Improving take-up by reaching out to potential beneficiaries. Insights from a large-scale field experiment in Belgium

Supplementary material

Raf Van Gestel, Tim Goedemé, Julie Janssens, Eva Lefevere and Rik Lemkens.

Please cite as:

Van Gestel, R., Goedemé, T., Janssens, J., Lefevere, E. and Lemkens, R. (2021) Improving take-up by reaching out to potential beneficiaries. Insights from a large-scale field experiment in Belgium, *Journal of Social Policy*, https://doi.org/10.1017/S004727942100088X.

The supplementary materials contain:

1. More detailed information on the identification of the average profile of treated compliers
2. Additional tables, referred to in the main article
3. Additional figures, referred to in the main article
4. An example of the letter and flyer used in the intervention

The tables and graphs in this document are based on administrative records from the National Alliance of Christian Mutualities (NACM) in Belgium, as documented in more detail in the accompanying paper.

1 THE KOWALSKI METHOD TO IDENTIFY THE AVERAGE PROFILE OF TREATED COMPLIERS

Following Kowalski (2016)[1], the average of any characteristic X for the treated compliers is equal to:

$$\frac{1}{p_I - p_B}[p_I E(X|D=1, Z=1) - p_B E(X|D=1, Z=0)].$$

Where p_I and p_B are the probabilities of take-up for the intervention and control (baseline) groups respectively. D is an indicator for take-up of IR (IR is approved) and Z is an indicator for receiving the intervention. In other words, this decomposition starts from the well-known fact that an average of two groups is equal to the weighted sum of the average in each of the groups, with the weights equal to the group shares, and the assumption that the always takers in both the intervention and the control group have the same average characteristics, which is reasonable given the random assignment to control and intervention groups.

[1] Kowalski, A.E. (2016), 'Doing More When You're Running LATE: Applying Marginal Treatment Effect Methods to Examine Treatment Effect Heterogeneity in Experiments', NBER Working Paper Series, National Bureau of Economic Research.

2 TABLES

Table A1: Descriptive Statistics

Variable	Obs.	Mean	Std. Error of mean	Min	Max
IR	53,474	0.115	0.001	0	1
Male	55,400	0.567	0.002	0	1
Year of Birth	55,400	1959.187	0.056	1907	2004
One Parent HH	55,407	0.005	0.000	0	1
Number of Family Members	55,407	1.664	0.005	1	13
Number of Adults	55,407	1.312	0.002	0	5
Maximum Billing	55,013	0.177	0.002	0	1
Historic expenditures Health Insurer	55,407	2,953.509	29.693	0	284,874.100
Historic expenditures on health care by household	55,407	356.862	2.663	0	13,679.880
Daily Defined Doses (DDD)	55,407	800.259	4.495	0	13,149.300
Days in General Hospital	55,407	3.555	0.060	0	486
Days in Psychiatric Hospital	55,407	0.619	0.047	0	452
Days Unemployed	55,407	29.844	0.365	0	626
Days Sickness	55,407	14.354	0.262	0	625

Table A2: Characteristics of household heads and associated households. Intervention subgroups 1 to 3 compared with the Control group.

Variable	Intervention subgroup 1		Intervention subgroup 2		Intervention subgroup 3	
	Contr.-G1	**p-value**	**Contr.-G2**	**p-value**	**Contr.-G3**	**p-value**
*Man**	-0.002	0.834	0.007	0.234	0.001	0.846
Year of Birth	-0.028	0.923	-0.007	0.980	-0.075	0.786
*One parent household**	0.000	0.854	0.000	0.954	0.001	0.216
Family members	0.003	0.845	0.008	0.616	0.011	0.496
Adults	0.006	0.441	0.005	0.488	0.008	0.269
Historic expenditure health insurer (HI)	125.571	0.214	107.303	0.281	111.868	0.255
Historic health expenditure by household	18.905	0.024	14.937	0.074	13.588	0.101
Daily Defined Doses (DDD)	22.979	0.168	19.991	0.221	21.009	0.193
Gen. Hospitalization	0.312	0.125	0.300	0.132	0.202	0.308
Psych. Hospitalization	0.077	0.650	0.187	0.257	0.009	0.957
Unemployment (days)	0.677	0.560	0.616	0.587	0.272	0.808
Sickness and disability (days)	-0.640	0.441	-0.749	0.357	-0.492	0.539

Note: Difference of mean values between the control group and the intervention subgroups. * binary variables: comparison of proportions. T-tests on weighted data, stratification taken into account.
Contr. = control group; G1, G2, G3 are intervention subgroups 1, 2 and 3.

