Effects of performance-based capitation payment on the use of public primary health care services in Indonesia

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Background

- In 2015, **BPJS Kesehatan** funding accounted for **more than half of the total budget of puskemas**, supplemented with funds from local governments and donors (World Bank, 2018).
- **Hospital care accounted for 82 percent of total JKN expenditure** in 2015, primary care for 17 percent and the remaining 1 percent is for health promotion activity.
- **Rising costs at the hospital level for avoidable advanced care** provided one of the main rationales for BPJS Kesehatan to introduce financial incentives for community health centres.
- The Kapitasi Berbasis Kinerja (KBK) or performance-based capitation for primary care providers was accompanied by a reform of the referral system to improve efficiency and effectiveness of service delivery and access to health services.
- KBK aimed **to encourage more contacts between users and primary care providers**, increase the number of primary care visits for chronically ill and discourage hospital referrals for a subset of so-called “non-specialistic” conditions, which should fall within the standard competency of general practitioners

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Research objective

- This study aims to evaluate the effects of KBK on its three incentivized monthly outcomes:
  1. The number of JKN insured patients with a visit to the puskesmas per 100 enrolees.
  2. The number of JKN insured chronically ill with a visit to the puskesmas per 100 enrolees.
  3. The hospital referral rate for insured with a non-specialistic condition.

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Performance Based Capitation Setting

- KBK was implemented in **province capitals, non-randomly and stepwise** between August 2015 and May 2016, with the majority of districts joining the program in January 2016.
- The KBK program used three performance indicators, as shown in namely **Contact Rate, Chronic disease contact rate, Non-specialistic referral rate**.
- Puskesmas **not meeting** at least the sufficient target for any of the three performance indicators incurred a **25 percent** malus on their capitation-based payment. Facilities performing **excellent** on all three indicators received a **15 percent** bonus on their capitation payment.

KBK monthly performance indicators.

	Sufficient	Excellent
Contact rate	>15 per 100	> 25 per 100
Chronic disease contact rate	> 50 per 100	> 90 per 100
Non-specialistic referral rate	<5 per 100	<1 per 100

Performance-based capitation payout based on number of performance indicators meeting the thresholds

Not sufficient out of 3	Sufficient out of 3	Excellent out of 3	Percentage of KBK capitation paid out
3	0	0	75%
2	1	0	80%
1	2	0	90%
0	3	0	100%
0	2	1	105%
0	1	2	110%
0	0	3	115%
2	0	1	90%
1	1	1	95%
1	0	2	98%

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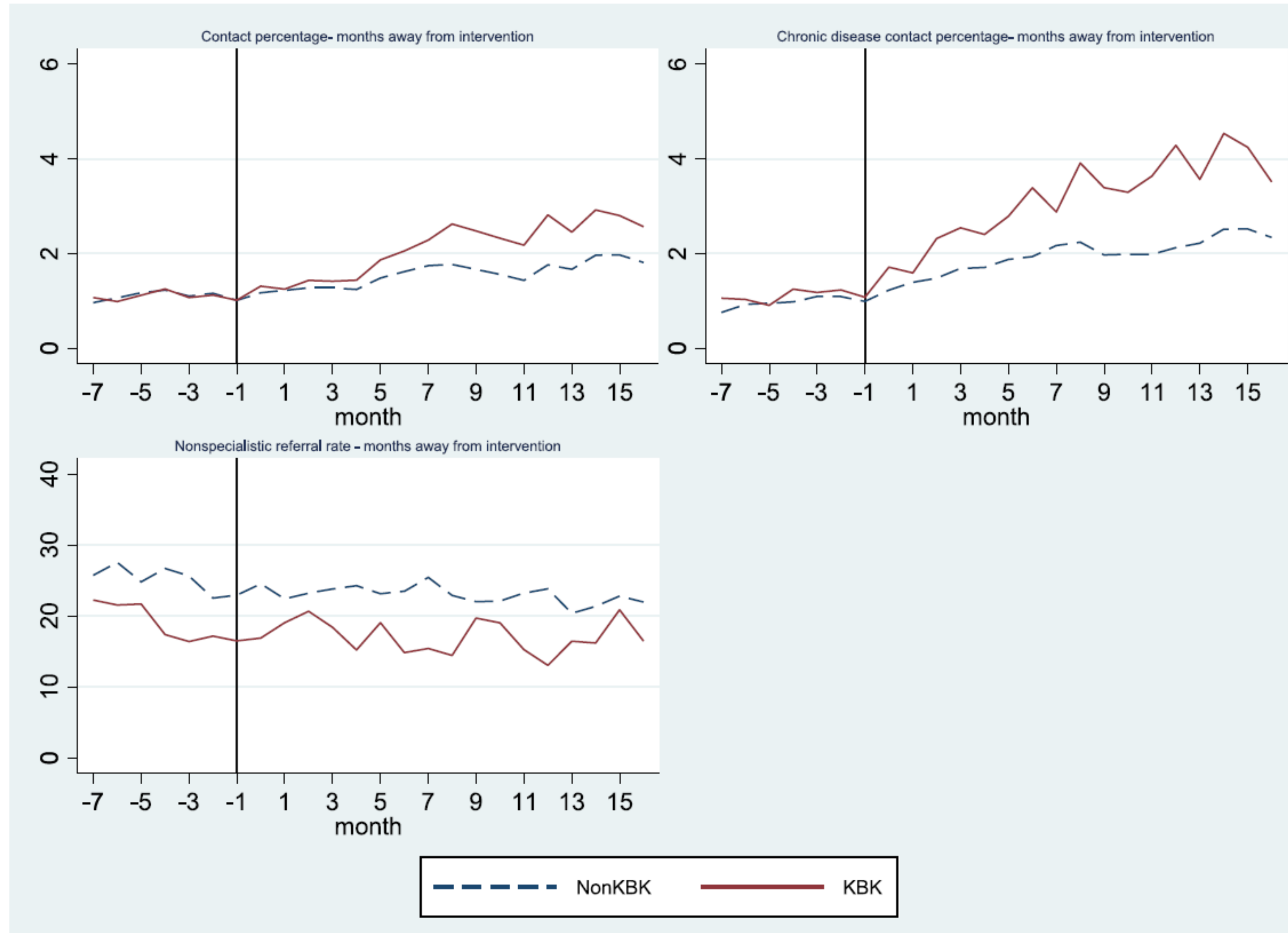
The outcome for contact percentage and chronic disease contact percentage are parallel for treated and control districts. The treated districts outcome are rising after introduction of KBK



