



NurseLLM: The First Specialized Language Model for Nursing

Md Tawkat Islam Khondaker^{♠♥} Julia Harrington^{♠◇} Shady Shehata^{♠△}

[♠]Yourika Labs, [♥]The University of British Columbia, [◇]Western University, [△]University of Waterloo

{mtawkat, jharrington, sshehata}@yourika.ai

Abstract

Recent advancements in large language models (LLMs) have significantly transformed medical systems. However, their potential within specialized domains such as nursing remains largely underexplored. In this work, we introduce NurseLLM, the first nursing-specialized LLM tailored for multiple choice question-answering (MCQ) tasks. We develop a multi-stage data generation pipeline to build the first large scale nursing MCQ dataset to train LLMs on a broad spectrum of nursing topics. We further introduce multiple nursing benchmarks to enable rigorous evaluation. Our extensive experiments demonstrate that NurseLLM outperforms SoTA general-purpose and medical-specialized LLMs of comparable size on different benchmarks, underscoring the importance of a specialized LLM for the nursing domain. Finally, we explore the role of reasoning and multi-agent collaboration systems in nursing, highlighting their promise for future research and applications.

1 Introduction

The rapid progress of large language models (LLMs) (Taori et al., 2023; Chiang et al., 2023; Jiang et al., 2023; Qwen, 2024; Gemma et al., 2024; Abdin et al., 2024; Dubey et al., 2024) has revolutionized general medical AI systems in clinical applications (Christophe et al., 2024; Qin et al., 2024; Ankit Pal, 2024). However, the potential of LLMs in a specialized domain like nursing is yet to be explored.

Nursing and medicine, while essential for healthcare, operate within different domains of knowledge. Medicine usually adheres to the biomedical model, emphasizing diagnosis and treatment (CRNA, 2022), while nursing focuses on holistic, person-centered care that includes advocacy, education, and emotional support (CRNA, 2022; Mazzotta, 2016). The same patient may be

viewed differently by nurses and physicians due to their unique approach to care (Vreugdenhil et al., 2023). With more than 28 million nurses worldwide, representing the largest segment of the global health workforce (WHO, 2025), the profession demands artificial intelligence (AI) tools designed specifically around its values and decision-making processes. A nursing-specific LLM must reflect this distinct perspective, moving beyond generic medical applications to truly support the holistic nature of nursing practice.

Another challenge of employing LLMs in nursing applications is the rigorous evaluation of the models on nursing questions. While the existing benchmarks (Singhal et al., 2023; Jin et al., 2021; Pal et al., 2022) evaluate LLMs on the generic medical knowledge, how these LLMs would situate themselves in nursing specialized question-answering exams like the NCLEX (National Council Licensure Examination) is still unexplored. The NCLEX¹ is a standardized entry-to-practice examination required for nurses in the United States and Canada to become licensed to practice as Registered Nurses (RN) or Licensed Practical Nurses (LPN). The NCLEX uses computer-adaptive testing (CAT) technology to administer the exam and measures clinical judgment and decision-making abilities through a variety of questions².

To address these gaps, we introduce NurseLLM the first nursing specialized LLM to the best of our knowledge. In the process of developing NurseLLM, we create a large-scale NCLEX-equivalent nursing multiple-choice question-answering (QA) dataset comprising 125K samples through a multi-stage data generation pipeline. We further develop three different nursing benchmarks for systematic evaluation of LLMs on nursing QA.

Our contributions can be summarized as follows:

¹College of Nurse of Ontario

²National Council of State Boards of Nursing

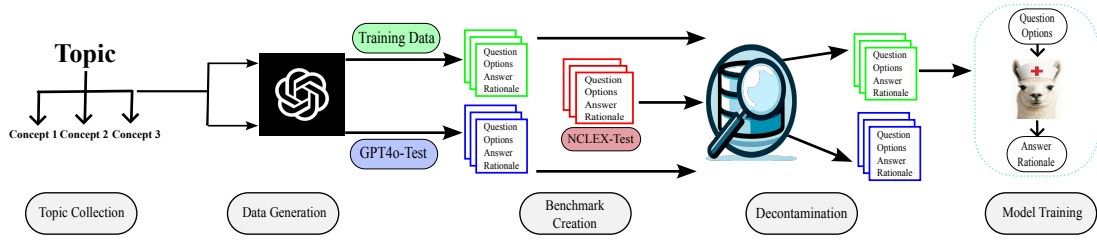


Figure 1: Overall methodology of NurseLLM data collection and training.

1. We develop NurseLLM, the first LLM specifically designed for nursing question-answering tasks. Given a nursing-related multiple-choice question, NurseLLM provides not only the answer, but also a rationale to ensure the model’s transparency and credibility.
2. We design a multi-stage data generation pipeline to create the first large-scale and topic-diverse nursing question-answering dataset.
3. For meticulous evaluation of LLMs on nursing QA, we further develop three different nursing MCQ benchmarks.
4. Our extensive evaluation reveals that NurseLLM outperforms SoTA generalized and medical expert LLMs of similar parameter magnitude on nursing benchmarks, highlighting the importance of a specialized LLM for the nursing domain.
5. We further investigate the potential of reasoning and multi-agent collaboration systems within the nursing domain, revealing their promising implications for future advancements in the field.

2 Related Works

Currently, there are no LLMs developed specifically for nursing; most nursing applications rely on generic or medical LLMs. While LLMs have shown promise in optimizing nursing workflows, personalizing care, and improving healthcare accessibility (Zhou et al., 2024), existing research highlights significant limitations. Studies report that general LLMs, including ChatGPT-3.5, demonstrate indecisiveness in clinical assessments, suggest unnecessary diagnostic tests, and misunderstand nursing concepts, leading to a tendency for over-triage compared to human clinicians (Saban

and Dubovi, 2024). Moreover, these models depend heavily on pre-existing data, which may become outdated without continual updates, compromising their reliability and potentially propagating obsolete or inaccurate information (Huang, 2023; Zhou et al., 2024). Additionally, the lack of transparency in training data and model processes raises concerns regarding accuracy, safety, and usability in clinical practice (Glauber et al., 2023; Gonzalez, 2024). Issues such as implicit bias and data-shift can further exacerbate inequities in care, emphasizing the urgent need for nursing-specific LLMs optimized through rigorous research to support clinical decision-making effectively (Zhou et al., 2024; Saban and Dubovi, 2024).

LLMs in Medical Application. In recent years, researchers have developed a diverse range of LLMs (Christophe et al., 2024; Ankit Pal, 2024; MedAlpaca, 2024) focusing on medical and clinical settings. Examples of such LLMs include BioMistral (Labrak et al., 2024), BioMedGPT (Zhang et al., 2023), Meditron (Chen et al., 2023b). A number of medical LLMs (Gururajan et al., 2024; Yu et al., 2025) have also been created on the top of a generalized LLM like LLaMA (Dubey et al., 2024). More recently, inspired by the strong performance of the reasoning LLMs, especially in medical applications (Qin et al., 2024), Chen et al. (2024b) develop HuatuoGPT-o1, providing valuable insights for enhancing the complex medical reasoning capabilities of LLMs.

LLMs are commonly benchmarked on the existing MCQ datasets on medical knowledge like MedQA (Jin et al., 2021), MedMCQA (Pal et al., 2022), and MMLU-Medical (Hendrycks et al., 2021). Recently, Zuo et al. (2025) introduce more challenging benchmark MedXpertQA to evaluate expert-level and advanced reasoning capabilities of LLMs spanning across 11 body systems. However, recent studies (Chen et al., 2024a; Liu et al., 2024; Jeong et al., 2024) expose a critical gap of medical LLMs on the clinical domain.

Despite recent advancements in medical LLMs, existing research has largely overlooked the development and evaluation of LLMs specifically tailored to the nursing domain. This gap in the literature motivates us to develop NurseLLM and introduce novel benchmarks specifically curated to address the unique needs and challenges within nursing practice.

3 Methodology

We present our overall methodology of NCLEX data generation and NurseLLM training in Figure 1. Now, we describe each component below:

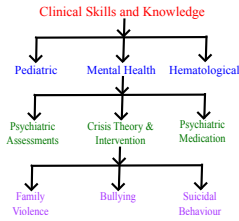


Figure 2: Example of a sample taxonomy (*Specialization* → *Domain* → *Topic* → *Concept*) for the specialization of *Clinical Skills and Knowledge*.

3.1 Topic Collection

In order to generate diverse NCLEX question-answer pairs, we first produced a comprehensive and exhaustive taxonomy of NCLEX topics. Two Registered Nurses with NCLEX expertise defined the high-level classification of *specializations* based on the NCLEX questions available in books and web corpora. Each specialization is further categorized into *domains* based on the expertise required for a nurse to be classified into that respective specialization. Then, analyzing the questions, they created the *topic* list for each domain and diversified the topics into different *concepts*. As a result, we created a comprehensive and diverse list of 7 *Specializations*, 60 *Domains*, 232 *Topics*, and 1,830 *Concepts*. A sample of this taxonomy is presented in Figure 2. We share the full taxonomy in Appendix F.

3.2 Synthetic NCLEX QA Generation

After creating the diverse list of concepts, we prompt GPT-4o to generate corresponding NCLEX MCQ question-answer (QA) from those concepts. The prompt to generate QA is given in Figure 3. Similar to the real NCLEX exam, we also generate the rationale that justifies the correct answer. We use this rationale

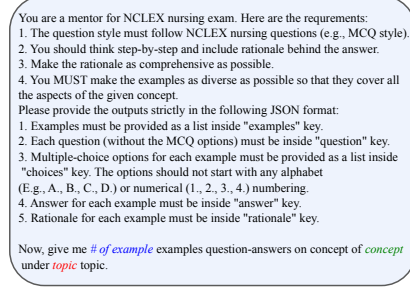


Figure 3: Prompt template used for synthetic data generation.

later to train NurseLLM with chain-of-thought (CoT) (Wei et al., 2022) reasoning. We provide the samples of synthetic NCLEX MCQ in Appendix C.

GPT4o-Test Benchmark Generation

Along with generating the synthetic data for training, we also generate a synthetic benchmark for testing the models. For this purpose, we generate one NCLEX QA per concept with GPT-4o and use these 1,830 samples as **GPT4o-Test** benchmark.

3.3 Benchmarks Creation

To rigorously test LLMs on the nursing tasks, we develop multiple NCLEX-based benchmarks. First, we develop a human-labeled gold NCLEX benchmark comprising 1,726 NCLEX questions (**NCLEX-Test**). Our Registered Nurses manually create these 1,726 NCLEX questions based on NCLEX expertise and knowledge gained from experience as educators. They further verified the correct answer as well as the rationales that justify the answer. We use this NCLEX-Test as our prime benchmark to test LLMs.

We further employ GPT-4o to extract nursing exclusive questions from MultiMedQA (Singhal et al., 2023). MultiMedQA is a collection consisting of multiple generic medical QA datasets. We prompt GPT-4o to identify the QA samples exclusively relevant to nursing topics (prompt for this topic modeling is presented in Appendix A). In this way, we mine a subset of MultiMedQA, namely **MultiNurseQA** to evaluate LLMs on the nursing-related questions.

Therefore, as summarized in Section 4.3, we develop three distinct benchmark datasets: NCLEX-Test, GPT4o-Test, MultiNurseQA, and in conjunction with MultiMedQA, we provide a comprehensive and rigorous framework for evaluating LLMs across both nursing-specific and general medical domains.

3.4 Decontamination

On one hand, it is important to decontaminate the trainings samples from the test set to ensure the generalization of NurseLLM, on the other hand, the generated training samples need to be unique to ensure diversity. However, comparing each question against a large-scale dataset is computationally expensive. Hence, to make the decontamination process efficient, we devise a two-step filtration. (i) First we decontaminate each generated sample against the whole **GPT4o-Test** and **NCLEX-Test** benchmarks to make sure that there is no overlapping between the train and the test datasets. (ii) If a sample passes the first step, then we compare this sample against the pool of the same concept, meaning that we compare this sample against the already generated training samples assigned to the same concept. Since each concept is unique, samples from different concepts will likely also be diverse. Therefore, we can avoid comparing a sample against a pool of samples from different concepts. Following Taori et al. (2023), we use the ROUGE-L score for the sample comparison. We apply the threshold of 0.5 and filter out any sample that exceeds this score.

4 Experimental Setup

4.1 Model Training

For finetuning of NurseLLM, we use Llama3-Med42-8B (Christophe et al., 2024) as the base model. The maximum length of the model was set to 2,048. The batch size is set to 1 with gradient accumulation step at 8. We train the model for 2 epochs with cosine scheduler and a learning rate of $2e-5$. We use QLoRA (Dettmers et al., 2023) with 4-bit quantization for the efficient utilization of GPU. The model is trained with an NVIDIA 10G GPU on AWS SageMaker for 4 days.

4.2 Model Merging

Finetuning LLMs on new data can cause catastrophic forgetting (Li et al., 2022; Scialom et al., 2022). To address this issue, we apply MergeKit to merge the finetuned LLM with the base Med42 using the DARE (Yu et al., 2023) method. We set the merging proportion to 60% upon inspecting the model’s performance on the validation set. Merging with the base model allows NurseLLM to preserve the generic medical capability while adapting to the new nursing knowledge.

4.3 Evaluation Benchmarks

To evaluate NurseLLM rigorously on the NCLEX task, we use the following four benchmarks:

1. **NCLEX-Test:** Human-labeled datasets comprising of 1,726 MCQ questions.
2. **GPT4o-Test:** GPT4o-generated 1,830 NCLEX MCQ questions.
3. **MultiMedQA:** A comprehensive suit (Singhal et al., 2023) consisting multiple medical question-answering datasets.
4. **MultiNurseQA:** A subset of MultiMedQA topic modeled exclusively for nursing questions.

4.4 Baselines

We compare NurseLLM against the following baselines consisting of both generic and medical specialized LLMs:

- (1) **Med42** (Llama3-Med42-8B) (Christophe et al., 2024);
- (2) **Gemma** (google/gemma-7b) (Gemma et al., 2024);
- (3) **Apollo** (FreedomIntelligence/Apollo-7B) (Wang et al., 2024);
- (4) **LLaMA** (meta-llama/Meta-Llama-3-8B-Instruct) (Dubey et al., 2024);
- (5) **OpenBioLLM** (aaditya/Llama3-OpenBioLLM-8B) (Ankit Pal, 2024);
- (6) **Mistral** (mistralai/Mistral-7B-Instruct-v0.1) (Jiang et al., 2023);
- (7) **BioMistral** (BioMistral/BioMistral-7B) (Labrak et al., 2024);
- (8) **MedAlpaca** (medalpaca/medalpaca-7b) (MedAlpaca, 2024);
- (9) **DeepSeek-LLaMA** (deepseek-ai/DeepSeek-R1-Distill-Llama-8B) (DeepSeek-AI et al., 2025).

All the LLMs are hosted locally for conducting the experiments. Please note that we do not include any closed-source LLMs like ChatGPT in our experiments because (i) The size of the closed-source models is not comparable to our baseline, and (ii) We do not intend to pass our NCLEX-Test benchmark to closed-source LLMs due to proprietary reasons.

5 Results

5.1 Performance on NCLEX-Test

We present the performance of the LLMs on the NCLEX-Test benchmark in Figure 4. As evident, NurseLLM outperforms all the open-source LLMs with compatible parameters. Noticeably,

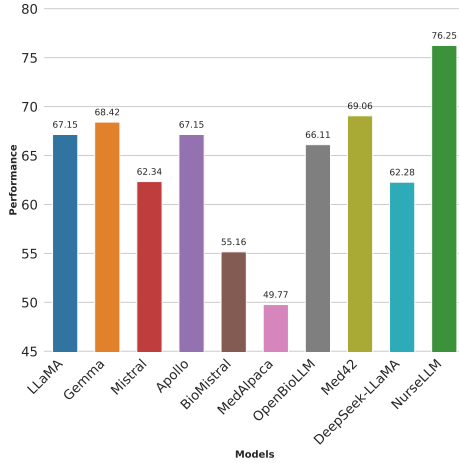


Figure 4: Performance of the models on the NCLEX-Test Benchmark.

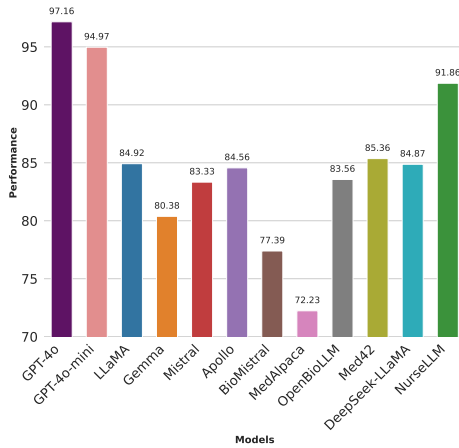


Figure 5: Performance of the models on GPT4o-Test Benchmark.

even LLMs specialized in the medical domain (E.g., Med42, OpenBioLLM) cannot reach the accuracy of 70%, whereas NurseLLM scores above 76%. This finding highlights (1) The importance of specialized LLMs for nursing domain, (2) The efficacy of our synthetic diverse dataset that helps NurseLLM to improve the performance, and (3) The necessity of challenging benchmark like NCLEX-Test for the rigorous evaluation of medical LLMs on nursing domain.

5.2 Performance on GPT4o-Test

We show the performance of the models on GPT-4o created NCLEX benchmark in Figure 5. Although the benchmark is GPT-4o generated, GPT-4o cannot reach the perfect accuracy due to the stochastic nature of the model. As evident, NurseLLM with 8B parameters achieves over 91% accuracy close to the performance of GPT-4o-mini (94.97%). How-

ever, other baseline LLMs struggle to compete with NurseLLM, which again signifies the necessity for a nursing specialized LLM.

5.3 Performance on MultiMedQA

We compare the models’ performance on the generic medical benchmark MultiMedQA in Table 1. As we can see, in overall performance, medical specialized models like Med42 dominates NurseLLM on this benchmark. This is unsurprising since medical specialized models are specifically pre- and post-trained on medical data. Although NurseLLM utilizes Med42 as the base model, the model unlearns some of its medical knowledge while post-training on nursing-specific data because of the catastrophic forgetting (Li et al., 2022) which happens during the domain adaptation. However, NurseLLM is still able to maintain comparable performance with other baselines. This indicates that, in addition to functioning as a nursing expert, NurseLLM is also capable of providing answers on generic medical knowledge.

5.4 Performance on MultiNurseQA

We further compare the models’ performance on the ‘nursing’ subset of MultiMedQA, namely MultiNurseQA in Table 2. As observed, Med42 continues to outperform NurseLLM, consistent with MultiMedQA. However, NurseLLM achieves the second best performance on this nursing benchmark, trailing Med42 by only a narrow margin (0.19%). When compared with the results from MultiMedQA (Table 1), a general decline in model performance is evident on MultiNurseQA. Notably, NurseLLM experiences the smallest performance degradation, while the other models suffer more substantial declines. This difference in performance further reveals the models’ relative deficiency in the nursing-specific domain.

