

SECTION 4

Deceased Organ Donor Profile

SUMMARY

This section provides a detailed description of organ donor demographic characteristics, including gender, age, ethnicity and religions. Data also describes pre-existing medical condition and virology screening assessed prior to deceased organ donation

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Suggested Citation

ANZOD Registry. 2019 Annual Report, Section 4: Deceased Organ Donor Profile. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2019. Available at: <u>https://www.anzdata.org.au/report/anzod-annual-report-2019/</u>

Donor Demographics

Table 4.1 contains a description of actual donors in Australia and New Zealand in 2018 compared to 2017. In Australia there continues to be more male than female donors. In both countries there is a preponderance of blood groups O and A.

Table 4.1.1 Demography of Deceased Donors in Australia 2017 - 2018

Table 4.1.1 Demography of Deceased I		2017			2018				
Australian Donors	DBD	DCD	Total	DBD	DCD	Total			
Gender									
Male	185 (52%)	90 (60%)	275 (54%)	226 (57%)	99 (64%)	325 (59%)			
Female	174 (48%)	61 (40%)	235 (46%)	174 (44%)	55 (36%)	229 (41%)			
Age									
0-4	6 (2%)	2 (1%)	8 (2%)	5 (1%)	1 (1%)	6 (1%)			
5-14	12 (3%)	5 (3%)	17 (3%)	10 (3%)	-	10 (2%)			
15-24	30 (8%)	16 (11%)	46 (9%)	37 (9%)	17 (11%)	54 (10%)			
25-34	50 (14%)	12 (8%)	62 (12%)	41 (10%)	17 (11%)	58 (10%)			
35-44	60 (17%)	24 (16%)	84 (16%)	62 (16%)	25 (16%)	87 (16%)			
45-54	77 (21%)	31 (21%)	108 (21%)	87 (22%)	35 (23%)	122 (22%)			
55-64	60 (17%)	41 (27%)	101 (20%)	70 (18%)	34 (22%)	104 (19%)			
65-74	55 (15%)	20 (13%)	75 (15%)	73 (18%)	25 (16%)	98 (18%)			
75+	9 (3%)	-	9 (2%)	15 (4%)	-	15 (3%)			
BMI (kg/m2)									
Underweight (<18.5)	20 (6%)	10 (7%)	30 (6%)	20 (5%)	6 (4%)	26 (5%)			
Normal (18.5-<25)	130 (36%)	42 (28%)	172 (34%)	159 (40%)	45 (29%)	204 (37%)			
Overweight (25-<30)	120 (33%)	60 (40%)	180 (35%)	134 (34%)	53 (34%)	187 (34%)			
Obese (>=30)	89 (25%)	38 (25%)	127 (25%)	87 (22%)	50 (32%)	137 (25%)			
Unknown	-	1 (1%)	1 (0%)	-	-	-			
Blood Group									
Α	129 (36%)	51 (34%)	180 (35%)	151 (38%)	65 (42%)	216 (39%)			
AB	10 (3%)	5 (3%)	15 (3%)	21 (5%)	4 (3%)	25 (5%)			
В	34 (9%)	13 (9%)	47 (9%)	52 (13%)	13 (8%)	65 (12%)			
0	186 (52%)	82 (54%)	268 (53%)	176 (44%)	72 (47%)	248 (45%)			
Ethnicity									
Australian Non-indigenous	266 (74%)	119 (79%)	385 (75%)	295 (74%)	117 (76%)	412 (74%)			
Australian Indigenous	10 (3%)	2 (1%)	12 (2%)	15 (4%)	3 (2%)	18 (3%)			
New Zealand European	4 (1%)	1 (1%)	5 (1%)	8 (2%)	1 (1%)	9 (2%)			
New Zealand Māori	4 (1%)	1 (1%)	5 (1%)	1 (0%)	1 (1%)	2 (0%)			
Pacific Islander	1 (0%)	1 (1%)	2 (0%)	1 (0%)	1 (1%)	2 (0%)			
European	44 (12%)	16 (11%)	60 (12%)	32 (8%)	17 (11%)	49 (9%)			
North African and Middle Eastern	1 (0%)	2 (1%)	3 (1%)	5 (1%)	1 (1%)	6 (1%)			
Asian	24 (7%)	8 (5%)	32 (6%)	37 (9%)	11 (7%)	48 (9%)			
American	2 (1%)	1 (1%)	3 (1%)	4 (1%)	1 (1%)	5 (1%)			
Sub-Saharan African	3 (1%)	-	3 (1%)	2 (1%)	1 (1%)	3 (1%)			

