

IVR - Economic Results & Perspectives of an Integrated Health Care Concept for Chronic (Low) Back Pain Patients

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ABSTRACT (UPDATED)

BACKGROUND/RATIONALE:

Background/Rationale: Despite extensive efforts to improve medical concepts to prevent chronification, prolonged disability and related compensation benefits, (low) back pain (L)BP – a common musculoskeletal symptom affecting 80% of people at some point in their life – evolved into the second leading cause of absenteeism from work and accounts for more than 15% of sick leaves in industrialized countries. Therefore, new treatment approaches have to prove their overall cost-effectiveness not only with respect to their pain-relieving treatment effect but also in view of their own financial charges. Since 2007, IVR – an integrated health care project established by the Integrated Managed Care (IMC) offers (L)BP patients with a sick leave duration of ≥28 days a multimodal treatment concept specifically tailored to meet their very unique healthcare needs in one of 33 nationwide IVR centers of excellence. Reimbursement based on a bonus/malus system and incorporates treatment duration as well as distinct treatment effect parameters (primarily the back to work rate - BTWR).

METHODS:

Based on data of the IVR program and the participating health insurance, direct as well as indirect costs of the IVR patients were compared with those of a control cohort of matched (L)BP patients who underwent standard-of-care. Benchmarking analyses were performed with respect to efficiency differences between participating centers.

RESULTS:

Until August 20th, 2010, 3,268 (L)BP patients were allocated, of whom 2,237 entered the tailored treatment period. Within 4-8 weeks, 1,892 patients (84.6%) returned back to work and 84.1% remained there without any recurrence for at least 6 months. Premature discontinuation despite verifiable improvements occurs in 8.1%, resulting in overall non-responder rates of only 7.2%. Mean total savings were € 1,615.17 per IVR-patient. However, benchmarking center analyses opened a spectrum ranging from incremental costs in the amount of € -794.24 up to savings of € 3,034.33. Subgroup analyses of high performing centers revealed above average savings of up to € 1,419.16 per patient contrasting the additional costs of low performing centers of up to € -2,409.41 per patient below average.

CONCLUSION:

A highly individualized multimodal treatment approach in combination with a merit-rating (bonus/malus) remuneration proves not only highly efficacious but also highly cost effective, opening new perspectives for alternative reimbursement concepts.

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TABLE 1:

center	savings per patient		patients per center		savings per center		savings in comparison to average	
	(mean)	(Z-score)	(mean)	(Z-score)	(mean)	(Z-score)	per patient	total
average	1,615.17 €	99.03	0.00		159,950.77 €	0.00	0.00 €	0.00 €
1	2,253.84 €	511	3.64		1,151,712.24 €	0.71	638.67 €	326,360.37 €
2	2,478.66 €	158	0.52		391,628.28 €	0.96	863.49 €	136,431.42 €
3	775.17 €	154	0.49		119,376.18 €	-0.93	-840.00 €	-129,360.00 €
4	1,946.98 €	130	0.27		253,107.40 €	0.37	331.81 €	43,135.30 €
5	1,888.92 €	49	-0.44		92,557.08 €	0.30	273.75 €	13,413.75 €
6	576.65 €	115	0.14		66,314.75 €	-1.16	-1,038.52 €	-119,429.80 €
7	1,715.15 €	287	1.66		492,248.05 €	0.11	99.98 €	28,694.26 €
8	765.48 €	92	-0.06		70,424.16 €	-0.95	-849.69 €	-78,171.48 €
9	-228.77 €	8	-0.80		-1,830.16 €	-2.05	-1,843.94 €	-14,751.52 €
10	2,217.06 €	139	0.35		308,171.34 €	0.67	601.89 €	83,662.71 €
11	-794.24 €	14	-0.75		-11,119.36 €	-2.68	-2,409.41 €	-33,731.74 €
12	2,433.65 €	114	0.13		277,436.10 €	0.91	818.48 €	93,306.72 €
13	1,104.31 €	181	0.72		199,880.11 €	-0.57	-510.86 €	-92,465.66 €
14	1,049.59 €	226	1.12		237,207.34 €	-0.63	-565.58 €	-127,821.08 €
15	1,375.63 €	18	-0.72		24,761.34 €	-0.27	-239.54 €	-4,311.72 €
16	1,392.74 €	42	-0.50		58,495.08 €	-0.25	-222.43 €	-9,342.06 €
17	1,953.13 €	39	-0.53		76,172.07 €	0.38	337.96 €	13,180.44 €
18	2,288.71 €	43	-0.49		98,414.53 €	0.75	673.54 €	28,962.22 €
19	1,830.92 €	49	-0.44		89,715.08 €	0.24	215.75 €	10,571.75 €
20	1,052.07 €	321	1.96		337,714.47 €	-0.63	-563.10 €	-180,755.10 €
21	1,815.65 €	47	-0.46		85,335.55 €	0.22	200.48 €	9,422.56 €
22	2,853.05 €	41	-0.51		116,975.05 €	1.38	1,237.88 €	50,753.08 €
23	1,213.70 €	213	1.01		258,518.10 €	-0.45	-401.47 €	-85,513.11 €
24	2,243.18 €	146	0.41		327,504.28 €	0.70	628.01 €	91,689.46 €
25	1,054.63 €	16	-0.73		16,874.08 €	-0.62	-560.54 €	-8,968.64 €
26	370.05 €	28	-0.63		10,361.40 €	-1.39	-1,245.12 €	-34,863.36 €
27	379.70 €	5	-0.83		1,898.50 €	-1.37	-1,235.47 €	-6,177.35 €
28	233.97 €	10	-0.79		2,339.70 €	-1.54	-1,381.20 €	-13,812.00 €
29	3,034.33 €	17	-0.72		51,583.61 €	1.58	1,419.16 €	24,125.72 €
30	899.68 €	6	-0.82		5,398.08 €	-0.80	-715.49 €	-4,292.94 €
31	576.27 €	4	-0.84		2,305.08 €	-1.16	-1,038.90 €	-4,155.60 €
32	1,929.09 €	32	-0.59		61,730.88 €	0.35	313.92 €	10,045.44 €
33	649.86 €	13	-0.76		8,448.18 €	-1.07	-965.31 €	-12,549.03 €
total:		3268			5,281,658.57 €			

