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# Learning Hawkes Processes from Short Doubly-Censored Event Sequences

## Dynamical Circulatory System Disease Network

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### 1. The List of ICD-9 Code

Acute Rheumatic Fever (390-392):

- (391) Rheumatic fever with heart involvement
- (392) Rheumatic chorea

Chronic rheumatic heart disease (393-398):

- (394) Diseases of mitral valve
- (395) Diseases of aortic valve
- (396) Diseases of mitral and aortic valves
- (397) Diseases of other endocardial structures
- (398) Other rheumatic heart disease

Hypertensive disease (401-405):

- (401) Essential hypertension
- (402) Hypertensive heart disease
- (403) Hypertensive renal disease
- (404) Hypertensive heart and renal disease
- (405) Secondary hypertension

Ischemic heart disease (410-414):

- (410) Acute myocardial infarction
- (411) Other acute and subacute forms of ischemic heart disease
- (412) Old myocardial infarction

- (413) Angina pectoris

- (414) Other forms of chronic ischemic heart disease

Diseases of pulmonary circulation (415-417):

- (415) Acute pulmonary heart disease
- (416) Chronic pulmonary heart disease
- (417) Other diseases of pulmonary circulation

Other forms of heart disease (420-429):

- (420) Acute pericarditis
- (421) Acute and subacute endocarditis
- (422) Acute myocarditis
- (423) Other diseases of pericardium
- (424) Other diseases of endocardium
- (425) Cardiomyopathy
- (426) Conduction disorders
- (427) Cardiac dysrhythmias
- (428) Heart failure
- (429) Ill-defined descriptions and complications of heart disease

Cerebrovascular disease (430-438):

- (430) Subarachnoid hemorrhage
- (431) Intracerebral hemorrhage
- (432) Other and unspecified intracranial hemorrhage
- (433) Occlusion and stenosis of precerebral arteries
- (434) Occlusion of cerebral arteries
- (435) Transient cerebral ischemia

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- (436) Acute but ill-defined cerebrovascular disease
- (437) Other and ill-defined cerebrovascular disease
- (438) Late effects of cerebrovascular disease

Diseases of arteries, arterioles, and capillaries (440-449):

- (440) Atherosclerosis
- (441) Aortic aneurysm and dissection
- (442) Other aneurysm
- (443) Other peripheral vascular disease
- (444) Arterial embolism and thrombosis
- (445) Atheroembolism
- (446) Polyarteritis nodosa and allied conditions
- (447) Other disorders of arteries and arterioles
- (448) Disease of capillaries
- (449) Septic arterial embolism

Diseases of veins and lymphatics, and other diseases of circulatory system (451-459):

- (451) Phlebitis and thrombophlebitis
- (452) Portal vein thrombosis
- (453) Other venous embolism and thrombosis
- (454) Varicose veins of lower extremities
- (455) Hemorrhoids
- (456) Varicose veins of other sites
- (457) Noninfective disorders of lymphatic channels
- (458) Hypotension
- (459) Other disorders of circulatory system