Table A3: Multivariate regressions of the uptake of IR on background characteristics (at household level)

Variable	Basic	LPM 1	LPM 2	Logistic Regression	LPM Outliers1	LPM Outliers2
Constant	0.0485	4.5777	4.3598	-	4.47	4.6818
	(0.0000)	(0.0000)	(0.0000)	-	(0.0000)	(0.0000)
Intervention subgroup 1	0.1511	0.1508	0.1513	0.1533	0.1504	0.1472
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Intervention subgroup 2	0.1378	0.1373	0.1378	0.1444	0.1361	0.1299
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Intervention subgroup 3	0.1005	0.1006	0.1011	0.1186	0.0984	0.0951
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Man	-	-0.0089	-0.0095	-0.0112	-0.011	-0.0119
	-	(0.0015)	(0.0007)	(0.0001)	(0.0001)	(0.0000)
Year of Birth	-	-0.0023	-0.0022	-0.0026	-0.0023	-0.0024
	-	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
One parent	-	0.0633	0.0635	0.0637	0.0595	0.0552
	-	(0.0033)	(0.0032)	(0.0002)	(0.0056)	(0.0102)
Number adults	-	-0.0143	-0.0148	-0.0137	-0.0172	-0.0153
	-	(0.0002)	(0.0001)	(0.0004)	(0.0000)	(0.0001)
Number family members	-	0.0049	0.0048	0.0076	0.0064	0.0057
	-	(0.0039)	(0.0047)	(0.0002)	(0.0002)	(0.0012)
Maximum Billing	-	0.0453	0.0444	0.0331	0.0494	0.0406
	-	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Expenditure Health insurer (HI)	-	-0.0001	-0.0001	-0.0001	-0.0002	-0.0003
	-	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)
Expenditure by household	-	-0.0008	-0.0008	-0.0004	-0.0018	-0.0015
	-	(0.0653)	(0.0628)	(0.2753)	(0.0173)	(0.0568)
DDD	-	0.0023	0.0022	0.0015	0.0027	0.003
	-	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
General Hospitalization (Days)	-	0.0004	0.0004	0.0002	0.0009	0.0008
	-	(0.0173)	(0.0145)	(0.0314)	(0.0017)	(0.0064)
Psychiatric Hospitalization (Days)	-	0.0005	0.0005	0.0004	0.0009	0.0011
	-	(0.0053)	(0.0051)	(0.0004)	(0.0015)	(0.0022)
Unemployment (Days)	-	0.0003	0.0003	0.0003	0.0003	0.0003
	-	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Sickness (Days)	-	0.0004	0.0004	0.0003	0.0003	0.0006
	-	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Reg. department Fixed Effects	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**
Obs.	53,474	53,474	53,474	53,474	51,781	48,112
R-squared	0.0385	0.0872	0.0908	-	0.0906	0.0921

Note: P-Values displayed below coefficient estimates. Household Expenditure, HI Expenditure and DDD in hundreds. Average Marginal Effects displayed for Logistic regression. LPM= Linear Probability Model. In the specifications "LPM Outliers1" and “LPM Outliers2” we remove outlying observations on healthcare use, and healthcare use and absence from work variables, respectively (>99th percentile).

Table A4: Percentage take-up of IR and participation in eligibility test 50 days after intervention (results at the household level)

Group	Take-up				Applied			
	Est.	SE	LB	UB	Est.	SE	LB	UB
Intervention subgroup 1	12.93	0.48	12.01	13.91	21.80	0.60	20.64	23.00
Intervention subgroup 2	15.95	0.37	15.23	16.70	24.47	0.44	23.62	25.35
Intervention subgroup 3	14.65	0.30	14.08	15.24	23.19	0.35	22.50	23.89

Note: Standard errors take account of clustering at the household level as well as stratification. LB= Lower Bound of the 95% Confidence Interval, UB= Upper Bound, Est.=Estimate.

Table A5: Always Takers, Treated Compliers and Never Takers (take-up of IR), household head and household characteristics, data from intervention subgroup 2 and control group.

Variable	Always Takers	Treated Compliers	Never Takers	TC-AT		TC-NT	
				Diff.	P-Val.	Diff.	P-Val.
Man	0.51	0.54	0.58	0.03	0.30	-0.04	0.01
Year of Birth	1956.84	1945.64	1961.58	-11.20	0.00	-15.94	0.00
One parent household	0.01	0.00	0.00	-0.01	0.04	0.00	0.60
Adults	1.33	1.34	1.31	0.01	0.83	0.03	0.07
Family members	1.71	1.51	1.68	-0.20	0.00	-0.17	0.00
Maximum Billing	0.33	0.29	0.15	-0.04	0.08	0.13	0.00
Historic expenditure HI	4833.99	3674.34	2687.75	-1159.65	0.00	986.59	0.00
Historic expenditure by household	527.66	476.94	327.96	-50.72	0.25	148.98	0.00
Daily Defined Doses (DDD)	1108.97	1377.89	681.08	268.92	0.00	696.81	0.00
General Hospitalization	8.84	3.73	3.10	-5.11	0.00	0.63	0.26
Psych. Hospitalization	2.19	-0.56	0.33	-2.75	0.00	-0.90	0.00
Unemployment (days)	53.27	30.85	28.32	-22.42	0.00	2.53	0.42
Sickness (days)	41.77	16.24	13.16	-25.53	0.00	3.08	0.22

Note. TC-AT = Treated compliers vs. always takers; TC-NT = Treated compliers vs. never takers. Diff. = difference (point estimate). P-Val. = p-value. P-values obtained from a bootstrap using 250 replications. To bootstrap we employ the Stata programming approach suggested by Cameron and Trivedi (2009: 426)[2].

[2] Cameron, A.C. and Trivedi, P.K. (2009), Microeconometrics using stata, Texas: Stata press College Station.

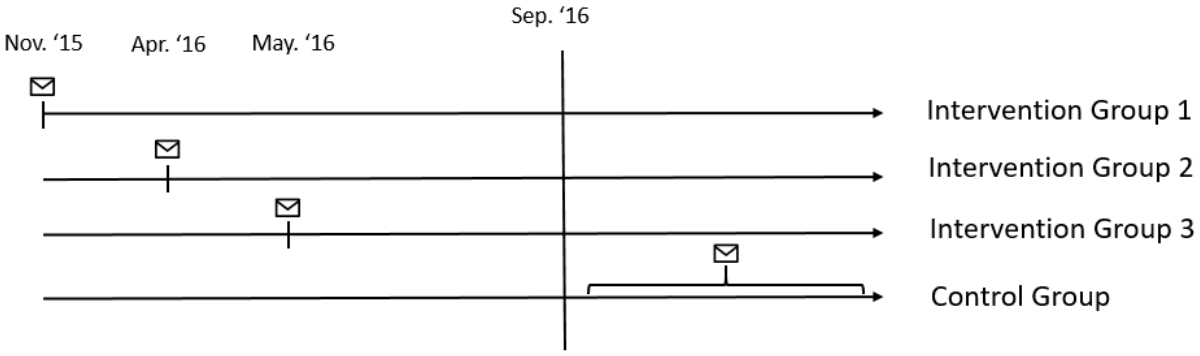
Table A6: Always Takers, Treated Compliers and Never Takers (take-up of IR), household head and household characteristics, data from intervention subgroup 3 and the control group.

