physician extenders.

To be clear, all medical acts, tasks, or functions executed by an APRT in this state will be accomplished under the supervision of a physician licensed in North Carolina (NC). Furthermore, to avoid any confusion with regard to credentialing and in an effort to better align with other advanced practice providers in our state, APRT applicants in NC will be known officially as “Advanced Respiratory Care Practitioners” (ARCP) once the license is issued.

APRT/ARCP ACADEMIC PROGRAM OVERVIEW

The APRT/ARCP program is designed to develop the knowledge, diagnostic reasoning, and clinical judgment skills expected of the practitioner in the broad domain of the discipline. Graduates will have the ability to make appropriate complex diagnostic and management decisions vital to all aspects of patient care.

More specifically, an ARCP will be expected to:

- Obtain an accurate and detailed patient history
- Perform a comprehensive physical examination
- Understand the pathophysiology of disease and basic science knowledge applicable to patient care
- Order and interpret results of appropriate diagnostic tests
- Assess underlying patient comorbidities
- Make an accurate diagnosis
- Understand drug safety, pharmaco-economics, and pharmaco-epidemiology
- Understand care unique to a hospitalized patient; including neonatal, pediatric, adult, elderly and vulnerable populations
- Understand population-specific differences in the presence of disease, health outcomes, or access to healthcare
- Recommend appropriate treatment/patient care
- Prescribe, administer, and order pharmacologic agents
- Assess risk, determine prognosis, and apply principles from epidemiologic studies
- Practice evidence-based medicine
- Maintain an up-to-date facility with electronic health records
- Communicate clearly and work alongside all other healthcare providers as a team

All educational programs are accredited by the Commission on Accreditation for Respiratory Care (CoARC) in the United States. All COARC programs utilize an 'outcomes-based' process. Programmatic outcomes are performance indicators that reflect the extent to which the program's educational goals are achieved and by which program effectiveness is documented. Ohio State University has graduated two cohorts of students as of 2022. The University of North Carolina at Charlotte has developed the APRT program and is submitting it for approval to start in 2023 or 2024.

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APRT/ARCP PROFESSIONAL CURRICULUM

The APRT/ARCP curriculum includes courses that meet the requirements for a Master of Science degree. Specifically, APRT/ARCP graduates will earn a “Master of Respiratory Therapy” degree. This program of study represents a unique and substantial professional growth opportunity not currently available in the field of respiratory therapy.

Respiratory Therapy Advanced Practice (47 credits):

HRS 7900: Evidence-Based Practice I: Critical Analysis of Intervention Research and Systematic Review (1)

HRS 7910: Evidence-Based Practice II: Critical Analysis of Intervention Research and Systematic Review (1)

Cognate Courses:

Nursing 7450: Pathophysiology of Altered Health States (5)

Nursing 7410: Advanced Health Assessment (3)

Nursing 7470: Advanced Pharmacology in Nursing (4)

Respiratory Therapy 7700: Ethical Issues in Advanced Practice (2)

Respiratory Therapy 7800: Advanced Practice in Respiratory Care (6)

Respiratory Therapy 7895: Respiratory Therapy Seminar (7)

Respiratory Therapy 8289: Advanced Clinical Practice in Respiratory Care (18)

The Ohio State University’s MRT Program Curriculum

AUTUMN YR 1	SPRING YR 1	SUMMER YR 1
<p>HTHRHC 7900: Evidence Based Practice I: Critical Analysis of Measurement and Diagnostic Tests (1)</p> <p>NURSING 7450: Pathophysiology of Altered Health States (5)</p> <p>RESPTHR 7700: Ethical Issues in Advanced Practice (2)</p> <p>RESPTHR 7895: Seminar: Evidence for Respiratory Care I (1)</p>	<p>HTHRHC 7910: Evidence Based Practice II: Critical Analysis of Intervention Research & Systematic Review (1)</p> <p>NURSING 7410: Advanced Health Assessment (3)</p> <p>NURSING 7470: Advanced Pharmacology in Nursing Practice (4)</p> <p>RESPTHR 7895: Seminar: Evidence for Respiratory Care II (1)</p>	<p>RESPTHR 7800: Advanced Practice in Respiratory Care (3)</p> <p>RESPTHR 8189: Advanced Clinical Practice I (4)</p> <p>RESPTHR 7895: Seminar: Updated and Current Developments I (2)</p>
9 credits	9 credits	9 credits
AUTUMN YR 2	SPRING YR 2	
<p>RESPTHR 7800: Advanced Practice in Respiratory Care (3)</p> <p>RESPTHR 7895: Seminar: Updates and Current Developments II (1)</p> <p>RESPTHR 8289: Advanced Clinical Practice II (7)</p>	<p>RESPTHR 7895: Seminar: Professional Practice Issues (2)</p> <p>RESPTHR 8389: Advanced Clinical Practice III (7)</p>	
11 credits	9 credits	TOTAL CREDITS: 47