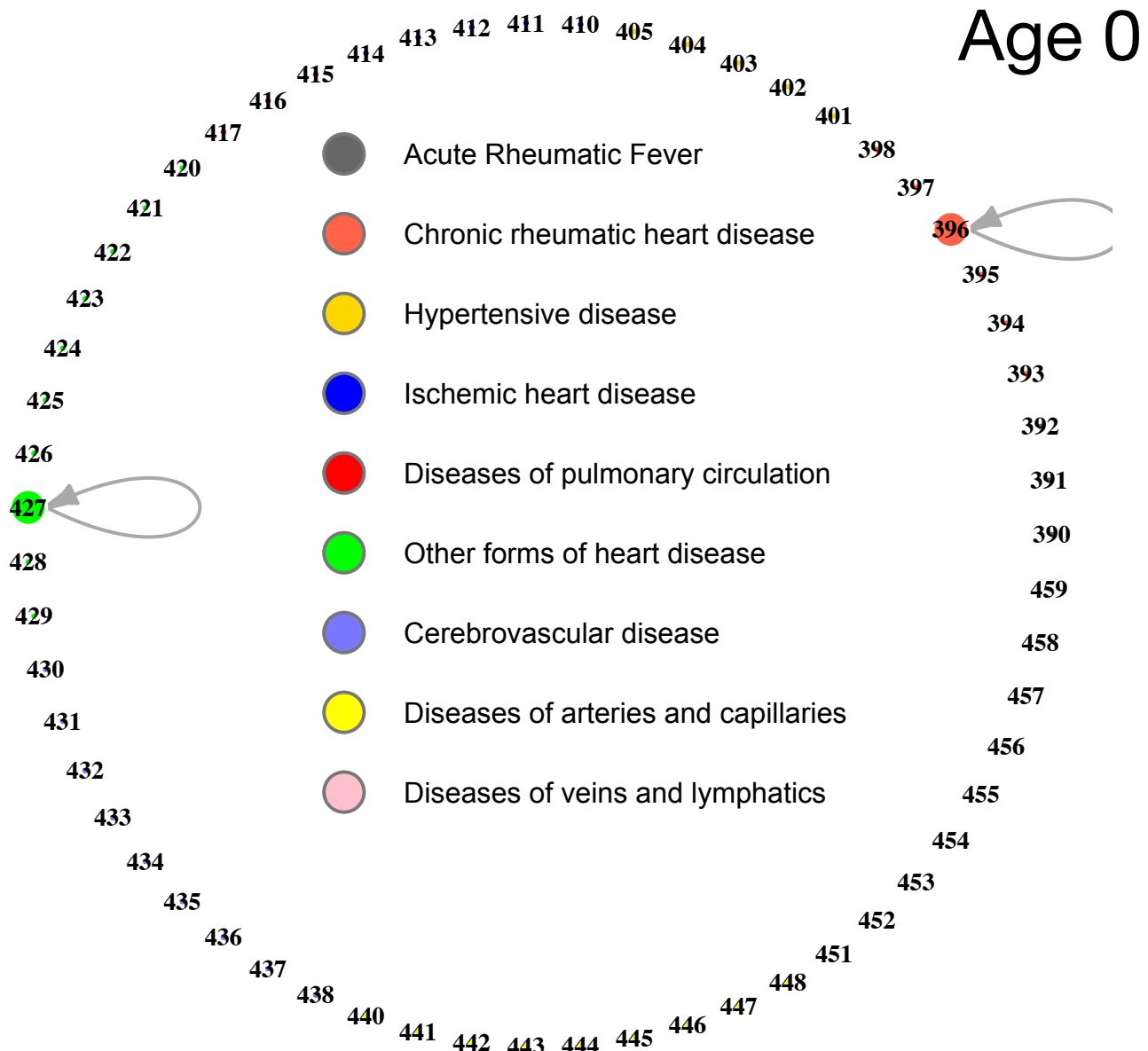


Figure 1: The disease network in 0-year-old.

