PRÉCARITÉ ET MALADIE RÉNALE CHRONIQUE: QUELS LIENS?

Cécile VIGNEAU
CHU Pontchaillou
Service de Néphrologie

La fonction rénale décline avec l'âge

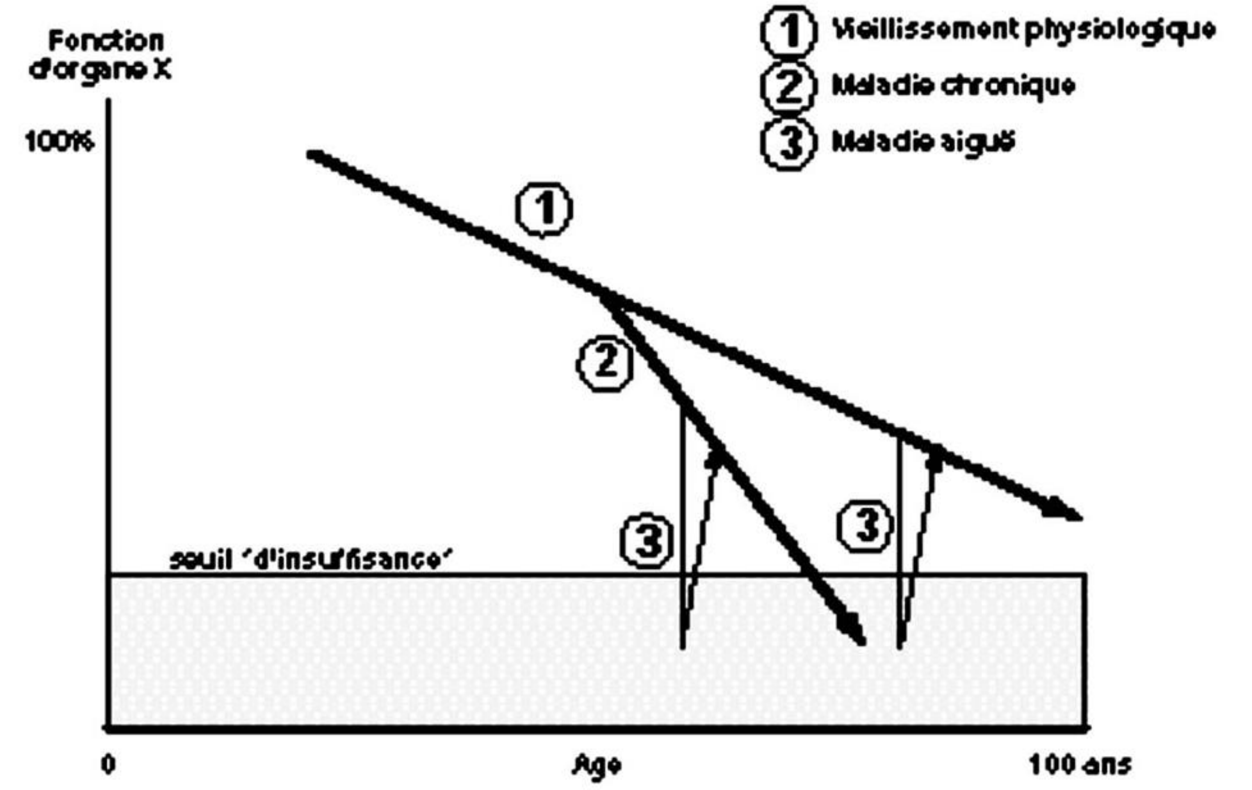
Physiologique

- 0,5 à 1ml/min/an après 40 ans

- Dépend du niveau de départ…

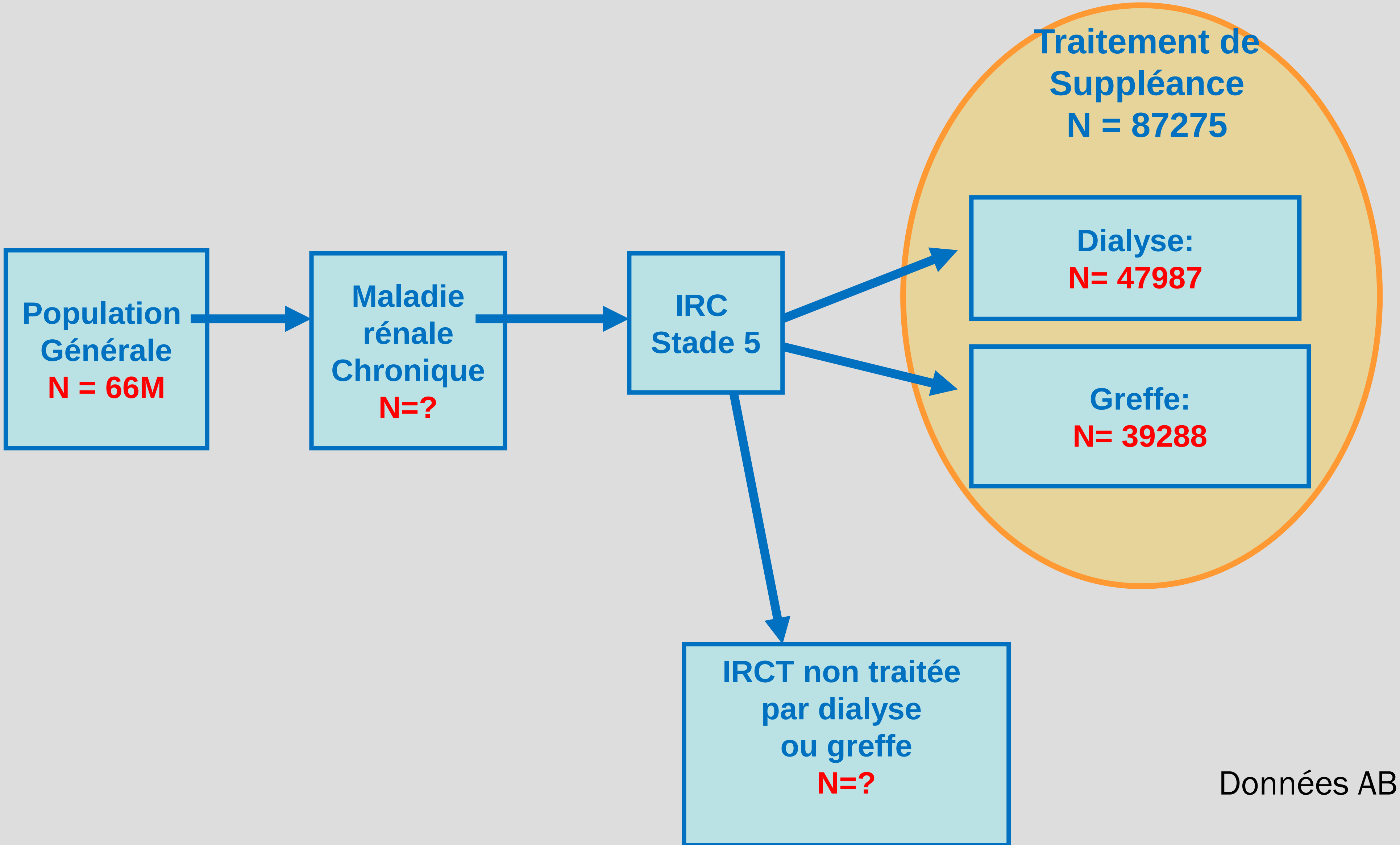
Accélérée si

- *Néphropathie*
- *Diabète*
- *HTA non équilibrée*
- *Obstruction (prostate, vessie…)*
- *Prise de toxiques*



J.P. Bouchon, 1+2+3 ou comment tenter d'être efficace en gériatrie, Rev Prat 1984, 34:888

Maladie rénale chronique
UN PARCOURS



Données ABM 2017

Précarité:
Quels Indicateurs?

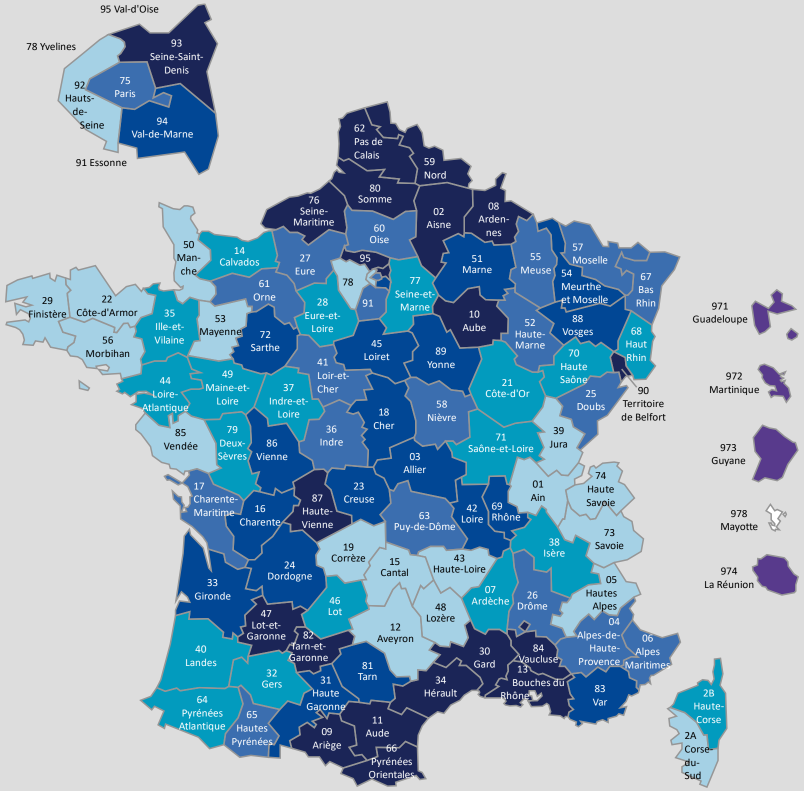
- Classe actif/inactif?
- Revenus?
- Niveau étude? Diplôme?
- Origine ethnique? Géographique?
- Lieu habitation: Foyer? Migrants? Prisons? SDF? Hôpital psy?
- Index par ilot de population?
- ….
- Accès aux soins, différent selon les pays….

Précarité et MRC: des liens indirects?