6 Analyses

6.1 Impact of Reasoning-Incorporated Training

Large reasoning models (Zhong et al., 2024; Qin et al., 2024; DeepSeek-AI et al., 2025) have shown remarkable performance on complex reasoning tasks in recent years. Inspired by this, we attempt to study how incorporating reasoning during the inference time (Snell et al., 2025). First, we sample 5,000 data from our synthetic post-training dataset. Then, we prompt (Figure 6)

Models	Avg.	Clinical KG	Medical Genetics	Anatomy	Pro Medicine	College Biology	College Medicine	MedQA 4 opts	PubMedQA	MedMCQA
LLaMA	69.19	68.30	83.00	68.89	70.22	78.47	61.85	59.70	74.80	57.52
Gemma	64.18	69.81	70.00	59.26	66.18	79.86	60.12	47.21	76.20	48.96
Mistral	62.85	68.68	71.00	55.56	68.38	68.06	59.54	50.82	75.40	48.20
Apollo	60.00	62.26	72.00	61.48	69.12	70.83	55.49	55.22	39.80	53.77
BioMistral	58.97	59.90	64.00	56.50	60.40	59.00	54.70	50.60	77.50	48.10
MedAlpaca	58.04	57.36	69.00	57.04	67.28	65.28	54.34	41.71	72.80	37.51
OpenBioLLM	71.99	78.49	84.00	68.89	78.68	83.33	67.05	58.05	71.80	57.59
Med42	72.41	76.23	78.00	71.85	76.84	80.56	68.21	62.77	77.00	60.24
DeepSeek-LLaMA	65.45	67.23	76.00	59.33	67.85	70.22	58.14	55.79	77.40	57.23
NurseLLM	71.01	76.98	80.00	68.89	73.53	76.39	63.01	62.84	77.80	59.65

Table 1: Performance of the models on the MultiMedQA benchmark.

Models	Avg.	Clinical KG	Anatomy	Pro Medicine	MedQA 4 opts	PubMedQA	MedMCQA
LLaMA	65.05	76.58	40	70.73	67.41	78.05	57.54
Gemma	58.32	66.06	40	57.14	68.29	73.17	45.26
Mistral	53.52	69.72	20	42.86	63.41	73.17	51.93
Apollo	55.88	63.56	20	61.47	63.58	70.18	56.48
BioMistral	58.66	60.53	40	56.79	68.24	75.56	50.81
MedAlpaca	54.42	58.23	40	54.52	63.28	71.93	38.58
OpenBioLLM	69.23	76.15	60	71.84	68.29	78.05	61.05
Med42	69.96	77.06	60	71.43	75.61	73.17	62.46
DeepSeek-LLaMA	66.86	68.17	60	65.55	71.83	76.34	59.25
NurseLLM	69.77	78.90	40	85.71	73.17	80.49	60.35

Table 2: Performance of the models on MultiNurseQA benchmark.

You are a nursing expert. You are given a MCQ question on NCLEX. Please reason step by step, and put your final answer within `\boxed{}`. You should only write A, B, C, D within `\boxed{}`. REMEMBER, You MUST reason step by step, and put your final answer within `\boxed{}`. Also, You can put correct option after "Final Answer".

Figure 6: Prompt to generate reasoning traces with DeepSeek-R1-Distill-Qwen-32B for NCLEX training data.

DeepSeek-R1-Distill-Qwen-32B model to generate the reasoning traces. We filter out those samples where the DeepSeek-R1-Distill-Qwen-32B does not agree with GPT-4o on the final answer, resulting in 4,683 final samples. After the filtration, A Med42 model is then supervised finetuned on these MCQ samples with reasoning traces.

We evaluate the reasoning version of NurseLLM on our NCLEX-Test benchmark. We observe that the reasoning model scores 72.01%, trailing SoTA NurseLLM by 4.24% while using only 1/30th samples of NurseLLM. This finding highlights the promising potential of leveraging the reasoning capabilities of models. As a future direction, we are currently expanding the reasoning-incorporated nursing post-training dataset to develop a nursing specialized large reasoning model. An example of the response generated by NurseLLM is presented in Appendix D.

6.2 NurseLLM as Multi-Agent System

The exploration of multi-agent systems (MAS) has gained increasing attraction among researchers (Hu

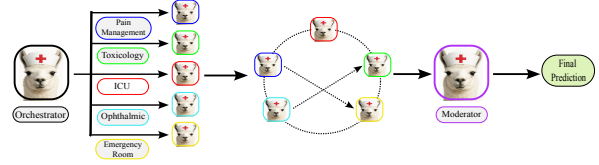


Figure 7: Workflow of our multi-agent collaborative system.

et al., 2024; Ke et al., 2025). Inspired by Kim et al. (2024), we deploy NurseLLM as a multi-agent collaborative system (Figure 7) to study its capability in the nursing domain. The workflow of our MAS is designed as follows: (1) upon receiving a nursing question an *Orchestrator* LLM first determines the difficulty of the question. (2) If the difficulty is determined as easy, the question is then routed to a single LLM. Otherwise, the question is routed to a group of LLMs dynamically assigned by the *Orchestrator*, where each LLM is an *Expert* in different nursing specializations. The *Experts* then involve in a multi-round collaborative debate. Finally, a *Moderator* analyzes discussions among the *Experts* and provides the final answer as the verdict. We present responses from MAS in Appendix E.

We evaluate the performance of MAS on NCLEX-Test benchmark. We find that MAS exhibits 79.87% accuracy improving over SoTA NurseLLM by 3.62%. This finding demonstrates that we can further improve the capability of nursing LLMs by deploying in a multi-agent collaborative system. We provide runtime comparison across different model configurations in Appendix B.

7 Ablation Study on Training Data Quantity

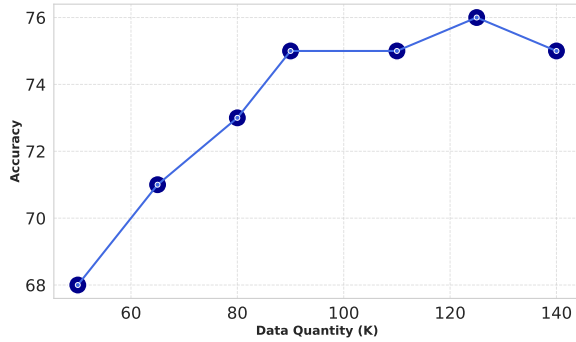


Figure 8: Ablation study on the performance of the model trained on different sample size.

We conduct an ablation study to investigate the relation between the quantity of post-training data and the performance of NurseLLM. For this purpose, we use a small human-labeled dataset of 100 samples as our validation set. We present our result in Figure 8. As noticed, the model’s performance improves monotonically with the increase amount of data. Nevertheless, the improve rate decreases after 90K and at 125K the performance reaches at a peak. Hence, considering the cost of high-quality synthetic data acquisition, we opted to limit the synthetic dataset to a sample size of 140K.

8 Ablation Study on Base Models

Base Models	Accuracy
LLaMA	72
OpenBioLLM	73
Med42	76

Table 3: Ablation study on the base models used for finetuning.

We further study the impact of employing different LLMs as base models on the performance for the NCLEX benchmark. For this, we experiment with Med42, LLaMA-3.1, OpenBioLLM as the base models. We use the same validation set from Section 7 for this study. We show the performance of NurseLLM with different base models in Table 3. As we can see, Med42 as a base model produces the best performance, followed by OpenBioLLM. This result reflects that a generic medical specialized LLM as a base model can lead to a better performance when adapting the model to specifically to the nursing domain.

9 Conclusion

In this work, we introduce NurseLLM, the first LLM specifically tailored for nursing question-answering. We design a multi-stage data generation pipeline to construct the first large-scale, diverse nursing QA dataset. We further develop three rigorous NCLEX-style benchmarks for the comprehensive evaluation of LLMs on the nursing domain. Our extensive experiments demonstrate that NurseLLM significantly outperforms strong generalized and medical LLMs of comparable size, underscoring the necessity of domain specialization in the nursing field. Finally, we explore the potential of reasoning-driven and multi-agent collaborative approaches within the nursing domain, showcasing their potential for advancing intelligent systems in nursing applications.

10 Limitations and Ethics Statement

10.1 Limitations

Data Generation Timeline. In this work, we use GPT-4o version from May 2024. Since the model can be updated on a regular interval, the prompting strategy and the data generation pipeline discussed in Section 3 should be treated accordingly, since the model’s responses can change over time (Chen et al., 2023a).

Data Quality. We develop an automated data generation pipeline to create a large scale diverse nursing-focused QA dataset. (Section 3). Although this automated pipeline makes the overall data generation process scalable, it comes at the risk of allowing low-quality data in the corpus. Hence, we suggest human inspection to remove any sort of potential vulnerability and maintain a standard quality of the corpus.

Model Responses. We show that NurseLLM exhibits impressive performance on NCLEX questions compared to the other similar baselines. However, looking at the results (Section 5), we believe there is still room for improvement for the models in terms of accuracy. This also indicates, LLM can produce inaccurate responses while answering to the nursing questions. Given the sensitiveness of the field, we recommend that NurseLLM should be couched with caution before deployment.

Model Evaluation. We only use open-sourced models while conducting evaluation on our NCLEX benchmarks. As discussed in Section 4, we omit evaluating closed-source LLMs since (i)

the size of the closed-source models is not comparable to our baselines, and (ii) we do not intend to expose the NCLEX-Test benchmark to closed-source LLMs due to the proprietary reasons. However, we aim to release our synthetic test benchmarks as well as the training dataset upon acceptance.

10.2 Ethics Statement

Data Collection. As mentioned in Section 3, we create a large-scale training dataset from a wide range of diverse nursing topics. We share the complete topic list in Appendix F to facilitate the NCLEX samples generation.

Intended Use of NurseLLM. The application of NurseLLM is to solve NCLEX-style nursing MCQ question while also providing corresponding rationale. We aim to help researchers build nursing-specialized LLMs. NurseLLM can also be regarded as a promising baseline to develop more robust and effective LLMs suited for nursing applications.

Potential Misuse and Bias. Our NCLEX corpus and NurseLLM model can potentially be misused to generate inaccurate and biased clinical data. For these reasons, we recommend that NurseLLM not be used in applications without careful prior consideration of potential misuse and bias.

References

- Marah Abdin, Sam Ade Jacobs, Ammar Ahmad Awan, Jyoti Aneja, Ahmed Awadallah, Hany Awadalla, Nguyen Bach, Amit Bahree, Arash Bakhtiari, Harkirat Behl, and 1 others. 2024. Phi-3 technical report: A highly capable language model locally on your phone. *arXiv preprint arXiv:2404.14219*.
- Malaikannan Sankarasubbu Ankit Pal. 2024. Openbiollms: Advancing open-source large language models for healthcare and life sciences. <https://huggingface.co/aaditya/OpenBioLLM-Llama3-70B>.
- Canyu Chen, Jian Yu, Shan Chen, Che Liu, Zhongwei Wan, Danielle S. Bitterman, Fei Wang, and Kai Shu. 2024a. *Clinicalbench: Can llms beat traditional ml models in clinical prediction?* *ArXiv*, abs/2411.06469.
- Junying Chen, Zhenyang Cai, Ke Ji, Xidong Wang, Wanlong Liu, Rongsheng Wang, Jianye Hou, and Benyou Wang. 2024b. *Huatuogpt-o1, towards medical complex reasoning with llms*. *Preprint*, arXiv:2412.18925.
- Lingjiao Chen, Matei Zaharia, and James Zou. 2023a. How is chatgpt’s behavior changing over time? *arXiv preprint arXiv:2307.09009*.
- Zeming Chen, Alejandro Hern’andez Cano, Angelika Romanou, Antoine Bonnet, Kyle Matoba, Francesco Salvi, Matteo Pagliardini, Simin Fan, Andreas Kopf, Amirkeivan Mohtashami, Alexandre Sallinen, Alireza Sakhaeirad, Vinitra Swamy, Igor Krawczuk, Deniz Bayazit, Axel Marmet, Syrielle Montariol, Mary-Anne Hartley, Martin Jaggi, and Antoine Bosselut. 2023b. *Meditron-70b: Scaling medical pretraining for large language models*. *ArXiv*, abs/2311.16079.
- Wei-Lin Chiang, Zhuohan Li, Zi Lin, Ying Sheng, Zhanghao Wu, Hao Zhang, Lianmin Zheng, Siyuan Zhuang, Yonghao Zhuang, Joseph E. Gonzalez, Ion Stoica, and Eric P. Xing. 2023. *Vicuna: An open-source chatbot impressing gpt-4 with 90%* chatgpt quality*.
- Clément Christophe, Praveen K Kanithi, Tathagata Raha, Shadab Khan, and Marco AF Pimentel. 2024. *Med42-v2: A suite of clinical llms*.
- CRNA. 2022. *Scope of practice for registered nurses*. Edmonton, Alberta: College of Registered Nurses of Alberta.
- DeepSeek-AI, Daya Guo, Dejian Yang, Haowei Zhang, Jun-Mei Song, Ruoyu Zhang, Runxin Xu, Qihao Zhu, Shirong Ma, Peiyi Wang, Xiaoling Bi, Xiaokang Zhang, Xingkai Yu, Yu Wu, Z. F. Wu, Zhibin Gou, Zhihong Shao, Zhuoshu Li, Ziyi Gao, and 179 others. 2025. *Deepseek-r1: Incentivizing reasoning capability in llms via reinforcement learning*. *ArXiv*, abs/2501.12948.
- Tim Dettmers, Artidoro Pagnoni, Ari Holtzman, and Luke Zettlemoyer. 2023. *Qlora: Efficient finetuning of quantized llms*. *arXiv preprint arXiv:2305.14314*.
- Abhimanyu Dubey, Abhinav Jauhri, Abhinav Pandey, Abhishek Kadian, Ahmad Al-Dahle, Aiesha Letman, Akhil Mathur, Alan Schelten, Amy Yang, Angela Fan, Anirudh Goyal, Anthony S. Hartshorn, Aobo Yang, Archi Mitra, Archie Sravankumar, Artem Korenev, Arthur Hinsvark, Arun Rao, Aston Zhang, and 510 others. 2024. *The llama 3 herd of models*. *ArXiv*, abs/2407.21783.
- Gemma, Thomas Mesnard, Cassidy Hardin, Robert Dadashi, Surya Bhupatiraju, Shreya Pathak, Laurent Sifre, Morgane Rivière, Mihir Sanjay Kale, Juliette Love, Pouya Tafti, Léonard Hussenot, Pier Giuseppe Sessa, Aakanksha Chowdhery, Adam Roberts, Aditya Barua, Alex Botev, Alex Castro-Ros, Ambrose Slone, and 89 others. 2024. *Gemma: Open models based on gemini research and technology*. *Preprint*, arXiv:2403.08295. Available at <https://huggingface.co/google/gemma-7b>.
- Gary Glaubergerman, Avree Ito-Fujita, Shayna Katz, and James Callahan. 2023. *Artificial intelligence in nursing education: Opportunities and challenges*. *Hawai’i Journal of Health & Social Welfare*, 82(12):302–305.

- Laura Gonzalez. 2024. [Nursing education in the era of chatgpt: Implications and opportunities](#). *OJIN: The Online Journal of Issues in Nursing*, 29(3):PPT76.
- Ashwin Kumar Gururajan, Enrique Lopez-Cuena, Jordi Bayarri-Planas, Adrián Tormos, Daniel Hinos, Pablo Bernabeu Perez, Anna Arias-Duart, Pablo A. Martin-Torres, Lucia Urcelay-Ganzabal, Marta Gonzalez-Mallo, Sergio Álvarez-Napagao, Eduard Ayguad'e-Parra, and Ulises Cortés Dario Garcia-Gasulla. 2024. [Aloe: A family of fine-tuned open healthcare llms](#). *ArXiv*, abs/2405.01886.
- Dan Hendrycks, Collin Burns, Steven Basart, Andy Zou, Mantas Mazeika, Dawn Song, and Jacob Steinhardt. 2021. Measuring massive multitask language understanding. *Proceedings of the International Conference on Learning Representations (ICLR)*.
- Shengran Hu, Cong Lu, and Jeff Clune. 2024. [Automated design of agentic systems](#). *ArXiv*, abs/2408.08435.
- Huiman Huang. 2023. [Performance of chatgpt on registered nurse license exam in taiwan: A descriptive study](#). *Healthcare (Basel)*, 11(21):2855.
- Daniel P Jeong, Saurabh Garg, Zachary Chase Lipton, and Michael Oberst. 2024. [Medical adaptation of large language and vision-language models: Are we making progress?](#) In *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing*, pages 12143–12170, Miami, Florida, USA. Association for Computational Linguistics.
- Albert Qiaochu Jiang, Alexandre Sablayrolles, Arthur Mensch, Chris Bamford, Devendra Singh Chaplot, Diego de Las Casas, Florian Bressand, Giana Lengyel, Guillaume Lample, Lucile Saulnier, L'elio Renard Lavaud, Marie-Anne Lachaux, Pierre Stock, Teven Le Scao, Thibaut Lavril, Thomas Wang, Timothée Lacroix, and William El Sayed. 2023. [Mistral 7b](#). *ArXiv*, abs/2310.06825.
- Di Jin, Eileen Pan, Nassim Oufattole, Wei-Hung Weng, Hanyi Fang, and Peter Szolovits. 2021. What disease does this patient have? a large-scale open domain question answering dataset from medical exams. *Applied Sciences*, 11(14):6421.
- Zixuan Ke, Fangkai Jiao, Yifei Ming, Xuan-Phi Nguyen, Austin Xu, Do Xuan Long, Minzhi Li, Chengwei Qin, PeiFeng Wang, Silvio Savarese, Caiming Xiong, and Shafiq Joty. 2025. [A survey of frontiers in llm reasoning: Inference scaling, learning to reason, and agentic systems](#). *ArXiv*, abs/2504.09037.
- Yubin Kim, Chanwoo Park, Hyewon Jeong, Yik Siu Chan, Xuhai Xu, Daniel McDuff, Hyeonhoon Lee, Marzyeh Ghassemi, Cynthia Breazeal, and Hae Won Park. 2024. [MDAgents: An adaptive collaboration of LLMs for medical decision-making](#). In *The Thirty-eighth Annual Conference on Neural Information Processing Systems*.
- Yanis Labrak, Adrien Bazoge, Emmanuel Morin, Pierre-Antoine Gourraud, Mickael Rouvier, and Richard Dufour. 2024. [Biomistral: A collection of open-source pretrained large language models for medical domains](#). *Preprint*, arXiv:2402.10373.
- Dingcheng Li, Zheng Chen, Eunah Cho, Jie Hao, Xiaohu Liu, Fan Xing, Chenlei Guo, and Yang Liu. 2022. [Overcoming catastrophic forgetting during domain adaptation of seq2seq language generation](#). In *Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, pages 5441–5454, Seattle, United States. Association for Computational Linguistics.
- Fenglin Liu, Zheng Li, Hongjian Zhou, Qingyu Yin, Jingfeng Yang, Xianfeng Tang, Chen Luo, Ming Zeng, Haoming Jiang, Yifan Gao, Priyanka Nigam, Sreyashi Nag, Bing Yin, Yining Hua, Xuan Zhou, Omid Rohanian, Anshul Thakur, Lei Clifton, and David A. Clifton. 2024. [Large language models are poor clinical decision-makers: A comprehensive benchmark](#). In *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing*, pages 13696–13710, Miami, Florida, USA. Association for Computational Linguistics.
- C. Patricia Mazzotta. 2016. [Biomedical approaches to care and their influence on point of care nurses: a scoping review](#). *Journal of Nursing Education and Practice*, 6:93.
- MedAlpaca. 2024. Medalpaca 7b. <https://huggingface.co/medalpaca/medalpaca-7b>. Accessed: 2025-06-03.
- Ankit Pal, Logesh Kumar Umapathi, and Malaikannan Sankarasubbu. 2022. [Medmcqa: A large-scale multi-subject multi-choice dataset for medical domain question answering](#). In *Proceedings of the Conference on Health, Inference, and Learning*, volume 174 of *Proceedings of Machine Learning Research*, pages 248–260. PMLR.
- Yiwei Qin, Xuefeng Li, Haoyang Zou, Yixiu Liu, Shijie Xia, Zhen Huang, Yixin Ye, Weizhe Yuan, Hector Liu, Yuanzhi Li, and Pengfei Liu. 2024. [O1 replication journey: A strategic progress report - part 1](#). *ArXiv*, abs/2410.18982.
- Qwen. 2024. [Qwen2.5: A party of foundation models](#).
- Mor Saban and Ilana Dubovi. 2024. [A comparative vignette study: Evaluating the potential role of a generative ai model in enhancing clinical decision-making in nursing](#). *Journal of Advanced Nursing*. Epub ahead of print.
- Thomas Scialom, Tuhin Chakrabarty, and Smaranda Muresan. 2022. [Fine-tuned language models are continual learners](#). In *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing*, pages 6107–6122, Abu Dhabi, United Arab Emirates. Association for Computational Linguistics.