APRT/ARCP CORE COMPETENCIES

Examples of core competencies earned through the APRT/ARCP program are listed below. This is not meant to be an exhaustive list.

In addition, graduates are expected to advance their knowledge and competency beyond graduation. This is accomplished both by workplace experience as well as mandatory participation in ongoing CME as monitored by the NCRCB.

Pulmonary Physiology

- Pulmonary mechanics of oxygenation & ventilation
- Cardiovascular physiology
- Cardiopulmonary exercise testing
- Acid-base interpretation
- Pulmonary function testing
- Barometric pressure-relate
 - High altitude, diving, and other special situations

Physical Examination, Patient Interview, and Epidemiology

- Approach to symptoms such as dyspnea
- Open ended questions
- Interpretation of clinical studies
 - Study design
 - Causal inference
 - Sources of error
 - Analytic issues
 - Screening studies
 - Diagnostic studies

Quality and Safety in Healthcare

- Methods of assessing quality, safety, and patient satisfaction
 - Adverse event reporting
 - Patient satisfaction surveys
 - Root cause analysis
 - Failure mode and effects analysis
- Methods for improving quality and safety
- Complications of medical care
 - Adverse drug effects and drug interactions
 - Complications of bronchoscopy and pleural procedures
 - Adverse outcomes of thoracic surgery
 - Adverse effects of thoracic radiation therapy
 - Complications of intubation and tracheostomy
 - Infection control
- Ethics and professionalism (advance directives, end of life, decision-making capacity, etc.)

Critical Care Medicine

- **Assessment and monitoring**
 - Outcomes prediction including prognostic scoring systems
 - Assessment for agitation, cognitive impairment, and delirium
 - Cardiovascular assessment and monitoring
 - Critical care ultrasound
 - Determination of brain death
- **Airway management in respiratory failure**
 - Invasive mechanical ventilation
 - Non-invasive mechanical ventilation
 - Extracorporeal membrane oxygenation and CO₂ removal
 - Weaning from mechanical ventilator support
 - Sedation, analgesia, and neuromuscular blockade
 - Blood component replacement
 - Enteral and parenteral nutrition (including feeding tubes)
 - Early mobilization and rehabilitation
 - Cardiopulmonary resuscitation and brain protective strategies
 - Indications for renal replacement therapy
 - Management of potential organ donors
- **Prevention and management of complications**
 - Catheter-associated complications
 - Ventilator-associated complications
 - Acquired coagulation disorders
 - Acquired gastroduodenal stress ulcers, ileus, and diarrhea
 - Aspiration
 - Acquired neuromuscular weakness
- **Respiratory Critical Care**
 - ARDS
 - Other hypoxemic respiratory failure (i.e.; vaping-associated lung injury)
 - Central airway obstruction
 - Hypercapnic respiratory failure
 - Massive hemoptysis
 - Diffuse alveolar hemorrhage
 - Respiratory failure related to COVID-19
- **Non-respiratory Critical Care**
 - Shock
 - Severe Sepsis
 - Cardiogenic
 - Hypovolemic
 - Anaphylaxis
 - Hemorrhagic shock; acute GI bleeding
 - Cardiovascular critical care
 - Acute coronary syndromes
 - Acute heart failure
 - Tachyarrhythmias and bradyarrhythmias
 - Hypertensive Crisis and other vascular emergencies
 - Neurologic critical care
 - Acute and chronic liver failure
 - Acute renal failure