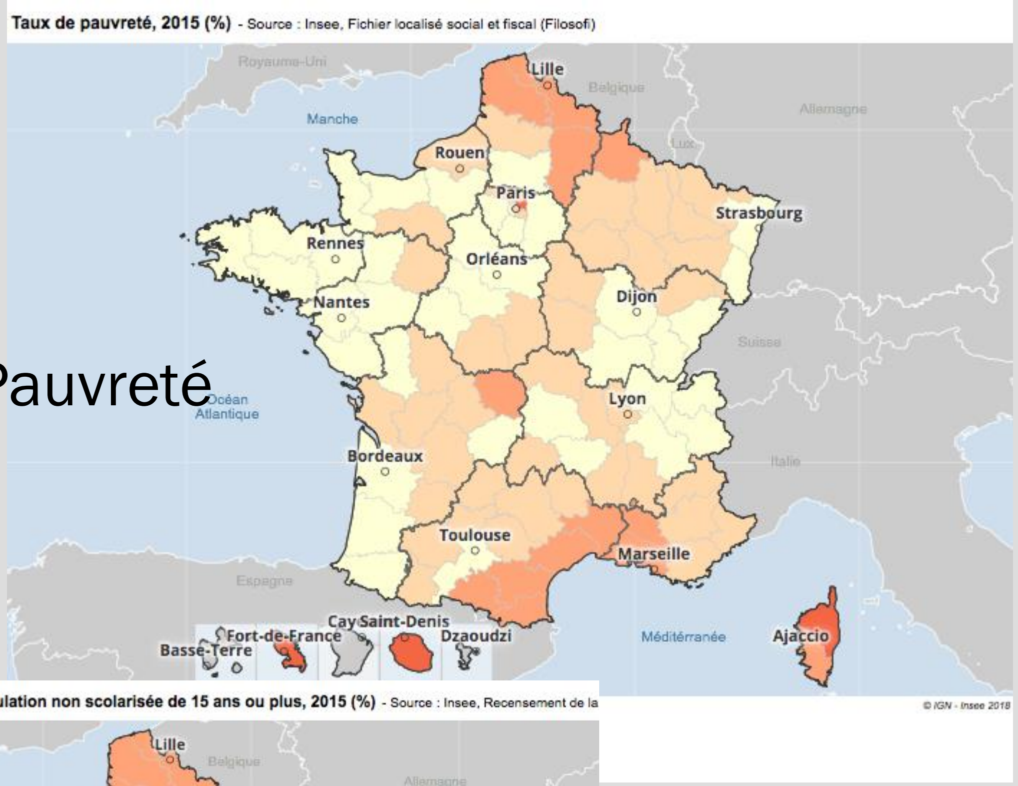
Indicateurs de précarité

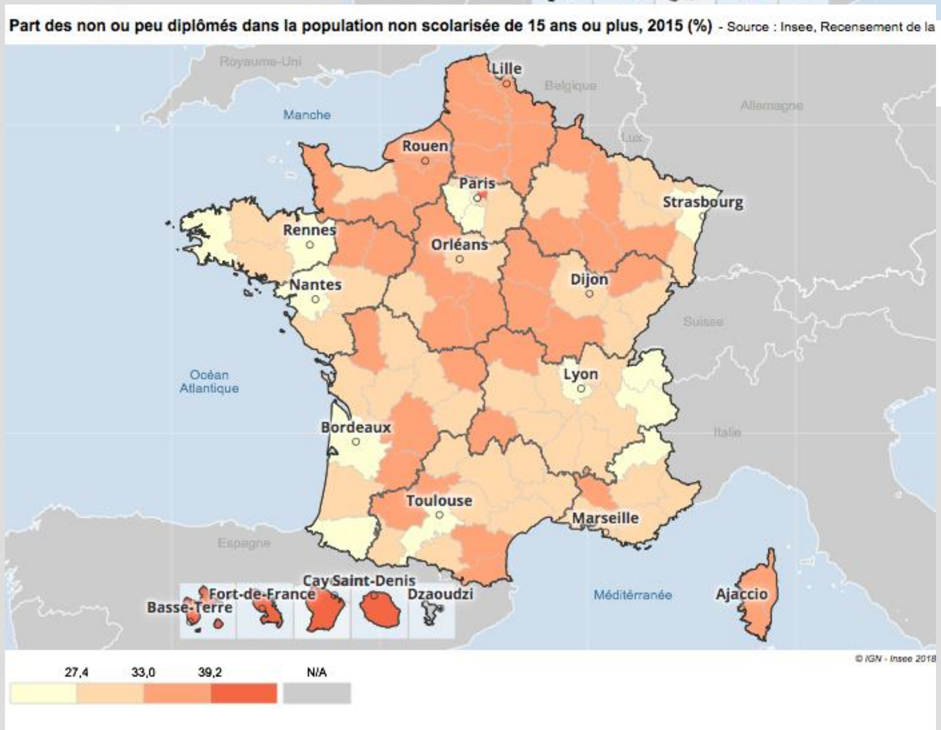
CMU-C

Figure 1 – Proportion des bénéficiaires de la CMU-C par rapport à la population totale, par département, métropole et Dom, CNAMTS, CNRSI, CCMSA, décembre 2016, en milliers



Pauvreté





Diplomés

Bénéficiaires des la CMU-C et maladies chroniques

- 30% des d'ouvriers non qualifiés vs 9 % reste de la population.
- 60 % Taux de chômage déclaré vs 8,5 % parmi les autres actifs

- 1,8 fois plus souvent en ALD (Païta et al., 2007).
- taux de mortalité 3,32 pour 1 000 vs 1,36 pour 1000 pop générale,

(Tuppin *et al.*, 2011)

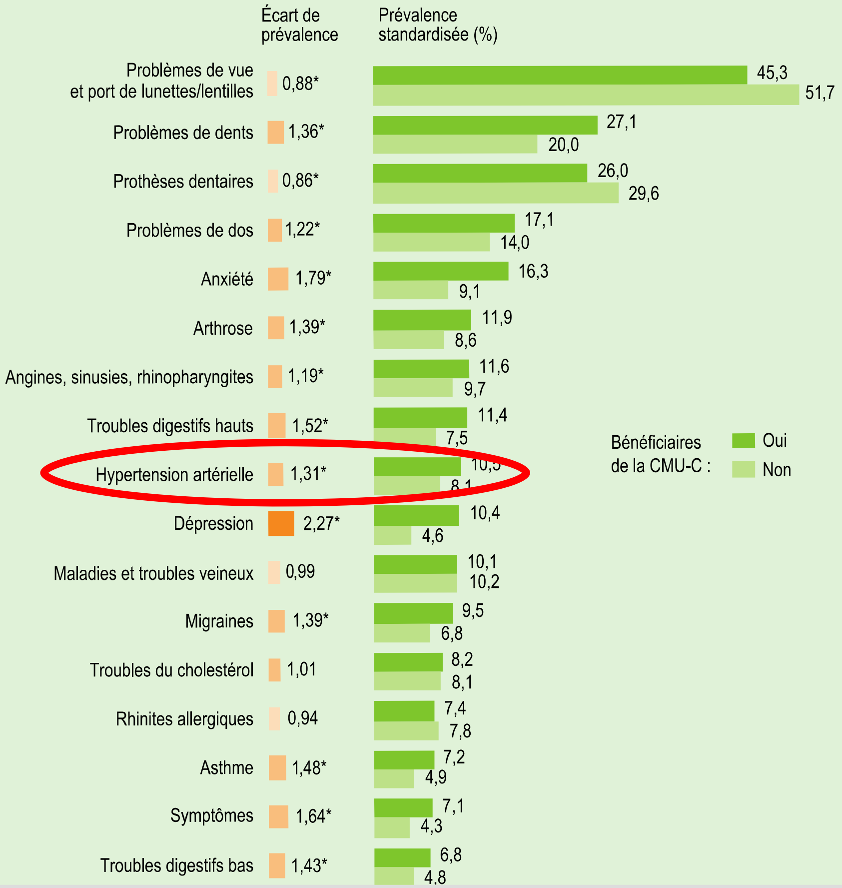
N° 793 • mars 2012

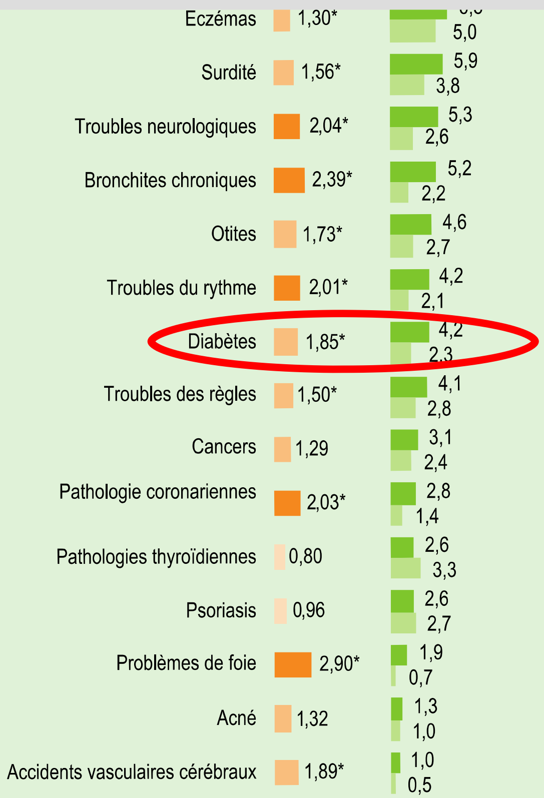
Les bénéficiaires de la CMU-C déclarent plus de pathologies que le reste de la population

Résultats des enquêtes ESPS 2006-2008

■ GRAPHIQUE 2

Écarts de prévalence des pathologies les plus fréquentes pour les bénéficiaires ou non de la CMU-CC

