

Improving Efficiency Through Explicit Rationing Criteria and Utilization Review: The Case of Regulating Brain MRI in South Korea

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BACKGROUND

- Healthcare quality issue: Improving efficiency while increasing access to healthcare
- Expansion of National Health Insurance (NHI) coverage for brain magnetic resonance imaging (MRI) in 2018
- Policy response to overuse concerns: Specifying the explicit rationing criteria & rigorous utilization review

OBJECTIVE

Understand **how** the regulation based on **explicit rationing criteria & utilization review** changed **physicians’ decisions** to make brain MRI reimbursement claims

METHODS

- Theory: Herbert Simon’s bounded rationality
- Mixed-methods (exploratory sequential design)
 - Semi-structured interview with physicians (n=29)
 - Multilevel analysis & Time series analysis of NHI claims data

Explicit rationing criteria often became **tools for physician discretion**, due to the **uncertainty** and **conflict** prevalent in the medical decision-making process.

QUALITATIVE RESULTS

Interview with a neurologist from a tertiary hospital

After a certain point, these so-called ‘consumers’ would come and say, (...) “I was told that MRIs are now reimbursed by the State, why am I not allowed?” (...) I would quarrel with these patients over making reimbursement claims. (...) I just typed [the rationing criteria] in the boilerplate, and made reimbursement claims for brain MRI by choosing the closest one. (...) For example, a 62 year old woman who looks just fine on the outside. (...) she comes in with a headache complaint. I would ask “When did it start?”. “Oh, it occurred suddenly since last week.” (...) If I ask “Don’t you feel a little nauseous?”, and if she says “It gets a little nauseous sometimes...”, then I would type in the [criteria] related to nausea.

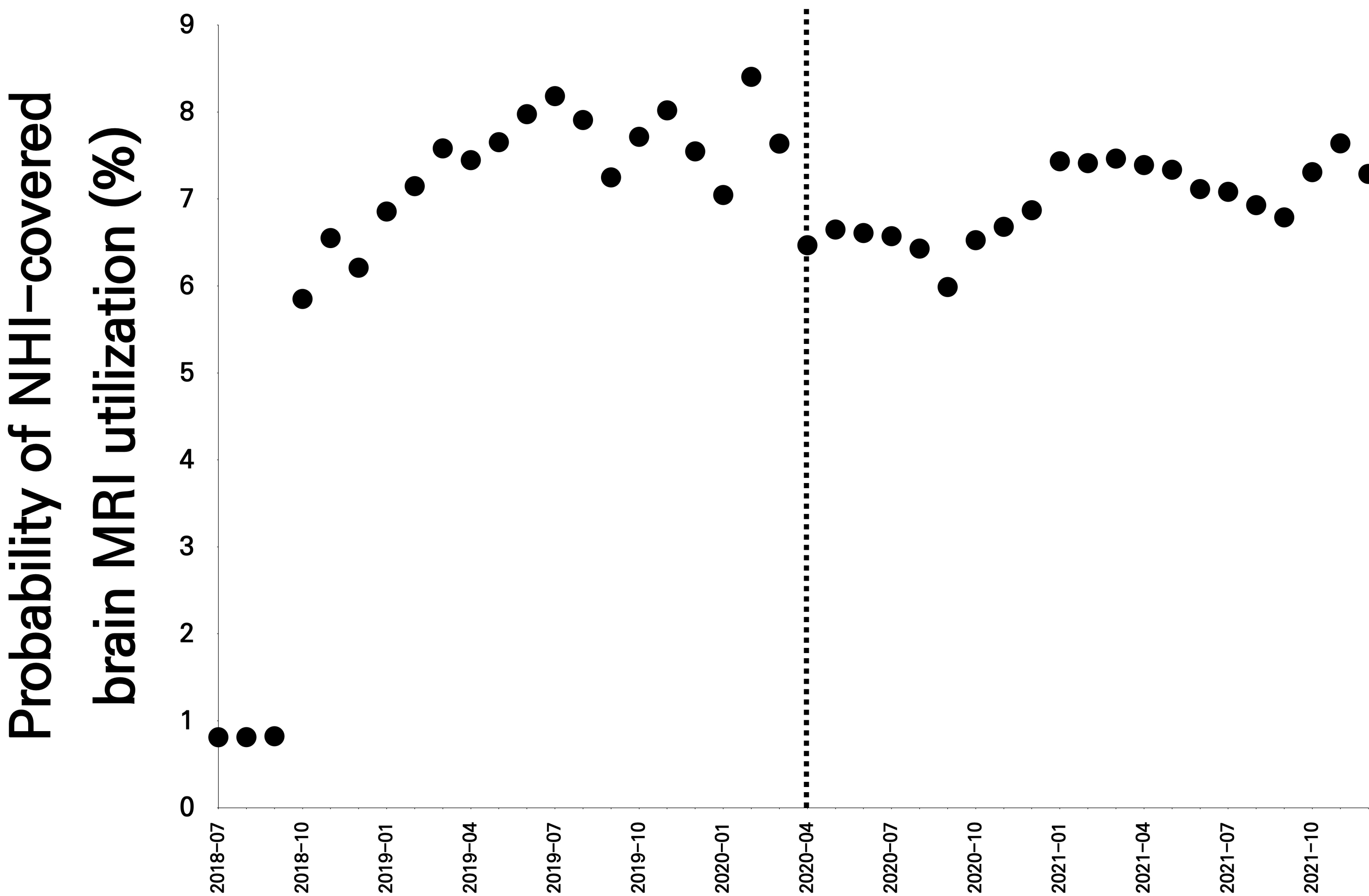
[] indicates words added by the researcher for clarification of meaning.

QUANTITATIVE RESULTS

Multilevel analysis (effect of provider characteristics on NHI-covered brain MRI utilization)

Specialty
Neurologists = Neurosurgeons < Radiologists
Type of healthcare facility
Tertiary hospital < General hospital < Hospital < Clinic

Time series analysis



Probability of NHI-covered brain MRI utilization
= (# of NHI-covered brain MRI scans / # of headache episodes) × 100 (%)
The vertical reference line marks the implementation of the regulatory policy