*Ethnicity categories listed in Table 4.1 are based on the Australian Bureau of Statistics (ABS) and Stats NZ ethnicity classifications below: Australian Non-indigenous: Oceanian - Australian

Australian Indigenous: Oceanian - Australian Aboriginal/Australian South Sea Islander/Torres Strait Islander

New Zealand European: Oceanian - New Zealand European

New Zealand Māori: Oceanian - New Zealand Māori

Pacific Islander: Oceanian - Melanesian And Papuan/Micronesian/Polynesian/Cook Islander/Fijian/Niuean/Samoan/Tongan/Tokelauan European: North-West European, Southern and Eastern European - Italian/Greek

North African and Middle Eastern: North African and Middle Eastern - Arab/Turkish

Asian: South-East Asian - Vietnamese/Filipino/Indonesian/Malay, North-East Asian - Chinese, Southern and Central Asian - Indian American: North American, Hispanic North American, South American, Central American, Caribbean Islander

Sub-Saharan African: Sub-Saharan African

Table 4.1.2 Demography of Deceased Donors in New Zealand 2017 - 2018

Table 4.1.2 Demography of Decea		2017			2018				
New Zealand Donors	DBD	DCD	Total	DBD	DCD	Total			
Gender									
Male	28(46%)	8(67%)	36 (49%)	28(53%)	4(44%)	32 (52%)			
Female	33(54%)	4(33%)	37 (51%)	25(47%)	5(56%)	30 (48%)			
Age									
5-14	1(2%)	-	1 (1%)	1(2%)	-	1 (2%)			
15-24	7(11%)	2(17%)	9 (12%)	9(17%)	1(11%)	10 (16%)			
25-34	8(13%)	1(8%)	9 (12%)	9(17%)	-	9 (15%)			
35-44	6(10%)	-	6 (8%)	7(13%)	1(11%)	8 (13%)			
45-54	9(15%)	6(50%)	15 (21%)	7(13%)	-	7 (11%)			
55-64	18(30%)	3(25%)	21 (29%)	7(13%)	7(78%)	14 (23%)			
65-74	9(15%)	-	9 (12%)	10(19%)	-	10 (16%)			
75+	3(5%)	-	3 (4%)	3(6%)	-	3 (5%)			
BMI (kg/m2)									
Underweight (<18.5)	-	-	-	1(2%)	-	1 (2%)			
Normal (18.5-<25)	28(46%)	3(25%)	31 (42%)	19(36%)	2(22%)	21 (34%)			
Overweight (25-<30)	22(36%)	3(25%)	25 (34%)	23(43%)	3(33%)	26 (42%)			
Obese (>=30)	11(18%)	6(50%)	17 (23%)	10(19%)	4(44%)	14 (23%)			
Blood Group									
Α	20(33%)	3(25%)	23 (32%)	22(42%)	1(11%)	23 (37%)			
AB	2(3%)	1(8%)	3 (4%)	3(6%)	1(11%)	4 (6%)			
В	5(8%)	4(33%)	9 (12%)	5(9%)	4(44%)	9 (15%)			
0	34(56%)	4(33%)	38 (52%)	23(43%)	3(33%)	26 (42%)			
Ethnicity									
Australian Non-indigenous	1(2%)	-	1 (1%)	-	-	-			
New Zealand European	38(62%)	4(33%)	42 (58%)	35(66%)	8(89%)	43 (69%)			
New Zealand Māori	7(11%)	-	7 (10%)	6(11%)	1(11%)	7 (11%)			
Pacific Islander	-	4(33%)	4 (5%)	4(8%)	-	4 (6%)			
European	10(16%)	1(8%)	11 (15%)	1(2%)	-	1 (2%)			
Asian	1(2%)	3(25%)	4 (5%)	4(8%)	-	4 (6%)			
American	1(2%)	-	1 (1%)	2(4%)	-	2 (3%)			
Sub-Saharan African	3(5%)	-	3 (4%)	1(2%)	-	1 (2%)			