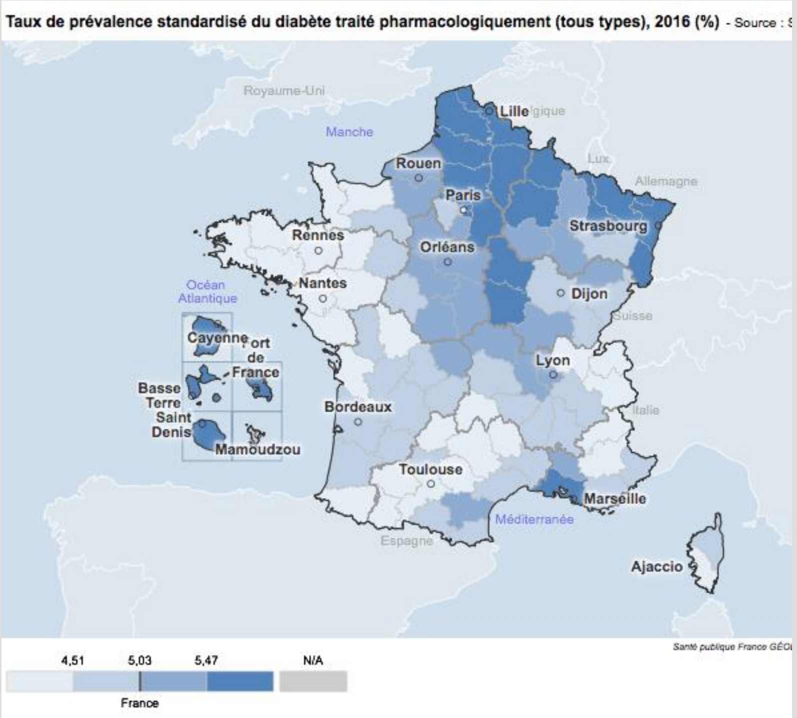




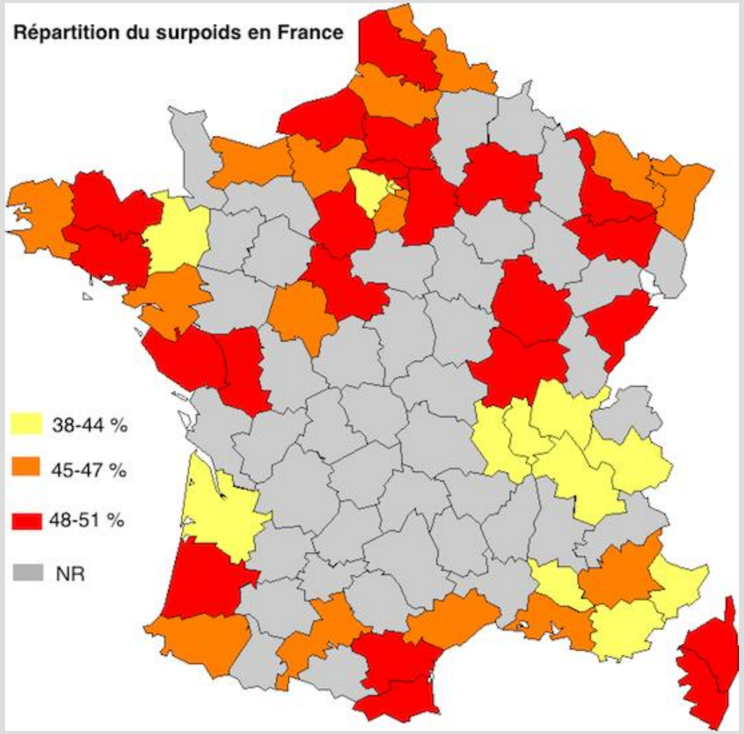
1. *Standardized morbidity ratio* (SMR).
* Écarts significatifs.
Guide de lecture • À âge et sexe comparables au reste de la population, 27 % des bénéficiaires de la CMU-C déclarent des problèmes dentaires *versus* 20 % dans le reste de la population.
Champ • Personnes de moins de 65 ans.
Sources • ESPS 2006-2008, Irdes.

Facteurs de risque de la maladie rénale chronique

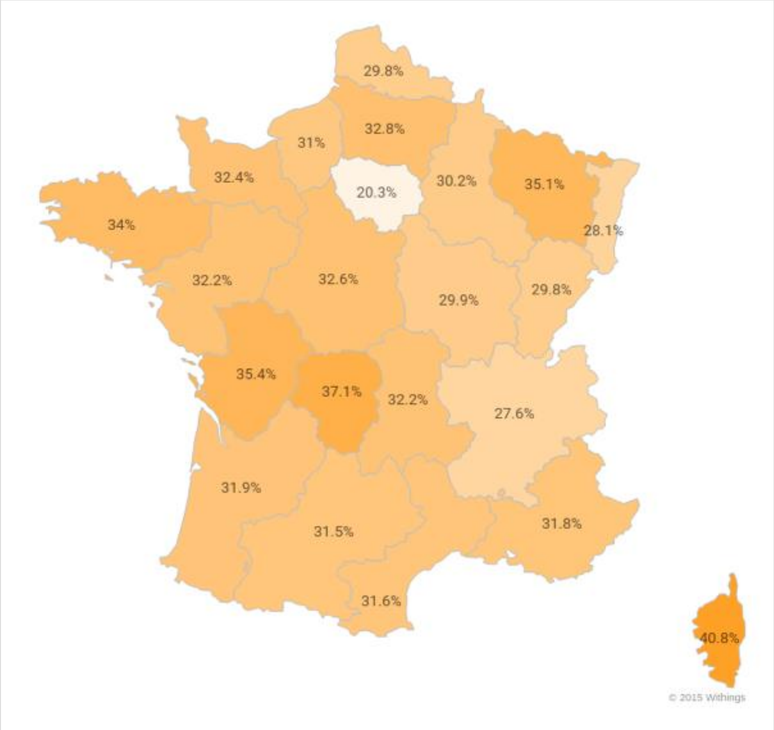
Diabète



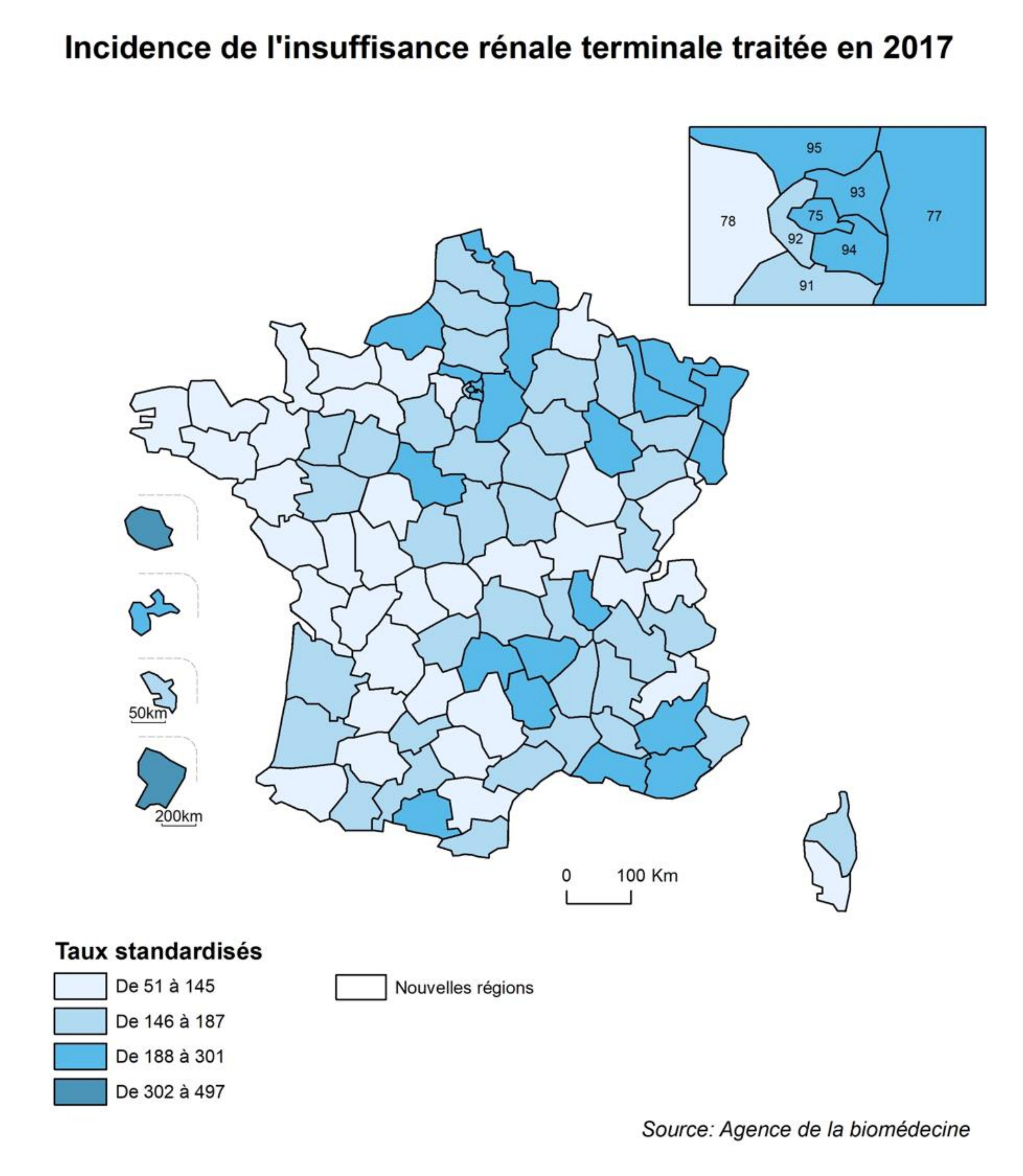
Obésité



Hypertension



IRC stade 5 Traitée par suppléance



Précarité et maladies rénales chroniques: des liens directs?

- Peu de données françaises
- Manque de données sur les patients MRC stade 3 et 4

Socioeconomic Status and Chronic Kidney Disease at Presentation to a Renal Service in the United Kingdom

Aminu K. Bello,* Jean Peters,† Jan Rigby,‡ Alhussein A. Rahman,* and Meguid El Nahas*

**Sheffield Kidney Institute, †School of Health and Related Research, and ‡Department of Geography, University of Sheffield, Sheffield, United Kingdom*

3	IMD deprivation quintile	
	1 (least deprived)	1.00 (reference)
	2	0.51 (0.07 to 3.28)
	3	0.23 (0.10 to 2.68)
	4	0.99 (0.11 to 8.63)
	5 (most deprived)	4.36 (1.09 to 17.38)[a]
	Age (per year)	1.04 (0.97 to 1.04)
	Gender (male *versus* female)	3.27 (0.30 to 37.40)
	Ethnicity (Caucasian/non-Caucasian)	0.69 (0.36 to 1.31)
	BMI (per kg/m^2)	1.02 (0.87 to 1.90)
	Serum cholesterol (mmol/L)	0.82 (0.58 to 1.15)
	Smoking (yes/no)	1.24 (0.37 to 4.18)
	Diabetes (yes/no)	1.87 (1.19 to 4.00)[a]
	Hypertension (yes/no)	1.75 (1.19 to 2.91)[a]

[a]$P < 0.01$.

