The Third Report of the

Structured Chronic Disease Management Treatment Programme

in General Practice

Foreword

The Third Report of the Chronic Disease Management Treatment Programme (CDM) gives results on over 400,000 patients for the first 4 years of the programme. Over 91% of patients now receive routine chronic disease care within community settings, demonstrating a successful shift away from hospital reliance. Significant improvements in biometric and lifestyle risk factors, including blood pressure, vaccine status, smoking and vaping habits weight and BMI have been achieved.

Additional insights from clinical results are presented, such as electrocardiogram (ECG) results, spirometry and blood test results. The clinical data shows that the programme contributes significantly to good blood pressure, LDL cholesterol and HbA1c control in patients enrolled, hence these results support the further extension of the programme by the Department of Health in 2023 and 2025 to include other high risk cardiovascular conditions.

The Programme has been widely embraced by General Practitioners (GPs) and patients alike, with a 97% participation rate among GPs across Ireland and 80% for patients of all ages. This high level of engagement underscores the programme's effectiveness and acceptance within the community.

ICGP colleagues have audited patients' unscheduled care utilisation pre and post enrolment in the CDM and have found substantial reductions. Participants enrolled in the programme experienced:

- 30% fewer ED attendances,
- 26% fewer hospital admissions, and
- 33% fewer GP out-of-hours attendances compared to their pre-enrollment rates.

I would like to thank patients with chronic conditions for engaging so actively with the programme and General Practitioners for providing such good care. I would like to thank the Department of Health for responding to the evidence presented and extending the programme, and also the Business, IT, Analysis, Administrative and Clinical Teams in the HSE that support its development, implementation and reporting.

Dr. Orlaith O Reilly,
Clinical Lead, CDM Programme.
HSE January 2025

Introduction

The Treatment Programme, as part of the Structured Chronic Disease Management Programme in General Practice 2020 - 2024 (CDM), was launched in January 2020. It is an essential element of the Enhanced Community Care Programme for chronic disease patients. The Treatment Programme was initially rolled out to over 70 year olds, with extension to the over 65 year olds commencing from January 2021 and further extension to all adults over 18 years of age from January 2022. The Treatment Programme is open to all adults who have a General Medical Services /Doctor Visit Card/Health Amendment Act Card (GMS/DVC/HAA) and who have been diagnosed with at least one of the following chronic diseases;

- Type 2 diabetes mellitus
- Ischaemic heart disease
- Atrial fibrillation
- Heart failure
- Cerebrovascular accident (CVA)
- Transient ischaemic attack (TIA)
- Chronic Obstructive Pulmonary Disease (COPD)
- Asthma

Data have been collected since the inception of the Treatment Programme and the first baseline report was published in March 2022. This initial report described demographics, programme uptake and engagement, clinical details, multimorbidity and lifestyle risk factors. It described early indicators of improvement in lifestyle risk factors for patients who had had a number of GP visits. The initial analysis also explored the extent, breadth and quality of the raw data. Following this review, edits to the data collection system were made to improve the quality of the data collected by the CDM, with these changes being rolled out nationally as part of the second phase of the CDM from late January 2022.

The second report described the above parameters for the larger cohort of patients, whose data had been imported into the system between 1st January 2020 and 20th January 2022. This cohort included all patients in the first phase of the Treatment Programme, before the changes to the data collection system was rolled out in phase 2. Hence the second report referred to patients treated by GPs for the first 2 years of the programme, the vast majority of these patients were aged over 65 years.

This third report includes data from all patients in the Treatment Programme, whose data was imported into the system from the inception of the programme up to 31st December 2023 and includes 405,131 patients.

Number of reviews, demographics and Treatment Programme uptake

Table 1: shows the number of reviews that patients have had

No. Reviews	No. Patients	%
1	85,171	21.02%
2	83,519	20.62%
3	73,086	18.04%
4	64,125	15.83%
5	41,547	10.26%
6	36,706	9.06%
7	18,478	4.56%
8	2,493	0.62%
9	5	0%
10	1	0%
Total	**405,131**	**100%**

As shown above 21% of patients had 1 review, 20.6% had 2 reviews and 58.4% had 3 or more reviews (236,441 patients). Of these 14.2% of patients had 6 or more reviews i.e. 57,683 patients.