- Karan Singhal, Shekoofeh Azizi, Tao Tu, S. Sara Mahdavi, Jason Wei, Hyung Won Chung, Nathan Scales, Ajay Tanwani, Heather Cole-Lewis, Stephen Pfohl, Perry Payne, Martin Seneviratne, Paul Gamble, Chris Kelly, Nathaneal Scharli, Aakanksha Chowdhery, Philip Mansfield, Blaise Agüera y Arcas, Dale Webster, and 11 others. 2023. [Large language models encode clinical knowledge](#). *Nature*, 616:703–710.
- Charlie Victor Snell, Jaehoon Lee, Kelvin Xu, and Aviral Kumar. 2025. [Scaling LLM test-time compute optimally can be more effective than scaling parameters for reasoning](#). In *The Thirteenth International Conference on Learning Representations*.
- Rohan Taori, Ishaan Gulrajani, Tianyi Zhang, Yann Dubois, Xuechen Li, Carlos Guestrin, Percy Liang, and Tatsunori B. Hashimoto. 2023. Stanford alpaca: An instruction-following llama model. https://github.com/tatsu-lab/stanford_alpaca.
- Jettie Vreugdenhil, Sunia Somra, Hans Ket, Eugène J. F. M. Custers, Marcel E. Reinders, Jos Dobber, and Rashmi A. Kusurkar. 2023. [Reasoning like a doctor or like a nurse? a systematic integrative review](#). *Frontiers in Medicine*, Volume 10 - 2023.
- Xidong Wang, Nuo Chen, Junyin Chen, Yan Hu, Yidong Wang, Xiangbo Wu, Anningzhe Gao, Xiang Wan, Haizhou Li, and Benyou Wang. 2024. [Apollo: Lightweight multilingual medical llms towards democratizing medical ai to 6b people](#). *Preprint*, arXiv:2403.03640.
- Jason Wei, Xuezhi Wang, Dale Schuurmans, Maarten Bosma, brian ichter, Fei Xia, Ed H. Chi, Quoc V Le, and Denny Zhou. 2022. [Chain of thought prompting elicits reasoning in large language models](#). In *Advances in Neural Information Processing Systems*.
- WHO. 2025. [Nursing workforce grows, but inequities threaten global health goals](#). WHO News Release. Accessed: 2025-06-18.
- Hongzhou Yu, Tianhao Cheng, Ying Cheng, and Rui Feng. 2025. [Finemedlm-o1: Enhancing the medical reasoning ability of llm from supervised fine-tuning to test-time training](#). *ArXiv*, abs/2501.09213.
- Le Yu, Yu Bowen, Haiyang Yu, Fei Huang, and Yongbin Li. 2023. [Language models are super mario: Absorbing abilities from homologous models as a free lunch](#). *ArXiv*, abs/2311.03099.
- Kai Zhang, Jun Yu, Zhilin Yan, Yixin Liu, Eashan Adhikarla, Sunyang Fu, Xun Chen, Chen Chen, Yuyin Zhou, Xiang Li, Lifang He, Brian D. Davison, Quanzheng Li, Yong Chen, Hongfang Liu, and Lichao Sun. 2023. [A generalist vision-language foundation model for diverse biomedical tasks](#). *Nature medicine*.
- Tianyang Zhong, Zheng Liu, Yi Pan, Yutong Zhang, Yifan Zhou, Shizhe Liang, Zihao Wu, Yanjun Lyu, Peng Shu, Xiao-Xing Yu, Chao-Yang Cao, Hanqi Jiang, Hanxu Chen, Yiwei Li, Junhao Chen, Huawen Hu, Yihe Liu, Huaqin Zhao, Shaochen Xu, and 59 others. 2024. [Evaluation of openai o1: Opportunities and challenges of agi](#). *ArXiv*, abs/2409.18486.
- You Zhou, Si-Jia Li, Xing-Yi Tang, Yi-Chen He, Hao-Ming Ma, Ao-Qi Wang, Run-Yuan Pei, and Mei-Hua Piao. 2024. [Using chatgpt in nursing: Scoping review of current opinions](#). *JMIR Med Educ*, 10:e54297.
- Yuxin Zuo, Shang Qu, Yifei Li, Zhangren Chen, Xuekai Zhu, Ermo Hua, Kaiyan Zhang, Ning Ding, and Bowen Zhou. 2025. [Medxpertqa: Benchmarking expert-level medical reasoning and understanding](#). *Proceedings of International Conference on Machine Learning (ICML)*.

Appendices

A Extracting Nursing Question from MultiMedQA

Your are an expert on nursing knowledge. Given a medical knowledge, your task is to identify whether this data is exclusively nursing-related. That means if a registered nurse or a practicing nurse, or a nursing student needs to learn about this knowledge for their nursing career. There are some knowledge which are more related to other medical professionals (e.g., doctors) but a nurse does not need to learn those knowledge for their career. So these types of knowledge are not nursing-related. You must provide a JSON output. In this JSON output, there will be only one key, which is "nursing-related". If the given knowledge is exclusively nursing-related, you should write yes inside the "nursing-related" key. Otherwise, you should write no inside the "nursing-related" key. You should not generate anything apart from the yes/no options.

Figure A.1: Prompt used for extracting nursing-relevant QA samples from MultiMedQA.

We prompt GPT-4o to identify the question-answering samples exclusively relevant to nursing topics. We present the prompt for this topic modeling in Figure A.1. In this way, we mine a subset of MultiMedQA, namely **MultiNurseQA**, to evaluate LLMs on the nursing-specific questions.

B Runtime Comparison

We provide the comparison of runtimes of different models in Table B.1.

Model	Runtime (sec)	Comparison
Single-LLM	5.6	1×
Reasoning-LLM	8.8	1.57×
MAS-easy	6.1	1.09×
MAS-hard	28.3	5.05×

Table B.1: Runtime comparison across different model configurations.

As evident, reasoning-based LLMs require approximately $1.5\times$ more computational time due to the additional step of generating intermediate reasoning before producing the final prediction. For easy questions, our MAS framework incurs comparable latency to a single-LLM setup, since such questions are routed directly to a single LLM by the orchestrator. In this case, the only overhead arises from the orchestrator’s difficulty assessment. In contrast, for hard questions, MAS requires about $5\times$ more time than a single-LLM baseline, as the architecture initiates a multi-round debate among

multiple LLMs before converging on a final answer.

C Examples of Synthetic NCLEX MCQ

In Table C.1, we present one example of a synthetic NCLEX MCQ per specialization generated by GPT-4o.

D Example of Reasoning-incorporated Response

Question

A client comes to the emergency department with severe dyspnea and a cough. Vital signs are temperature 99.2 F (37.3 C), blood pressure 108/70 mm Hg, heart rate 88/min, and respirations 24/min. The client has a history of chronic obstructive pulmonary disease and chronic heart failure. Which diagnostic test will be most useful to the nurse in determining if this is an exacerbation of heart failure?

A. Arterial blood gases (ABGs)
B. B-type natriuretic peptide (BNP)
C. Cardiac enzymes (CK-MB)
D. Chest x-ray

Reasoning

Okay, so I'm trying to figure out the correct answer to this NCLEX question about a client with severe dyspnea and a cough. The client has a history of chronic obstructive pulmonary disease (COPD) and chronic heart failure (CHF). The question is asking which diagnostic test would be most useful to determine if this is an exacerbation of heart failure.

First, I need to understand the scenario. The client is presenting with symptoms that could be related to either COPD or CHF. Severe dyspnea and a cough are common in both, but the patient also has a history of heart failure. So, the nurse needs to determine if the current episode is a worsening of the heart failure.

Looking at the options:

A. Arterial blood gases (ABGs): These measure the levels of oxygen and carbon dioxide in the blood. In COPD, ABGs might show hypoxia (low oxygen) and hypercapnia (high carbon dioxide). In heart failure, especially if there's pulmonary congestion, ABGs might also show issues, but I'm not sure if this is the most specific test for heart failure exacerbation.

B. B-type natriuretic peptide (BNP): BNP is a hormone released by the heart in response to increased pressure, like in heart failure. High levels of BNP suggest heart failure, especially if it's acute. This seems like a good option because it's specific to heart failure.

C. Cardiac enzymes (CK-MB): These are markers for heart muscle damage, like in a heart attack. While elevated levels could indicate heart issues, they're more indicative of myocardial infarction rather than heart failure. So this might not be the best choice here.

D. Chest x-ray: A chest x-ray can show signs of pulmonary congestion, fluid in the lungs, or other structural issues. In heart failure, fluid in the lungs (pulmonary edema) would show up on a chest x-ray. This is a common test for evaluating heart failure exacerbations.

Now, the question is which test is most useful. The client's history is key here. The nurse needs to determine if the current episode is due to heart failure worsening. BNP is a direct marker of heart failure and can help confirm if it's an exacerbation. Chest x-rays are also useful but might not be as specific as BNP in this context. ABGs could show hypoxia, which is common in both COPD and heart failure, but it's more about the oxygenation status rather than diagnosing heart failure specifically.

So, between B and D, I think BNP is more specific for heart failure, especially in acute cases, while chest x-rays are more for imaging the lungs. Since the question is about determining if it's an exacerbation of heart failure, BNP would be the most useful.

Final Answer

`\boxed{B}`. B-type natriuretic peptide (BNP)

Figure D.1: Example of a NurseLLM response along with the reasoning.

We present an example of response from NurseLLM trained with reasoning in Figure D.1.

E Sample Response from Multi-Agent System

We show sample response from our multi-agent system in Table E.1.

Question	Choices	Answer	Rationale	Specialization	Domain	Topic	Concept
A nurse is assessing a postpartum client who delivered 3 days ago. Which type of lochia should the nurse expect to find at this stage?	"Lochia rubra", "Lochia serosa", "Lochia alba", "Lochia sanguineous"	0	Lochia rubra is the normal discharge observed for the first 3-4 days postpartum. It is bright red in color and contains blood, decidual and trophoblastic debris. Lochia serosa follows after lochia rubra and lasts for 4-10 days. Lochia alba is the final stage, typically occurring from day 10 to up to 6 weeks postpartum. There is no type called lochia sanguineous.	Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	lochia types
A 65-year-old man with a family history of prostate cancer questions the timing of his prostate cancer screening. What factor is most important in determining the appropriate time for screening initiation?	"Age alone", "Family history of prostate cancer", "Presence of urinary symptoms", "Diet and lifestyle"	1	For men with a family history of prostate cancer, screening can start earlier than the general recommended age of 50. The USPSTF suggests individualized decision-making about screening for men aged 55-69, but those with a strong family history may benefit from starting earlier.	Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Routine Screenings	Cancer screenings (e.g., mammograms, colonoscopies)
A patient diagnosed with terminal cancer expresses the desire to refuse further chemotherapy. Which document should the nurse refer to in order to honor the patient's wishes?	"Medical history", "Advance directive", "Insurance policy", "Patient education booklet"	1	document that allows patients to specify their preferences for medical treatment if they become unable to communicate their decisions. In this case, the advance directive would include the patient's wish to refuse further chemotherapy, guiding healthcare providers in respecting the patient's autonomy and decisions regarding their treatment.	Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	advance directive
A nurse is evaluating the effectiveness of pain management in a patient who underwent abdominal surgery. The patient reports a pain level of 2 on a scale of 0-10, has a relaxed facial expression, and is able to participate in physical therapy exercises. Which is the most appropriate evaluation of pain management for this patient?	"Pain management is partially effective; further evaluation is needed.", "Pain management is ineffective; the pain level is still present.", "Pain management is effective; pain is well-controlled.", "Pain management needs to be revised entirely due to continued pain."	2	Evaluation of pain management involves assessing both subjective and objective indicators of pain relief. Reporting a low pain level (2/10), having a relaxed facial expression, and participating in physical activities are all indicative of well-managed pain. Hence, it is reasonable to conclude that pain management is effective.	Professional Nursing Practice	Evidence-Based Practice and Research	Clinical Practice Guidelines	evaluation
During a health assessment, a nurse notes an abnormal heart rhythm. Which action should the nurse document?	"The time the abnormal rhythm was first noted.", "A probable diagnosis based on the abnormal rhythm.", "How the patient feels about the abnormal rhythm.", "The abnormal rhythm and immediately notify the family."	0	Accurate documentation of the exact time the abnormal rhythm was first detected is crucial for medical treatment decisions and continuity of care. It helps in tracking the condition and correlating it with other clinical signs and symptoms.	Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	documenting health assessment
A nurse working in an urban clinic notices that many patients from low-income neighborhoods have higher rates of chronic diseases. What is the most likely reason for this observation?	"Lack of genetic variation in the population", "Limited access to healthy food options", "Decreased prevalence of exercise routines", "Inadequate health education programs"	1	People living in poverty often reside in areas known as 'food deserts', where access to affordable, healthy food options is limited. This lack of access can lead to poor nutrition, which is a significant risk factor for chronic diseases such as diabetes, hypertension, and obesity. Addressing this issue involves improving food availability and affordability.	Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of Health (SDH)	poverty
A nurse is educating a patient about the benefits of maintaining their own personal health records (PHRs). Which of the following statements made by the patient indicates a need for further teaching?	"I will be able to access my medical history easily.", "I won't need to share my PHR with my healthcare provider.", "It can help me track my progress on health goals.", "I can have all my medication records in one place."	1	While PHRs empower patients by giving them control over their personal health information, these records are most beneficial when shared with healthcare providers. This collaboration ensures a comprehensive understanding of the patient's health, facilitating better management and treatment. Therefore, the statement 'I won't need to share my PHR with my healthcare provider' indicates a misunderstanding of the intended use of PHRs.	Technology and Innovation in Nursing	Digital Health and Wellness Tools	Personal Health Records (PHRs)	patient-maintained records

Table C.1: Examples of synthetic NCLEX MCQ generated by GPT-4o.

Question	During the initial assessment of a client who has sustained a chemical burn to the eye, what additional information is most important for the nurse to obtain? Options: A: The client's pain level on a scale of 1-10., B: The type and exact composition of the chemical., C: Whether the client has a history of eye problems., D: The time elapsed since the exposure.
Orchestrator	Recruitment: Agent 1 (1. Emergency Room Nurse): Specializes in stabilizing trauma patients and managing acute conditions, including chemical exposures. Agent 2 (2. Ophthalmic Nurse): Focuses on the care of patients with eye conditions and injuries. Agent 3 (3. Toxicology Nurse): Specializes in managing patients with toxic exposures and understanding the effects of various chemicals. Agent 4 (4. Critical Care Nurse (ICU Nurse)): Specializes in caring for critically ill patients who may require advanced interventions. Agent 5 (5. Pain Management Nurse): Focuses on assessing and managing pain levels in patients, including those with acute injuries.
Initial Report	(emergency room nurse): Answer: (B) The type and exact composition of the chemical. Reason: Knowing the specific type and composition of the chemical that caused the burn is crucial for determining the appropriate treatment and possible interventions. Different chemicals can cause varying degrees of damage and may require specific antidotes or treatments. This information will guide the nurse and the healthcare team in managing the chemical burn effectively and minimizing potential complications. (ophthalmic nurse): Answer: (B) The type and exact composition of the chemical. Reason: Obtaining information about the type and exact composition of the chemical that caused the burn is critical in order to determine the appropriate treatment and interventions. Different chemicals can have varying effects on the eye and may require specific antidotes or management strategies to mitigate damage and preserve vision. This information is essential for ensuring proper and timely medical care. (toxicology nurse): Answer: (B) The type and exact composition of the chemical. Reason: Knowing the type and exact composition of the chemical involved in the eye burn is crucial for determining the appropriate treatment and interventions. Different chemicals can cause varying degrees of damage and require specific decontamination and management strategies. This information will guide the nurse and the healthcare team in providing the most effective care for the client. (critical care nurse (icu nurse)): Answer: (B) The type and exact composition of the chemical. Reason: Determining the type and exact composition of the chemical involved in the eye burn is crucial for guiding the appropriate treatment plan. Different chemicals can have varying effects on the eye and may require specific antidotes or management strategies. This information will directly impact the urgency and focus of interventions, ensuring the best possible outcome for the client. (pain management nurse): Answer: (B) The type and exact composition of the chemical. Reason: Obtaining information about the type and exact composition of the chemical is crucial for determining the appropriate treatment and potential complications related to eye exposure. Different chemicals can have varying effects on ocular tissues, and knowing this information helps guide immediate interventions and management strategies to mitigate damage and promote healing.
Partial Conversation Log	Agent 1 ->Agent 3: As an emergency room nurse specializing in stabilizing trauma patients and managing acute conditions, including chemical exposures, I want to emphasize the importance of knowing the type and exact composition of the chemical involved in the eye burn. To the toxicology nurse: Given your expertise in managing patients with toxic exposures, I believe it's crucial for us to work closely together to determine the chemical's identity. This information will significantly influence our treatment strategies, including the selection of specific antidotes or decontamination protocols. Different chemicals can have varying effects on ocular and systemic health, so understanding the composition will be vital for optimizing patient care and minimizing potential complications. Your insight in this area could guide our immediate interventions effectively. Agent 2 ->Agent 3: As an ophthalmic nurse focusing on the care of patients with eye conditions and injuries, I would like to address the toxicology nurse. Opinion to Agent 3 (Toxicology Nurse): Given the critical role of understanding the specific chemical exposure in managing a chemical burn to the eye, I emphasize the importance of obtaining the type and exact composition of the chemical involved. This information is pivotal not only for determining the appropriate treatment regimen but also for selecting any necessary antidotes or decontamination procedures. The varying effects of different chemicals on ocular tissues can lead to significant differences in treatment protocols. Therefore, your expertise in toxicology will be invaluable in guiding our approach to effectively mitigate the risks and complications associated with this eye injury. Agent 3 ->Agent 2: As a toxicology nurse specializing in managing patients with toxic exposures, I would like to share my opinion with Agent 2, the ophthalmic nurse. Opinion: It is essential to obtain the type and exact composition of the chemical that caused the eye burn. Reason: Different chemicals have unique mechanisms of injury and may require specific treatment protocols. Knowing the exact chemical will guide us in administering the right decontamination and therapeutic interventions to minimize ocular damage and preserve the patient's vision. Timely and accurate treatment, based on this critical information, is vital for optimal outcomes in chemical eye injuries. Agent 5 ->Agent 3: As a pain management nurse, my specialty lies in assessing and managing pain levels in patients, including those with acute injuries. To the toxicology nurse: I believe it's imperative that we focus on understanding the type and exact composition of the chemical involved in this eye burn. This information is not only crucial for tailoring urgent treatment protocols but also for anticipating potential complications related to specific toxic substances. Different chemicals may require different management strategies, and knowing the chemical composition will greatly enhance our ability to administer appropriate antidotes or decontamination measures. This can significantly impact the outcome for the patient, including pain management and the preservation of vision. Your expertise in toxicology will be invaluable in guiding our interventions effectively.
Moderator Decision	Based on the opinions provided by the nursing specialists, the majority consensus is as follows: **Emergency Room Nurse**: (B) The type and exact composition of the chemical. **Ophthalmic Nurse**: (B) The type and exact composition of the chemical. **Toxicology Nurse**: (B) The type and exact composition of the chemical. **Critical Care Nurse (ICU Nurse)**: (B) The type and exact composition of the chemical. **Pain Management Nurse**: (B) The type and exact composition of the chemical. All five specialists unanimously agree that the most important additional information to obtain during the initial assessment of a client with a chemical burn to the eye is the type and exact composition of the chemical. Final Decision: Answer: (B) The type and exact composition of the chemical.