Table 5. Results of multivariate logistic regression analysis, relating CKD (lower eGFR) with Area Deprivation as the primary independent variable under investigation

Risque d'IR chronique majoré dans le quintile le plus défavorisé

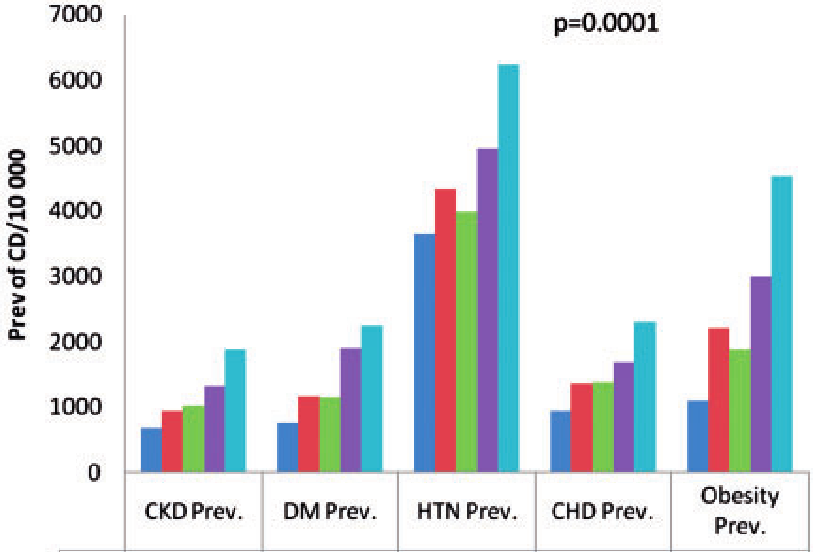
Clin J Am Soc Nephrol 3: 1316–1323, 2008. doi: 10.2215/CJN.00680208

Q J Med 2012; **105**:167–175
doi:10.1093/qjmed/hcr153 Advance Access Publication 30 September 2011

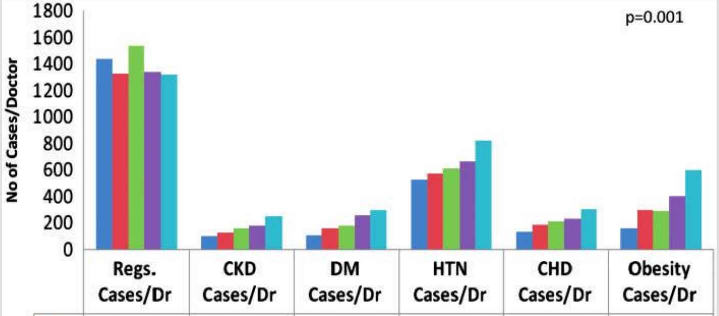
Social deprivation and prevalence of chronic kidney disease in the UK: workload implications for primary care

M.P. HOSSAIN[1], D. PALMER[2], E. GOYDER[3] and A.M. EL NAHAS[1]

From the [1]Sheffield Kidney Institute, [2]Interdisciplinary Centre of the Social Sciences (ICOSS) and [3]School of Health and Related Research (ScHARR), University of Sheffield, Sheffield, UK



	CKD Prev.	DM Prev.	HTN Prev.	CHD Prev.	Obesity Prev.
Q1	696	758	3652	952	1097
Q2	956	1176	4330	1351	2214
Q3	1017	1148	3981	1374	1874
Q4	1313	1898	4957	1695	3001
Q5	1880	2255	6230	2303	4524



	Regs. Cases/Dr	CKD Cases/Dr	DM Cases/Dr	HTN Cases/Dr	CHD Cases/Dr	Obesity Cases/Dr
Q1	1440	100	109	526	137	158
Q2	1331	127	157	576	180	295
Q3	1538	156	177	612	211	288
Q4	1344	177	255	666	228	403
Q5	1322	249	298	824	305	598

Figure 5. The number of patients with chronic diseases who have been looked after by each doctor in the Sheffield's ward based on IMD quintiles 2007.

Plus de diabète, HTA, Obésité et MRC dans les classes les plus défavorisées
Mais aussi accès au soins différent?

Nephrology **24** (2019) 308–315

Original Article

Prevalence and risk factors for chronic kidney disease in primary health care in the southern region of New Zealand

HYWEL LLOYD,[1] GRACE LI,[2] ANDREW TOMLIN,[3] MURRAY W TILYARD,[4] ROBERT WALKER[5] and JOHN SCHOLLUM[6]

Departments of [1]General Practice & Rural Health, [2]Medicine, [4]General Practice & Rural Health, [5]Medicine, [6]Medicine, University of Otago, and [3]Best Practice Advocacy Centre, Dunedin, New Zealand

Table 2 Patients tested for chronic kidney disease and prevalence of chronic kidney disease in the Southern region of New Zealand.

	Registered patients	Tested for CKD	CKD	Odds ratio (95% CI)	Prob.
	n (%)	*n* (%)	***n*** (%) [95% CI]		
All patients (≥20 years)	211 980 (100.0)	159 799 (75.4)	25 012 (11.8) [11.7–11.9]		
Age group (years)					
20–29	34 693 (16.4)	18 053 (52.0)	560 (1.6) [1.5–1.7]	Reference	
30–39	35 141 (16.6)	20 844 (59.3)	731 (2.1) [1.9–2.2]	1.30 (1.16–1.46)	<0.001
40–49	40 791 (19.2)	29 345 (71.9)	934 (2.3) [2.1–2.4]	1.40 (1.26–1.56)	<0.001
50–59	40 047 (18.9)	33 497 (83.6)	2180 (5.4) [5.2–5.7]	3.29 (2.99–3.62)	<0.001
60–69	30 248 (14.3)	27 810 (91.9)	5079 (16.8) [16.4–17.2]	10.96 (10.01–12.00)	<0.001
70–79	19 010 (9.0)	18 383 (96.7)	7656 (40.3) [39.6–41.0]	35.56 (32.48–38.93)	<0.001
80+	12 050 (5.7)	11 867 (98.5)	7892 (65.5) [64.6–66.3]	104.45 (95.11–114.70)	<0.001
Gender					
Male	102 165 (48.2)	74 039 (72.5)	10 474 (10.3) [10.1–10.4]	Reference	
Female	109 713 (51.8)	85 694 (78.1)	14 529 (13.2) [13.0–13.4]	1.35 (1.31–1.40)	<0.001
Ethnicity					
European	186 395 (87.9)	143 109 (76.8)	23 005 (12.3) [12.2–12.5]	Reference	
Maori	12 049 (5.7)	8495 (70.5)	1074 (8.9) [8.4–9.4]	1.56 (1.45–1.69)	<0.001
Pacific	2665 (1.3)	1844 (69.2)	338 (12.7) [11.4–13.9]	2.62 (2.28–3.01)	<0.001
Asian	5531 (2.6)	3192 (57.7)	322 (5.8) [5.2–6.4]	0.97 (0.85–1.11)	0.674
Other	4353 (2.1)	2394 (55.0)	184 (4.2) [3.6–4.8]	0.87 (0.73–1.03)	0.113
Deprivation quintile					
1 – Least deprived	54 135 (25.5)	40 071 (74.0)	4789 (8.8) [8.6–9.1]	Reference	
2	49 053 (23.1)	36 297 (74.0)	5357 (10.9) [10.6–11.2]	1.11 (1.06–1.17)	<0.001
3	41 646 (19.6)	31 910 (76.6)	5426 (13.0) [12.7–13.4]	1.19 (1.14–1.25)	<0.001
4	37 172 (17.5)	28 819 (77.5)	5422 (14.6) [14.2–14.9]	1.31 (1.24–1.38)	<0.001
5 – Most deprived	20 689 (9.8)	16 078 (77.7)	3005 (14.5) [14.0–15.0]	1.38 (1.30–1.47)	<0.001
Diabetes					
No	200 629 (94.6)	148 529 (74.0)	19 476 (9.7) [9.6–9.8]	Reference	
Yes	11 351 (5.4)	11 270 (99.3)	5536 (48.8) [47.9–49.7]	4.68 (4.45–4.91)	<0.001

[1]eGFR G3-5 or albuminuria A2–A3. [2]% of registered patients. Odds ratios for CKD adjusted for age, sex, ethnicity, deprivation and diabetes.

Table 3 Patients with diabetes tested for CKD with adjusted odds ratios for reduced eGFR (G stages 3–5).

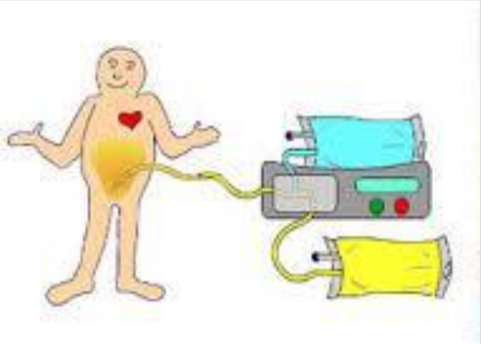
	n	G1 or G2	G3, G4 or G5	Odds ratio (95% CI)	Prob.
Number of patients	11 270	7559 (67.1)	3711 (32.9)		
Age (years)					
20–29	196	192 (98.0)	4 (2.0)	Reference	
30–39	350	338 (96.6)	12 (3.4)	1.59 (0.50–5.00)	0.430
40–49	1006	963 (95.7)	43 (4.3)	2.02 (0.72–5.71)	0.183
50–59	2039	1842 (90.3)	197 (9.7)	5.07 (1.86–13.81)	0.002
60–69	2914	2167 (74.4)	747 (25.6)	16.77 (6.20–45.35)	<0.001
70–79	2975	1490 (50.1)	1485 (49.9)	48.59 (17.98–131.30)	<0.001
80+	1790	567 (31.7)	1223 (68.3)	104.74 (38.67–283.71)	<0.001
Sex					
Male	5927	4169 (70.3)	1758 (29.7)	Reference	
Female	5341	3389 (63.5)	1952 (36.5)	1.26 (1.15–1.38)	<0.001
Ethnicity					
European	9907	6529 (65.9)	3378 (34.1)	Reference	
Maori	683	505 (73.9)	178 (26.1)	1.28 (1.05–1.57)	0.016
Pacific	243	173 (71.2)	70 (28.8)	1.88 (1.36–2.60)	<0.001
Asian	293	234 (79.9)	59 (20.1)	0.91 (0.65–1.27)	0.578
Other	118	96 (81.4)	22 (18.6)	0.59 (0.35–1.00)	0.049
Deprivation quintile					
1	2013	1459 (72.5)	554 (27.5)	Reference	
2	2307	1596 (69.2)	711 (30.8)	1.09 (0.94–1.26)	0.260
3	2358	1560 (66.2)	798 (33.8)	1.14 (0.98–1.32)	0.083
4	2500	1588 (63.5)	912 (36.5)	1.36 (1.18–1.58)	<0.001
5	1677	1083 (64.6)	594 (35.4)	1.45 (1.24–1.70)	<0.001

Odds ratios for reduced eGFR adjusted for age, sex, ethnicity, deprivation.