Mean:	1,615.17 €	99	0.00	160,050.26 €	-0.27	-241.57 €	99.49 €
SD:	898.75 €	113	1.00	222,554.26 €	1.00	898.75 €	90,438.74 €
Med.:	1,375.63 €	47	-0.46	85,335.55 €	-0.27	-239.54 €	-4,292.94 €
Min.:	-794.24 €	4	-0.84	-11,119.36 €	-2.68	-2,409.41 €	-180,755.10 €
Max.:	3,034.33 €	511	3.64	1,151,712.24 €	1.58	1,419.16 €	326,360.37 €

Table 1 summarizes the economic key factors of all 33 IVR-centers of excellence. Calculations based on the individual performance status of each center. Overall average savings for the health insurance per patient enrolled were 1,615.17 Euros. However, individual calculations per center varied significantly between savings of 3,034.33 Euros and additional costs of 794.24 Euros per patient enrolled. Figures 1-4 give an overview over these economic factors showing mean savings and mean patient numbers per center (Z-scores; Figure 1), mean savings per center (Z-scores; Figure 2), mean savings per patient per center related to the average of all IVR centers (Euro; Figure 3), and the total savings per center (Euro; Figure 4).

As a supplement to the data given in Table 1, Figures 1-4 highlight the fact that the economic performance status varies significantly between the evaluated IVR-centers. All approaches to correlate these discrepancies with patient-related factors (age, stage of chronification, pain intensity, etc.) failed completely, indicating center-specific factors as underlying reasons.

FIGURE 1:

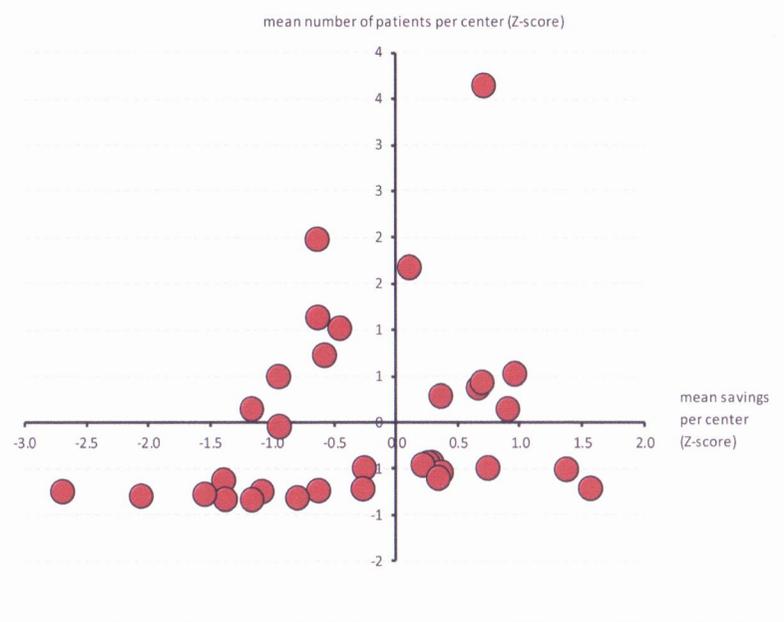


FIGURE 2:

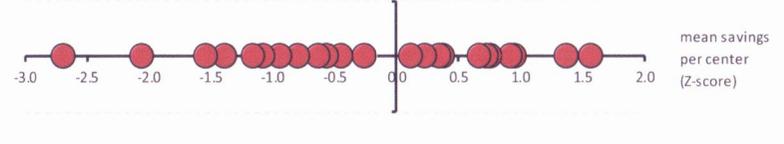


FIGURE 3:

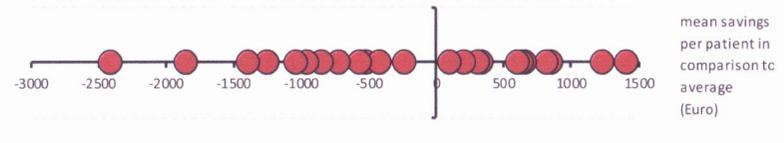


FIGURE 4:

