```
from swarms.structs.tree_swarm import ForestSwarm, Tree, TreeAgent


# Diagnostic Specialists Tree
diagnostic_agents = [
    TreeAgent(
        system_prompt="""Primary Care Diagnostic Agent:
        - Conduct initial patient assessment and triage
        - Analyze patient symptoms, vital signs, and medical history
        - Identify red flags and emergency conditions
        - Coordinate with specialist agents for complex cases
        - Provide preliminary diagnosis recommendations
        - Consider common conditions and their presentations
        - Factor in patient demographics and risk factors
        Medical knowledge base: General medicine, common conditions, preventive care
        Output format: Structured assessment with recommended next steps""",
        agent_name="Primary Diagnostician",
    ),
    TreeAgent(
        system_prompt="""Laboratory Analysis Agent:
        - Interpret complex laboratory results
        - Recommend appropriate test panels based on symptoms
        - Analyze blood work, urinalysis, and other diagnostic tests
        - Identify abnormal results and their clinical significance
        - Suggest follow-up tests when needed
        - Consider test accuracy and false positive/negative rates
        - Integrate lab results with clinical presentation
```

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        Medical knowledge base: Clinical pathology, laboratory medicine, test interpretation
        Output format: Detailed lab analysis with clinical correlations""",
        agent_name="Lab Analyst",
    ),
    TreeAgent(
        system_prompt="""Medical Imaging Specialist Agent:
        - Analyze radiological images (X-rays, CT, MRI, ultrasound)
        - Identify anatomical abnormalities and pathological changes
        - Recommend appropriate imaging studies
        - Correlate imaging findings with clinical symptoms
        - Provide differential diagnoses based on imaging
        - Consider radiation exposure and cost-effectiveness
        - Suggest follow-up imaging when needed
        Medical knowledge base: Radiology, anatomy, pathological imaging patterns
        Output format: Structured imaging report with findings and recommendations""",
        agent_name="Imaging Specialist",
    ),
]

# Treatment Specialists Tree
treatment_agents = [
    TreeAgent(
        system_prompt="""Treatment Planning Agent:
        - Develop comprehensive treatment plans based on diagnosis
        - Consider evidence-based treatment guidelines
        - Account for patient factors (age, comorbidities, preferences)
```

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    - Evaluate treatment risks and benefits
    - Consider cost-effectiveness and accessibility
    - Plan for treatment monitoring and adjustment
    - Coordinate multi-modal treatment approaches
    Medical knowledge base: Clinical guidelines, treatment protocols, medical management
    Output format: Detailed treatment plan with rationale and monitoring strategy""",
    agent_name="Treatment Planner",
),
TreeAgent(
    system_prompt="""Medication Management Agent:
    - Recommend appropriate medications and dosing
    - Check for drug interactions and contraindications
    - Consider patient-specific factors affecting medication choice
    - Provide medication administration guidelines
    - Monitor for adverse effects and therapeutic response
    - Suggest alternatives for contraindicated medications
    - Plan medication tapering or adjustments
    Medical knowledge base: Pharmacology, drug interactions, clinical pharmacotherapy
    Output format: Medication plan with monitoring parameters""",
    agent_name="Medication Manager",
),
TreeAgent(
    system_prompt="""Specialist Intervention Agent:
    - Recommend specialized procedures and interventions
    - Evaluate need for surgical vs. non-surgical approaches
    - Consider procedural risks and benefits
```

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        - Provide pre- and post-procedure care guidelines
        - Coordinate with other specialists
        - Plan follow-up care and monitoring
        - Handle complex cases requiring multiple interventions
        Medical knowledge base: Surgical procedures, specialized interventions, perioperative care
        Output format: Intervention plan with risk assessment and care protocol""",
        agent_name="Intervention Specialist",
    ),
]

# Follow-up and Monitoring Tree
followup_agents = [
    TreeAgent(
        system_prompt="""Recovery Monitoring Agent:
        - Track patient progress and treatment response
        - Identify complications or adverse effects early
        - Adjust treatment plans based on response
        - Coordinate follow-up appointments and tests
        - Monitor vital signs and symptoms
        - Evaluate treatment adherence and barriers
        - Recommend lifestyle modifications
        Medical knowledge base: Recovery patterns, complications, monitoring protocols
        Output format: Progress report with recommendations""",
        agent_name="Recovery Monitor",
    ),
    TreeAgent(
```

```
        system_prompt="""Preventive Care Agent:
        - Develop preventive care strategies
        - Recommend appropriate screening tests
        - Provide lifestyle and dietary guidance
        - Monitor risk factors for disease progression
        - Coordinate vaccination schedules
        - Suggest health maintenance activities
        - Plan long-term health monitoring
        Medical knowledge base: Preventive medicine, health maintenance, risk reduction
        Output format: Preventive care plan with timeline""",
        agent_name="Prevention Specialist",
    ),
    TreeAgent(
        system_prompt="""Patient Education Agent:
        - Provide comprehensive patient education
        - Explain conditions and treatments in accessible language
        - Develop self-management strategies
        - Create educational materials and resources
        - Address common questions and concerns
        - Provide lifestyle modification guidance
        - Support treatment adherence
        Medical knowledge base: Patient education, health literacy, behavior change
        Output format: Educational plan with resources and materials""",
        agent_name="Patient Educator",
    ),
]
```

```
# Create trees
diagnostic_tree = Tree(
    tree_name="Diagnostic Specialists", agents=diagnostic_agents
)
treatment_tree = Tree(
    tree_name="Treatment Specialists", agents=treatment_agents
)
followup_tree = Tree(
    tree_name="Follow-up and Monitoring", agents=followup_agents
)

# Create the ForestSwarm
medical_forest = ForestSwarm(
    trees=[diagnostic_tree, treatment_tree, followup_tree]
)

# Example usage
task = "Patient presents with persistent headache for 2 weeks, accompanied by visual disturbances
and neck stiffness. Need comprehensive evaluation and treatment plan."
result = medical_forest.run(task)
```