NZD index: unités géographiques

Précarité et techniques de suppléance

- Comparaisons internationales plus difficiles compte tenu des systèmes de santé différents



Dialyse

Medical practice patterns and socio-economic factors may explain geographical variation of end-stage renal disease incidence

Cécile Couchoud[1], Chantal Guihenneuc[2,3], Florian Bayer[4], Vincent Lemaitre[5], Philippe Brunet[6,7] and Bénédicte Stengel[8,9]; On behalf of the REIN Registry

Indicateur par département

Table 3. RRs (and 95% CIs) of the incidence rates associated with an increase of 1 SD in levels of each district-level characteristic, adjusting for spatial autocorrelation in the residual variability

	Crude RR (95% CI)	Adjusted for all other factors RR (95% CI)
Socio-economic indicators		
Proportion of people unemployed (%)[a]	1.09 (1.04–1.14)	1.05 (1.01–1.09)
Proportion of people aged 18–59 years receiving minimum guaranteed income allowances (%)[a]	1.09 (1.05–1.13)	
Proportion of people receiving free health care (%)[a]	1.09 (1.05–1.13)	
GDP per capita (€ per inhabitants/year)	1.00 (0.96–1.04)	
Low educational level (%)	1.00 (0.97–1.04)	
Demographic indicators		
Population density (inhabitants/km^2)[b,c]	1.08 (1.03–1.14)	1.07 (1.02–1.12)
Proportion of people living in rural area (%)[c]	0.96 (0.91–1.00)	
Morbidity–mortality		
Age-adjusted cardiovascular mortality rate per 100 000 inhabitants	0.99 (0.94–1.04)	
Age- and sex-adjusted prevalence of treated diabetes (%)	1.09 (1.04–1.14)	1.08 (1.03–1.12)
Indicators of health care resources and supply		
Number of general practitioners per 100 000 inhabitants	1.01 (0.97–1.04)	
Number of specialists per 100 000 inhabitants	1.02 (0.98–1.05)	
Number of nephrologists per 100 000 inhabitants	1.02 (0.98–1.05)	
Proportion of nephrologists in private practice (%)	1.05 (1.01–1.09)	1.05 (1.01–1.08)
Mean travel time to reach a dialysis centre (minutes)	0.91 (0.87–0.96)	1.00 (0.95–1.04)
Indicators of clinical practices		
Median estimated glomerular filtration rate at RRT start (mL/min/1.73m^2)	1.07 (1.03–1.11)	1.06 (1.02–1.09)
Proportion of incident patients >85 years (%)	1.03 (1.00–1.07)	1.02 (0.99–1.06)
Proportion of incident patients who died within the first 3 months (%)	1.06 (1.02–1.10)	1.03 (1.00–1.06)

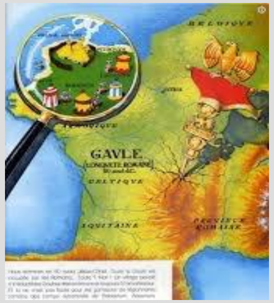
[a]Because of the correlations between these three variables (all Pearson correlation coefficients >0.8), only the percentage of people unemployed was entered in the final model.
[b]Because of the skewed distribution, the log-transformed levels of population density were used in all analyses.
[c]Because of the correlations between these two variables (Pearson correlation coefficients >0.7), only the population density was entered in the final model.

Nephrol Dial Transplant (2012) 27: 2312–2322

Clin Kidney J (2015) 8: 7–13
doi: 10.1093/ckj/sfu131
Advance Access publication 3 December 2014

ckj

Original Article



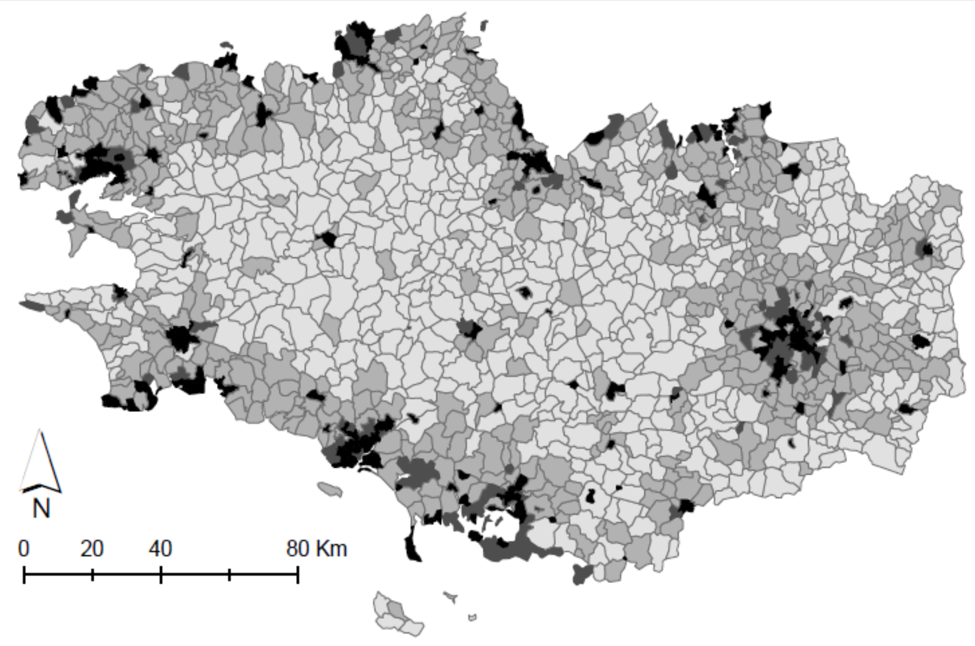
Spatial distribution of end-stage renal disease (ESRD) and social inequalities in mixed urban and rural areas: a study in the Bretagne administrative region of France

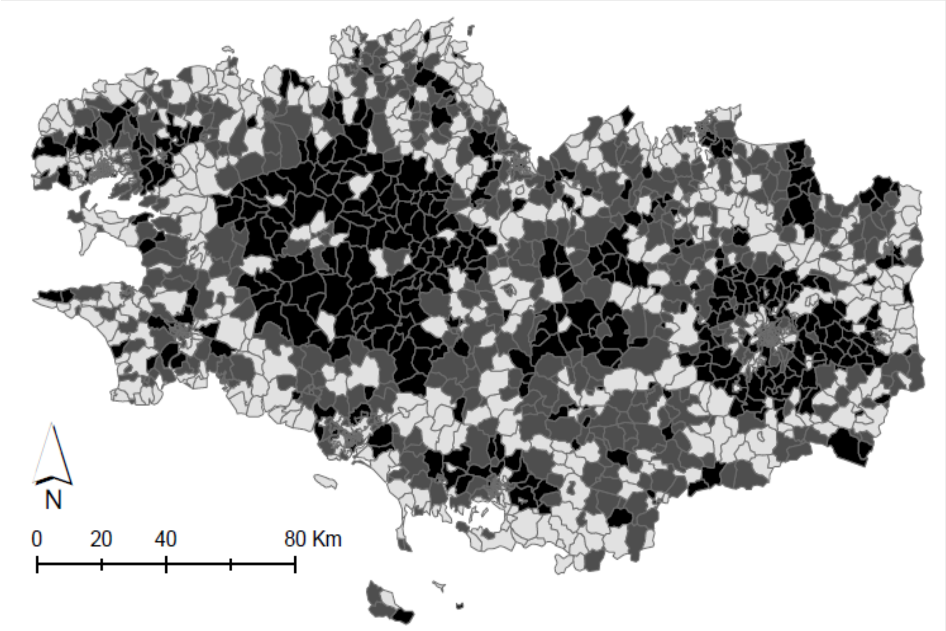
Wahida Kihal-Talantikite[1], Séverine Deguen[1,2], Cindy Padilla[2], Muriel Siebert[3], Cécile Couchoud[4], Cécile Vigneau[3,5] and Sahar Bayat[6] on behalf of The REIN registry

- Niveau de défaveur sociale à l'échelle IRIS (Îlot regroupé pour l'information statistique, regroupant 2000 habitants en moyenne) → 1797 IRIS en Bretagne
- + prise en compte rural/urbain
- Cohorte des cas incidents d'IRCT Entre le 1er janvier 2004 et le 31 décembre 2009, Agés de plus de 18 ans, Résidant en Bretagne, pris en charge en Bretagne

Grande disparité en Bretagne

- Cartographie : typologie rurale/urbaine – défaveur sociale





Legend

Rural/ urban typology

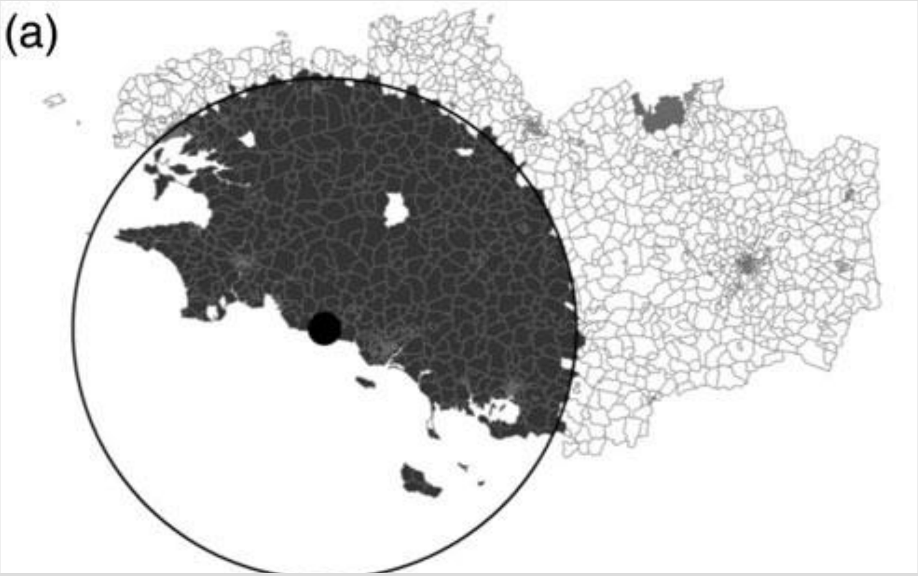
- Deep RURAL
- Peri-Rural
- Peri-urban
- Urban close-space