Table E.1: Response from the multi-agent system (due to the space constraint, we only show partial conversation log).

F List of Topics used for Data Generation

We present the complete list of topic that we create to generate diverse synthetic NCLEX samples below.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	Temperature assessment
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	pulse assessment
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	pulse deficit
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	respiration assessment
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	Calculations for Pulse pressure + MAP + CPP
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	blood pressure assessment
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	most common types of pain medication
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	adult vital signs
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	pediatric vital signs
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	types of pain
Clinical Skills and Knowledge	Patient Assessment	Vital Signs Monitoring	pain assessment
Clinical Skills and Knowledge	Patient Assessment	Physical Examinations	head to toe assessment
Clinical Skills and Knowledge	Patient Assessment	Physical Examinations	cardiovascular exams
Clinical Skills and Knowledge	Patient Assessment	Physical Examinations	respiratory exams
Clinical Skills and Knowledge	Patient Assessment	Physical Examinations	GI_GU assessment
Clinical Skills and Knowledge	Patient Assessment	Physical Examinations	priority assessment after opioid administration
Clinical Skills and Knowledge	Patient Assessment	Physical Examinations	neurological exams
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	health history components
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	mental status exam
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	snellen eye chart
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	confrontation test
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	corneal light reflex
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	cover_uncover test
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	pupil assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	auditory assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	whisper test
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	watch test
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	vestibular assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	lung assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	percussion
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	auscultation
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	normal breath sounds
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	adventitious breath sounds
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	heart assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	peripheral vascular system
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	breast assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	axillary lymph node assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	abdominal assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	musculoskeletal assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	grading muscle strength
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	neurological system assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	motor function
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	cerebellar function
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	coordination
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	sensory function
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	deep tendon reflexes
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	plantar reflexes
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	testing for meningeal irritation
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	female genitalia and reproductive tract
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	male genitalia
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	documenting health assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	type of health assessments
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	SOAP notes
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	pitting edema
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	grading a murmur
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	cranial nerve assessment
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	poison intervention
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	airborne precautions
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	droplet precautions
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	contact precautions
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	ebola virus disease (EVD) care
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	hemorrhagic fever
Clinical Skills and Knowledge	Patient Assessment	Health and Physical Assessment	typhoid fever
Clinical Skills and Knowledge	Patient Assessment	Nursing assessment	neurovascular assessment
Clinical Skills and Knowledge	Patient Assessment	Gastrointestinal Diagnostics	how to test for gilbert's syndrome
Clinical Skills and Knowledge	Patient Assessment	Assessing symptoms	finger clubbing and blood in urine
Clinical Skills and Knowledge	Patient Assessment	Assessing symptoms	cyclical mastalgia symptoms
Clinical Skills and Knowledge	Patient Assessment	Diagnostic tests and treatments	Benign prostatic hyperplasia (BPH) diagnostics and treatments
Clinical Skills and Knowledge	Patient Assessment	Health History Taking	Techniques for comprehensive history taking
Clinical Skills and Knowledge	Patient Assessment	Health History Taking	Techniques when taking health history from an pediatric patient
Clinical Skills and Knowledge	Patient Assessment	Health History Taking	Techniques when taking health history from an unreliable patient

Table F.1: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Patient Assessment	Health History Taking	Munchausen (by proxy) syndrome and how to handle that
Clinical Skills and Knowledge	Patient Assessment	Health History Taking	Techniques for documentation.
Clinical Skills and Knowledge	Medication Administration	Dosage Calculations	common dosage calculations
Clinical Skills and Knowledge	Medication Administration	Dosage Calculations	Mathematical skills for accurate dosage calculations.
Clinical Skills and Knowledge	Medication Administration	Complex Pharmacological Concepts	management of sedation, agitation, and delirium
Clinical Skills and Knowledge	Medication Administration	Complex Pharmacological Concepts	richmond agitation sedation scale (RAAS)
Clinical Skills and Knowledge	Medication Administration	Complex Pharmacological Concepts	types of medications used for sedation
Clinical Skills and Knowledge	Medication Administration	Complex Pharmacological Concepts	propofol propofol related infusion syndrome
Clinical Skills and Knowledge	Medication Administration	Complex Pharmacological Concepts	dexmedetomidine
Clinical Skills and Knowledge	Medication Administration	Routes of Administration	Oral administration
Clinical Skills and Knowledge	Medication Administration	Routes of Administration	intravenous administration
Clinical Skills and Knowledge	Medication Administration	Routes of Administration	intramuscular administration
Clinical Skills and Knowledge	Medication Administration	Routes of Administration	subcutaneous administration
Clinical Skills and Knowledge	Medication Administration	Routes of Administration	sublingual administration
Clinical Skills and Knowledge	Medication Administration	Routes of Administration	intra osseous administration
Clinical Skills and Knowledge	Medication Administration	Routes of Administration	topical administration
Clinical Skills and Knowledge	Medication Administration	Medication Safety	ten rights of medication administration
Clinical Skills and Knowledge	Medication Administration	Medication Safety	Five rights of medication administration
Clinical Skills and Knowledge	Medication Administration	Medication Safety	prevention of medication errors
Clinical Skills and Knowledge	Medication Administration	Medication Safety	side effects of pain medication
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	oral medications
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	route of medication administration
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	parenteral medications
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	types of syringes
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	intravenous flow rates
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	how to calculate medication dosage
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	reconstitution
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	formulas for intravenous calculations
Clinical Skills and Knowledge	Medication Administration	Medication Calculation	infusions prescribed by unit dosage per hour
Clinical Skills and Knowledge	Medication Administration	Pediatric Medication Administration and Calculation	calculation of medication dosage by weight
Clinical Skills and Knowledge	Medication Administration	Pediatric Medication Administration and Calculation	calculation of body surface area
Clinical Skills and Knowledge	Medication Administration	Pediatric Medication Administration and Calculation	developmental considerations for administering medications
Clinical Skills and Knowledge	Medication Administration	Pediatric Medication Administration and Calculation	medication administration guidelines for children
Clinical Skills and Knowledge	Medication Administration	Pediatric Medication Administration and Calculation	preferred muscles for intramuscular injection
Clinical Skills and Knowledge	Medication Administration	alternative medicine	acupuncture
Clinical Skills and Knowledge	Medication Administration	alternative medicine	natural remedies
Clinical Skills and Knowledge	Medication Administration	alternative medicine	cultural medicine practices
Clinical Skills and Knowledge	Medication Administration	alternative medicine	massage therapy
Clinical Skills and Knowledge	Medication Administration	alternative medicine	yoga
Clinical Skills and Knowledge	Medication Administration	Pharmacology	non-steroidal anti-inflammatory drugs (NSAIDs)
Clinical Skills and Knowledge	Medication Administration	Pharmacology	common side effects of NSAIDs
Clinical Skills and Knowledge	Medication Administration	Pharmacology	recommended dose for ibuprofen in adults
Clinical Skills and Knowledge	Medication Administration	Pharmacology	recommended dose for acetaminophen in adults
Clinical Skills and Knowledge	Medication Administration	Pharmacology	durg interactions with NSAIDs
Clinical Skills and Knowledge	Medication Administration	Pharmacology	antibiotics approved for use in patients with
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	administration of IV fluids
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	types of IV solutions
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	isotonic versus hypotonic solutions
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	intravenous devices
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	IV gauges and indications for use
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	patient controlled analgesia
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	how to assess for and chose the best peripheral IV site
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	initiation and administration of IV fluids
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	inserting a peripheral IV line
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	removing an IV
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	central venous catheters
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	peripherally inserted central catheter (PICC) line
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	epidural catheter
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	administration of parenteral nutrition
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	complications of parenteral nutrition
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	priority nursing actions for client with central venous site infection
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	administration of blood products
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	packed red blood cells (PRBCs)
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	platelet transfusion
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	fresh frozen plasma
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	cyroprecipitates
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	granulocytes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	types of blood donations
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	compatibility
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	infusion pumps
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	blood warmers
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	transfusion reactions
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	signs of transfusion reactions
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	nursing interventions for transfusion reaction
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	circulatory overload
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	septicemia
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	iron overload
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	disease transmission
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	hypocalcemia
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	hyperkalemia
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	citrate toxicity
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	nasogastric (NG) tube care
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	intubation procedures
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	gastrointestinal tube feedings
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	administering medications via feeding tube

Table F.2: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	gastrostomy tube
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	jejunostomy tube
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	intestinal tubes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	esophageal and gastric tubes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	lavage tubes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	urinary and renal tubes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	routine urinary catheter care
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	ureteral and nephrostomy tubes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	catheter insertion and removal
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	respiratory system tubes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	endotracheal tube nursing interventions and care
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	orotracheal tubes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	nasotracheal tubes
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	minimal leak technique
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	occlusive technique
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	extubation procedures
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	tracheostomy care
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	complications of tracheostomy
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	tracheal suctioning nursing actions
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	chest tube drainage system
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	water seal chamber
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	suction control chamber
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	dry suction system
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	portable chest drainage system
Clinical Skills and Knowledge	Medication Administration	Complex Care Concepts	interventions for the client with a chest tube
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	lateral position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	reverse trendelenburg's position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	high-Fowler's position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	Sims's position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	trendelenburg's position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	prone position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	supine position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	lithotomy position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	semiprone position
Clinical Skills and Knowledge	Medication Administration	Patient Positioning	devices used for proper positioning
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	homeostasis
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	intravascular
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	extracellular
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	third-spacing
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	edema
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	body fluid
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	interstitial
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	body fluid intake
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	body fluid output
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	maintaining fluid and electrolyte balance
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	fluid volume deficit
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	causes of fluid volume deficits
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	fluid volume excess
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	hyponatremia
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	hypernatremia
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	hypocalcemia
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	hypomagnesemia
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	hypermagnesemia
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	hypophosphatemia
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	hyperphosphatemia
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	assessing fluid volume deficit and fluid volume excess
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	assessing for electrolyte imbalances
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	electrocardiographic changes in electrolyte imbalances
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	precautions with intravenous administered potassium
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	Chvostek's sign
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Fluids and Electrolytes	Trousseau's sign
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	compensation
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	respiratory acidosis
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	respiratory alkalosis
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	metabolic acidosis
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	metabolic alkalosis
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	normal arterial blood gases (ABGs)
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	steps for analyzing ABGs
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	performing the Allen's test
Clinical Skills and Knowledge	Fluids, Electrolytes, Acid	Acid-Base Balance	causes of acid base imbalances
Clinical Skills and Knowledge	Lab Test	Laboratory Values	serum sodium
Clinical Skills and Knowledge	Lab Test	Laboratory Values	serum potassium
Clinical Skills and Knowledge	Lab Test	Laboratory Values	activated partial thromboplastin time (aPTT)
Clinical Skills and Knowledge	Lab Test	Laboratory Values	prothrombin time (PT) and international normalized ratio (INR)
Clinical Skills and Knowledge	Lab Test	Laboratory Values	platelet count

Table F.3: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Lab Test	Laboratory Values	hemoglobin and hematocrit
Clinical Skills and Knowledge	Lab Test	Laboratory Values	lipids
Clinical Skills and Knowledge	Lab Test	Laboratory Values	fasting blood glucose
Clinical Skills and Knowledge	Lab Test	Laboratory Values	HgbA1C
Clinical Skills and Knowledge	Lab Test	Laboratory Values	renal function studies
Clinical Skills and Knowledge	Lab Test	Laboratory Values	blood urea nitrogen (BUN)
Clinical Skills and Knowledge	Lab Test	Laboratory Values	white blood cell (WBC)
Clinical Skills and Knowledge	Lab Test	Laboratory Values	grading scale for pulses
Clinical Skills and Knowledge	Lab Test	Laboratory Values	hypertension categories and guidelines
Clinical Skills and Knowledge	Lab Test	Laboratory Values	nonverbal indicators of pain
Clinical Skills and Knowledge	Lab Test	Laboratory Values	elevated platelets and neutrophils
Clinical Skills and Knowledge	Lab Test	Laboratory Values	elevated bilirubin
Clinical Skills and Knowledge	Intravenous Nursing	Intravenous solutions	common intravenous sites
Clinical Skills and Knowledge	Intravenous Nursing	Intravenous solutions	intravenous sites to avoid
Clinical Skills and Knowledge	Intravenous Nursing	Intravenous solutions	complications of intravenous therapy
Clinical Skills and Knowledge	Intravenous Nursing	Intravenous solutions	signs and symptoms of an adverse reaction to lipids
Clinical Skills and Knowledge	Intravenous Nursing	Intravenous solutions	compatibility chart for red blood cell transfusions
Clinical Skills and Knowledge	Wound Care	Types of Wounds	Acute vs. chronic
Clinical Skills and Knowledge	Wound Care	Types of Wounds	surgical wounds
Clinical Skills and Knowledge	Wound Care	Wound Healing Stages	unexpected wound healing complications
Clinical Skills and Knowledge	Wound Care	Dressings and Products	wound irrigation
Clinical Skills and Knowledge	Wound Care	Types of Wounds	wound evisceration
Clinical Skills and Knowledge	Wound Care	Types of Wounds	pressure injuries
Clinical Skills and Knowledge	Wound Care	Dressings and Products	vacuum assisted closure of wound
Clinical Skills and Knowledge	Wound Care	Dressings and Products	Selection and application of appropriate dressings
Clinical Skills and Knowledge	Wound Care	Wound Healing Stages	Phases of healing
Clinical Skills and Knowledge	Wound Care	Wound Healing Stages	factors affecting wound healing
Clinical Skills and Knowledge	Wound Care	chest injuries	rib fracture
Clinical Skills and Knowledge	Wound Care	chest injuries	treatment of rib fracture
Clinical Skills and Knowledge	Wound Care	chest injuries	flail chest
Clinical Skills and Knowledge	Wound Care	chest injuries	pulmonary contusion
Clinical Skills and Knowledge	Emergency Care	chest injuries	pneumothorax
Clinical Skills and Knowledge	Emergency Care	Cardiopulmonary Resuscitation (CPR)	Adult CPR techniques
Clinical Skills and Knowledge	Emergency Care	Cardiopulmonary Resuscitation (CPR)	compression to breath ratio pediatric CPR
Clinical Skills and Knowledge	Emergency Care	Cardiopulmonary Resuscitation (CPR)	pediatric CPR techniques
Clinical Skills and Knowledge	Emergency Care	Cardiopulmonary Resuscitation (CPR)	Common medications used in resuscitation situations
Clinical Skills and Knowledge	Emergency Care	Cardiopulmonary Resuscitation (CPR)	code status and what they mean
Clinical Skills and Knowledge	Emergency Care	Cardiopulmonary Resuscitation (CPR)	infant CPR techniques
Clinical Skills and Knowledge	Emergency Care	Automated External Defibrillators (AEDs)	Operation and protocols
Clinical Skills and Knowledge	Emergency Care	Life Support Protocols	BLS
Clinical Skills and Knowledge	Emergency Care	Life Support Protocols	ACLS
Clinical Skills and Knowledge	Emergency Care	Life Support Protocols	pediatric advanced life support (PALS)
Clinical Skills and Knowledge	Infection Control	Hand Hygiene Practices	5 Moments of hand hygiene
Clinical Skills and Knowledge	Infection Control	Hand Hygiene Practices	Techniques and importance
Clinical Skills and Knowledge	Infection Control	Personal Protective Equipment (PPE)	Proper use and removal
Clinical Skills and Knowledge	Infection Control	Isolation Precautions	Standard
Clinical Skills and Knowledge	Infection Control	Isolation Precautions	contact
Clinical Skills and Knowledge	Infection Control	Isolation Precautions	droplet
Clinical Skills and Knowledge	Infection Control	Isolation Precautions	airborne
Clinical Skills and Knowledge	Chronic Disease Management	Diabetes Management	Blood glucose monitoring
Clinical Skills and Knowledge	Chronic Disease Management	Diabetes Management	insulin therapy
Clinical Skills and Knowledge	Chronic Disease Management	Diabetes Management	DKA
Clinical Skills and Knowledge	Chronic Disease Management	Diabetes Management	dietary planning
Clinical Skills and Knowledge	Chronic Disease Management	Hypertension Control	Blood pressure monitoring
Clinical Skills and Knowledge	Chronic Disease Management	Hypertension Control	Modifiable and nonmodifiable risks for hypertension
Clinical Skills and Knowledge	Chronic Disease Management	Hypertension Control	lifestyle modifications
Clinical Skills and Knowledge	Chronic Disease Management	Hypertension Control	medication adherence
Clinical Skills and Knowledge	Chronic Disease Management	Heart Failure and COPD	Symptom management
Clinical Skills and Knowledge	Chronic Disease Management	Heart Failure and COPD	patient education
Clinical Skills and Knowledge	Chronic Disease Management	Heart Failure and COPD	rehabilitation
Clinical Skills and Knowledge	Pediatric Nursing	Growth and Development	Assessment of growth
Clinical Skills and Knowledge	Pediatric Nursing	Growth and Development	developmental milestones
Clinical Skills and Knowledge	Pediatric Nursing	Pediatric Assessments	Age-appropriate assessment techniques
Clinical Skills and Knowledge	Pediatric Nursing	Common Pediatric Conditions	Management and care strategies
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	phases of wound healing
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	risk factors for integumentary problems
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	skin_wound cultures
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	skin biopsy
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	candida albicans
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	herpes zoster (shingles)
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	cellulitis
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	bites and stings
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	frostbite
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	skin cancer
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	psoriasis
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	acne vulgaris
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	stevens-johnson syndrome
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	pressure injuries
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	types of exudate from wounds
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	skin cancer lesion types