- Severe, acute endocrine and metabolic disorders
- Coagulopathies
- Hypothermia and hyperthermia
- Toxicology

Infectious Disease

- **Host defense mechanisms**
 - Nonimmune mechanisms
 - Innate immunity
 - Adaptive immunity
- **The Immunocompromised host**
 - Chemotherapy related
 - Post-transplantation related
 - Medication induced (i.e.; prednisone)
 - AIDS associated illness
 - Congenital and acquired immune system disorders
- **Vaccination**
 - Pneumococcus and other bacteria (HIB, Pertussis)
 - Influenza
 - SARS-Cov-2
- **Common syndromes**
 - Upper respiratory tract infections, acute bronchitis
 - Community-acquired pneumonia
 - Aspiration pneumonia/pneumonitis
 - Lung abscess and anaerobic infections
 - Empyema
 - Healthcare-acquired pneumonia [HCAP]
 - Ventilator-associated pneumonia [VAP]
- **Major pathogens**
 - Pneumonia due to gram-positive bacteria
 - Pneumococcus
 - *Staphylococcus aureus*, including methicillin-resistant
 - *S. aureus* (MRSA) and community-associated MRSA (CA-MRSA)
 - Other gram-positive bacteria (*Nocardia*, enterococci)
 - Pneumonia due to gram-negative bacteria
 - *Pseudomonas*
 - Enterobacteriaceae
 - Other gram-negative bacteria (*Burkholderia*, *Legionella*)
 - Viruses
 - Influenza
 - COVID-19/SARS-CoV-2
 - Cytomegalovirus infection
 - HSV
 - VZV
 - Yeast and Fungi
 - *Aspergillus* and other opportunistic fungi (*Mucor*)
 - Endemic fungoses (histoplasmosis, blastomycosis, coccidioidomycosis)
 - Parasitic infections
 - Tuberculosis (TB)

- Non-TB mycobacterial infection (MAC/MAI)

Vascular Disease

- **Pulmonary thromboembolic disease**
 - Deep venous thrombosis
 - Pulmonary thromboembolism
 - Non-thrombotic pulmonary embolism
 - Infectious thrombophlebitis
- **Right ventricular failure/cor pulmonale**
- **Pulmonary hypertension**
 - Primary pulmonary arterial hypertension
 - Chronic thromboembolic pulmonary hypertension (CTEPH)
 - Other pulmonary hypertension related to heart or lung disease
- **Pulmonary vasculitis and capillaritis**
 - Granulomatosis with polyangiitis
 - Anti-glomerular basement membrane disease
 - Microscopic polyangiitis
 - Other pulmonary vasculitides
- **Pulmonary vascular malformations**
 - Pulmonary arteriovenous malformation
 - Hepatopulmonary syndrome
- **Sickle cell disease**

Obstructive Lung Disease

- **Asthma**
 - Pathophysiology and diagnosis
 - Evaluation (bronchodilator responses and provocative challenge)
 - Severity classifications and stepped care
 - Special types and phenotypes of asthma
 - Aspirin-sensitive asthma
 - Exercise-induced asthma
 - Eosinophilic asthma
 - TH2-high asthma
 - Cough variant asthma
 - Asthma mimics
 - Paradoxical vocal fold motion (Inducible laryngeal obstruction)
 - Genetics (cystic fibrosis, alpha-1 antitrypsin, primary ciliary dyskinesia)
 - Hypereosinophilic Löffler's syndrome and other parasitic infections
 - Infiltrative airway processes (amyloidosis and other processes)
 - Congestive Heart Failure (with preserved or reduced ejection fraction)
 - Status asthmaticus
 - Asthma in pregnancy
 - Perioperative care
 - Allergic bronchopulmonary aspergillosis and fungosis
- **Chronic obstructive pulmonary disease (COPD)**
 - Pathophysiology and diagnosis
 - Genetics Epidemiology Biology
 - Evaluation (guidelines, physiology of airflow, and imaging)
 - Management of chronic stable disease