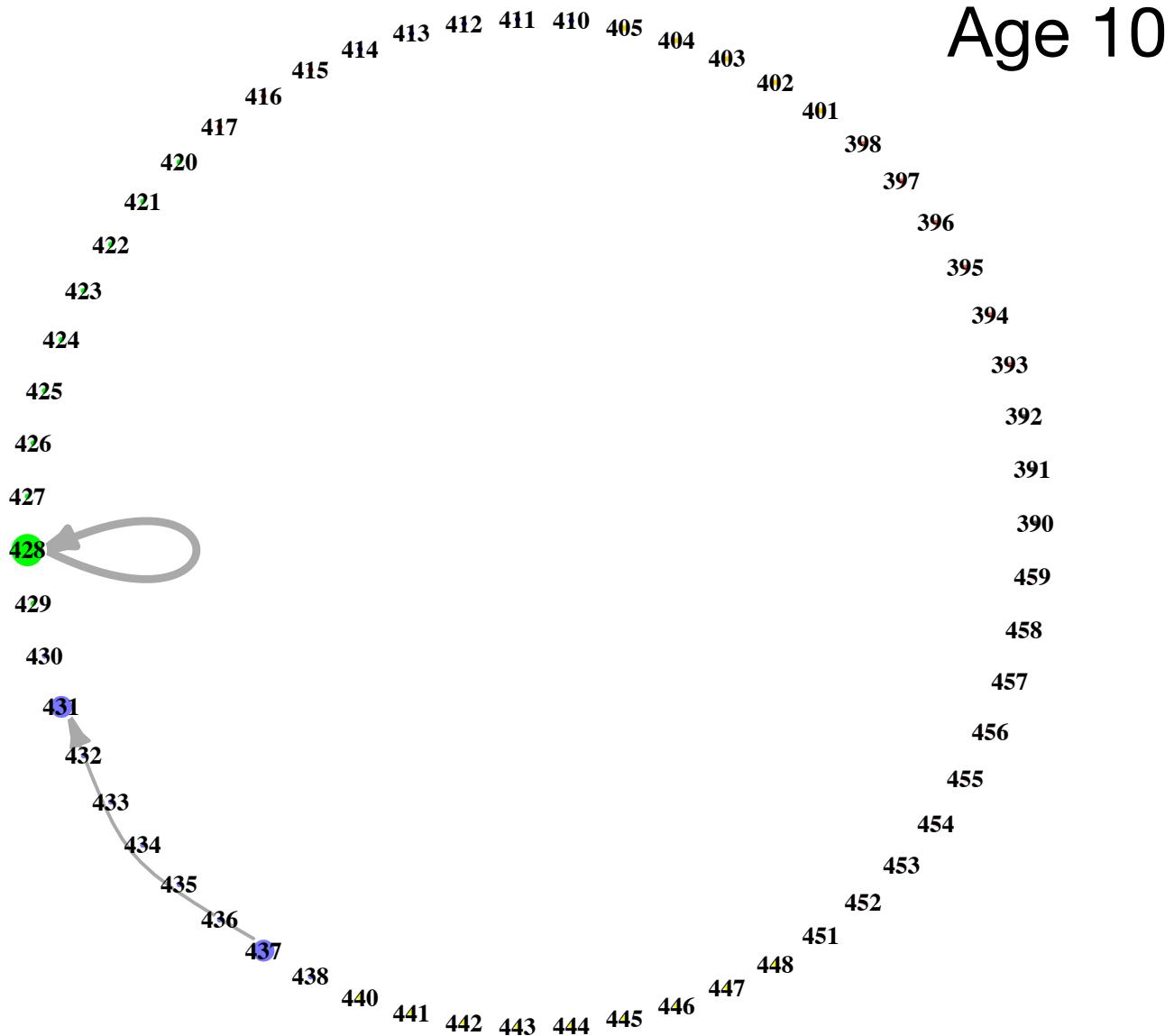


Figure 2: The disease network in 10-year-old.

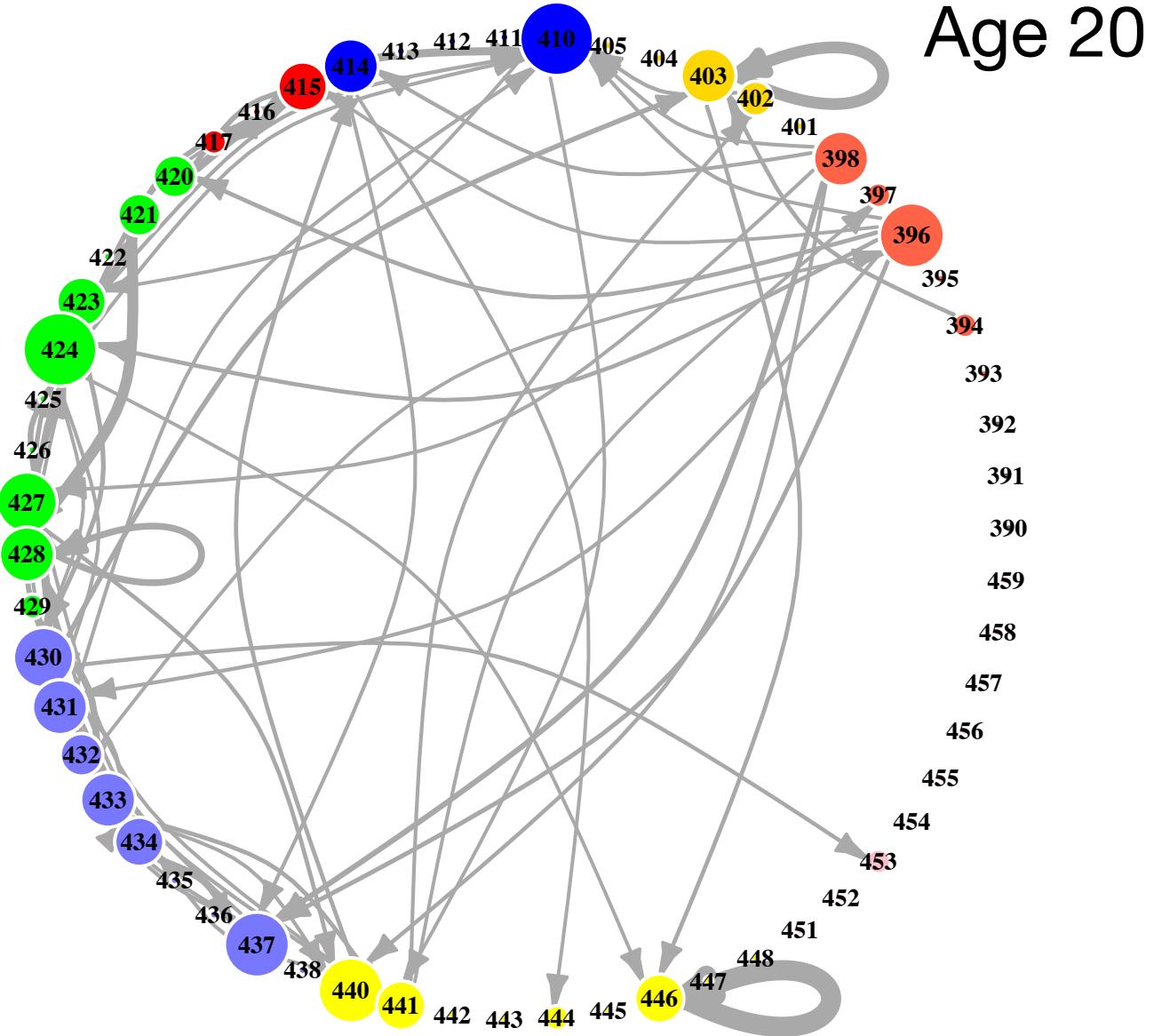


Figure 3: The disease network in 20-year-old.