Table F.4: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	melanoma
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	squamous cell carcinoma
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems of the Adult Client	basal cell carcinoma
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Medications	poison ivy treatment
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Medications	dermatitis treatment
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Medications	topical glucocorticoids
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Medications	actinic keratosis medications
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Medications	sunscreen teaching
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Medications	medications to treat psoriasis
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems in Pediatrics	eczema care
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems in Pediatrics	forms of eczema
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems in Pediatrics	impetigo
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems in Pediatrics	pediculosis capitis (lice)
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems in Pediatrics	scabies
Clinical Skills and Knowledge	Integumentary Nursing	Integumentary Problems in Pediatrics	managing burn injury in pediatric client
Clinical Skills and Knowledge	Hematological Nursing	Hematological Problems in Pediatrics	sickle cell anemia
Clinical Skills and Knowledge	Hematological Nursing	Hematological Problems in Pediatrics	sickle cell crisis management
Clinical Skills and Knowledge	Hematological Nursing	Hematological Problems in Pediatrics	hemophilia
Clinical Skills and Knowledge	Hematological Nursing	Hematological Problems in Pediatrics	von willebrand's disease
Clinical Skills and Knowledge	Hematological Nursing	Hematological Problems in Pediatrics	beta thalassemia major
Clinical Skills and Knowledge	Hematological Nursing	Hematological Problems in Pediatrics	iron deficiency anemia
Clinical Skills and Knowledge	Hematological Nursing	Hematological Problems in Pediatrics	aplastic anemia
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Prenatal Care	Monitoring
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Prenatal Care	education
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Prenatal Care	risk assessment
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Labor and Delivery	Stages of labor
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Labor and Delivery	pain management
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Labor and Delivery	delivery techniques
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Postpartum and Neonatal Care	Breastfeeding support
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Postpartum and Neonatal Care	neonatal assessments
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Postpartum and Neonatal Care	Newborn and pediatric vital signs
Clinical Skills and Knowledge	Obstetric and Neonatal Care	Postpartum and Neonatal Care	common newborn conditions
Clinical Skills and Knowledge	Geriatric Nursing	Elderly Care Principles	Age-related physiological changes
Clinical Skills and Knowledge	Geriatric Nursing	Elderly Care Principles	comprehensive geriatric assessment
Clinical Skills and Knowledge	Geriatric Nursing	Managing Geriatric Syndromes	Dementia
Clinical Skills and Knowledge	Geriatric Nursing	Managing Geriatric Syndromes	falls
Clinical Skills and Knowledge	Geriatric Nursing	Managing Geriatric Syndromes	incontinence
Clinical Skills and Knowledge	Geriatric Nursing	End-of-Life Care	Palliative care
Clinical Skills and Knowledge	Geriatric Nursing	End-of-Life Care	advance care planning
Clinical Skills and Knowledge	Geriatric Nursing	End-of-Life Care	support for families
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	Polypharmacy management
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	Palliative and end of life care
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	sexuality and intimacy in older adults
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	dementia care
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	nutrition and hydration in older adults
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	temperature regulation in older adults
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	elder abuse
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	decision making capabilities
Clinical Skills and Knowledge	Geriatric Nursing	gerontology	rehab and the interprofessional team
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	physiological signs of aging
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	psychosocial concerns of aging
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	mental health concerns
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	susceptibility to illness
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	polypharmacy
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	administering oral medications to client at risk for aspiration
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	difference between delirium, depression and dementia
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	symptoms of infection in elderly client
Clinical Skills and Knowledge	Geriatric Nursing	Care of the Older Patient	medications to avoid in older patient
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Assessments	Mental status examination
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Assessments	risk assessments
Clinical Skills and Knowledge	Mental Health Nursing	Managing Mental Health Conditions	Therapeutic communication
Clinical Skills and Knowledge	Mental Health Nursing	Managing Mental Health Conditions	medication management
Clinical Skills and Knowledge	Mental Health Nursing	Managing Mental Health Conditions	types of restraints
Clinical Skills and Knowledge	Mental Health Nursing	Managing Mental Health Conditions	restraint use in mental health settings
Clinical Skills and Knowledge	Mental Health Nursing	Managing Mental Health Conditions	psychotherapy interventions
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	components of the nurse-client relationship
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	principles of therapeutic relationship
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	therapeutic communication process
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	coping and defence mechanisms
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	diagnostic testing for mental health disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	types of mental health admission and discharges
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	right to confidentiality
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	involuntary admission
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	release from hospital
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	voluntary release
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	discharge planning and follow-up care
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	types of therapy for care
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	interpersonal psychotherapy
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	behaviour therapy
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	cognitive therapy

Table F.5: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	family therapy
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	therapeutic and nontherapeutic communication techniques
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	types of defence mechanisms
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	client rights
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems of the Adult Client	self-help and support groups
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	anxiety
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	types of anxiety
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	nursing interventions for a client with anxiety
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	priority nursing actions for a client with anxiety
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	generalized anxiety disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	post traumatic stress disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	specific phobia
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	obsessive compulsive disorder (OCD)
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	somatic symptom and related disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	dissociative disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	multiple personality disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	dissociative amnesia
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	depersonalization disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	mood disorder types
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	bipolar disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for mania
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	depressive disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	major depressive disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for client with mental health problems
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	electroconvulsive therapy (ECT)
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	schizophrenia
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	distortions
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	language and communication disturbances
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	types of delusions
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for active hallucinations
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for delusions
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	personality disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	cluster A personality disorder types
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	cluster B personality disorder types
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	cluster C personality disorder types
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	neurodevelopment disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	neurocognitive disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	dementia and alzheimer's disease
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	signs of dementia
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	criteria for generalized anxiety disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for post-traumatic stress disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	types of phobias
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for OCD and related disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	assessment of bipolar and related disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	dealing with inappropriate behaviours associated with bipolar disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for depressed clients
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	ECT indications for use
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	abnormal motor behaviours
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	abnormal thought processes
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for paranoia
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	eating disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	compulsive overeating
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	anorexia nervosa
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	bulimia nervosa
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for clients with an eating disorder
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	substance use disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	substance misuse
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	substance withdrawal
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	dysfunctional behaviours related to substance abuse
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	codependency issues
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	alcohol misuse
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	alcohol withdrawal
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	drug dependency
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	hallucinogens
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	interventions for withdrawal
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	dual diagnoses
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	cycle of eating disorders
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	CAGE screening questionnaire
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	early signs of alcohol withdrawal
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	delirium tremens
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	managing the client who misuses alcohol
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	therapies for clients with substance misuse and their families
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	intoxication: central nervous system depressants
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	intoxication: central nervous system stimulants
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	intoxication: opioids
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	intoxication: hallucinogens
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	intoxication: inhalants
Clinical Skills and Knowledge	Mental Health Nursing	Mental Health Problems	nursing care for the client experiencing withdrawal
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	Crisis intervention for nurses
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	types of crises

Table F.6: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	grief
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	loss
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	nurse's role in grief and loss
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	suicidal behaviour
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	cues
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	assessment of suicidal ideation
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	abusive behaviours
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	restraints and seclusion interventions best practice
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	bullying
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	family violence
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	types of violence
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	child abduction
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	child abuse
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	latchkey children
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	abuse of the older adult
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	priority nursing actions in dealing with physically abused clients
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	rape and sexual assault
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	rape trauma syndrome
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	the grief responses
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	grief in children signs
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	communication during grief and loss
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	suicidal cues
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	suicidal risk assessment
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	assessment questions for violence and abuse
Clinical Skills and Knowledge	Mental Health Nursing	Crisis Theory and Intervention	child neglect and abuse assessment questions
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	SSRIs
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	tricyclic antidepressants
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	tricyclic antidepressant overdose priority nursing actions
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	MAOIs
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	mood stabilizers
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	lithium toxicity
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	laboratory value for lithium toxicity
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	anxiety or anxiolytic medications
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	barbiturates and sedative hypnotics
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	antipsychotic medications
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	extrapyramidal syndrome
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	neuroleptic malignant syndrome
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	medications to treat ADHD
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	medications used to treat alzheimer's disease
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	reuptake inhibitors
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	foods that contain tyramine
Clinical Skills and Knowledge	Mental Health Nursing	Psychiatric Medications	care provided to a patient with bulimia eating disorder
Clinical Skills and Knowledge	Oncology Nursing	Oncology	Cancer genetics and genomics
Clinical Skills and Knowledge	Oncology Nursing	Oncology	common chemo drugs
Clinical Skills and Knowledge	Oncology Nursing	Oncology	Targeted Therapies and Immunotherapies
Clinical Skills and Knowledge	Oncology Nursing	Oncology	clinical trials and research
Clinical Skills and Knowledge	Oncology Nursing	Oncology	survivorship
Clinical Skills and Knowledge	Oncology Nursing	Oncology	hematologic malignancies
Clinical Skills and Knowledge	Oncology Nursing	Oncology	integrative treatment
Clinical Skills and Knowledge	Oncology Nursing	Cancer Care Fundamentals	Pathophysiology
Clinical Skills and Knowledge	Oncology Nursing	Cancer Care Fundamentals	staging and grading
Clinical Skills and Knowledge	Oncology Nursing	Chemotherapy and Radiation Therapy	Administration
Clinical Skills and Knowledge	Oncology Nursing	Chemotherapy and Radiation Therapy	side effect management
Clinical Skills and Knowledge	Oncology Nursing	Palliative Care	Symptom management
Clinical Skills and Knowledge	Oncology Nursing	Palliative Care	end-of-life care
Clinical Skills and Knowledge	Oncology Nursing	Palliative Care	support for patients and families
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	leukemia
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	chemotherapy
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	Hodgkin's disease
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	nephroblastoma (Wilm's tumor)
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	neuroblastoma
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	osteosarcoma
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	brain tumors
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	signs and symptoms of increased intracranial pressure in infants and children
Clinical Skills and Knowledge	Oncology Nursing	Oncological Problems in Pediatrics	signs and symptoms of increased intracranial pressure
Clinical Skills and Knowledge	Oncology Nursing	Complex Hematological and Oncological Problems	sepsis
Clinical Skills and Knowledge	Oncology Nursing	Complex Hematological and Oncological Problems	disseminated intravascular coagulation (DIC)
Clinical Skills and Knowledge	Oncology Nursing	Complex Hematological and Oncological Problems	syndrome of inappropriate antidiuretic hormone (SIADH)
Clinical Skills and Knowledge	Oncology Nursing	Complex Hematological and Oncological Problems	spinal cord compression
Clinical Skills and Knowledge	Oncology Nursing	Complex Hematological and Oncological Problems	hypercalcemia
Clinical Skills and Knowledge	Oncology Nursing	Complex Hematological and Oncological Problems	superior vena cava syndrome
Clinical Skills and Knowledge	Oncology Nursing	Complex Hematological and Oncological Problems	oncological emergencies
Clinical Skills and Knowledge	Oncology Nursing	Complex Hematological and Oncological Problems	tumor lysis syndrome
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	metastasis
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	cancer classification
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	lymphoma
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	myeloma
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	grading and staging
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	carcinogen

Table F.7: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	risk factors
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	prevention
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	early detection
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	diagnostics
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	pain control
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	surgery
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	chemotherapy interventions
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	radiation therapy
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	radiation implant device
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	stem cell transplant
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	Hodgkin's disease
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	multiple myeloma
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	testicular cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	cervical cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	pelvic exenteration
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	ovarian cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	uterine cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	breast cancer risk factors
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	esophageal cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	gastric cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	pancreatic cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	intestinal tumors
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	lung cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	laryngeal cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	prostate cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	bladder cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	oncological emergencies
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	spinal cord compression
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	tumor lysis syndrome
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	anemia
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	common sites of metastasis
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	warning signs of cancer
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	client education for radiation therapy
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	testicular self exam
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	client instructions following mastectomy
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	continuous bladder irrigation (CBI)
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Problems of the Adult Client	urinary stoma care
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	antineoplastic medications
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	antitumor antibiotic medications
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	antimetabolite medications
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	mitotic inhibitor medications
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	topoisomerase inhibitors
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	hormonal medications and enzymes
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	side effects of chemotherapy
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	side effects of radiation therapy
Clinical Skills and Knowledge	Oncology Nursing	Oncological and Hematological Medications	theories of growth and development
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	cognitive development
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	psychosocial development
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	moral development
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	erik erikson's stages of psychosocial development
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	intervention to assist client in achieving erikson's stages of development
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	lawrence kohlborg
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	psychosexual development theory
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	caring for the hospitalized child
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	loss of control
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	fear of injury and pain
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	separation anxiety
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	communication approaches
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	car safety and car seats
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	administering parenteral vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	rotavirus vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	diphtheria, tetanus, acellular pertussis tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	haemophilus influenzae type b
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	inactivated poliovirus vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	measles, mumps, rubella vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	varicella vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	pneumococcal conjugate vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	hepatitis a vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	meningococcal vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	human papillomavirus vaccine
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	reactions to vaccines
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	end of life care
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	postmortem care
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	wellness check up schedule
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	infant development skills
Clinical Skills and Knowledge	Growth and Development	Growth and Development Across the Lifespan	signs of readiness for toilet training
Clinical Skills and Knowledge	Surgical Nursing	Preoperative Care	Patient preparation
Clinical Skills and Knowledge	Surgical Nursing	Preoperative Care	risk assessment
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	obtaining informed consent
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	preoperative client teaching

Table F.8: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	preoperative checklist
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	postoperative care
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	risks of surgery
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	management of surgical patients
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	wound dehiscence and evisceration
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	deep breathing and coughing
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	incentive spirometry
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	leg and foot exercises
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	preventing pulmonary embolism
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	splinting the incision
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	cultural aspects of perioperative nursing care
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	substances that can affect the client in surgery
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	postoperative complications
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	sterile dressing change
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	wound irrigation
Clinical Skills and Knowledge	Surgical Nursing	Perioperative Nursing Care	discharge teaching
Clinical Skills and Knowledge	Surgical Nursing	Postoperative Care	Pain management
Clinical Skills and Knowledge	Surgical Nursing	Postoperative Care	wound care
Clinical Skills and Knowledge	Surgical Nursing	Postoperative Care	Types of post-operative drains (JP, open, closed, passive, active)
Clinical Skills and Knowledge	Surgical Nursing	Postoperative Care	monitoring for complications
Clinical Skills and Knowledge	Surgical Nursing	Patient Education	Preparing patients for surgery
Clinical Skills and Knowledge	Surgical Nursing	Patient Education	postoperative recovery
Clinical Skills and Knowledge	Surgical Nursing	Patient Education	lifestyle modifications
Professional Nursing Practice	Foundations of Professional Practice	Nursing Theories and Frameworks	Key theories that guide nursing practice
Professional Nursing Practice	Foundations of Professional Practice	Nursing Theories and Frameworks	application of theoretical models
Professional Nursing Practice	Foundations of Professional Practice	Ethics in Nursing	Ethical principles in nursing
Professional Nursing Practice	Foundations of Professional Practice	Ethics in Nursing	Delegation to UCPs
Professional Nursing Practice	Foundations of Professional Practice	Ethics in Nursing	decision-making processes
Professional Nursing Practice	Foundations of Professional Practice	Ethics in Nursing	handling ethical dilemmas
Professional Nursing Practice	Foundations of Professional Practice	Legal Aspects of Nursing	Understanding of laws governing nursing
Professional Nursing Practice	Foundations of Professional Practice	Legal Aspects of Nursing	Understanding of laws of patient rights
Professional Nursing Practice	Foundations of Professional Practice	Legal Aspects of Nursing	legal responsibilities of nurses.
Professional Nursing Practice	Quality and Safety in Nursing Care	Patient Safety Initiatives	Error prevention
Professional Nursing Practice	Quality and Safety in Nursing Care	Patient Safety Initiatives	reporting systems
Professional Nursing Practice	Quality and Safety in Nursing Care	Patient Safety Initiatives	safety culture
Professional Nursing Practice	Quality and Safety in Nursing Care	Quality Improvement Processes	Methods for quality assessment and improvement
Professional Nursing Practice	Quality and Safety in Nursing Care	Quality Improvement Processes	evidence-based practice
Professional Nursing Practice	Quality and Safety in Nursing Care	Infection Control and Prevention	Standard precautions
Professional Nursing Practice	Quality and Safety in Nursing Care	Infection Control and Prevention	transmission-based precautions
Professional Nursing Practice	Quality and Safety in Nursing Care	Infection Control and Prevention	outbreak management
Professional Nursing Practice	Professional Development and Lifelong Learning	Continuing Education	Importance of lifelong learning
Professional Nursing Practice	Professional Development and Lifelong Learning	Continuing Education	types of continuing education
Professional Nursing Practice	Professional Development and Lifelong Learning	Continuing Education	certification
Professional Nursing Practice	Professional Development and Lifelong Learning	Career Advancement	Pathways for advancement within nursing
Professional Nursing Practice	Professional Development and Lifelong Learning	Career Advancement	leadership roles
Professional Nursing Practice	Professional Development and Lifelong Learning	Career Advancement	Types of certification (CC1, CC2, Critical care certificate, CRNA, etc.)
Professional Nursing Practice	Professional Development and Lifelong Learning	Career Advancement	Nurse practitioner education route
Professional Nursing Practice	Professional Development and Lifelong Learning	Career Advancement	specialization
Professional Nursing Practice	Professional Development and Lifelong Learning	Care management	conflict resolution
Professional Nursing Practice	Professional Development and Lifelong Learning	Care management	quality improvement
Professional Nursing Practice	Professional Development and Lifelong Learning	Care management	best practice guidelines
Professional Nursing Practice	Professional Development and Lifelong Learning	Care management	patient advocacy
Professional Nursing Practice	Professional Development and Lifelong Learning	Care management	resource management
Professional Nursing Practice	Professional Development and Lifelong Learning	Care management	workplace diversity and cultural competence
Professional Nursing Practice	Professional Development and Lifelong Learning	Mentorship and Preceptorship	Roles and responsibilities of mentors and preceptors
Professional Nursing Practice	Professional Development and Lifelong Learning	Mentorship and Preceptorship	benefits of mentorship programs
Professional Nursing Practice	Nursing Leadership and Management	Leadership Theories and Styles	Application of leadership theories in nursing
Professional Nursing Practice	Nursing Leadership and Management	Leadership Theories and Styles	effective leadership behaviors
Professional Nursing Practice	Nursing Leadership and Management	Conflict Resolution and Negotiation	Strategies for managing conflicts
Professional Nursing Practice	Nursing Leadership and Management	Conflict Resolution and Negotiation	negotiation skills
Professional Nursing Practice	Nursing Leadership and Management	Resource Management	Staffing
Professional Nursing Practice	Nursing Leadership and Management	Resource Management	budgeting and resource allocation for optimal patient care
Professional Nursing Practice	Evidence-Based Practice and Research	Research in Nursing	Understanding the research process
Professional Nursing Practice	Evidence-Based Practice and Research	Research in Nursing	critical appraisal of research
Professional Nursing Practice	Evidence-Based Practice and Research	Research in Nursing	application of research findings
Professional Nursing Practice	Evidence-Based Practice and Research	Implementing Evidence-Based Practice	Steps in the EBP process
Professional Nursing Practice	Evidence-Based Practice and Research	Implementing Evidence-Based Practice	barriers to implementation
Professional Nursing Practice	Evidence-Based Practice and Research	Implementing Evidence-Based Practice	strategies for overcoming barriers
Professional Nursing Practice	Evidence-Based Practice and Research	Clinical Practice Guidelines	Development
Professional Nursing Practice	Evidence-Based Practice and Research	Clinical Practice Guidelines	evaluation
Professional Nursing Practice	Evidence-Based Practice and Research	Clinical Practice Guidelines	application of guidelines in clinical practice
Professional Nursing Practice	Health Policy and Advocacy	Nursing's Role in Health Policy	Involvement in policy development
Professional Nursing Practice	Health Policy and Advocacy	Nursing's Role in Health Policy	advocacy for health care reforms
Professional Nursing Practice	Health Policy and Advocacy	Global Health Policies	Understanding global health issues
Professional Nursing Practice	Health Policy and Advocacy	Global Health Policies	impact of global health issues on nursing practice
Professional Nursing Practice	Health Policy and Advocacy	Advocacy for Patients and the Profession	Strategies for advocating on behalf of patients
Professional Nursing Practice	Health Policy and Advocacy	Advocacy for Patients and the Profession	Strategies for advocating on behalf of the nursing profession
Professional Nursing Practice	Health Policy and Advocacy	Academic research	scholarly resources for asthma in the past 5 years
Professional Nursing Practice	Health Policy and Advocacy	Medical directives	writing a medical directive for testing for sexually transmitted disease (STD)
Professional Nursing Practice	Interprofessional Collaboration	Principles of Interprofessional Practice	Benefits