Event study graph of the effect of KBK on puskesmas healthcare use

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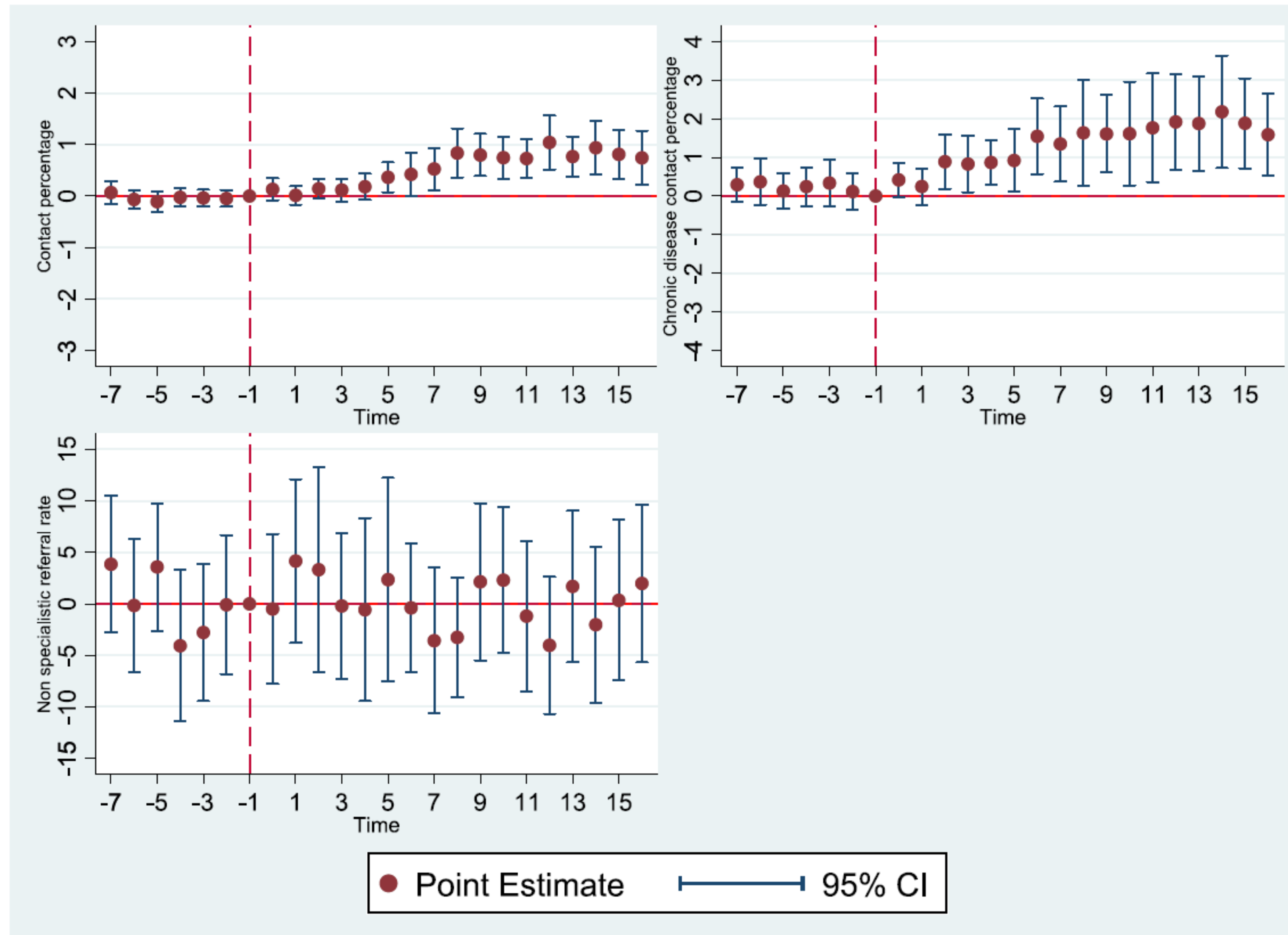
The point estimates are increasing after the implementation of KBK.