- Pharmaceutical therapies
- Nonpharmaceutical therapies (rehabilitation, oxygen, palliation, and other therapies) Operative and bronchoscopic procedures
- Preoperative assessment and perioperative management Comorbidities (vascular disease, lung cancer, and other conditions)
- Acute Exacerbations
 - Pharmaceutical therapies
 - Nonpharmaceutical therapies (non-invasive positive- pressure ventilation [NIPPV] and mucociliary clearance)
- Prevention of exacerbations
- Mimics (heart failure and pulmonary embolism)
- **Obstructive, other than asthma and COPD**
 - Cystic fibrosis (CF)
 - Pathophysiology
 - Airway clearance
 - Non-CF Bronchiectasis
 - Pathophysiology
 - Airway clearance

Diffuse Parenchymal Lung Disease (DPLD)

- **Interstitial lung disease (ILD) associated with systemic inflammatory disease**
 - Connective tissue disease (CTD)–associated ILD
 - Rheumatoid arthritis
 - Systemic sclerosis
 - Polymyositis, dermatomyositis, and anti-synthetase syndromes
 - Sjogren syndrome
 - Systemic lupus erythematosus
 - Other connective tissue diseases
 - Inflammatory bowel disease–associated ILD
 - IgG4-related disease and other diseases
- **Idiopathic interstitial pneumonias**
 - Acute interstitial pneumonia
 - Cryptogenic organizing pneumonia
 - Desquamative interstitial pneumonia
 - Idiopathic pulmonary fibrosis
 - Lymphocytic interstitial pneumonia (LIP)
 - Nonspecific interstitial pneumonia
 - Respiratory bronchiolitis–associated ILD
 - Acute and chronic eosinophilic pneumonias
 - Idiopathic pleuropulmonary fibroelastosis
- **Granulomatous interstitial lung diseases**
 - Sarcoidosis
 - Hypersensitivity pneumonitis
 - Granulomatous lymphocytic ILD
- **Diffuse cystic lung disease**
 - Lymphangiomyomatosis
 - Langerhans cell histiocytosis
 - Birt-Hogg-Dube syndrome
 - Follicular bronchiolitis and cystic LIP

- Light-chain deposition disease
- Neurofibromatosis
- Marfan syndrome
- **Radiation induced pneumonitis and fibrosis**
- **Drug-induced interstitial lung disease**
- **Pulmonary alveolar proteinosis**

Occupational and Environmental Diseases

- **Tobacco use treatment and smoking cessation**
- **Occupational asthma and work-exacerbated asthma**
- **Indoor and outdoor air pollution**
- **Barometric- or thermal-related disorders Pneumoconioses**
 - Asbestosis
 - Berylliosis
 - Coal-workers' pneumoconiosis
 - Hard metal pneumoconiosis
 - Silicosis
- **Toxic inhalations**
 - E-cigarette and vaping-associated lung injury
 - Carbon monoxide
 - Smoke inhalation
 - Other toxic exposures (cobalt, dust, endotoxin, metal fume fever)
- **Environmental cancer risk**

Pleural Disease

- **Structure and physiology**
 - Fibrosis
 - Calcification
 - Thickening
 - Fluid dynamics
 - Trapped lung and lung entrapment
- **Pneumothorax**
 - Primary spontaneous
 - Secondary
 - Parenchymal disease-related iatrogenic
 - Traumatic
 - Catamenial, familial, and other types
- **Effusions and pleural pathology**
 - Transudative vs exudative
 - Infectious
 - Malignant
 - Inflammatory
 - Hemorrhagic
 - Chylous
 - Drug-induced
 - Eosinophilic
- **Diagnostic and therapeutic procedures**
 - Thoracentesis
 - Chest tubes and tunneled pleural catheters

Lung Transplantation

- Patient selection
- Complications
 - Infections
 - Neoplastic complications
 - Other (i.e.; graft-versus-host disease)
- Outcomes