Table F.9: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Professional Nursing Practice	Interprofessional Collaboration	Principles of Interprofessional Practice	challenges
Professional Nursing Practice	Interprofessional Collaboration	Principles of Interprofessional Practice	strategies for effective interprofessional practice
Professional Nursing Practice	Interprofessional Collaboration	Roles and Responsibilities	Understanding and respecting the roles of different healthcare professionals
Professional Nursing Practice	Interprofessional Collaboration	Collaborative Patient-Centered Care	Approaches to ensure care is coordinated, comprehensive, and patient-centered
Professional Nursing Practice	Client-focused Care	Care of Special Populations	health care considerations for the LGBTQ population
Professional Nursing Practice	Client-focused Care	Care of Special Populations	special populations needs assessment tools
Professional Nursing Practice	Client-focused Care	Care of Special Populations	common problems in the homeless community
Professional Nursing Practice	Client-focused Care	Care of Special Populations	medications to avoid in homeless community
Professional Nursing Practice	Client-focused Care	Care of Special Populations	mental health concerns for foster children
Professional Nursing Practice	Client-focused Care	Care of Special Populations	health problems in older adults
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	nursing care plan
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	leadership and management styles
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	evidence-based practice
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	quality improvement
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	change process
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	dealing with conflict
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	interprofessional collaboration
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	discharge planning
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	delegation and assignments
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	guidelines of delegation
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	what nurse's can and cannot delegate
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	triage systems
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	emergency department triage systems
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	simple triage and rapid treatment (START)
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	theories of leadership and management
Professional Nursing Practice	Client-focused Care	Prioritizing Client Care	guidelines for prioritizing
Special Domains of Nursing	Critical Care Nursing	Fundamentals of Critical Care	Hemodynamic monitoring
Special Domains of Nursing	Critical Care Nursing	Fundamentals of Critical Care	insulin drips
Special Domains of Nursing	Critical Care Nursing	Fundamentals of Critical Care	intubation and trach care
Special Domains of Nursing	Critical Care Nursing	Fundamentals of Critical Care	Medications compatibility
Special Domains of Nursing	Critical Care Nursing	Fundamentals of Critical Care	Mixing drugs through central lines or manifolds
Special Domains of Nursing	Critical Care Nursing	Fundamentals of Critical Care	sedation medications
Special Domains of Nursing	Critical Care Nursing	Fundamentals of Critical Care	mechanical ventilation
Special Domains of Nursing	Critical Care Nursing	Fundamentals of Critical Care	fluid management
Special Domains of Nursing	Critical Care Nursing	Specific Conditions	management of chronic obstructive pulmonary disease (COPD)
Special Domains of Nursing	Critical Care Nursing	Specific Conditions	Management of acute respiratory distress syndrome (ARDS)
Special Domains of Nursing	Critical Care Nursing	Specific Conditions	sepsis
Special Domains of Nursing	Critical Care Nursing	Specific Conditions	multi-organ failure
Special Domains of Nursing	Critical Care Nursing	Technological Interventions	Use of ECMO (Extracorporeal Membrane Oxygenation)
Special Domains of Nursing	Critical Care Nursing	Technological Interventions	Use of CRRT (Continuous Renal Replacement Therapy)
Special Domains of Nursing	Emergency Nursing	Triage	Principles of triage
Special Domains of Nursing	Emergency Nursing	Triage	disaster triage
Special Domains of Nursing	Emergency Nursing	Triage	Ranking pts in triage (level 1-5)
Special Domains of Nursing	Emergency Nursing	Triage	pediatric triage
Special Domains of Nursing	Emergency Nursing	Acute Care	Management of trauma
Special Domains of Nursing	Emergency Nursing	Acute Care	strokes
Special Domains of Nursing	Emergency Nursing	Acute Care	GI bleeds
Special Domains of Nursing	Emergency Nursing	Acute Care	Code transfusion and Omega
Special Domains of Nursing	Emergency Nursing	Acute Care	myocardial infarctions
Special Domains of Nursing	Emergency Nursing	Emergency Procedures	Airway management
Special Domains of Nursing	Emergency Nursing	Emergency Procedures	emergency pharmacology
Special Domains of Nursing	Emergency Nursing	Emergency Procedures	wound closure techniques
Special Domains of Nursing	Operating Room Nursing	Preoperative Care	Patient preparation
Special Domains of Nursing	Operating Room Nursing	Preoperative Care	informed consent
Special Domains of Nursing	Operating Room Nursing	Preoperative Care	surgical site marking
Special Domains of Nursing	Operating Room Nursing	Intraoperative Care	Sterile technique
Special Domains of Nursing	Operating Room Nursing	Intraoperative Care	instrumentation
Special Domains of Nursing	Operating Room Nursing	Intraoperative Care	surgical assisting
Special Domains of Nursing	Operating Room Nursing	Postoperative Care	Monitoring for complications
Special Domains of Nursing	Operating Room Nursing	Postoperative Care	pain management
Special Domains of Nursing	Operating Room Nursing	Postoperative Care	patient education for discharge
Special Domains of Nursing	Cardiac Nursing	Cardiac Assessment	ECG interpretation
Special Domains of Nursing	Cardiac Nursing	Cardiac Assessment	cardiac enzymes
Special Domains of Nursing	Cardiac Nursing	Cardiac Assessment	hemodynamic monitoring
Special Domains of Nursing	Cardiac Nursing	Cardiac Conditions	Care of patients with coronary artery disease
Special Domains of Nursing	Cardiac Nursing	Cardiac Conditions	Care of patients with heart failure
Special Domains of Nursing	Cardiac Nursing	Cardiac Conditions	care of pediatric patients with congenital heart defects
Special Domains of Nursing	Cardiac Nursing	Cardiac Conditions	signs of fluid overload or congestion
Special Domains of Nursing	Cardiac Nursing	Cardiac Conditions	Common signs of a worsening cardiac conditions
Special Domains of Nursing	Cardiac Nursing	Cardiac Conditions	cardiac biomarkers and their ranges
Special Domains of Nursing	Cardiac Nursing	Cardiac Conditions	Care of patients with coronary arrhythmias
Special Domains of Nursing	Cardiac Nursing	Interventions	Post-operative care for cardiac surgery
Special Domains of Nursing	Cardiac Nursing	Interventions	cardiac rehabilitation
Special Domains of Nursing	Cardiac Nursing	cardiac dysrhythmias	normal sinus rhythm
Special Domains of Nursing	Cardiac Nursing	cardiac dysrhythmias	sinus bradycardia
Special Domains of Nursing	Cardiac Nursing	cardiac dysrhythmias	sinus tachycardia
Special Domains of Nursing	Cardiac Nursing	cardiac dysrhythmias	atrial fibrillation
Special Domains of Nursing	Cardiac Nursing	cardiac dysrhythmias	premature ventricular contractions
Special Domains of Nursing	Cardiac Nursing	cardiac dysrhythmias	ventricular tachycardia
Special Domains of Nursing	Cardiac Nursing	cardiac dysrhythmias	ventricular fibrillation

Table F.10: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Cardiac Nursing	Interventions	patient education on lifestyle modifications
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	diagnostic tests and procedures
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	normal versus abnormal heart sounds
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	coronary artery disease
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	angina
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	myocardial infarction
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	heart failure
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	pericarditis
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	myocarditis
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	endocarditis
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	cardiac tamponade
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	valvular heart disease
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	cardiomyopathy
Special Domains of Nursing	Cardiovascular Nursing	vascular disorders	venous thrombosis
Special Domains of Nursing	Cardiovascular Nursing	vascular disorders	phlebitis
Special Domains of Nursing	Cardiovascular Nursing	vascular disorders	deep vein thrombophlebitis
Special Domains of Nursing	Cardiovascular Nursing	vascular disorders	venous insufficiency
Special Domains of Nursing	Cardiovascular Nursing	vascular disorders	varicose veins
Special Domains of Nursing	Cardiovascular Nursing	arterial disorders	peripheral arterial disease
Special Domains of Nursing	Cardiovascular Nursing	arterial disorders	raynaud's disease
Special Domains of Nursing	Cardiovascular Nursing	arterial disorders	buerger's disease (thromboangitis obliterans)
Special Domains of Nursing	Cardiovascular Nursing	aortic aneurysms	types of aortic aneurysms
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	hypertension
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	risk factors for hypertension
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular problems	hypertensive crisis
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	anticoagulants
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	thrombolytic medications
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	antiplatelet medications
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	positive inotropic and cariotonic medications
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	cardiac glycosides
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	antihypertensive medications: diuretics
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	ACE inhibitors and ARBs
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	antianginal medications
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	B-adrenergic blockers
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	calcium channel blockers
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	peripheral vasodilators
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	antidysrhythmic medications
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	adrenergic agonists
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular medications	substances to avoid with anticoagulants
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	hyperlipidemia
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	heart failure (HF)
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	atrial septal defect (ASD)
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	patent ductus arteriosus
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	ventricular septal defect (VSD)
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	obstructive defects
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	aortic stenosis
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	coarctation of the aorta
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	pulmonary stenosis
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	tatralogy of fallot
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	tricuspid atresia
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	cardiac catheterization
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	rheumatic fever
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	kawasaki disease
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	signs and symptoms of heart failure
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	left versus right sided heart failure
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	signs and symptoms of decreased cardiac output
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	interventions for cardiovascular defects
Special Domains of Nursing	Cardiovascular Nursing	Cardiovascular Problems in Pediatrics	home care after cardiac surgery
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	cardiac markers
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	complete blood count
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	serum lipids
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	electrolytes
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	calcium
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	phosphorus
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	magnesium
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	blood urea nitrogen
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	blood glucose
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	b-type natriuretic peptide (BNP)
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	chest x ray
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	electrocardiography
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	holter monitoring
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	echocardiography
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	exercise electrocardiography (stress test)
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	myocardial nuclear perfusion imaging (MNPI)
Special Domains of Nursing	Cardiovascular Nursing	diagnostic tests	magnetic rosonance imaging (MRI)
Special Domains of Nursing	Cardiovascular Nursing	cardiovascular diagnostic tests	cardiac catheterization
Special Domains of Nursing	Cardiovascular Nursing	therapeutic management of cardiovascular problems	percutaneous transluminal coronary angioplasty (PTCA)
Special Domains of Nursing	Cardiovascular Nursing	therapeutic management of cardiovascular problems	laser assisted angioplasty
Special Domains of Nursing	Cardiovascular Nursing	therapeutic management of cardiovascular problems	coronary artery stents

Table F.11: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Cardiovascular Nursing	therapeutic management of cardiovascular problems	atherectomy
Special Domains of Nursing	Cardiovascular Nursing	therapeutic management of cardiovascular problems	transmyocardial revascularization
Special Domains of Nursing	Cardiovascular Nursing	therapeutic management of cardiovascular problems	coronary artery bypass grafting
Special Domains of Nursing	Cardiovascular Nursing	therapeutic management of cardiovascular problems	heart transplantation
Special Domains of Nursing	Cardiovascular Nursing	management of dysrhythmias	vagal maneuvers
Special Domains of Nursing	Cardiovascular Nursing	management of dysrhythmias	valsalva maneuver
Special Domains of Nursing	Cardiovascular Nursing	management of dysrhythmias	cardioversion
Special Domains of Nursing	Cardiovascular Nursing	management of dysrhythmias	defibrillation
Special Domains of Nursing	Cardiovascular Nursing	management of dysrhythmias	automated external defibrillator (AED)
Special Domains of Nursing	Cardiovascular Nursing	management of dysrhythmias	pacemakers
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	fluid and electrolyte elimination
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	serum creatinine
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	blood urea nitrogen (BUN)
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	BUN or creatinine ratio
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	interventions of urinalysis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	24-hour free urine collection
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	specific gravity determination
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	urine culture and sensitivity testing
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	creatinine clearance test
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	KUB (kidneys, ureters, and bladder) radiography
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	bladder ultrasonography (bladder scanning)
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	intravenous urography
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	renography (kidney scan)
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	cystoscopy and biopsy of the bladder
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary diagnostic tests	renal biopsy
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	acute kidney injury (AKI)
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	chronic kidney disease (CKD)
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	uremic syndrome
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary treatments	hemodialysis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary treatments	dialysate bath
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary treatments	access routes for hemodialysis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	air embolism in client receiving hemodialysis nursing interventions
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary treatments	peritoneal dialysis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	complications of peritoneal dialysis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	cystitis (urinary tract infection)
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	urethritis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	ureteritis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	glomerulonephritis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	nephrotic syndrome
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	polycystic kidney disease
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	hydronephrosis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	renal calculi
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	kidney tumors
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	epididymitis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	prostatitis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	bladder cancer
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	bladder trauma
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	anuria
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	hematuria
Special Domains of Nursing	Renal and Urinary Nursing	Laboratory reference ranges	normal renal function values
Special Domains of Nursing	Renal and Urinary Nursing	Laboratory reference ranges	normal urinalysis values
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	nephrotoxic substances
Special Domains of Nursing	Renal and Urinary Nursing	Laboratory reference ranges	acute kidney injury: phases and laboratory findings
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	complications of hemodialysis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary problems	types of automated peritoneal dialysis
Special Domains of Nursing	Renal and Urinary Nursing	renal and urinary assessment	clinical signs of renal transplant (graft) rejection
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	urinary tract antiseptics
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	side effects and nursing considerations of common urinary medications
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	foscymycin
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	methenamine
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	nitrofurantoin
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	fluoroquinolones
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	sulfonamides
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	urinary tract analgesics
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	anticholinergics and atnispasmodics
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	cholinergics
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	medications for preventing organ rejection
Special Domains of Nursing	Renal and Urinary Nursing	Renal and urinary medications	hematopoietic growth factors
Special Domains of Nursing	Renal and Urinary Nursing	Complex Renal and Urinary Problems	continuous renal replacement therapy (CCRT)
Special Domains of Nursing	Renal and Genitourinary Nursing	Renal and Genitourinary Problems in Pediatrics	UTI
Special Domains of Nursing	Renal and Genitourinary Nursing	Renal and Genitourinary Problems in Pediatrics	glomerulonephritis
Special Domains of Nursing	Renal and Genitourinary Nursing	Renal and Genitourinary Problems in Pediatrics	nephrotic syndrome
Special Domains of Nursing	Renal and Genitourinary Nursing	Renal and Genitourinary Problems in Pediatrics	hemolytic uremic syndrome
Special Domains of Nursing	Renal and Genitourinary Nursing	Renal and Genitourinary Problems in Pediatrics	enuresis
Special Domains of Nursing	Renal and Genitourinary Nursing	Renal and Genitourinary Problems in Pediatrics	cryptorchidism
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	anatomy and physiology of the eye
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	common diagnostic tests for the eye
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	risk factors related to eye problems
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	caring for the client who is legally blind
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	caring for a client with cataracts
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	nursing considerations for glaucoma

Table F.12: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	nursing considerations for retinal detachment
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	macular degeneration
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	ocular melanoma
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	enucleation and exenteration
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	hyphema
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	contusions
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	foreign bodies
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	penetrating objects
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	chemical burns
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	anatomy and physiology of the ear
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	assessment of the ear
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	common diagnostic tests for the ear
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	risk factors related to ear problems
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	conductive hearing loss
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	sensorineural hearing loss
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	mixed hearing loss
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	central hearing loss
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	cochlear implantation
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	signs of hearing loss and facilitating communication
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	hearing aids
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	presbycusis
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	otitis externa
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	otitis media
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	chronic otitis media
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	mastoiditis
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	ostosclerosis
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	fenestration
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	labyrinthitis
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	meniere's syndrome
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	acoustic neuroma
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	trauma to tympanic membrane
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	cerumen and foreign bodies
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	client education following cataract surgery
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	client education regarding hearing aids
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Problems of the Adult Client	client education following myringotomy
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	ophthalmic medication administration
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	instillation of eye medications nursing considerations
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	administration of ointments
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	mydriatic, cycloplegic, and anticholinergic medications
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	anti-infective eye medications
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	anti-inflammatory eye medications
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	topical eye anesthetics
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	eye lubricants
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	medications to treat glaucoma
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	beta adrenergic blocker eye medications
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	carbonic anhydrase inhibitors
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	ocusert system
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	osmotic medications
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	medications to treat macular degeneration
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	otic medication administration
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	anti-infective ear medications
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	antihistamines and decongestants
Special Domains of Nursing	Eye and Ear Nursing	Eye and Ear Medications	ceruminolytic medications
Special Domains of Nursing	Eye, Ear, and Throat Problems in Pediatrics	Eye, Ear, and Throat Problems in Pediatrics	strabismus
Special Domains of Nursing	Eye and Ear Nursing	Eye, Ear, and Throat Problems in Pediatrics	conjunctivitis (pink eye)
Special Domains of Nursing	Eye and Ear Nursing	Eye, Ear, and Throat Problems in Pediatrics	otitis media
Special Domains of Nursing	Eye and Ear Nursing	Eye, Ear, and Throat Problems in Pediatrics	otitis externa
Special Domains of Nursing	Eye and Ear Nursing	Eye, Ear, and Throat Problems in Pediatrics	myringotomy
Special Domains of Nursing	Eye and Ear Nursing	Eye, Ear, and Throat Problems in Pediatrics	tonsillitis and adenoiditis
Special Domains of Nursing	Eye and Ear Nursing	Eye, Ear, and Throat Problems in Pediatrics	epistaxis
Special Domains of Nursing	Eye, Ear, and Throat Problems in Pediatrics	Eye, Ear, and Throat Problems in Pediatrics	allergic rhinitis
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	anatomy and physiology of the brain and spinal cord
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	diagnostic tests and procedures
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	nursing considerations of a client having an MRI
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	nursing considerations of a client having a CT scan
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	nursing considerations of a client having a lumbar puncture
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	nursing considerations of a client having a cerebral angiography
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	electroencephalography
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	caloric testing (oculovestibular reflex)
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	neurological assessment
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	assessment of risk factors
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	assessment of cranial nerves
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	assessment of level of consciousness (LOC)
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	flaccid posturing
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	caring for the unconscious client
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	increased intracranial pressure (ICP)
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	hyperthermia
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	traumatic head injury
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	hematoma
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	craniotomy