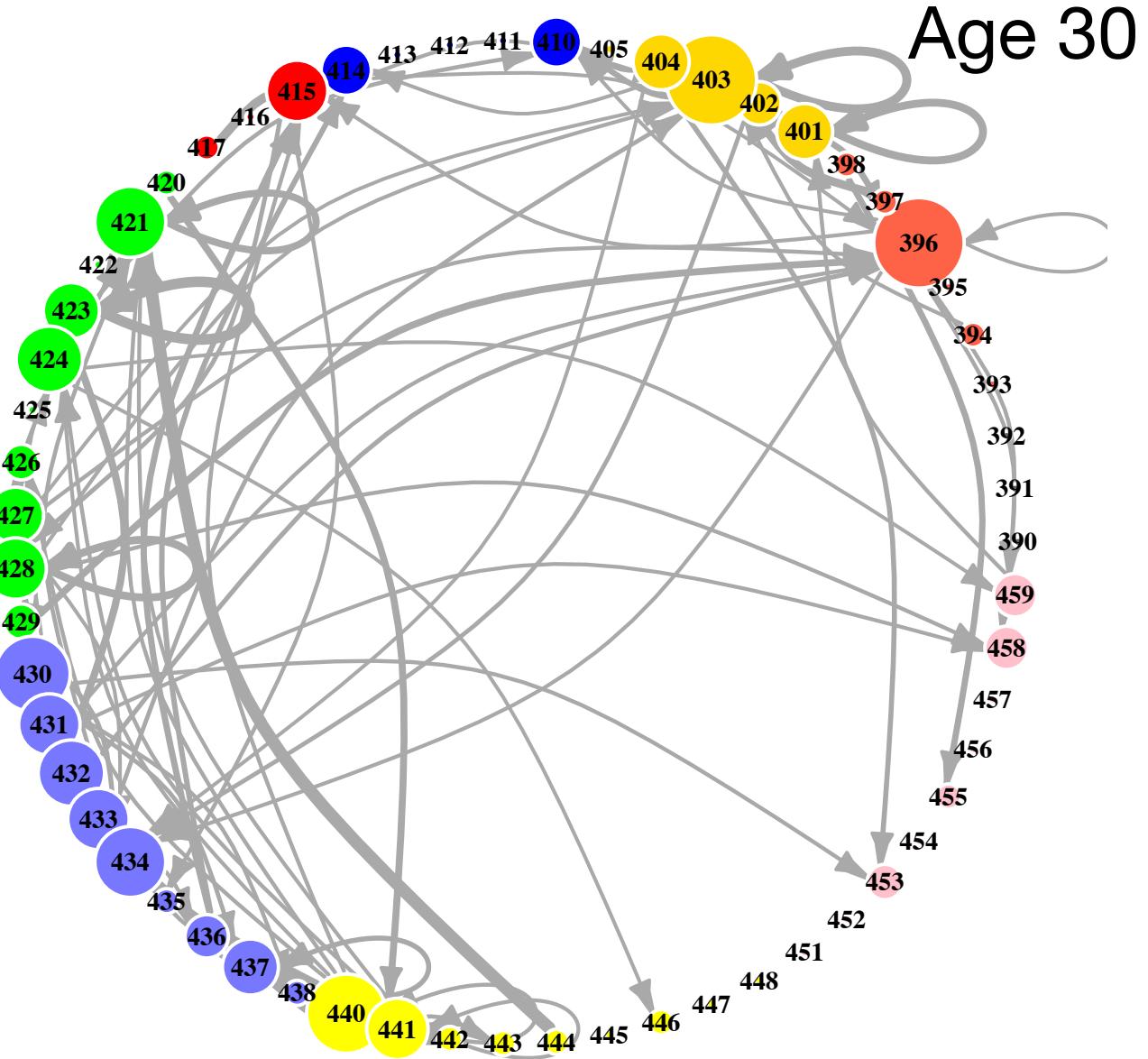


Figure 4: The disease network in 30-year-old.