Legend

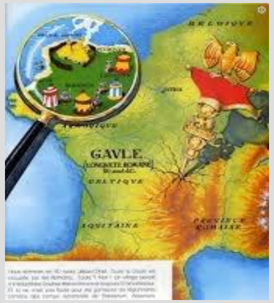
Socio-economic index

- Low deprivation
- Moderate deprivation
- High deprivation

Sans ajustement



Les différences d’Incidence de l’IRCT traitée (dialyse et greffe) en Bretagne s’expliquent par:



- Age, sexe
- Niveau de défaveur sociale :

  - *Nutrition, obésité, activité sportive*
  - *Toxines environnementaux*
  - *Prévalence et prise en charge des comorbidités : HTA et diabète*

  - *Pauvreté : prise en charge à 100% par la sécurité sociale*
  - *Accès aux soins : éloignement géographique,…*
  - *Meilleur prévention et recours aux néphrologues en amont de la suppléance*
    - *IRIS très défavorisés : 2% de greffes préemptives*
    - *IRIS peu défavorisés : 4% de greffes préemptives*

Précarité et techniques de suppléance

- Comparaisons internationales plus difficiles compte tenu des systèmes de santé différents

Greffe

Transplant International

ORIGINAL ARTICLE

Outcome-dependent geographic and individual variations in the access to renal transplantation in incident dialysed patients: a French nationwide cohort study

Adélaïde Pladys[1,†], Camille Morival[2,†], Cécile Couchoud[3], Christian Jacquelinet[3,4], Emmanuelle Laurain[5], Sylvie Merle[6], Cécile Vigneau[7,8] & Sahar Bayat[1] on behalf of the REIN registry

UN TRACÉ AUTONOME PAR DÉPARTEMENT

- Identifier les déterminants de l'accès à la greffe (1ere greffe) incluant toutes les régions de la France métropolitaine et les DOM-TOM

- Chez tous les incidents de moins de 90 ans
- Incidents 2012, suivi jusque fin 2015
- Données **individuelles et régionales** médicales ou non médicales
- **Analyse multivariée**

Transplant International 2018;

Résultats: Analyse **multivariée** de l'accès à la **liste**

9312 patients incidents

Moins d'accès pour:
- Les plus âgés
- Les patients les plus comorbides
- Les obèses
- Les patients qui démarrent en urgences

- Les femmes
- Les inactifs

Table 3. Association of patient-related and regional variables with placement on the waiting list (Multivariable Cox and Cox shared frailty models; *n* = 9312 incident patients. Among them, 2448 patients were waitlisted).

	Multivariable Cox model		Multivariable Cox shared frailty model	
	HR (95% CI)	*P*	HR (95% CI)	*P*
Gender				
Men	1		1	
Women	0.86 (0.79–0.94)	**0.001**	0.86 (0.79–0.94)	**<0.001**
Age (years)				
18–39	1		1	
40–59	0.70 (0.62–0.78)	**<0.001**	0.69 (0.61–0.78)	**<0.001**
60–69	0.47 (0.40–0.54)	**<0.001**	0.47 (0.40–0.54)	**<0.001**
70–79	0.09 (0.07–0.11)	**<0.001**	0.09 (0.07–0.11)	**<0.001**
80–90	0.002 (0.001–0.006)	**<0.001**	0.002 (0.001–0.006)	**<0.001**
Activity status				
Inactive	0.80 (0.72–0.89)	**<0.001**	0.80 (0.72–0.89)	**<0.001**
Active	1		1	
Clinical data				
Haemoglobin (g/dl)				
<10	0.83 (0.76–0.92)	**<0.001**	0.83 (0.75–0.91)	**<0.001**
[10–12]	1		1	
>12	0.99 (0.88–1.12)	0.896	0.99 (0.88–1.12)	0.912
Albumin (g/dl)				
<30	0.76 (0.67–0.86)	**<0.001**	0.76 (0.68–0.86)	**<0.001**
≥30	1		1	
BMI (kg/m²)				
<18.5	0.78 (0.64–0.96)	**0.019**	0.78 (0.64–0.96)	**0.020**
[18.5–23]	0.86 (0.74–0.99)	**0.034**	0.86 (0.75–0.99)	**0.042**
[23–25]	1		1	
≥25	0.87 (0.77–0.98)	**0.026**	0.87 (0.77–0.99)	**0.029**

Pladys, Bayat, Vigneau, Transplant int 2018

Accès a la **liste** différent selon les régions et moins important dans les régions « précaires »

Table 3. Association of patient-related and regional variables with placement on the waiting list (Multivariable Cox and Cox shared frailty models; *n* = 9312 incident patients. Among them, 2448 patients were waitlisted).

	Multivariable Cox model		Multivariable Cox shared frailty model	
	HR (95% CI)	*P*	HR (95% CI)	*P*
Sociodemographic data				
Region of residence				
Alsace	0.39 (0.29–0.53)	**<0.001**		
Aquitaine	0.88 (0.72–1.07)	0.204		
Auvergne	0.55 (0.41–0.73)	**<0.001**		
Basse-Normandie	0.77 (0.56–1.06)	0.107		
Bourgogne	0.55 (0.39–0.78)	**0.001**		
Bretagne	0.67 (0.54–0.83)	**<0.001**		
Centre	0.91 (0.73–1.13)	0.378		
Champagne-Ardenne	0.66 (0.49–0.88)	**0.004**		
Corse	0.50 (0.27–0.95)	**0.034**		
Franche-Comté	0.86 (0.63–1.19)	0.376		
Haute-Normandie	0.80 (0.60–1.07)	0.139		
Ile-de-France	1		n/a	
Languedoc-Roussillon	0.62 (0.49–0.77)	**<0.001**		
Limousin	0.54 (0.35–0.84)	**0.005**		
Lorraine	0.55 (0.43–0.71)	**<0.001**		
Midi-Pyrénées	1.1 (0.89–1.35)	0.384		
Nord-Pas-de-Calais	0.37 (0.31–0.46)	**<0.001**		
Pays de la Loire	0.94 (0.76–1.15)	0.531		
Picardie	0.57 (0.44–0.75)	**<0.001**		
Poitou-Charentes	0.84 (0.63–1.11)	0.219		
Provence-Alpes-Côte-d'Azur	0.59 (0.49–0.70)	**<0.001**		
Rhône-Alpes	0.76 (0.65–0.88)	**<0.001**		
Overseas territories	0.27 (0.21–0.34)	**<0.001**		

Analyse **multivariée** de l'accès à la **greffe**

Après le démarrage de la dialyse
Analyse multivariée
(2 modèles différents)

Moins d'accès pour:

- Les plus âgés
- Les patients les plus comorbides
- Les obèses

- Les femmes

Gender				
Men	1		1	
Women	0.84 (0.75–0.95)	**0.003**	0.84 (0.75–0.94)	**0.003**
Age (years)				
18–39	1		1	
40–59	0.68 (0.59–0.79)	**<0.001**	0.68 (0.59–0.79)	**<0.001**
60–69	0.56 (0.47–0.66)	**<0.001**	0.56 (0.48–0.67)	**<0.001**
70–79	0.16 (0.12–0.20)	**<0.001**	0.16 (0.13–0.20)	**<0.001**
80–90	0.003 (0.001–0.012)	**<0.001**	0.003 (0.001–0.01)	**<0.001**
Clinical data				
Albumin (g/dl)				
<30	0.76 (0.61–0.95)	**0.019**	0.76 (0.63–0.90)	**0.002**
≥30	1		1	
BMI (kg/m²)				
<18.5	0.73 (0.53–0.99)	**0.040**	0.69 (0.53–0.89)	**0.005**
[18.5–23]	0.92 (0.76–1.12)	0.404	0.92 (0.77–1.11)	0.388
[23–25]	1		1	
≥25	0.81 (0.69–0.94)	**0.007**	0.81 (0.69–0.94)	**0.006**
Number of cardiovascular diseases				
0	1		1	
1	0.76 (0.66–0.89)	**0.001**	0.77 (0.66–0.90)	**0.001**
2	0.43 (0.32–0.57)	**<0.001**	0.43 (0.33–0.58)	**<0.001**
≥3	0.41 (0.28–0.59)	**<0.001**	0.41 (0.28–0.60)	**<0.001**

Accès a la **greffe** différent selon les régions et moins important dans certaines régions « précaires »

Rattrapage de certaines régions → bilans plus longs?

Table 5. Association of patient-related and regional variables with access to renal transplantation after dialysis start (Multivariable Cox and Cox shared frailty models; *n* = 9312 incident patients. Among them, 1402 patients were transplanted).

	Multivariable Cox model		Multivariable Cox shared frailty model	
	HR (95% CI)	*P*	HR (95% CI)	*P*
Sociodemographic data				
Region of residence				
Alsace	0.74 (0.50–1.09)	0.129		
Aquitaine	1.50 (1.17–1.92)	**0.001**		
Auvergne	0.90 (0.62–1.31)	0.578		
Basse-Normandie	2.42 (1.71–3.42)	**<0.001**		
Bourgogne	1.02 (0.66–1.60)	0.920		
Bretagne	1.83 (1.40–2.38)	**<0.001**		
Centre	1.56 (1.17–2.08)	**0.002**		
Champagne-Ardenne	0.95 (0.64–1.41)	0.814		
Corse	1.67 (0.84–3.30)	0.142		
Franche-Comté	1.52 (1.01–2.26)	**0.042**		
Haute-Normandie	1.51 (1.06–2.15)	**0.024**		
Ile-de-France	1		n/a	
Languedoc-Roussillon	1.43 (1.07–1.90)	**0.016**		
Limousin	1.39 (0.84–2.32)	0.204		
Lorraine	0.79 (0.55–1.12)	0.187		
Midi-Pyrénées	1.19 (0.89–1.60)	0.238		
Nord-Pas-de-Calais	0.71 (0.54–0.94)	**0.018**		
Pays de la Loire	1.60 (1.22–2.10)	**0.001**		
Picardie	0.93 (0.66–1.32)	0.698		
Poitou-Charentes	2.35 (1.69–3.26)	**<0.001**		
Provence-Alpes-Côte-d'Azur	1.64 (1.31–2.04)	**<0.001**		
Rhône-Alpes	1.14 (0.92–1.41)	0.242		
Overseas territories	0.29 (0.19–0.44)	**<0.001**		