Variable	Always Takers	Treated Compliers	Never Takers	TC-AT		TC-NT	
				Diff.	P-Val.	Diff.	P-Val.
Man	0.51	0.54	0.57	0.03	0.32	-0.03	0.05
Year of Birth	1956.84	1944.24	1961.28	-12.60	0.00	-17.05	0.00
One parent household	0.01	0.00	0.01	-0.01	0.01	-0.01	0.03
Adults	1.33	1.35	1.30	0.01	0.62	0.05	0.01
Family members	1.71	1.48	1.67	-0.23	0.00	-0.20	0.00
Maximum Billing	0.33	0.30	0.15	-0.03	0.25	0.15	0.00
Historic expenditure HI	4833.99	4079.23	2651.36	-754.77	0.05	1427.87	0.00
Historic expenditure by household	527.66	526.03	327.62	-1.63	0.97	198.41	0.00
Daily Defined Doses (DDD)	1108.97	1521.48	685.53	412.51	0.00	835.95	0.00
General Hospitalization	8.84	4.92	3.18	-3.92	0.00	1.75	0.01
Psych. Hospitalization	2.19	1.40	0.61	-0.80	0.47	0.78	0.23
Unemployment (days)	53.27	32.26	28.86	-21.01	0.00	3.40	0.34
Sickness (days)	41.77	9.25	13.11	-32.52	0.00	-3.86	0.15

Note. TC-AT = Treated compliers vs. always takers; TC-NT = Treated compliers vs. never takers. Diff. = difference (point estimate). P-Val. = p-value. P-values obtained from a bootstrap using 250 replications. To bootstrap we employ the Stata programming approach suggested by Cameron and Trivedi (2009: 426)[3].

3 GRAPHS AND FIGURES

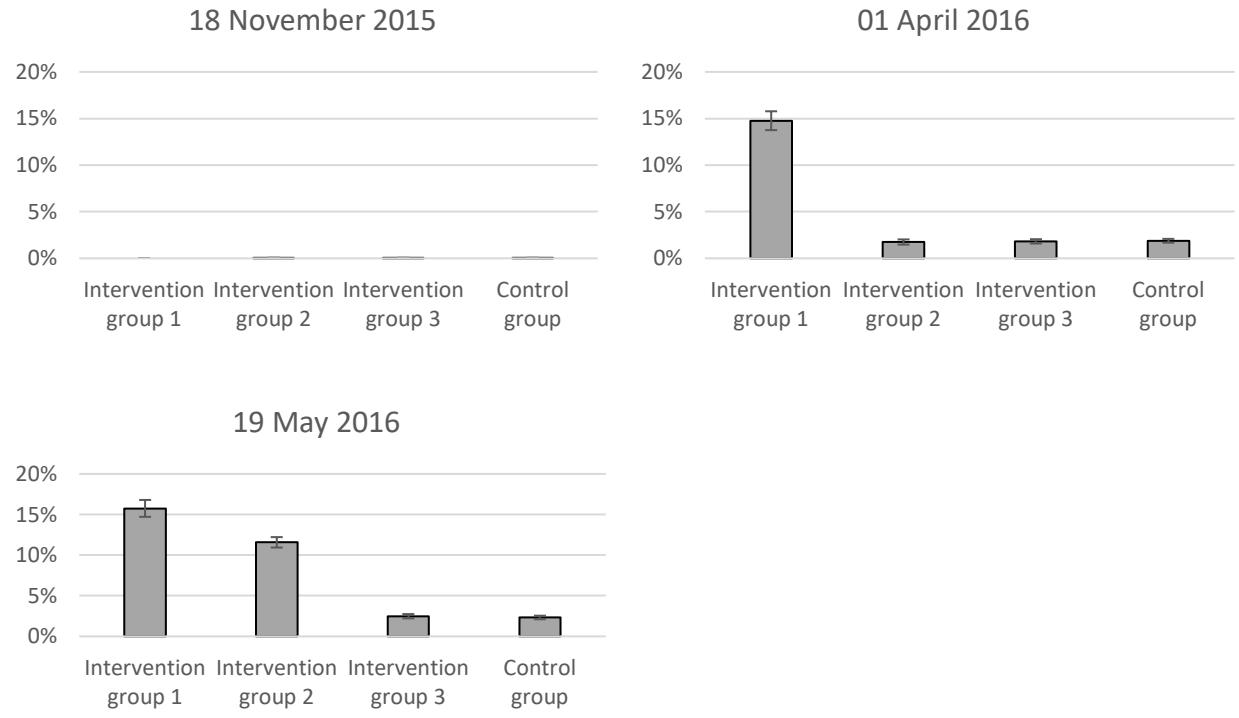
Figure A1:Timing of the experiment and data collection



Note: In this study we observe take-up of IR in September 2016. At that moment, the first three intervention subgroups have received a mailing, at three different points in time. As people have been allocated randomly to intervention subgroups, the remaining groups that have not yet been contacted in September 2016, function as a control group in this study. Socio-demographic variables refer to the situation in September 2016, while data on healthcare use and absence from work are aggregated over 2015.