Table F.13: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	cerebral aneurysm
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	seizure types
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	nursing considerations for a client with seizures
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	stroke
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	types of stroke
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	nursing considerations for a client with stroke
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	risk factors for stroke
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	symptoms of stroke
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	multiple sclerosis
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	myasthenia gravis
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	edrophonium (Tensilon) test
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	parkinson's disease
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	trigeminal neuralgia
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	bell's palsy
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	Guillain-Barre syndrome
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	amyotrophic lateral sclerosis
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	encephalitis
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	west nile virus infection
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	meningitis
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	cheyne-stokes respirations
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	pupillary check for size and response
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	assessment of reflexes
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	glasgow coma scale
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	ventriculoperitoneal shunt
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	types of head injuries
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	nursing care following craniotomy
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	client positioning following craniotomy
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	aneurysm precautions
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	right versus left sided stroke
Special Domains of Nursing	Neurological Nursing	Neurological Problems of the Adult Client	autonomic dysreflexia in a spinal cord injury client
Special Domains of Nursing	Neurological Nursing	Complex Neurological Problems	traumatic head injury types
Special Domains of Nursing	Neurological Nursing	Complex Neurological Problems	autonomic dysreflexia
Special Domains of Nursing	Neurological Nursing	neurological disorders	spinal shock
Special Domains of Nursing	Neurological Nursing	neurological disorders	neurogenic shock
Special Domains of Nursing	Neurological Nursing	neurological disorders	cerebral edema
Special Domains of Nursing	Neurological Nursing	neurological disorders	skull fractures
Special Domains of Nursing	Neurological Nursing	Neurological medications	anticholinergic medications
Special Domains of Nursing	Neurological Nursing	Neurological medications	side and adverse effects: cholinergic crisis
Special Domains of Nursing	Neurological Nursing	Neurological medications	multiple sclerosis medications
Special Domains of Nursing	Neurological Nursing	Neurological medications	antiparkinsonian medications
Special Domains of Nursing	Neurological Nursing	Neurological medications	dopaminergic medications
Special Domains of Nursing	Neurological Nursing	Neurological medications	anticholinergic medications
Special Domains of Nursing	Neurological Nursing	Neurological medications	antiseizure medications
Special Domains of Nursing	Neurological Nursing	Neurological medications	barbiturates
Special Domains of Nursing	Neurological Nursing	Neurological medications	benzodiazepines
Special Domains of Nursing	Neurological Nursing	Neurological medications	succinimides
Special Domains of Nursing	Neurological Nursing	Neurological medications	valproates
Special Domains of Nursing	Neurological Nursing	Neurological medications	iminosilbenes
Special Domains of Nursing	Neurological Nursing	Neurological medications	central nervous system stimulants
Special Domains of Nursing	Neurological Nursing	Neurological medications	nonopioid analgesics
Special Domains of Nursing	Neurological Nursing	Neurological medications	opioid analgesics
Special Domains of Nursing	Neurological Nursing	Neurological medications	opioid antagonists
Special Domains of Nursing	Neurological Nursing	Neurological medications	reversal agent for opioids
Special Domains of Nursing	Neurological Nursing	Neurological medications	osmotic diuretics
Special Domains of Nursing	Neurological Nursing	Neurological medications	client education for antiseizure medications
Special Domains of Nursing	Neurological Nursing	Neurological and Cognitive Problems in Pediatrics	cerebral palsy
Special Domains of Nursing	Neurological Nursing	Neurological and Cognitive Problems in Pediatrics	head injury
Special Domains of Nursing	Neurological Nursing	Neurological and Cognitive Problems in Pediatrics	hydrocephalus
Special Domains of Nursing	Neurological Nursing	Neurological and Cognitive Problems in Pediatrics	meningitis
Special Domains of Nursing	Neurological Nursing	Neurological and Cognitive Problems in Pediatrics	submersion injury
Special Domains of Nursing	Neurological Nursing	Neurological and Cognitive Problems in Pediatrics	Reye's syndrome
Special Domains of Nursing	Neurological Nursing	Neurological and Cognitive Problems in Pediatrics	neural tube defects
Special Domains of Nursing	Neurological Nursing	Neurological and Cognitive Problems in Pediatrics	autism spectrum disorder assessment
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	anatomy and physiology of msk system
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	types of joints
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	muscles
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	bone healing phases
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	risk factors associated with musculoskeletal problems
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	diagnostic tests
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	arthrocentesis nursing considerations
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	arthroscopy nursing considerations
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	bone mineral density measurements
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	bone scan
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	bone or muscle biopsy
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	electromyography (EMG)
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	sprains
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	rotator cuff injuries
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	types of fractures
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	external fixation

Table F.14: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	traction devices
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	skeletal traction
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	skin traction
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	Russell's skin (sling) traction
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	pelvic skin traction
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	balanced suspension traction
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	cast care
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	complications of fractures
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	musculoskeletal
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	compartment syndrome signs
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	nursing considerations for compartment syndrome
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	infection and osteomyelitis
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	avascular necrosis
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	crutch walking nursing education
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	crutch gaits
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	canes and walker types
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	hemicanes or quadripod canes
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	walker types and nursing teaching
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	fractured hip nursing considerations
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	surgical interventions for fractures
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	total knee replacement nursing interventions and care
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	joint dislocation and subluxation
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	herniation: intervertebral disk
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	thoracic spine
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	thoracic spine
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	lumbar spine
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	amputation of lower extremity nursing considerations
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	rheumatoid arthritis (RA)
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	nursing interventions for RA
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	osteoarthritis (degenerative joint disease)
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	osteoporosis
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	gout
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	internal fixation
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	types of disk surgery
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	client education for RA and OA
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems of the adult client	risk factors for osteoporosis
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Medications	skeletal muscle relaxants
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Medications	antigout medications
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Medications	antiarthritic medications
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Medications	DMARDs
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Medications	medications to prevent and treat osteoporosis
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems	fracture complications
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems	rhabdomyolysis
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems	muscular dystrophy
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems	acute back pain
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems	acute back pain – straight leg test
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems	spine surgery - lumbar fusion
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems	lupus
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal problems	patient and care giver teaching preventing musculoskeletal problems
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Problems in Pediatrics	hip dysplasia
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Problems in Pediatrics	congenital clubfoot
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Problems in Pediatrics	idiopathic scoliosis
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Problems in Pediatrics	marfan's syndrome
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Problems in Pediatrics	legg-calve-perthes disease
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal Problems in Pediatrics	extremity fracture care
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal assessment	buck's traction
Special Domains of Nursing	Musculoskeletal Nursing	Musculoskeletal reduction of risk potential	reducing risks for Musculoskeletal injuries
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	functions of the immune system
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	humoral response
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	cellular response
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	innate immunity
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	acquired immunity
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	laboratory studies
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	nursing care for client with bee sting
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	hypersensitivities and allergies
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	latex allergy nursing considerations
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	immunodeficiency
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	autoimmune disease
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	scleroderma
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	polyarteritis nodosa
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	pemphigus
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	goodpasture's syndrome
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	lyme disease
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	immunodeficiency syndrome
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	AIDS
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	risk group for AIDs
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	nursing care for client with AIDs
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	Kaposi's sarcoma
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	Posttransplantation immunodeficiency
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	how to interpret intradermal skin testing

Table F.15: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	products that contain latex
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	interventions for the client with a latex allergy
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	assessment and stages of lyme disease
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	tests used to evaluate progression of human immunodeficiency virus (HIV) infection
Special Domains of Nursing	Immune Nursing	Immune Problems of the Adult Client	diagnostic criteria for acquired immunodeficiency syndrome (AIDS)
Special Domains of Nursing	Immune Nursing	Immune medications	HIV and AIDs medications
Special Domains of Nursing	Immune Nursing	Immune medications	immunosuppressants
Special Domains of Nursing	Immune Nursing	Immune medications	antimicrobials
Special Domains of Nursing	Immune Nursing	Immune medications	adverse effects of antimicrobials
Special Domains of Nursing	Immune Nursing	Complex Immune Problems	Anaphylaxis reaction and airway management
Special Domains of Nursing	Immune Nursing	Complex Immune Problems	shock and sepsis
Special Domains of Nursing	Immune Nursing	Complex Immune Problems	stages of shock
Special Domains of Nursing	Immune Nursing	Complex Immune Problems	management of shock
Special Domains of Nursing	Immune Nursing	Complex Immune Problems	systemic inflammatory response syndrome (SIRS)
Special Domains of Nursing	Immune Nursing	Complex Immune Problems	multiple organ dysfunction syndrome (MODS)
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	care of child with HIV or AIDS
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	measles
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	roseola
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	rubella
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	mumps
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	varicella
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	pertussis (whooping cough)
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	diphtheria
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	poliomyelitis
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	scarlet fever
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	erythema infectiosum
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	infectious mononucleosis
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	MRSA
Special Domains of Nursing	Immune Nursing	Immune Problems and Infectious Disease in Pediatrics	influenza
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	burn injury care
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	types of burns
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	superficial-thickness burn
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	superficial partial-thickness burn
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	deep partial-thickness burn
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	full-thickness burn
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	deep full-thickness burn
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	smoke inhalation injury
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	carbon monoxide poisoning
Special Domains of Nursing	Burn Injury	Complex Integumentary Problems	pathophysiology of burns
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	management of burn injuries: resuscitation and emergent phase
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	management of burn injuries: resuscitative phase
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	fluid resuscitation
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	pain management
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	nutrition
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	management of burn injuries: acute phase
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	circulatory compromise treatments
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	escharotomy
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	fasciotomy
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	wound care
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	debridment
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	wound closure
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	wound dressings
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	autografting
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	care of the graft site
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	care of the donor site
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	rehabilitative phase
Special Domains of Nursing	Burn Injury	Care of the Client with a Burn Injury	physical therapy
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	endocrine glands
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	diagnostics
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	thyroid stimulating hormone
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	thyroid scan
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	pituitary gland problems
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	acromegaly
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	diabetes insipidus
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	adrenal gland problems
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	addisonian crisis
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	cushing's syndrome
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	cushing's disease
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	conn's syndrome
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	pheochromocytoma
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	adrenalectomy
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	thyroid gland problems
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	myxedema coma
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	hyperthyroidism
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	thyroid storm
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	thyroidectomy
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	hypoparathyroidism
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	hyperparathyroidism
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	parathyroidectomy
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	problems with the pancreas

Table F.16: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	oral hypoglycemic medications
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	complications of insulin therapy
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	dawn phenomenon
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	somogyi phenomenon
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	insulin administration
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	self-monitoring blood glucose level
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	acute complications of diabetes mellitus
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	15_15 rule
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	IV insulin administration
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	hyperosmolar hyperglycemic syndrome (HHS)
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	chronic complications of diabetes
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	diabetic neuropathy
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	care of diabetic patient undergoing surgery
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	risk factors for endocrine problems
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	hypothalamus hormones
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	pituitary gland hormones
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	adrenal cortex
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	Addison's disease
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	foods to treat hypoglycemia
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	assessmet of hypoglycemia
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	patient education during illness
Special Domains of Nursing	Endocrine Care	Endocrine Problems of the Adult Client	preventative foot care instructions
Special Domains of Nursing	Endocrine Care	Endocrine Medications	pituitary medications
Special Domains of Nursing	Endocrine Care	Endocrine Medications	antidiuretic hormones
Special Domains of Nursing	Endocrine Care	Endocrine Medications	thyroid hormones
Special Domains of Nursing	Endocrine Care	Endocrine Medications	anithyroid hormones
Special Domains of Nursing	Endocrine Care	Endocrine Medications	parathyroid medications
Special Domains of Nursing	Endocrine Care	Endocrine Medications	corticosteroids
Special Domains of Nursing	Endocrine Care	Endocrine Medications	glucocorticoids
Special Domains of Nursing	Endocrine Care	Endocrine Medications	androgens
Special Domains of Nursing	Endocrine Care	Endocrine Medications	estrogens
Special Domains of Nursing	Endocrine Care	Endocrine Medications	progestins
Special Domains of Nursing	Endocrine Care	Endocrine Medications	medications for diabetes mellitus
Special Domains of Nursing	Endocrine Care	Endocrine Medications	medications for typ 2 diabetes mellitus
Special Domains of Nursing	Endocrine Care	Endocrine Medications	types of insulin
Special Domains of Nursing	Endocrine Care	Endocrine Medications	glucagon
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	dehydration management in pediatric patient
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	phenylketonuria
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	childhood obesity
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	blood glucose monitoring
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	assessing for diabetes mellitus
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	hypoglycemia management
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	hyperglycemia management
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	interventions for hypoglycemia
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	interventions for hyperglycemia
Special Domains of Nursing	Endocrine Care	Metabolic and Endocrine Problems in Pediatrics	managing care for sick child with diabetes
Special Domains of Nursing	Endocrine Care	Complex Endocrine Problems	Diabetic ketoacidosis (DKA)
Special Domains of Nursing	Endocrine Care	Complex Endocrine Problems	Hyperosmolar hyperglycemia syndrome (HHS)
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	diagnostic procedures
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	gastric analysis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	endoscopy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	colonoscopy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	laparoscopy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	endoscopic retrograde cholangiopancreatography (ERCP)
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	computed tomography (CT) scan
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	paracentesis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	liver biopsy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	stool specimens
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	urea breath test
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	esophageal pH testing
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	liver and pancreas laboratory studies
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	gastritis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	peptic ulcer disease
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	duodenal ulcers
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	dumping syndrome
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	bariatric surgery indications
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	hiatal hernia
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	cholecystitis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	cholecystectomy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	choledocholithotomy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	cirrhosis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	melena
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	hematemesis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	sclerotherapy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	pancreatitis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	acute versus chronic pancreatitis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	Crohn's disease
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	diverticulitis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	diverticulosis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	hemorrhoids

Table F.17: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Adults	signs of bowel perforation
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	antacids
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	gastric protectants
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	histamine receptor antagonists
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	proton pump inhibitors
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	prokinetic agent
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	bile acid sequestrants
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	treating hepatic encephalopathy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	pancreatic enzyme replacements
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	antiemetics
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Medications	laxatives
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	vomiting
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	diarrhea
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	esophageal atresia
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	tracheoesophageal fistula
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	gastroesophageal reflux disease
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	hypertrophic pyloric stenosis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	lactose intolerance
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	celiac disease
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	ulcerative colitis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	appendicitis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	peritonitis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	care for patient with appendectomy
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	intussusception
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	hernia types
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	managing constipation
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	irritable bowel syndrome
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	hepatitis
Special Domains of Nursing	Gastrointestinal Care	Gastrointestinal Problems in Pediatrics	intestinal parasites
Special Domains of Nursing	Gastrointestinal Care	Complex Gastrointestinal Problems	esophageal varices
Special Domains of Nursing	Gastrointestinal Care	Complex Gastrointestinal Problems	GI bleeding
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	female reproductive system
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	male reproductive system
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	amniotic fluid
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	fetal development
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	placenta
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	fetal circulation
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	family planning
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	fetal heart rate (FHR)
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	umbilical cord care
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	types of birth control
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	infertility
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity Nursing	menstrual cycle phases
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	fertilization
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	Naegele's rule
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	gravidity and parity
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	gravidia
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	multigravida
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	primigravida
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	nulligravida
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	GTPAL
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	pregnancy signs
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	quickening
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	presumptive signs of pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	probably signs of pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	Hegar's sign
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	Goodell' sign
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	Chadwick's sign
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	Ballotement
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	positive signs of pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	fundal height
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	physiological maternal changes
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	uterus enlargement
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	interventions for the discomforts of pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	positions to avoid in pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	maternal risk factors
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	neural tube defects
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	sexually transmitted infections risking maternal and newborn health
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	substances that can cross the placenta
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	substance use and pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	antepartum diagnostic testing
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	vaccines contraindicated in pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	genetic testing
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	aminocentesis
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	fern test
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	nitrazine test
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	fibronectin test
Special Domains of Nursing	Obstetric and Neonatal Care	Prenatal Period	pica
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	hemorrhage
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	abortion

Table F.18: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	types of abortion
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	interventions for abortion
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	diabetes mellitus
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	disseminated intravascular coagulation (DIC)
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	ectopic pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	fetal death
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	hematoma
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	AIDS and pregnancy care interventions
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	hyperemesis gravidarum
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	hypertensive disorders of pregnancy
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	preeclampsia assessment findings
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	eclampsia
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	incompetent cervix
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	toxoplasmosis
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	cytomegalovirus
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	herpes simplex virus
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	multiple gestation
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	placental abnormalities
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	placenta previa
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	abruptio placentae
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	pyelonephritis
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	obesity in pregnancy interventions
Special Domains of Nursing	Obstetric and Neonatal Care	Risk Conditions Related to Pregnancy	assessment of reflexes
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	4 p's of labor
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	fetal lie
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	fetal presentation
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	fetal position
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	Braxton Hicks contractions
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	spontaneous rupture of membranes
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	Leopold's maneuvers
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	breathing techniques
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	fetal monitoring
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	fetal variability
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	fetal accelerations
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	fetal early decelerations
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	fetal late decelerations
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	variable fetal decelerations
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	hypertonic uterine activity
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	nursing actions nonreassuring fetal heart rate pattern
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	four stages of labor
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	anesthesia used for labor
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	types of delivery methods
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	bishop score assessment
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	indication for amniotomy
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	external version technique
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	episiotomy
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	forceps delivery
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	vacuum extraction
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	cesarean delivery
Special Domains of Nursing	Obstetric and Neonatal Care	Labor and Birth	true versus false labor
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	premature rupture of membranes
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	prolapsed umbilical cord
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	umbilical cord prolapse
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	supine hypotension (vena cava syndrome)
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	preterm labor
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	precipitous labor and delivery
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	dystocia
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	amniotic fluid embolism
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	fetal distress
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	intrauterine fetal demise
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	rupture of uterus
Special Domains of Nursing	Obstetric and Neonatal Care	Problems with Labor and Birth	uterine inversion
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	physiological maternal changes in postpartum
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	involution assessment
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	lochia types
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	postpartum interventions
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	client teaching
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	postpartum discomforts
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	nutrition counselling
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	breast-feeding
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	foods to avoid for the postpartum period
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	breast-feeding procedure
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	normal amount of lochia
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	breast care

Table F.19: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	normal postpartum vital signs
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	signs and symptoms of postpartum depression
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum	signs and symptoms of postpartum psychosis
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	cystitis
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	hematoma management in postpartum
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	uterine atony
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	hemorrhage and shock
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	blood loss in labor
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	infection in postpartum patient
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	mastitis management
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	subinvolution
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	perinatal loss
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	stillbirth
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	neonatal death
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	miscarraige
Special Domains of Nursing	Obstetric and Neonatal Care	Postpartum Complications	vulvular hematoma
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	normal characteristics of newborn cry
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	newborn assessment
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	Apgar score
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	initial physical exam for newborns
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	newborn vital signs
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	types of birthmarks
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	cord care
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	circumcision care
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	normal newborn reflexes
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	babinski's sign
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	newborn safety protocols
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	parent teaching
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	bathing a newborn
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	meconium aspiration syndrome
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	bronchopulmonary dysplasia
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	transient tachypnea of newborn
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	hyperbilirubinemia
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	phototherapy
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	fetal alcohol spectrum disorders assessment
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	newborn care of a mother with HIV
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	newborn care of a mother with diabetes
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	relief of choking infant
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	mongolian spots
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	stork bites
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	port-wine stain
Special Domains of Nursing	Obstetric and Neonatal Care	Newborn Care	strawberry mark
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	tocolytics
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	magnesium sulfate
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	betamethasone and dexamethasone
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	opioids used in labor
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	oxytocin
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	medications used to manage postpartum hemorrhage
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	Rho immune globulin
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	lung surfactants
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	eye prophylaxis for newborn
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	phytonadoine
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	hepatitis B vaccine
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	fertility medications
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	assessing deep tendon reflexes
Special Domains of Nursing	Obstetric and Neonatal Care	Maternity and Newborn Medications	calculating oxytocin dose
Special Domains of Nursing	Respiratory Nursing	respiratory problems	primary functions of the respiration system
Special Domains of Nursing	Respiratory Nursing	respiratory problems	acute respiratory failure
Special Domains of Nursing	Respiratory Nursing	respiratory problems	asthma
Special Domains of Nursing	Respiratory Nursing	respiratory problems	pneumonia
Special Domains of Nursing	Respiratory Nursing	respiratory problems	influenza
Special Domains of Nursing	Respiratory Nursing	respiratory problems	pleural effusion
Special Domains of Nursing	Respiratory Nursing	respiratory problems	empyema
Special Domains of Nursing	Respiratory Nursing	respiratory problems	pleural effusion
Special Domains of Nursing	Respiratory Nursing	respiratory problems	pulmonary embolism
Special Domains of Nursing	Respiratory Nursing	respiratory problems	histoplasmosis
Special Domains of Nursing	Respiratory Nursing	respiratory problems	risk factors for respiratory disorders
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	epiglottitis
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	Croup
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	bronchitis
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	RSV