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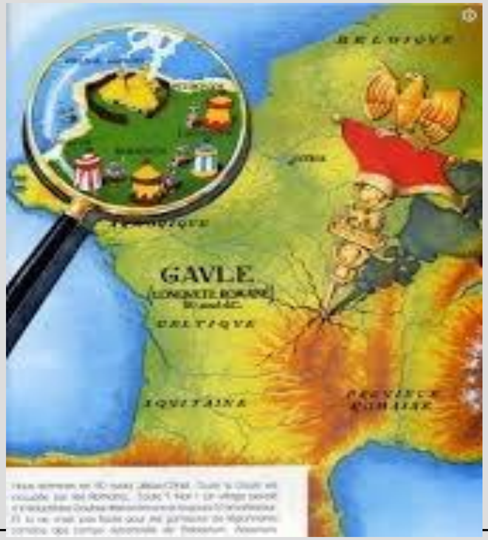
RESEARCH ARTICLE

Influence of Socio-Economic Inequalities on Access to Renal Transplantation and Survival of Patients with End-Stage Renal Disease

Wahida Kihal-Talantikite[1]*, Cécile Vigneau[2,3], Séverine Deguen[1], Muriel Siebert[2], Cécile Couchoud[4], Sahar Bayat[5]

- Incidents 2004-2009 en Bretagne



PLOS ONE | DOI:10.1371/journal.pone.0153431 April 15, 2016

Accès à la liste d'attente

Table 1. Patients' characteristics at first dialysis and their association with access to the waiting list (univariate and multivariate Cox analyses).

Patients' characteristics		Number (%)	Univariate analysis		Multivariate analysis	
		2006	HR (95%CI)	p-value	HR (95%CI)	p-value
Age						
	18–39	122 (6.1)	54.52 [36.7–81.1]	<0.001	29.81 [18.1–49.1]	<0.001
	40–59	425 (21.2)	38.10 [24.4–54.9]	<0.001	23.50 [15.2–36.4]	<0.001
	60–69	334 (16.6)	12.15 [8.2–18.0]	<0.001	11.00 [7.01–17.2]	<0.001
	≥70	1125 (56.1)	1		1	
Sex						
	Men	1216 (60.6)	1.06 [0.9–1.2]	0.49	1.01 [0.8–1.2]	0.9
	Women	790 (39.4)	1		1	

PLOS ONE | DOI:10.1371/journal.pone.0153431 April 15, 2016

Accès à la liste : Facteurs médicaux

Patients' characteristics		Number (%)	Univariate analysis		Multivariate analysis	
		2006	HR (95%CI)	p-value	HR (95%CI)	p-value
Active malignancy						
	Yes	217 (11.4)	0.18 [0.1–0.3]	<0.001	0.28 [0.2–0.5]	<0.001
	No	1689 (88.6	1		1	
Diabetes						
	Yes	505 (26.0)	0.49 [0.4–0.6]	<0.001	-	
	No	1437 (74.0)	1		-	
Physical disabilities						
	Yes	335 (17.6)	0.18 [0.1–0.3]	<0.001	0.48 [0.3–0.8]	0.002
	No	1566 (82.4)	1		1	
Hepatic disease						
	Yes	1 832 (96.3)	0.21 [0.1–0.5]	0.001	0.23 [0.1–0.6]	<0.001
	No	70 (3.7)	1		1	
Primary renal disease						
	APKD ‡	76 (3.8)	1		1	
	Hypertensive & vascular	481 (24.0)	0.14 [0.1–0.2]	<0.001	0.72 [0.5–1.0]	0.07
	Other & unknown	786 (39.2)	0.26 [0.2–0.3]	<0.001	0.62 [0.5–0.8]	<0.001
	Diabetes	187 (9.3)	0.25 [0.2–0.4]	<0.001	0.67 [0.4–0.98]	0.04
	Glomerulonephritis	267 (13.3)	0.64 [0.5–0.8]	0.001	0.85 [0.6–1.1]	0.28
	Pyelonephritis	108 (5.4)	0.59 [0.4–0.8]	0.003	0.77 [0.5–1.1]	0.19
Cardiovascular disease						
	Yes	1058 (54.5)	0.20 [0.2–0.3]	0.001	0.52 [0.4–0.7]	<0.001
	No	883 (45.5)	1		1	
Chronic respiratory disease						
	Yes	239 (87.5)	0.38 [0.3–0.6]	<0.001	-	
	No	1668(12.5)	1			

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Accès à la liste: facteurs socio-éco

Occupational status			
Yes	264 (14.3)	8.38[7.0–10.2]	<0.001
No	1587 (85.7)	1	
Ownership of dialysis facility			
Private	791(39.4)	2.16 [1.8–2.6]	<0.001
Public, non-university	943(47.0)	1	
Public, university	272 (13.6)	0.52 [0.4–0.8]	0.001
Neighborhood deprivation			
Low	75(18.7)	1.40 [1.1–1.7]	0.002
Moderate	628(31.3)	1.06 [0.9–1.3]	0.53
High	1003(50.0)	1	
Degree of urbanization			
Rural	946 (47.2)	1	
Urban	1060 (52.8)	0.86 [0.7–1.0]	0.09

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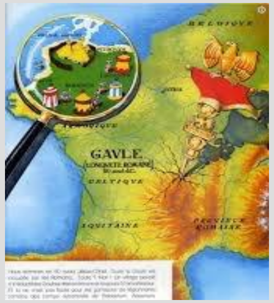
Accès à la greffe après l'inscription

Table 2. Association between patients' characteristics and access to renal transplantation after placement on the waiting list (univariate and multivariate Cox analyses).

Patients' characteristics		Number (%)	Univariate analysis		Multivariate analysis	
		546	HR (95%CI)	p-value	HR (95%CI)	p-value
Age						
	18–39	104 (19.0)	1		1	
	40–59	302 (55.3)	1.00 [0.8–1.3]	0.93	0.86 [0.7–1.1]	0.16
	60–69	108 (19.8)	1.04[0.8–1.4]	0.74	0.89 [0.7–1.2]	0.20
	≥70	32 (5.9)	1.61[1.1–2.4]	0.02	1.72 [1.1–2.6]	0.01
Gender						
	Men	336 (61.5)	1.01 [0.8–1.2]	0.90	0.95 [0.8–1.2]	0.71
	Women	210 (38.5)	1		1	
Occupation status						
	No	281 (56.1)	1			
	Yes	220 (43.9)	1.12 [0.9–1.3]	0.23		
Neighborhood deprivation						
	Low	129 (23.6)	0.88 [0.7–1.1]	0.29	0.86 [0.7–1.1]	0.26
	Moderate	165 (30.2)	0.99 [0.8–1.2]	0.95	1.03 [0.8–1.3]	0.90
	High	252 (46.2)	1		1	
Degree of urbanization						
	Rural	277(50.7)	0.97 [0.8–1.2]	0.76		
	Urban	269 (49.3)	1			

PLOS ONE | DOI:10.1371/journal.pone.0153431 April 15, 2016



En conclusion…..

- Dans cette étude Bretonne, l'accès à la liste d'attente de greffe rénale, en analyse multivariée **dépend de facteurs médicaux**
  - *Pas de différence entre les hommes et les femmes*
  - *Plus d'accès chez les personnes « actives » définition?*
  - *Pas de différence selon l'indice de défaveur social*

- Aucune différence dans l'accès à la greffe selon le niveau socio-économique

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ORIGINAL ARTICLE

Access to preemptive registration on the waiting list for renal transplantation: a hierarchical modeling approach

Natacha Riffaut,[1] Thierry Lobbedez,[1] Marc Hazzan,[2] Dominique Bertrand,[3] Pierre-François Westeel,[4] Guy Launoy,[5] Isabelle Danneville,[1] Nicolas Bouvier[1] and Bruno Hurault de Ligny[1]

1 Service de Néphrologie, CHU Clémenceau, Caen, France

Table 2. Multivariate mixed logistic regression of factors associated with preemptive registration.

		Model 1(A)		Model 1(B)		Model 2 (final)	
Fixed effects	Empty model	OR (95% CI)	*P*-value†	OR (95% CI)	*P*-value†	OR (95% CI)	*P*-value†
Level 1: patients							
Age							
18–45 years		Ref.	<0.10	Ref.	0.10	Ref.	0.11
45.1–60 years		0.87 (0.65–1.17)		0.92 (0.69–1.23)		0.93 (0.70–1.23)	
≥60.1 years		0.72 (0.51–1.01)		0.76 (0.55–1.05)		0.76 (0.55–1.06)	
BMI*							
20.1–25 kg/m²		Ref.	0.12	–	–	–	–
≤20 kg/m²		0.62 (0.37–1.00)		–	–	–	–
>25 kg/m²		0.89 (0.69–1.16)		–	–	–	–
Diabetes*		0.89 (0.61–1.28)	0.52	–	–	–	–
Dyslipidemia*		1.21 (0.92–1.59)	0.17	–	–	–	–
Cardiovascular disease*		0.57 (0.41–0.79)	<0.001	0.57 (0.41–0.78)	<0.001	0.57 (0.42–0.79)	<0.001
EDI*							
Quintile 1–4 (least deprived)		Ref.	<0.01	Ref.	<0.01	Ref.	<0.05
Quintile 5 (most deprived)		0.72 (0.55–0.92)		0.70 (0.54–0.90)		0.73 (0.57–0.94)	
Year of registration							
2008		Ref.	<0.001	Ref.	<0.001	Ref.	<0.001
>2008		1.84 (1.30–2.63)		1.87 (1.33–2.67)		1.85 (1.31–2.62)	
Level 2: renal units							
Transplant center							
A						Ref.	<0.10
B						2.35 (1.25–4.41)	
C						1.40 (0.85–2.31)	
D						1.70 (0.92–3.14)	
Ownership of the facility							
Academic hospital						Ref.	<0.01
Community hospital						0.44 (0.24–0.80)	
Private hospital						0.35 (0.18–0.69)	
Random effects							
Level 2 variance	0.452	0.445		0.459		0.248	
P (LRT χ^2)	<0.001	<0.001		<0.001		<0.001	
PCV	–	1.6%		−1.5%		46.0%	

LRT, Likelihood Ratio Test, test of random intercept = D_0–D_1. Under H0, the statistics of LRT follows a distribution of χ^2 in one degree of freedom.
D_1, deviance of multilevel model with random intercept; D_0, deviance of logistic model without random effect.
PCV, Proportional change in variance.
*A multiple imputation by chained equations was performed for missing data.
†p trend, probability for linear tendency (categorical variables); *P* heterogeneity, probability for heterogeneity (non-ordering variables).