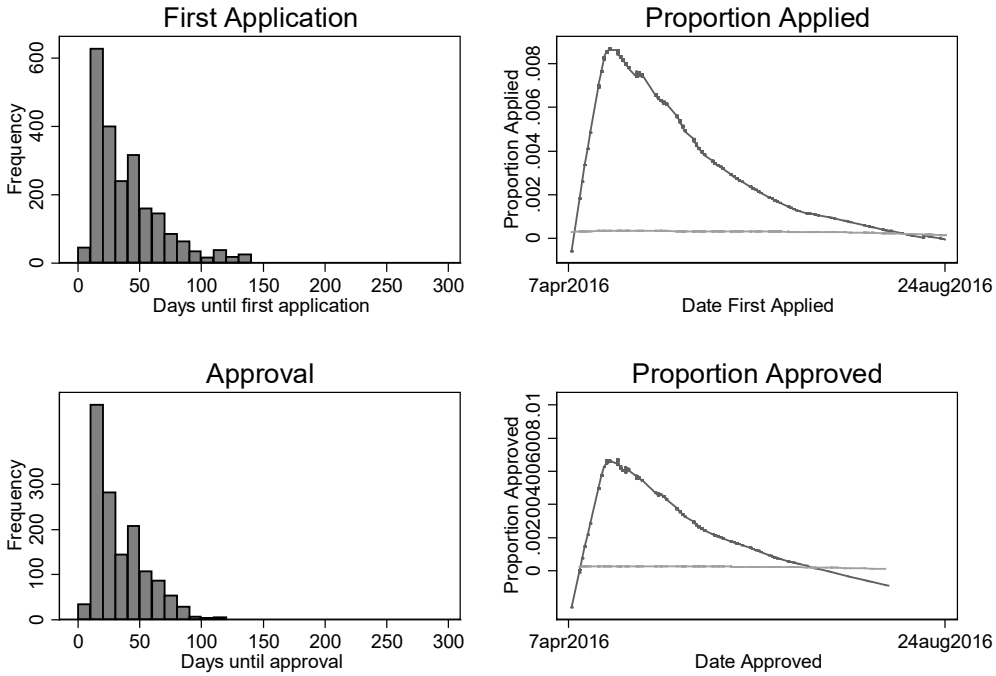
[3] Cameron, A.C. and Trivedi, P.K. (2009), Microeconometrics using stata, Texas: Stata press College Station.

Figure A2: Percentage take-up of the Increased Reimbursement, one week before the next intervention



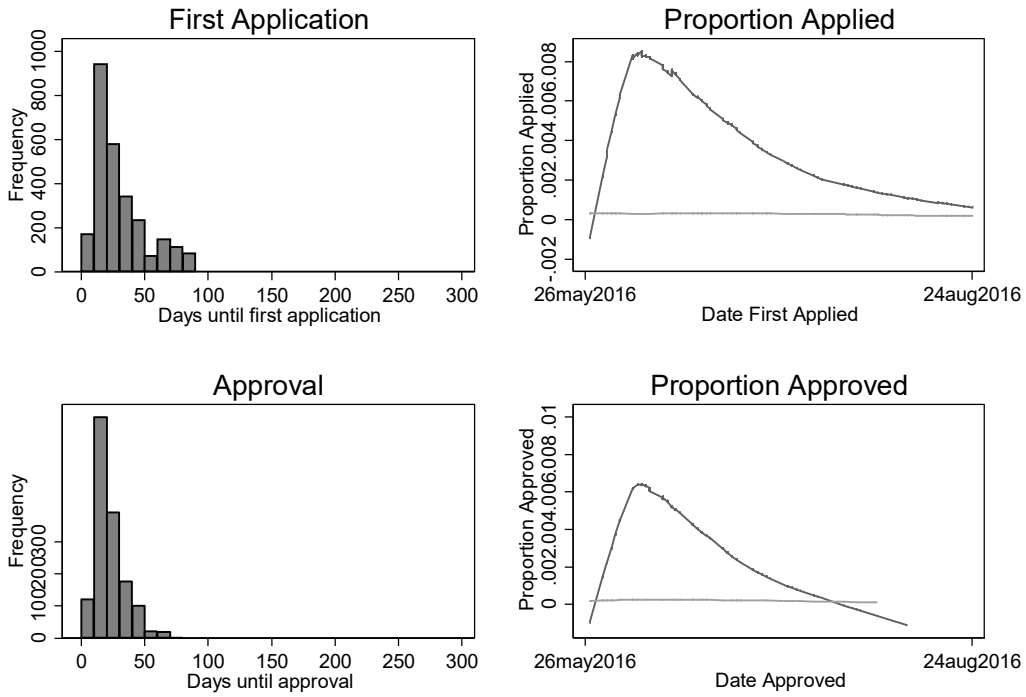
Note: 95% Confidence intervals.