Neoplasia

- **Lung cancer**
 - Non-small cell lung cancer vs Small cell lung cancer
 - Diagnostic evaluation
 - Chest CT and PET scans
 - Standard bronchoscopy
 - EBUS
 - Navigational bronchoscopy
 - Staging
 - TNM staging and non-invasive staging
 - Invasive mediastinal staging
 - Molecular markers
 - Surgical treatment
 - Video-assisted thoracoscopy (VATS) and other surgical approaches
 - Pre-op physiologic assessment
 - Nonsurgical treatment
 - Chemotherapy
 - Radiation therapy
 - Immunotherapy
 - Palliative therapy
- **Other intrathoracic tumors**
 - Carcinoid tumors
 - Hamartoma
 - Adenoid cystic carcinoma
 - Inflammatory Pseudotumor
 - Tumors of the mediastinum
 - Thymoma
 - Lymphoma
 - Thyroid Carcinoma
 - Plasmacytoma
 - Sarcoma
- **Malignant pleural disease**
 - Mesothelioma
 - Malignant pleural effusion or pleural metastasis
- **Complications**
 - Paraneoplastic syndromes
 - Superior vena cava syndrome
- **Pulmonary nodules and Low Dose Screening CT (LDCT) scans**
 - Eligibility criteria for LDCT

- Solitary pulmonary nodule
- Multiple pulmonary nodules
- Mimics of pulmonary nodules and masses

Sleep Medicine and Neuromuscular Control of Breathing

- **Sleep, Respiratory**
 - Obstructive sleep apnea
 - Pathophysiology
 - Evaluation
 - Therapy
 - Outcomes
 - Central sleep apnea
 - Altitude
 - Cheyne-Stokes breathing
 - Hypoventilation
 - Chest wall and skeletal
 - Obesity
 - Neuromuscular disease
 - Ventilatory control
- **Sleep, Non-Respiratory**
 - Insomnia
 - Narcolepsy
 - Periodic limb movement disorder
 - Restless legs syndrome
- **Evaluation procedures**
 - Attended polysomnography
 - Home sleep testing
 - Multiple Sleep Latency Test (MSLT)
 - Maintenance of Wakefulness Test (MWT)

APRT/ARCP Procedures List

These procedures are intentionally related to the cardiovascular and/or cardiopulmonary systems. This list is not meant to be exhaustive and would not usurp the procedural credentials of the ARCP's supervisory physician.

- **Airway Management**
 - Intubation
 - Invasive mechanical ventilation management
 - Capnometry and capnography
 - Non-invasive ventilatory management

- **Anesthesia**
 - Local
 - Moderate sedation

- **Advanced Wound Management**
 - Incision & drainage, wound debridement
 - Superficial & deep wound closure

- **Diagnostic/Therapeutic Procedures**
 - Soft tissue and joint aspiration
 - Lumbar puncture
 - Thoracentesis
 - Control of epistaxis
 - Electrocardiographic interpretation
 - Defibrillation/cardioversion
 - Clearing a cervical spine
 - Fracture/dislocation management
 - Chest tube placement/removal
 - Thoracentesis
 - Pleurodesis
 - Ultrasonography
 - Arthrocentesis
 - Vascular access
 - Cardiac ECHO in the ICU
 - Nasogastric tube/feeding tube placement
 - Simple bronchoscopy and bronchoalveolar lavage
 - Epicardial wire removal
 - PICC line insertion
 - Intra-aortic balloon (IABP) pump placement/removal

- **Hemodynamic Techniques**
 - Peripheral venous access
 - Arterial line placement
 - CVP/central line placement

- Intraosseous infusion
- **Operative/Perioperative Care**
 - Preoperative consultation, evaluation
 - Active bedside patient care management
 - First/Second surgical assist
 - Conduit vessel harvesting
 - Sternal closure/thoracotomy closure
 - Sternotomy/Sternal re-entry
 - Decannulation and/or separation from cardiopulmonary bypass
 - Organ procurement for transplantation
 - Postoperative care, management
- **Radiographic Interpretation**
 - Chest x-ray
 - Other plain films (i.e.; bone, soft tissues, abdominal series)
 - CT
 - MRI
 - PET
 - Diagnostic ultrasonography
 - Diagnostic echocardiography
- **Resuscitation**
 - Cardiopulmonary (i.e.; ACLS, NRP, PALS, STABLE)
 - Fluids and Medications

APRT/ARCP PRESCRIBING AUTHORITY EXAMPLE

The prescribing authority for an ACRP will be defined clearly and in detail in the NCRCB rules. An example is included below:

(a) The prescribing stipulations contained in this Rule apply to writing prescriptions and ordering the administration of medications.