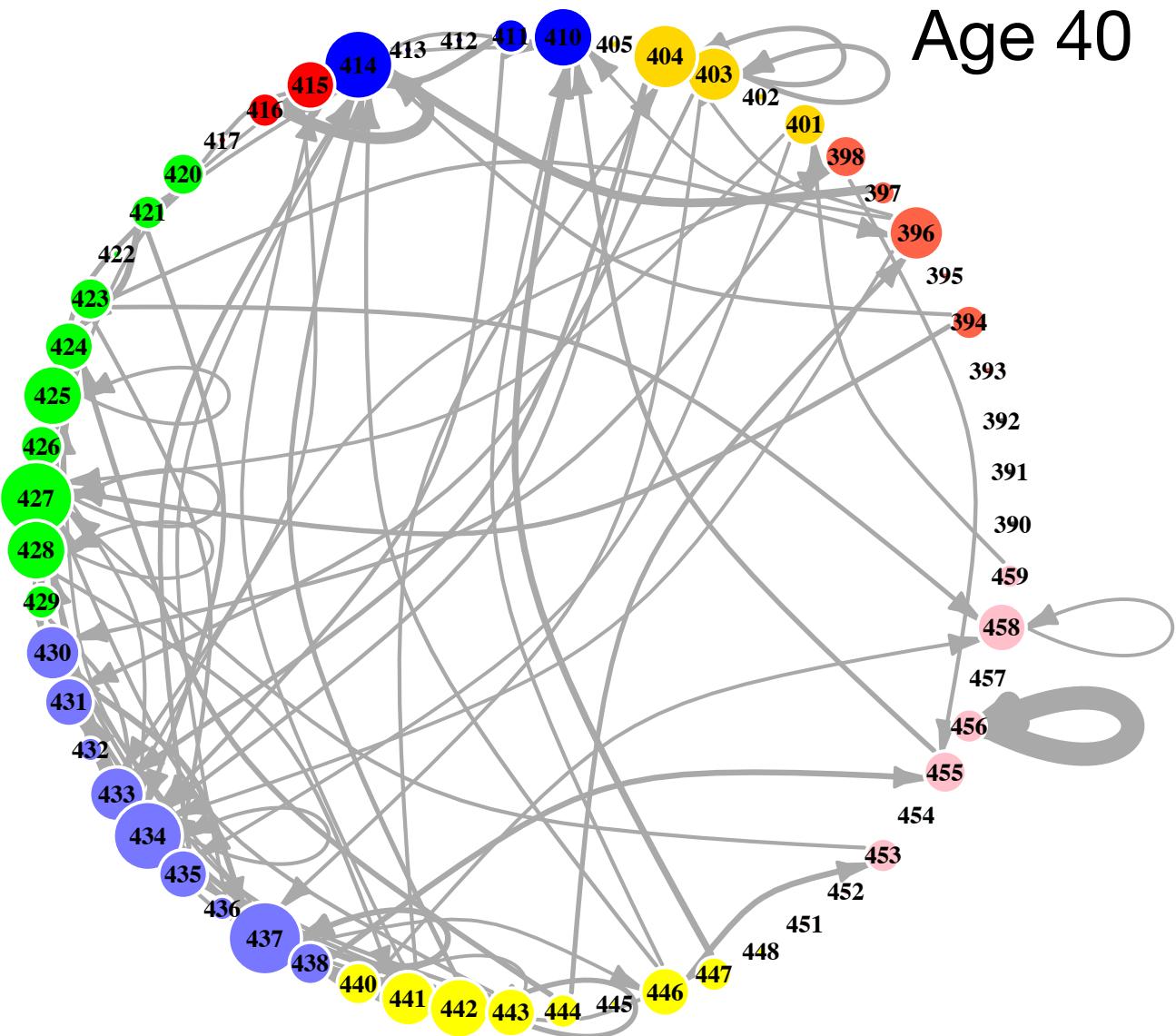


Figure 5: The disease network in 40-year-old.