Figure A3: Timing of Events: frequency and proportion of households that have applied for/ have been awarded IR across time – Intervention group 2 compared to control group



Note: Left panel: intervention subgroup 2; right-hand side panel: intervention subgroup 2 (black lines) vs. the control group (grey lines) (lowess curves which non-parametrically fit the data). The smoothing through the non-parametric lowess curves has as a side effect that some values are below 0. However, the main parts of the figures are very similar to the ones in the main text.

Figure A4:Timing of Events: frequency and proportion of households that have applied for/ have been awarded IR across time – Intervention group 3 compared to Control group



Note: Left panel: intervention subgroup 3; right-hand side panel: intervention subgroup 3 (black lines) vs. the control group (grey lines) (lowess curves which non-parametrically fit the data). The smoothing through the non-parametric lowess curves has as a side effect that some values are below 0. However, the main parts of the figures are very similar to the ones in the main text.

4 LETTER AND FLYER

Figure A5: Example Letter:

To X

Date …

Higher reimbursement for medical expenses

Dear X

According to the information of the Federal Public Service Finance you may be entitled to a higher reimbursement of your medical expenses. This right is called 'the Increased Reimbursement'.

Please find attached more information about the benefits of an 'Increased Reimbursement'.

You are eligible when your gross taxable household income for 2014 is less than 17 303,80 euros. For every additional household member, you may add 3203,40 euros to this amount.

CM would like to assist you with your application. Using below contact details, you can easily make an appointment to take care of your application together.

Best regards

Mr/Ms. Y
Managing Director

For more information, please contact our contact centre, 03 221 93 39, antwerpen@cm.be.

Figure A6: Example Flyer

The increased Reimbursement

Do you have a low income? Then you may be entitled to the increased reimbursement. With an increased reimbursement you pay less for healthcare but also for the train or bus.

What are the benefits?

You pay less

- ✓ For the doctor, dentist or physiotherapist, …
- ✓ For some medicines
- ✓ In the hospital and rehabilitation centres
- ✓ For Flemish Health Insurance (25 instead of 50 euros)
- ✓ For the train and bus
- ✓ For your telephone and mobile phone
- ✓ For holidays with Kazou and Samana
- ✓ For information sessions and courses of CM on health

CHRISTELIJKE MUTUALITEIT

What should you do?

Make an appointment:

- Call 03 221 93 39
- Mail to antwerpen@cm.be
- Or pass by the nearest CM-office in your area

A CM-consultant will take care of your application.

Which documents do you bring?

- Most recent tax form on personal income tax
- Wage bills
- Bank accounts of all pensions (also foreign pensions)
- Bank accounts or evidence from interests, extra-legal pension, industrial accident, occupational disease
- Proof of payment of group and life insurance, pension savings
- Tax bill property tax showing the cadastral income
- Evidence of movable assets (assets, shares …)
- Evidence of all other income (payment of employment benefit, end-of-the-year bonus, holiday bonus, alimony …).

Please also bring your electronic ID and PIN number.

CHRISTELIJKE MUTUALITEIT

CM. Hoe gaat het met u?