*Ethnicity categories listed in Table 4.1 are based on the Australian Bureau of Statistics (ABS) and Stats NZ ethnicity classifications below: Australian Non-indigenous: Oceanian - Australian

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Asian: South-East Asian - Vietnamese/Filipino/Indonesian/Malay, North-East Asian - Chinese, Southern and Central Asian - Indian American: North American, Hispanic North American, South American, Central American, Caribbean Islander

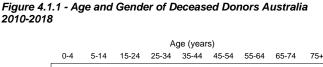
Sub-Saharan African: Sub-Saharan African

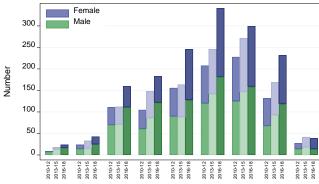
Donor Age and Gender

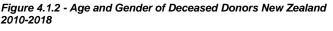
In Australia in 2018, 17.7% of donors (98) were 65-74 years of age and 2.7% of donors (15) were aged 75 years or older. The oldest donor was 81.4 years and the youngest was less than one year. In New Zealand in 2018, 21.0% of donors (13) were 65 years or older. The age range was from 14.5 years to 81.2 years.

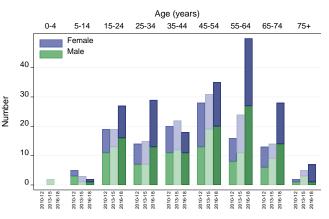
The mean age of donors in Australia in 2018 was 48.2 years. The mean age in New Zealand was 46.8 years.

Figure 4.1 shows the trends in donor numbers for each age group and gender; while there has been growth in all age groups this is more marked in the older age groups.



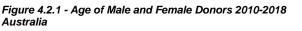






The median age for Australian donors in 2018 was 50.2 years (Figure 4.2). The median age across Australian jurisdictions in 2018 ranged from 38.5 years in ACT to 55.9 years in NSW.

The median age for New Zealand was 48.6 years in 2018.



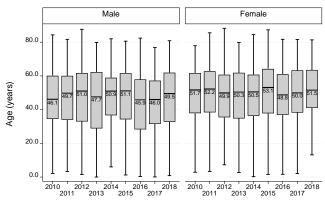


Figure 4.2.2 - Age of Male and Female Donors 2010-2018 New Zealand

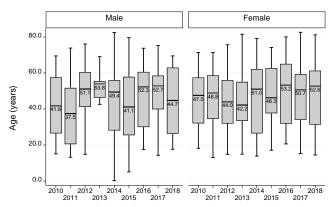
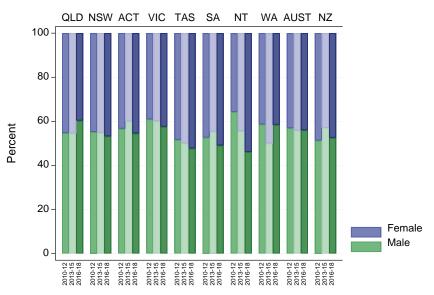


Figure 4.1.2 - Age and Gender of Deceased Donors New Zealand

Donor gender in each State, Australia and New Zealand is shown in three-year cohorts in Figure 4.3.

Figure 4.3 - Gender by State, Australia, New Zealand 2010-2018



Donor Ethnic Origins

There have been no significant changes in the documented ethnicity of donors over the past five years in either Australia or New Zealand (Table 4.2).