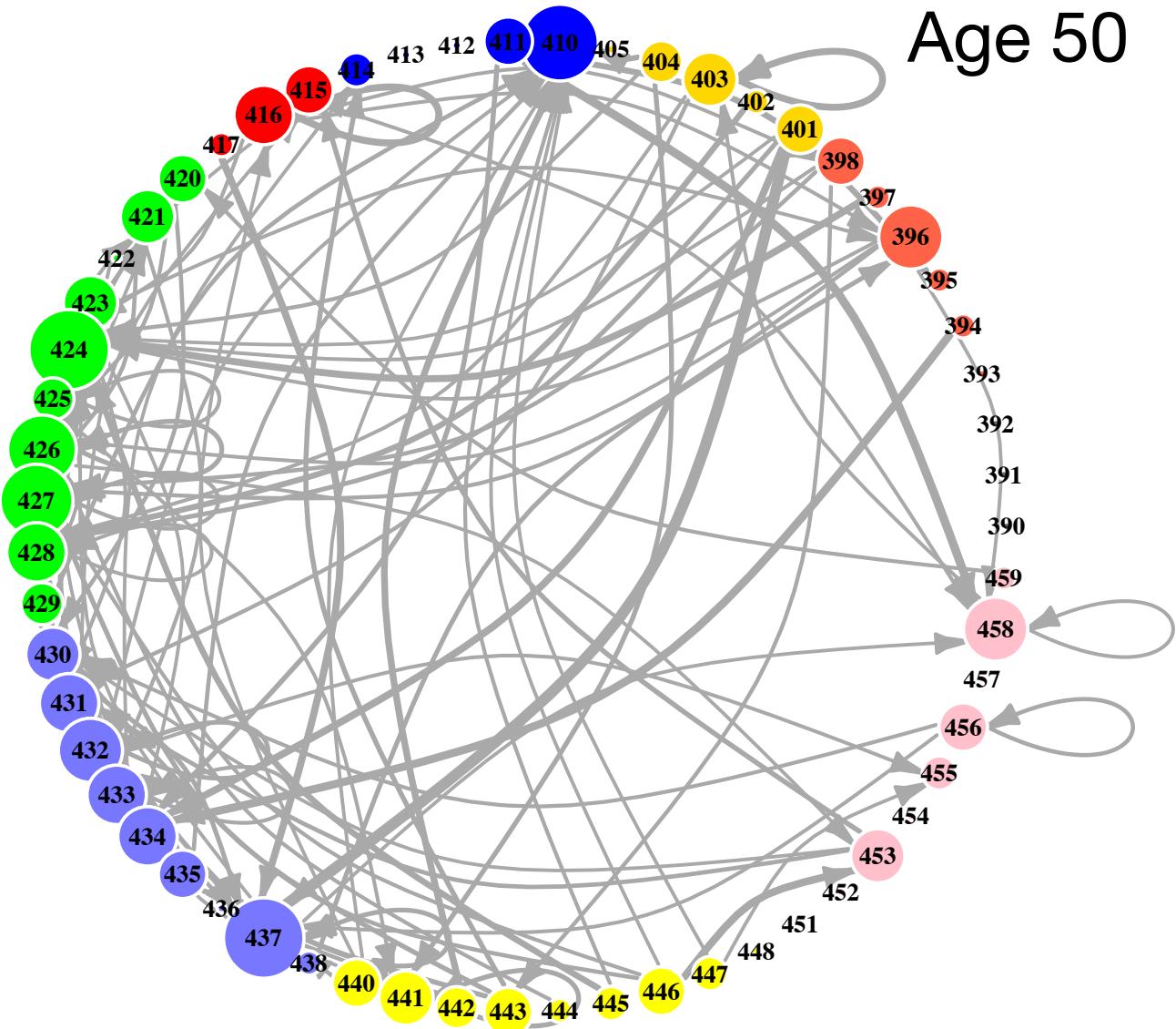


Figure 6: The disease network in 50-year-old.