L'inscription en greffe préemptive

- Est influencée par multiples facteurs
- Dont le niveau de défaveur sociale

→ Influence l'amont de la suppléance

Etude Hauts de France

Facteurs associés à l'inscription sur liste (analyse multivariée).

		HR (IC95%)	p=
Age (début dialyse)	<30 ans	ref	
	30-40 ans	1.2 (0.65-2.20)	0.55
	40-50 ans	0.81 (0.42-1.53)	0.52
	50-60 ans	0.74 (0.42-1.30)	0.30
	60-70 ans	0.41 (0.21-0.81)	0.01
	>70 ans	0.04 (0.01-0.13)	<0.0001
Insuffisance Cardiaque		0.61 (0.38-0.96)	0.03
Re transplantation		4.69 (2.83-7.76)	<0.0001
Niveau d'étude	Primaire-Collège	ref	
	Lycée	1.52 (1.03-2.23)	0.03
	> Bac	1.51 (0.84-2.72)	0.16
Vacances	Non, mais pas avant	ref	
	Non, trop fatigué	1.64 (0.91-2.88)	0.1
	Non, financier	1.65 (0.88-3.08)	0.12
	Oui	2.25 (1.35-3.76)	0.001
Situation de famille	Seul	ref	
	En couple	1.73 (1.10-2.79)	0.02
	Avec d'autres personnes	2.32 (1.31-4.11)	0.004

C guise, … F Glowacki, SFNDT 2017

En conclusion, en France L'accès à la liste d'attente et la greffe

L'accès à la liste comme l'accès à la greffe est hétérogène en France

Dépend surtout de facteurs médicaux

Mais aussi de facteurs non médicaux comme l'âge, la région et les caractéristiques épidémiologiques **de la région**

Peu d'influence directe des facteurs socio éco individuels en analyse multivariée car intrication majeure des facteurs socio-éco et médicaux

Un parcours différent pour les hommes et les femmes?

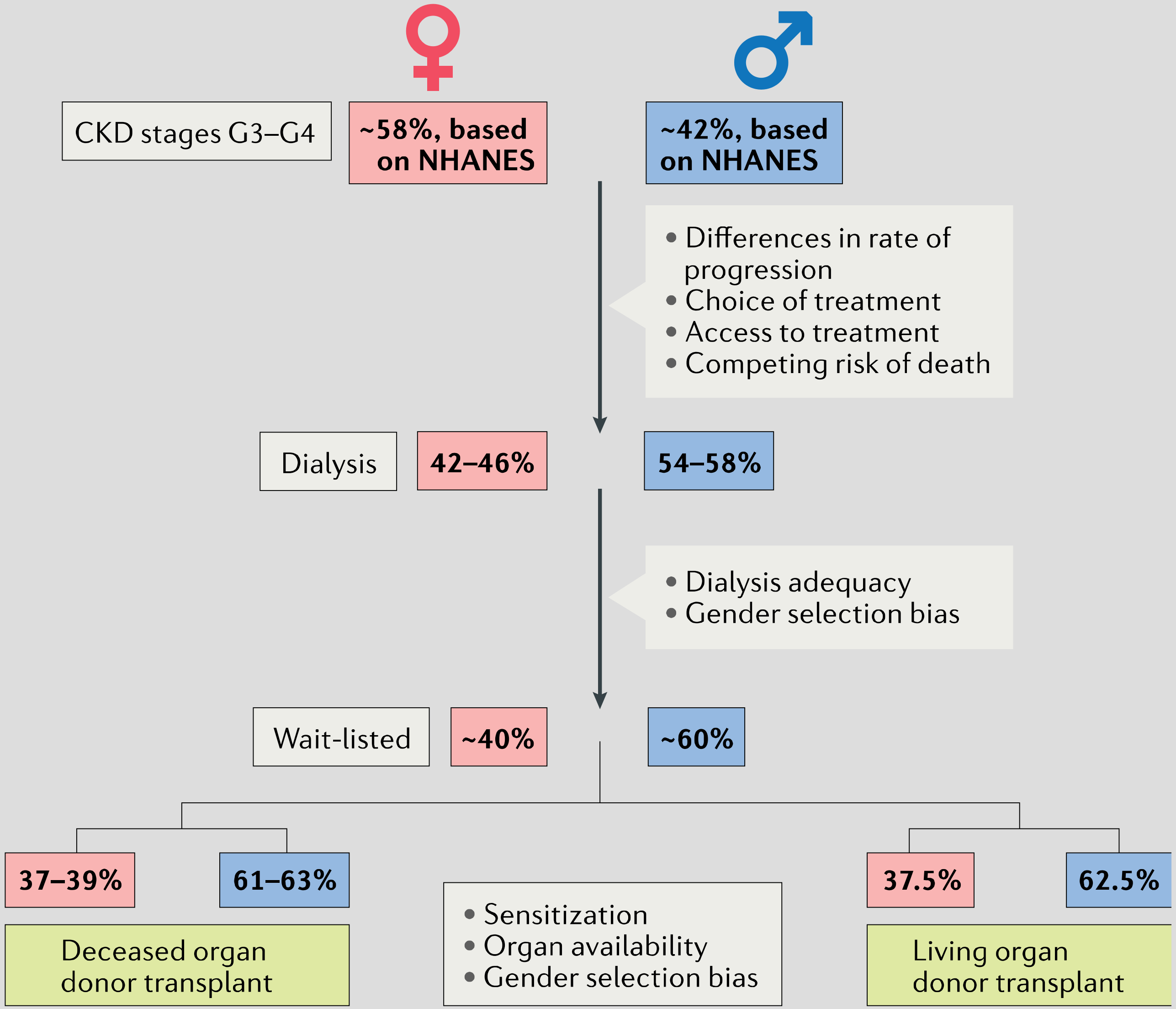
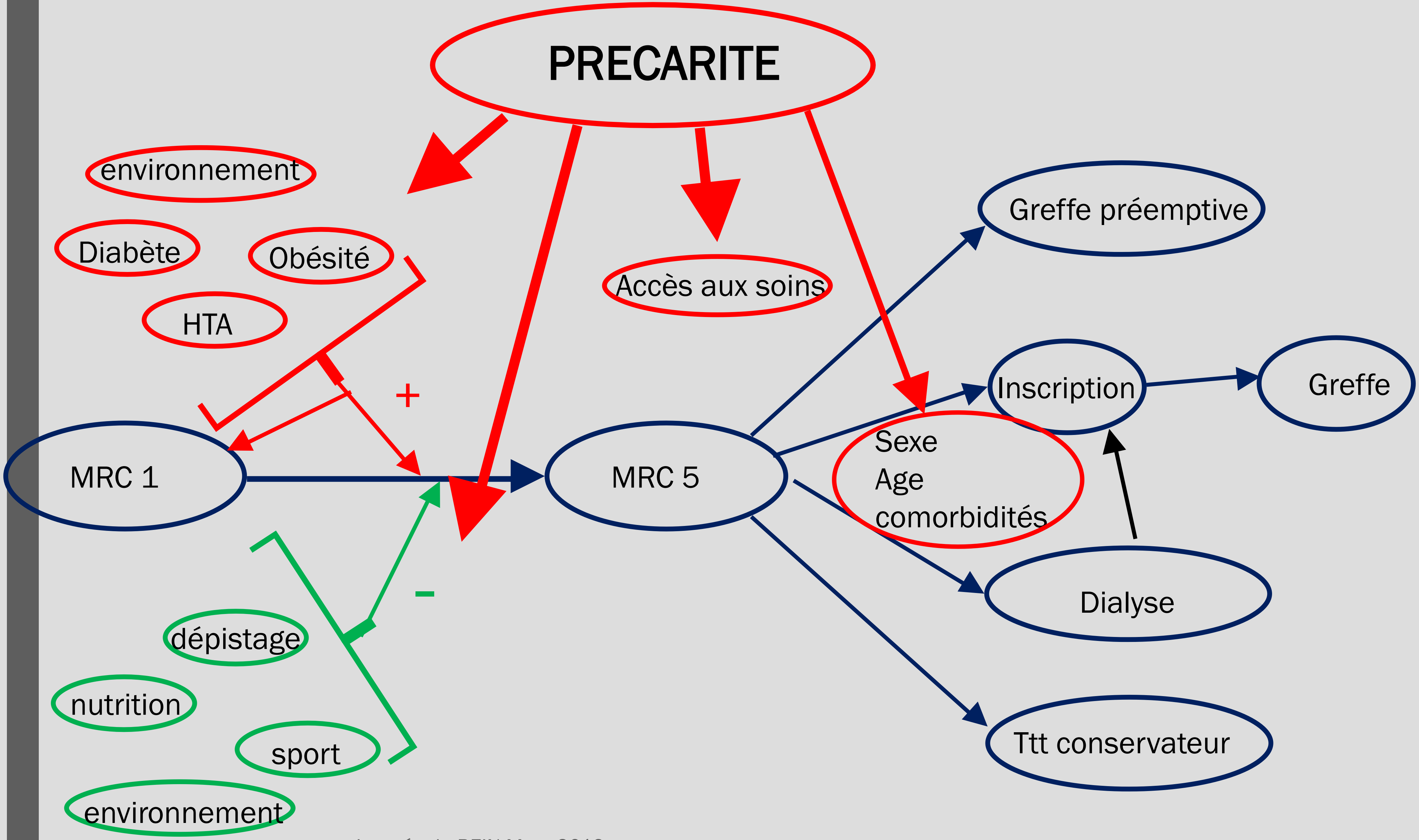


Figure 3 | **Sex and gender disparities in the epidemiology and outcomes of CKD.** Despite more women than men having chronic kidney disease (CKD), more men than women initiate dialysis or undergo transplantation. This discrepancy might in part be attributed to sex (that is, biological) differences, such as in the rate of CKD progression or the effect of sensitization, or to gender (that is, sociocultural) differences, including differences in access to care or differences in attitude towards disease. All percentages


PRECARITE
environnement
Diabète
Obésité
HTA
Accès aux soins
+
MRC 1
MRC 5
-
dépistage
nutrition
sport
environnement
Greffe préemptive
Inscription
Greffe
Sexe
Age
comorbidités
Dialyse
Ttt conservateur

MERCI POUR VOTRE ATTENTION