# CONTENTS

**CHAPTER 1**  Introduction  7

**CHAPTER 2**  Antibiotic use and associated factors in patients with dementia: a systematic review  21

**CHAPTER 3**  Prospective observations of discomfort, pain, and dyspnea in nursing home residents with dementia and pneumonia  49

**CHAPTER 4**  Development of a practice guideline for optimal symptom relief for patients with pneumonia and dementia in nursing homes using a Delphi study  69

**CHAPTER 5**  Improving comfort in people with dementia and pneumonia: a cluster-randomized trial  87

**CHAPTER 6**  Symptom relief in patients with pneumonia and dementia: implementation of a practice guideline  109

**CHAPTER 7**  General discussion  129

Appendix  151
Practice Guideline: Intervention PneuMonitor study  177
Summary  209
Nederlandse samenvatting  217
Dankwoord  224
Curriculum Vitae  229
List of publications  231