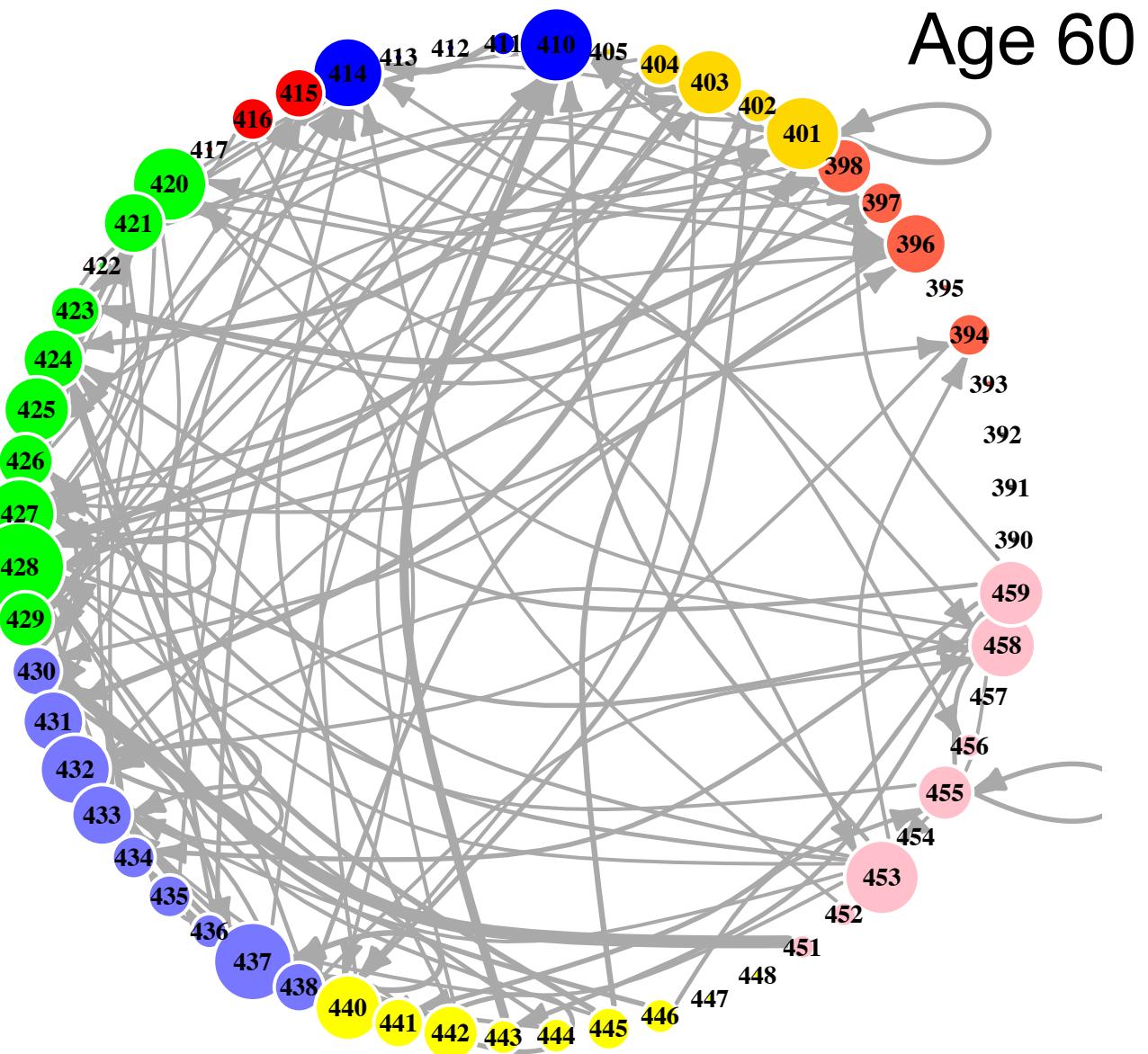


Figure 7: The disease network in 60-year-old.