Donor racial / ethnic origin*			Australia				l.	New Zeala	nd	
Donor racial / ethnic origin	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Australian	286 (76%)	326 (75%)	385 (77%)	385 (75%)	412 (74%)	4 (9%)	-	1 (2%)	1 (1%)	-
Australian Aboriginal/Torres Strait Islander	9 (2%)	11 (3%)	20 (4%)	12 (2%)	18 (3%)	-	-	-	-	-
New Zealand European	7 (2%)	5 (1%)	4 (1%)	5 (1%)	9 (2%)	27 (59%)	41 (77%)	41 (67%)	42 (58%)	43 (69%)
New Zealand Māori	1 (0%)	1 (0%)	5 (1%)	5 (1%)	2 (0%)	6 (13%)	5 (9%)	5 (8%)	7 (10%)	7 (11%)
Pacific Islander	2 (1%)	4 (1%)	3 (1%)	2 (0%)	2 (0%)	1 (2%)	-	1 (2%)	4 (5%)	4 (6%)
European	31 (8%)	44 (10%)	43 (9%)	60 (12%)	49 (9%)	4 (9%)	2 (4%)	5 (8%)	11 (15%)	1 (2%)
North African and Middle Eastern	2 (1%)	4 (1%)	2 (0%)	3 (1%)	6 (1%)	-	-	1 (2%)	-	-
Asian	25 (7%)	32 (7%)	34 (7%)	32 (6%)	48 (9%)	1 (2%)	2 (4%)	6 (10%)	4 (5%)	4 (6%)
American	10 (3%)	5 (1%)	4 (1%)	3 (1%)	5 (1%)	2 (4%)	3 (6%)	1 (2%)	1 (1%)	2 (3%)
Sub-Saharan African	5 (1%)	3 (1%)	3 (1%)	3 (1%)	3 (1%)	1 (2%)	-	-	3 (4%)	1 (2%)

Table 4.2 Ethnic Origin of Donors, 2014-2018

*Ethnicity categories listed in Table 4.2 are based on the Australian Bureau of Statistics (ABS) and Stats NZ ethnicity classifications below: Australian: Oceanian - Australian

North African and Middle Eastern: North African and Middle Eastern - Arab/Turkish

Sub-Saharan African: Sub-Saharan African

Australian Aboriginal/Torres Strait Islander: Oceanian - Australian Aboriginal/Australian South Sea Islander/Torres Strait Islander New Zealand European: Oceanian - New Zealand European

New Zealand Māori: Oceanian - New Zealand Māori

Pacific Islander: Oceanian - Melanesian And Papuan/Micronesian/Polynesian/Cook Islander/Fijian/Niuean/Samoan/Tongan/Tokelauan European: North-West European, Southern and Eastern European - Italian/Greek

Asian: South-East Asian - Vietnamese/Filipino/Indonesian/Malay, North-East Asian - Chinese, Southern and Central Asian - Indian American: North American, Hispanic North American, South American, Central American, Caribbean Islander

Donor Religion

Table 4.3 shows the reported religion of donors.

Donor	,	,	Austral	ia				New Zea	land	
Religion	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Christianity	96 (25%)	136 (31%)	150 (30%)	178 (35%)	163 (29%)	4 (9%)	3 (6%)	4 (7%)	2 (3%)	8 (13%)
Judaism	2 (1%)	2 (0%)	1 (0%)	-	3 (1%)	-	-	1 (2%)	-	-
Islam	-	1 (0%)	3 (1%)	3 (1%)	3 (1%)	-	-	-	-	-
Buddhism	7 (2%)	6 (1%)	8 (2%)	6 (1%)	13 (2%)	-	-	-	-	1 (2%)
Hinduism	2 (1%)	3 (1%)	4 (1%)	1 (0%)	5 (1%)	-	-	-	1 (1%)	1 (2%)
Others	3 (1%)	4 (1%)	6 (1%)	1 (0%)	1 (0%)	-	-	-	-	-
No religion	87 (23%)	92 (21%)	123 (24%)	123 (24%)	167 (30%)	1 (2%)	-	-	-	-
Unknown	181 (48%)	191 (44%)	208 (41%)	198 (39%)	199 (36%)	41 (89%)	50 (94%)	56 (92%)	70 (96%)	52 (84%)

Table 4.3 Religion of Donors, 2014-2018 n (%)

Donor Weight

The allocation of heart, lungs and livers are based in part on the matching of recipient and donor size and weight. In 2018 there were 11 donors in Australia and no donors in New Zealand who weighed less than 40 kilograms. There were 99 donors 100 kilograms and over in Australia and 12 donors in New Zealand. (Table 4.4)