(b) Prescribing stipulations are as follows:

- (1) Drugs and devices that may be prescribed by the ARCP in each practice site shall be included in the collaborative practice agreement.
- (2) The ARCP may prescribe a drug or device not included in the collaborative practice agreement only as follows:
 - (A) upon a specific written or verbal order obtained from a primary or backup supervising physician before the prescription or order is issued by the ARCP; and
 - (B) the written or verbal order shall be entered into the patient record with a notation that it is issued on the specific order of a primary or backup supervising physician and signed by the ARCP and the physician.
- (3) Each prescription shall be noted on the patient's chart and include the following information:
 - (A) medication and dosage;
 - (B) amount prescribed;
 - (C) directions for use;
 - (D) number of refills; and
 - (E) signature of ARCP.
- (4) Prescription Format:
 - (A) All prescriptions issued by the ARCP shall contain the name of the patient and the ARCP's name and telephone number;
- (5) ARCP shall not prescribe controlled substances, as defined by the State and Federal Controlled Substances Acts, for the following:
 - (A) ARCP's own use;
 - (B) ARCP's supervising physician;
 - (C) a member of the ARCP's immediate family, which shall mean a:
 - (i) spouse;
 - (ii) parent;
 - (iii) child;
 - (iv) sibling;
 - (v) parent-in-law;
 - (vi) son or daughter-in-law;
 - (vii) brother or sister-in-law;
 - (viii) step-parent;
 - (ix) step-child; or
 - (x) step-siblings;
 - (D) any other person living in the same residence as the licensee; or
 - (E) anyone with whom the ARCP is having a physical, sexual, or emotionally intimate relationship.

APRT/ARCP FORMULARY EXAMPLE

The following drug classes, preparations, and combinations have been proposed by the NCRCB for prescribing, ordering, and administering by licensed and supervised ARCPs.

All medicines must be within the ARCP's skills, form a usual component of the supervisory physician's scope of practice, and are rendered under the direction of the supervising physician.

Categories include but are not limited to the following:

- **ANESTHETICS:** topical & local
- **DIABETIC AGENTS**
- **ANTIDOTES & OTHER ANTAGONISTS:** anti-venom, digibind, narcan
- **ANTI-FIBROTIC AGENTS:** ofev, esbriet
- **ANTI-HISTAMINES**
- **ANTI-INFECTIVES:** antibiotics, anti-fungals, anti-virals
- **ANTI-INFLAMMATORY:** non-steroidal & steroidal
- **ANTI-NEOPLASTIC AGENTS** (under direct supervision of an Oncologist)
- **ANTI-PRURITICS**
- **ANTI-PYRETICS**
- **BIOLOGICS:** fasenra, dupixent, vaccines
- **BLOOD MODIFIERS:** anti-coagulants, fibrinolytics, PRBCs, plasma
- **CARDIOVASCULAR AGENTS:** anti-hypertensives, beta blockers, calcium channel blockers, ACE inhibitors, anti-arrhythmics, inotropes, nitrates, vasopressors
- **CENTRAL NERVOUS SYSTEM:** anti-convulsants
- **COLD & COUGH PREPARATIONS**
- **DIETARY SUPPLEMENT & FOOD:** electrolytes, prenatal and infant formulae
- **DME EQUIPMENT AND THERAPY:** home oxygen, VEST, CPAP, AVAPS
- **GASTROINTESTINAL AGENTS:** anti-emetics, H2B, proton pump inhibitors
- **HORMONAL PREPARATIONS:** bone metabolism, thyroid medications, DDAVP
- **INSOMNIA:** lunesta, ambien
- **INHALERS/NEBULIZED MEDS:** spiriva, trelegy, duonebs
- **MIGRAINE MEDICATION**
- **MUSCLE RELAXANTS:** neuromuscular blockade (for vented ICU patients)
- **NASAL PREPARATIONS:** antihistamines, flonase
- **NARCOLEPSY:** Provigil/nuvigil, sunosi
- **RHEUMATOLOGICALS:** disease modifying antirheumatic drugs (dmards)
- **SARCOIDOSIS MEDS:** long term prednisone, methotrexate

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