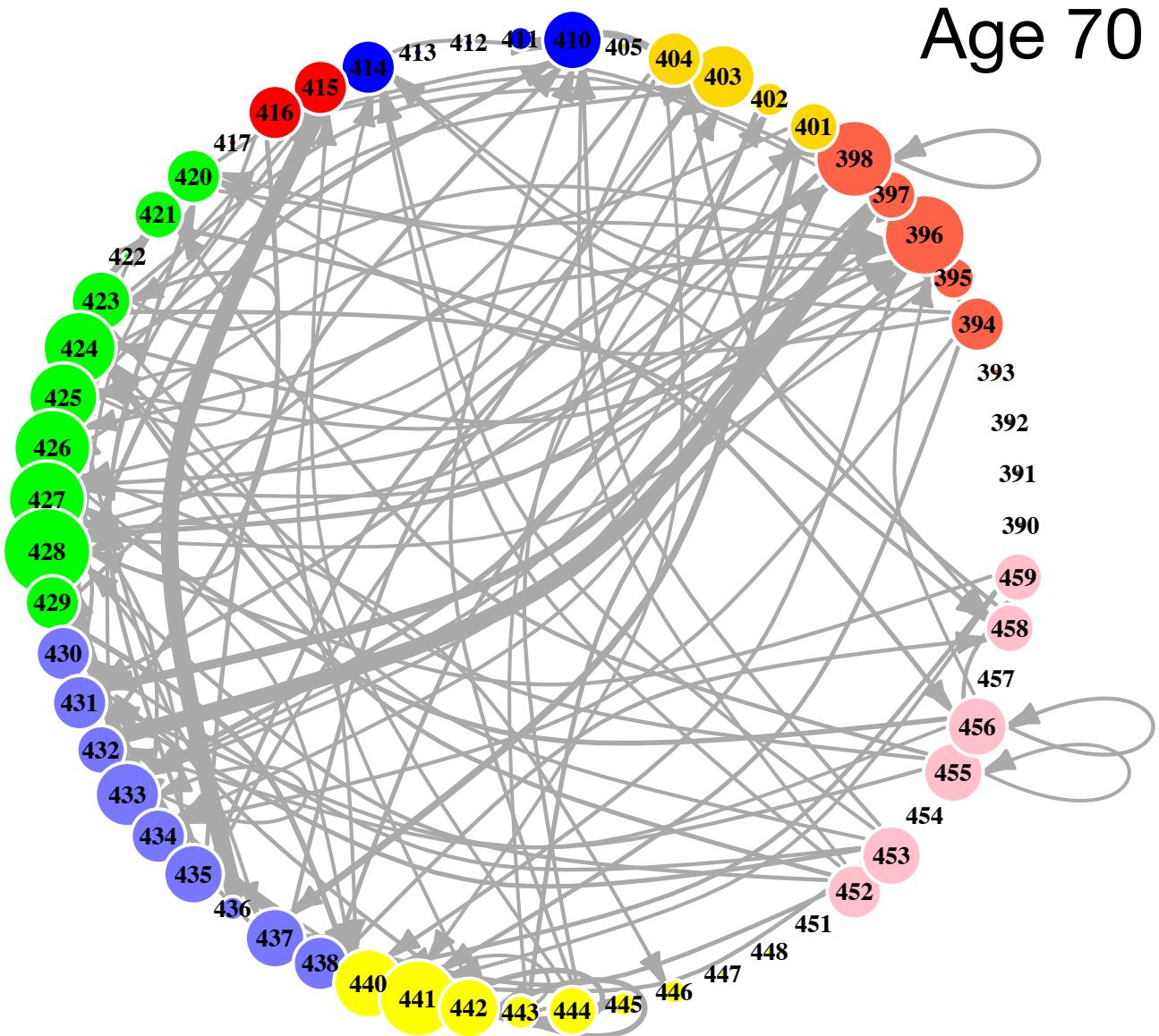


Figure 8: The disease network in 70-year-old.

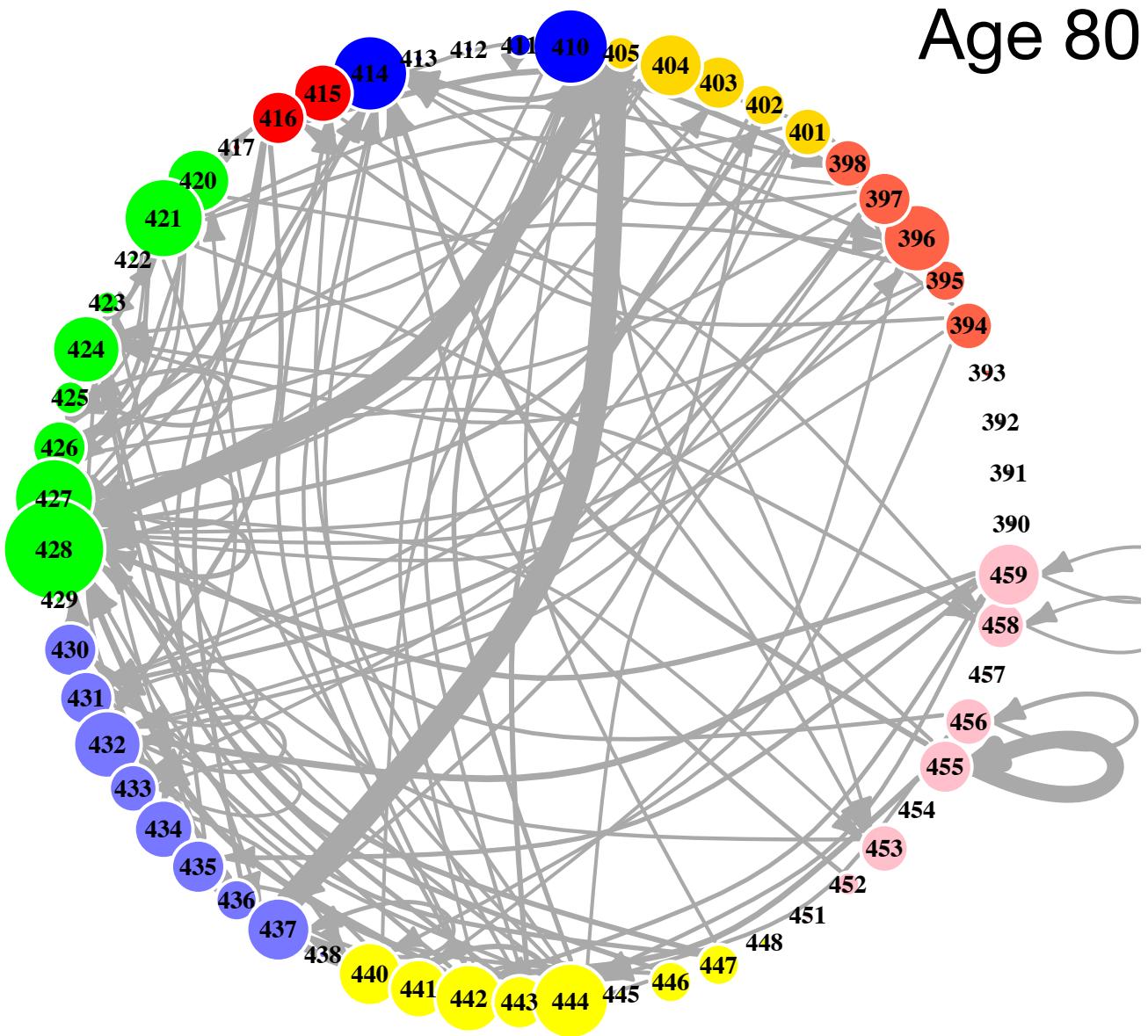


Figure 9: The disease network in 80-year-old.