Table F.20: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	pneumonia types and management
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	asthma
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	cystic fibrosis
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	sudden infant death syndrome (SIDS)
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	foreign body aspiration
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	tuberculosis
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	laboratory test to diagnose asthma
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	asthma severity classification system
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	quick relief medications for asthma
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	long term control for asthma
Special Domains of Nursing	Respiratory Nursing	Respiratory Problems in Pediatrics	interpreting TB skin test
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	respiratory treatments
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	chest physiotherapy
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	types of oxygen delivery systems
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	nasal cannula
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	nasal high flow
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	simple face mask
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	venturi mask
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	partial rebreather
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	nonrebreather
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	tracheostomy collar
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	face tent
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	continuous positive airway pressure (CPAP)
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	BIPAP
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	mechanical ventilation
Special Domains of Nursing	Respiratory Nursing	Complex Respiratory Problems	causes of ventilator alarms
Special Domains of Nursing	Respiratory Nursing	occupational lung disease	tuberculosis
Special Domains of Nursing	Respiratory Nursing	respiratory physiology	upper respiratory airway physiology
Special Domains of Nursing	Respiratory Nursing	respiratory physiology	lower respiratory airway physiology
Special Domains of Nursing	Respiratory Nursing	respiratory treatments	diagnostic tests
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	how to collect sputum specimen
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	indications for laryngoscopy and bronchoscopy
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	nursing care of a client with pulmonary angiography
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	nursing care of a client with thoracentesis
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	pulmonary function tests
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	lung biopsy
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	V_Q lung scan
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	arterial blood gases (ABGs)
Special Domains of Nursing	Respiratory Nursing	respiratory diagnostic tests	D-dimer
Special Domains of Nursing	Respiratory Nursing	respiratory medications	bronchodilators
Special Domains of Nursing	Respiratory Nursing	respiratory medications	anticholinergics
Special Domains of Nursing	Respiratory Nursing	respiratory medications	glucocorticoids
Special Domains of Nursing	Respiratory Nursing	respiratory medications	leukotriene modifiers
Special Domains of Nursing	Respiratory Nursing	respiratory medications	monoclonal antibody
Special Domains of Nursing	Respiratory Nursing	respiratory medications	nasal decongestants
Special Domains of Nursing	Respiratory Nursing	respiratory medications	expectorants and mucolytic agents
Special Domains of Nursing	Respiratory Nursing	respiratory medications	antitussives
Special Domains of Nursing	Respiratory Nursing	respiratory medications	antihistamines
Special Domains of Nursing	Respiratory Nursing	respiratory medications	opioid antagonists
Special Domains of Nursing	Public Health Nursing	Community Assessment	Identifying community health needs
Special Domains of Nursing	Public Health Nursing	Community Assessment	resource mapping
Special Domains of Nursing	Public Health Nursing	Health Promotion	Disease prevention programs
Special Domains of Nursing	Public Health Nursing	Health Promotion	vaccination campaigns
Special Domains of Nursing	Public Health Nursing	Health Promotion	health education

Table F.21: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Special Domains of Nursing	Public Health Nursing	Epidemiology	Outbreak investigation
Special Domains of Nursing	Public Health Nursing	Epidemiology	surveillance
Special Domains of Nursing	Public Health Nursing	Epidemiology	community health research
Special Domains of Nursing	Travel Nursing	Adaptability Skills	Adjusting to different clinical environments
Special Domains of Nursing	Travel Nursing	Adaptability Skills	tips for floating to other units
Special Domains of Nursing	Travel Nursing	Adaptability Skills	flexibility in assignments
Special Domains of Nursing	Travel Nursing	Regulatory and Compliance Knowledge	Understanding state licensure requirements
Special Domains of Nursing	Travel Nursing	Regulatory and Compliance Knowledge	Joint Commission standards
Special Domains of Nursing	Travel Nursing	Cultural Competency	Providing care to diverse populations
Special Domains of Nursing	Travel Nursing	Cultural Competency	understanding regional health care disparities
Special Domains of Nursing	Informatics Nursing	Health Information Systems	Electronic health records (EHR) management
Special Domains of Nursing	Informatics Nursing	Health Information Systems	paper charting
Special Domains of Nursing	Informatics Nursing	Health Information Systems	data analytics
Special Domains of Nursing	Informatics Nursing	Patient Safety and Quality	Using technology to improve patient outcomes
Special Domains of Nursing	Informatics Nursing	Patient Safety and Quality	error reduction strategies
Special Domains of Nursing	Informatics Nursing	Implementation Science	Introducing new technologies into clinical settings
Special Domains of Nursing	Informatics Nursing	Implementation Science	change management
Special Domains of Nursing	Home Health Nursing	Home Care Fundamentals	Assessment of home environment
Special Domains of Nursing	Home Health Nursing	Home Care Fundamentals	home safety evaluations
Special Domains of Nursing	Home Health Nursing	Chronic Disease Management	At-home care strategies
Special Domains of Nursing	Home Health Nursing	Chronic Disease Management	medication management
Special Domains of Nursing	Home Health Nursing	Chronic Disease Management	telehealth
Special Domains of Nursing	Home Health Nursing	End-of-Life Care	Hospice care
Special Domains of Nursing	Home Health Nursing	End-of-Life Care	palliative care strategies
Special Domains of Nursing	Home Health Nursing	End-of-Life Care	family support
Special Domains of Nursing	School Nursing	Pediatric Assessments and Interventions	Routine screenings
Special Domains of Nursing	School Nursing	Pediatric Assessments and Interventions	managing common childhood illnesses
Special Domains of Nursing	School Nursing	Emergency Preparedness and Response	Developing school emergency plans
Special Domains of Nursing	School Nursing	Emergency Preparedness and Response	administering first aid
Special Domains of Nursing	School Nursing	Health Education	Nutrition
Special Domains of Nursing	School Nursing	Health Education	physical activity
Special Domains of Nursing	School Nursing	Health Education	Social Determinants of health considerations in Education
Special Domains of Nursing	School Nursing	Health Education	substance abuse prevention
Health Promotion and Disease Prevention	Nutrition and Hydration	Basic Nutrition	Macronutrients
Health Promotion and Disease Prevention	Nutrition and Hydration	Basic Nutrition	micronutrients
Health Promotion and Disease Prevention	Nutrition and Hydration	Basic Nutrition	dietary guidelines
Health Promotion and Disease Prevention	Nutrition and Hydration	Nutrition education	nutritional therapy for calculi
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	Diets for chronic diseases (e.g., diabetes, hypertension)
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	allergies
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	therapeutic diets
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	cardiac diet
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	sodium restricted diet
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	high calorie high protein diet
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	fat restricted diet
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	high fiber diet
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	low fiber diet
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	gluten free diet
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	low purine diet
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	vegan and vegetarian diets
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	NPO order
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	Tube feeds
Health Promotion and Disease Prevention	Nutrition and Hydration	Special Diets	specific life stages (e.g., pregnancy, elderly)
Health Promotion and Disease Prevention	Nutrition and Hydration	Hydration	Importance of hydration
Health Promotion and Disease Prevention	Nutrition and Hydration	Hydration	fluid balance
Health Promotion and Disease Prevention	Nutrition and Hydration	Hydration	dehydration prevention
Health Promotion and Disease Prevention	Exercise and Physical Activity	Benefits of Physical Activity	Cardiovascular health
Health Promotion and Disease Prevention	Exercise and Physical Activity	Benefits of Physical Activity	weight management
Health Promotion and Disease Prevention	Exercise and Physical Activity	Benefits of Physical Activity	mental health benefits
Health Promotion and Disease Prevention	Exercise and Physical Activity	Exercise Prescription	Aerobic exercises
Health Promotion and Disease Prevention	Exercise and Physical Activity	Exercise Prescription	strength exercises
Health Promotion and Disease Prevention	Exercise and Physical Activity	Exercise Prescription	flexibility exercises
Health Promotion and Disease Prevention	Exercise and Physical Activity	Exercise Prescription	tailoring programs to individual needs
Health Promotion and Disease Prevention	Exercise and Physical Activity	Barriers to Physical Activity	Identifying and overcoming barriers
Health Promotion and Disease Prevention	Exercise and Physical Activity	Barriers to Physical Activity	motivational strategies
Health Promotion and Disease Prevention	Vaccinations	Immunization Schedules	adverse reactions to pediatric immunizations
Health Promotion and Disease Prevention	Vaccinations	Immunization Schedules	Childhood vaccination schedules
Health Promotion and Disease Prevention	Vaccinations	Immunization Schedules	adult vaccination schedules
Health Promotion and Disease Prevention	Vaccinations	Immunization Schedules	elderly vaccination schedules
Health Promotion and Disease Prevention	Vaccinations	Vaccine-Preventable Diseases	Information on diseases prevented by vaccines
Health Promotion and Disease Prevention	Vaccinations	Vaccine-Preventable Diseases	herd immunity
Health Promotion and Disease Prevention	Vaccinations	Vaccine Safety and Efficacy	Addressing vaccine hesitancy
Health Promotion and Disease Prevention	Vaccinations	Vaccine Safety and Efficacy	understanding contraindications
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Routine Screenings	Cancer screenings (e.g., mammograms, colonoscopies)
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Routine Screenings	transgender persons and breast cancer screening protocols
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Routine Screenings	age of onset for breast cancer screening
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Routine Screenings	cholesterol
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Routine Screenings	blood pressure
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Age-Specific Screenings	Recommendations for different age groups, including pediatrics and geriatrics.
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Risk Assessment Tools	Tools for assessing risk of heart disease
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Risk Assessment Tools	Tools for assessing risk of diabetes
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Risk Assessment Tools	Tools for assessing risk of osteoporosis
Health Promotion and Disease Prevention	Screening and Preventive Health Checks	Risk Assessment Tools	modifiable versus nonmodifiable risk factors
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Stress Reduction Techniques	Mindfulness
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Stress Reduction Techniques	meditation
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Stress Reduction Techniques	deep breathing exercises
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Mental Health Promotion	Recognizing signs of mental health issues
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Mental Health Promotion	promoting mental health literacy
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Support Systems	Importance of social support
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Support Systems	navigating social support systems with an uncooperative family x patient dynamic
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Support Systems	Importance of community resources
Health Promotion and Disease Prevention	Stress Management and Mental Well-being	Support Systems	Importance of counseling services
Communication and Interpersonal Skills	Patient Education and Health Literacy	Assessment of Learning Needs	Determining patient and family education needs based on literacy levels, learning styles
Communication and Interpersonal Skills	Patient Education and Health Literacy	Development of Educational Materials	Creating accessible, understandable materials for diverse populations
Communication and Interpersonal Skills	Patient Education and Health Literacy	Evaluation of Education Outcomes	Assessing understanding, retention, and application of health information
Communication and Interpersonal Skills	Therapeutic Communication	Active Listening	Techniques for effective listening
Communication and Interpersonal Skills	Therapeutic Communication	Active Listening	Techniques for validating feelings
Communication and Interpersonal Skills	Therapeutic Communication	Active Listening	Techniques for empathetic responses
Communication and Interpersonal Skills	Therapeutic Communication	Verbal and Nonverbal Communication	Use of language, tone, body language to convey empathy and respect
Communication and Interpersonal Skills	Therapeutic Communication	Communication techniques	techniques for caring for the client with a hearing impairment
Communication and Interpersonal Skills	Therapeutic Communication	Dealing with Difficult Conversations	managing anger or frustration

Table F.22: Topic list used for synthetic data generation.

Specialization	Domain	Topic	Concept
Communication and Interpersonal Skills	Therapeutic Communication	Dealing with Difficult Conversations	discussing sensitive topics
Communication and Interpersonal Skills	Therapeutic Communication	post-mortem care	post-mortem care considerations for nurses
Communication and Interpersonal Skills	Therapeutic Communication	Nursing self-care	strategies for coping with patient death
Communication and Interpersonal Skills	Therapeutic Communication	Ethical considerations	therapeutic benefit versus risk of treatment in patients with substance use disorders
Communication and Interpersonal Skills	Interprofessional Collaboration	Roles and Responsibilities	Strategies for effective team meetings
Communication and Interpersonal Skills	Interprofessional Collaboration	Team Communication	shared decision-making
Communication and Interpersonal Skills	Interprofessional Collaboration	Team Communication	conflict resolution
Communication and Interpersonal Skills	Interprofessional Collaboration	Collaborative Care Planning	Developing interdisciplinary care plans that address comprehensive patient needs
Communication and Interpersonal Skills	Patient and Family Advocacy	Rights and Autonomy	Supporting patient rights
Communication and Interpersonal Skills	Patient and Family Advocacy	Rights and Autonomy	informed consent
Communication and Interpersonal Skills	Patient and Family Advocacy	Rights and Autonomy	autonomy in care decisions
Communication and Interpersonal Skills	Patient and Family Advocacy	Navigating Healthcare Systems	Assisting patients and families in understanding healthcare services
Communication and Interpersonal Skills	Patient and Family Advocacy	Navigating Healthcare Systems	Assisting patients and families in understanding insurance
Communication and Interpersonal Skills	Patient and Family Advocacy	Navigating Healthcare Systems	Assisting patients and families in understanding access to care
Communication and Interpersonal Skills	Patient and Family Advocacy	Ethical Considerations	Advocating for ethical treatment
Communication and Interpersonal Skills	Patient and Family Advocacy	Ethical Considerations	Advocating for privacy
Communication and Interpersonal Skills	Patient and Family Advocacy	Ethical Considerations	respect for patient preferences
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	how to deal with ethical dilemmas in healthcare
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	regulations of nursing practice
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	standards of floating as a nurse
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	legal liability
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	negligence and malpractice
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	controlled substances
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	collective bargaining
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	legal risk areas
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	assault
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	battery
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	false imprisonment
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	defamation
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	fraud
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	client rights
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	bill of rights
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	rights for the mentally ill
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	organ donation and transplantation
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	advance directive
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	informed consent
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	religious beliefs in organ donation
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	minors
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	legal age of consent
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	health insurance and portability and accountability act
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	confidentiality
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	do not resuscitate (DNR) prescriptions
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	nurse's responsibility to report
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	types of law
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	client rights when hospitalized
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	types of consents
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	violations and invasion of client privacy
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	occurrences that need to be reported
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	telephone prescription guidelines
Communication and Interpersonal Skills	Ethics and Legal	Ethical and Legal Issues	components of a medical prescription
Technology and Innovation in Nursing	Health Information Technology (EHRs, Telehealth)	Electronic Health Records (EHRs)	Implementation
Technology and Innovation in Nursing	Health Information Technology (EHRs, Telehealth)	Electronic Health Records (EHRs)	optimization
Technology and Innovation in Nursing	Digital Health and Wellness Tools	Health Apps and Wearables	nutrition
Technology and Innovation in Nursing	Digital Health and Wellness Tools	Health Apps and Wearables	chronic disease management
Technology and Innovation in Nursing	Digital Health and Wellness Tools	Digital Therapeutics	Software as medical treatments
Technology and Innovation in Nursing	Digital Health and Wellness Tools	Digital Therapeutics	behavior change interventions
Technology and Innovation in Nursing	Digital Health and Wellness Tools	Personal Health Records (PHRs)	Patient-maintained records
Technology and Innovation in Nursing	Digital Health and Wellness Tools	Personal Health Records (PHRs)	integration with health systems
Global Health and Nursing	Global Health Issues	Infectious Diseases	HIV or AIDS
Global Health and Nursing	Global Health Issues	Infectious Diseases	tuberculosis
Global Health and Nursing	Global Health Issues	Infectious Diseases	malaria
Global Health and Nursing	Global Health Issues	Infectious Diseases	emerging infectious diseases (e.g., COVID-19)
Global Health and Nursing	Global Health Issues	Non-communicable Diseases (NCDs)	Diabetes
Global Health and Nursing	Global Health Issues	Non-communicable Diseases (NCDs)	cardiovascular diseases
Global Health and Nursing	Global Health Issues	Non-communicable Diseases (NCDs)	cancers
Global Health and Nursing	Global Health Issues	Non-communicable Diseases (NCDs)	chronic respiratory diseases
Global Health and Nursing	Global Health Issues	Maternal and Child Health	Prenatal care
Global Health and Nursing	Global Health Issues	Maternal and Child Health	childbirth
Global Health and Nursing	Global Health Issues	Maternal and Child Health	neonatal care
Global Health and Nursing	Global Health Issues	Maternal and Child Health	immunization schedule for pregnant patients
Global Health and Nursing	Global Health Issues	Maternal and Child Health	nutrition
Global Health and Nursing	Global Health Issues	Environmental Health	Climate change impacts
Global Health and Nursing	Global Health Issues	Environmental Health	water and sanitation
Global Health and Nursing	Global Health Issues	Environmental Health	air quality
Global Health and Nursing	Health Equity and Social Determinants of Health	Access to Healthcare	Barriers to access
Global Health and Nursing	Health Equity and Social Determinants of Health	Access to Healthcare	universal health coverage
Global Health and Nursing	Health Equity and Social Determinants of Health	Access to Healthcare	healthcare systems in low- and middle-income countries (LMICs)
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	education
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	income and social status
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	employment
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	childhood experience
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	social supports
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	diversity and inclusion
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	housing and security
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	food security
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	accessability
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of health	transportation
Global Health and Nursing	Health Equity and Social Determinants of Health	community health nursing	Global health
Global Health and Nursing	Health Equity and Social Determinants of Health	community health nursing	epidemiology
Global Health and Nursing	Health Equity and Social Determinants of Health	community health nursing	community based participatory research
Global Health and Nursing	Health Equity and Social Determinants of Health	community health nursing	home health nursing
Global Health and Nursing	Health Equity and Social Determinants of Health	community health nursing	health equality and social justice
Global Health and Nursing	Health Equity and Social Determinants of Health	community health nursing	telehealth
Global Health and Nursing	Health Equity and Social Determinants of Health	community health nursing	school system health nursing
Global Health and Nursing	Health Equity and Social Determinants of Health	community health nursing	mental health follow up in the community (community treatment orders)
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of Health (SDH)	Poverty
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of Health (SDH)	education
Global Health and Nursing	Health Equity and Social Determinants of Health	Social Determinants of Health (SDH)	housing
Global Health and Nursing	Health Equity and Social Determinants of Health	Cultural Competency and Sensitivity	Understanding and respecting cultural differences in healthcare practices
Global Health and Nursing	Global Health Governance and Policy	International Health Regulations and Policies	WHO guidelines

Table F.23: Topic list used for synthetic data generation.