Coarsened Exact Matching weighted outcomes – months away from intervention

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Estimation Results

1. We conclude that KBK implementation raised the contact percentage by 0.735 points, following an anticipation effect of 0.146 percentage points. Combined, this caused an increase of 0.578 percentage points since the announcement of the KBK.
2. The KBK effects are positive for the contact percentage and the chronic disease contact percentage.
3. The non-specialist referral rate does not appear to have been affected, as neither of the effect estimates is statistically significant.

		CEM Weighted DiD		
		(1)	(2)	(3)
		Contact percentage	Chronic disease contact percentage	Non specialistic
Sufficient threshold		15	50	5
Baseline value		1.21	1.32	18.95
Model 1	KBK (announcement)	0.578***	1.149***	0.101
		(0.0534)	(0.147)	(1.084)
	N	7795	7795	7334
Model 2	KBKI (actual implementation)	0.735***	1.377***	−0.340
		(0.165)	(0.402)	(1.402)
	KBKA (anticipation)	0.146**	0.520***	1.320
		(0.0646)	(0.161)	(2.004)
	N	7795	7795	7334

KBK effect estimates from CEM weighted two-way fixed effects regression model with announcement starting from August 2015 compared to separate anticipation and implementation estimates.

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Lesson learned

- BPJS is the first to supplement capitation-based payment with performance-based financing.
- This new payment program aims to encourage primary care use.
- Using difference-in-differences we find a small increase in primary care visits.
- The effects of the program were far below the targets initially set by BPJS.
- We recommend the Indonesian government to initially lower the targets and subsequently increase these step by step on an annual basis.
- We suspect that applying same targets for all puskesmas may have discouraged some facilities to act if these targets were out of reach, while for relatively well-endowed facilities less effort is required to meet the KBK targets.

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Moving forward

- Performance based capitation shows an effect (even small) changes the provider behaviour, and also improve accountability and transparency.
- **BPJS Kesehatan shows interest in implementing a pay-for-performance system in hospital** settings, with the primary goal of maintaining financial efficiency within the JKN program (call for paper research topic).
- However, implementing this approach at the hospital level—which is inherently more complex than primary care—requires careful consideration of several key challenges, including:
    1. **Data quality and availability**
    2. **Defining appropriate performance metrics**
    3. **Risk of unintended consequences**
    4. **Capacity and incentive design**
    5. **Administrative burden**
    6. **Resistance from health workers**
    7. **Alignment with existing payment system**
    8. **Sustainability and funding**

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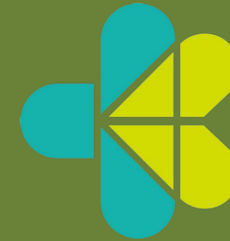
Thankyou!



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Most of this presentation is based on the published article: Novat Pugo Sambodo, Igna Bonfrer, Robert Sparrow, Menno Pradhan, Eddy van Doorslaer, Effects of performance-based capitation payment on the use of public primary health care services in Indonesia, Social Science & Medicine, Volume 327, 2023, 115921, ISSN 0277-9536, https://doi.org/10.1016/j.socscimed.2023.115921.