Table 4.4 Don	Table 4.4 Donor Weight in Kilograms 2014 - 2018												
Country	Year	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total	
	2014	4	4	2	4	29	53	104	86	54	38	378	
	2015	7	4	3	8	33	70	93	86	63	68	435	
AUSTRALIA	2016	9	6	4	10	34	82	115	113	73	57	503	
	2017	8	6	4	8	41	91	97	102	80	73	510	
	2018	4	2	5	15	36	113	113	98	69	99	554	
	2014	1	0	0	0	3	8	7	16	7	4	46	
	2015	0	1	0	0	3	12	12	11	10	4	53	
NEW ZEALAND	2016	0	0	0	1	8	9	17	12	5	9	61	
	2017	0	0	0	1	5	13	19	13	11	11	73	
	2018	0	0	0	1	5	13	5	16	10	12	62	

Donor Medical Conditions

Comorbid medical conditions are an important area in determining donor suitability, and one that has been changing over time. Table 4.5 lists the medical conditions of donors by jurisdiction for 2018 by donor type.

 Table 4.5 Comorbid Medical Conditions of Actual Deceased Donors by Jurisdiction 2018 n (%)

Donor Type	Medical Condition	QLD	NSW	АСТ	VIC	TAS	SA	NT	WA	AUS	NZ
DBD	Diabetes Type I	-	1 (1%)	1 (7%)	1 (1%)	1 (9%)	1 (4%)	-	1 (3%)	6 (2%)	-
DBD	Diabetes Type II	2 (3%)	10 (10%)	-	9 (7%)	-	2 (8%)	-	2 (5%)	25 (6%)	3 (6%)
DBD	Hypertension	15 (21%)	38 (36%)	3 (20%)	36 (28%)	5 (45%)	9 (35%)	-	11 (30%)	117 (29%)	12 (23%)
DBD	Smoking-Current	31 (42%)	35 (33%)	5 (33%)	57 (44%)	5 (45%)	14 (54%)	1 (33%)	22 (59%)	170 (43%)	14 (26%)
DBD	Cancer	5 (7%)	16 (15%)	2 (13%)	8 (6%)	-	1 (4%)	-	1 (3%)	33 (8%)	4 (8%)
DBD	Total	73	105	15	130	11	26	3	37	400	53
DCD	Diabetes Type I	-	-	-	1 (2%)	-	-	-	-	1 (1%)	-
DCD	Diabetes Type II	-	5 (11%)	-	5 (8%)	-	1 (10%)	1 (100%)	-	12 (8%)	-
DCD	Hypertension	3 (14%)	9 (20%)	1 (17%)	17 (27%)	-	4 (40%)	1 (100%)	2 (50%)	37 (24%)	3 (33%)
DCD	Smoking-Current	13 (62%)	21 (46%)	2 (33%)	23 (37%)	2 (67%)	4 (40%)	-	1 (25%)	66 (43%)	1 (11%)
DCD	Cancer	-	4 (9%)	-	8 (13%)	-	-	-	1 (25%)	13 (8%)	2 (22%)
DCD	Total	21	46	6	63	3	10	1	4	154	9
Total	Diabetes Type I	-	1 (1%)	1 (5%)	2 (1%)	1 (7%)	1 (3%)	-	1 (2%)	7 (1%)	-
Total	Diabetes Type II	2 (2%)	15 (10%)	-	14 (7%)	-	3 (8%)	1 (25%)	2 (5%)	37 (7%)	3 (5%)
Total	Hypertension	18 (19%)	47 (31%)	4 (19%)	53 (27%)	5 (36%)	13 (36%)	1 (25%)	13 (32%)	154 (28%)	15 (24%)
Total	Smoking-Current	44 (47%)	56 (37%)	7 (33%)	80 (41%)	7 (50%)	18 (50%)	1 (25%)	23 (56%)	236 (43%)	15 (24%)
Total	Cancer	5 (5%)	20 (13%)	2 (10%)	16 (8%)	-	1 (3%)	-	2 (5%)	46 (8%)	6 (10%)
Total	Total	94	151	21	193	14	36	4	41	554	62

Diabetes

There were 44 donors with diabetes in Australia in 2018. The 37 Australian Type 2 donors provided 112 organ and tissue grafts which were transplanted or stored. This included three double adult kidneys, 47 single kidneys, 11 livers, nine double lungs, two single lungs and two hearts. The seven Type 1 diabetic donors provided 17 organs that were transplanted; nine single kidneys, five livers, one double lung, one single lung and one heart.

In New Zealand, the three Type 2 diabetic donors provided two livers which were transplanted.

Cancer in Donor

In Australia, 46 actual donors had a history of cancer prior to donation. Of the 45 actual donors who had organs retrieved, there were 17 donors with skin only cancers, 25 with non-skin only cancers and three with skin and non-skin cancers. One actual donor did not have organs retrieved. In New Zealand, six donors had a history of cancer, with two donors with skin only cancers and four with non-skin only cancers.

Virology Screening

Table 4.6 lists the cytomegalovirus (CMV) status of donors by country from 2013 to 2018.

CMV IgG		U	Aus	stralia			New Zealand					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
Positive	242	228	268	332	309	361	21	23	26	33	47	33
Negative	148	148	167	169	200	192	15	23	27	26	26	29
Not Done	0	2	0	2	1	1	0	0	0	2	0	0
Indeterminate	0	0	0	0	0	0	0	0	0	0	0	0
Not Reported	1	0	0	0	0	0	0	0	0	0	0	0
Total	391	378	435	503	510	554	36	46	53	61	73	62

Table 4.6 Cytomegalovirus (CMV IgG) Status of Donors, 2013 - 2018

Table 4.7 shows the Epstein-Barr Virus (EBV) status of donors from 2013 to 2018.

Table 4.7 Epstein-Barr Virus (EBV IgG) Status of Donors, 2013 - 2018

EBV IgG				stralia			New Zealand					
EBV IgG	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
Positive	356	339	404	462	459	511	27	37	36	53	63	53
Negative	33	30	28	38	48	41	4	5	13	6	5	3
Not Done	2	5	1	2	2	1	0	3	2	2	5	5
Indeterminate	0	1	0	1	1	1	0	1	0	0	0	1
Not Reported	0	3	2	0	0	0	5	0	2	0	0	0
Total	391	378	435	503	510	554	36	46	53	61	73	62

Table 4.8 shows the Hepatitis C Antibody status of donors from 2013 to 2018.

Table 4.8 Hepatitis C Antibody Status of Donors (Anti-HCV), 2013 - 2018

Anti-HCV			Aus	stralia			New Zealand					
Anti-nev	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
Positive	13	8	11	17	12	17	1	2	1	1	2	0
Negative	378	364	420	482	496	534	35	44	52	59	70	61
Not Done	0	5	4	4	2	3	0	0	0	1	1	1
Indeterminate	0	0	0	0	0	0	0	0	0	0	0	0
Not Reported	0	1	0	0	0	0	0	0	0	0	0	0
Total	391	378	435	503	510	554	36	46	53	61	73	62

Table 4.9 shows the Hepatitis B Core Antibody status of actual donors from 2013 to 2018.

Table 4.9 Hepatitis B Core Antibod	v Status of Donors	(Anti-HBcAb), 2013 - 2018
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Anti-HBcAb			Aus	stralia			New Zealand					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
Positive	17	21	20	19	22	26	2	3	3	7	11	5
Negative	374	337	394	473	475	517	34	42	50	54	62	57
Not Done	0	19	21	11	13	11	0	1	0	0	0	0
Indeterminate	0	0	0	0	0	0	0	0	0	0	0	0
Not Reported	0	1	0	0	0	0	0	0	0	0	0	0
Total	391	378	435	503	510	554	36	46	53	61	73	62

Since 1993, all consented actual and intended donors in Australia and New Zealand have been tested for Hepatitis B surface antigen. Table 4.10 shows the status of actual donors from 2013 to 2018.

Table 4.10 Hepatitis B Surface Antigen Status of Donors (HBsAg), 2013 - 2018

HBsAg	Australia						New Zealand					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
Positive	2	1	0	2	1	0	2	1	0	1	0	0
Negative	389	375	431	499	507	551	34	45	53	60	73	62
Not Done	0	2	4	2	1	3	0	0	0	0	0	0
Indeterminate	0	0	0	0	1	0	0	0	0	0	0	0
Not Reported	0	0	0	0	0	0	0	0	0	0	0	0
Total	391	378	435	503	510	554	36	46	53	61	73	62