This report will present updated data on the 405,131 patients in the programme and also examine the much larger cohorts of patients who now have had 3 or more reviews and 6 or more reviews, to confirm the positive findings for both lifestyle risk factors and biometric risk factors described in the second report. This report also shows additional gains for patients attending for 6 visits or more.

Table 2: Mean and Median Number of Reviews by Age Group

Age group	Mean No. of reviews	Median No. of reviews
18-44	2.1	2
45-64	2.4	2
18-64	2.3	2
65+	3.5	3
All patients	**3.2**	**3**

The above table shows the mean and median number of reviews for patients by age group. As expected patients over 65, who have been longer in the programme have higher average number of reviews, the overall mean number of reviews was 3.2 at the end of 2023.

Fig. 1 shows the distribution of age groups in the Treatment Programme cohort

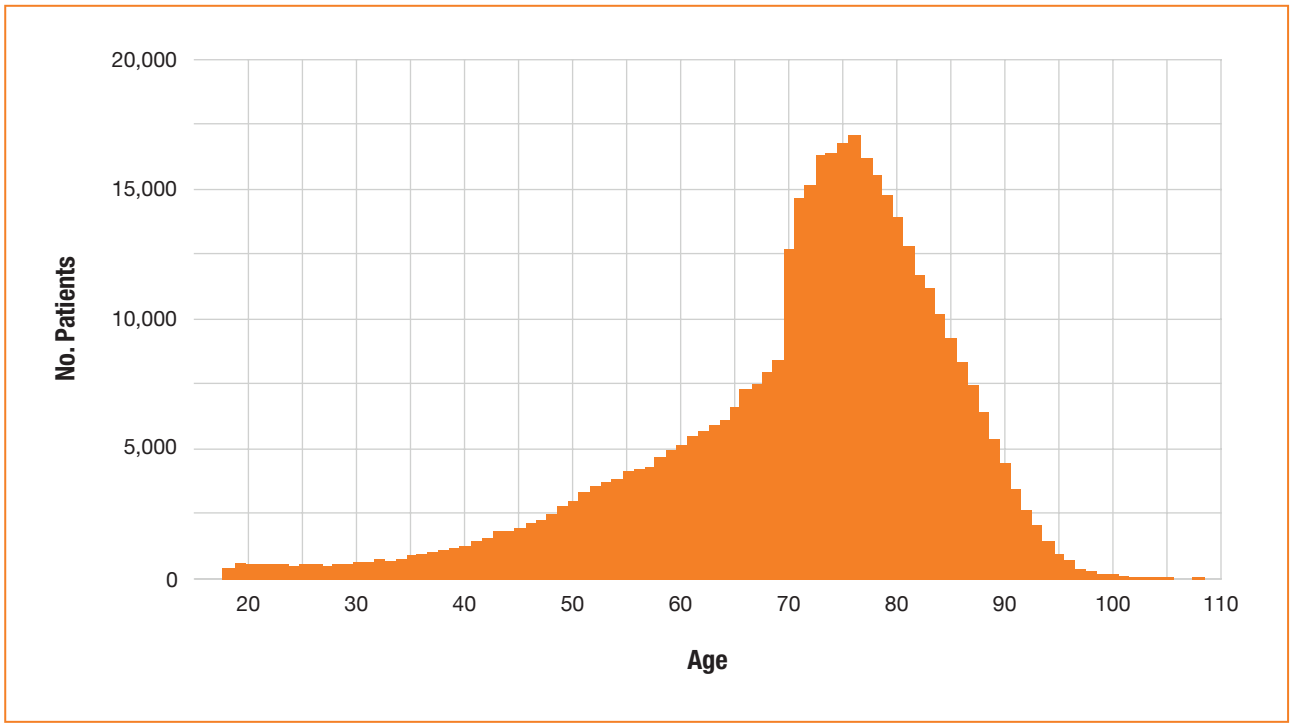


Table 3: shows the distribution of age group

Age group	No. Unique Patients	%
18-24	3,214	0.79%
25-34	5,397	1.33%
35-44	12,377	3.06%
45-54	28,457	7.02%
55-64	50,083	12.36%
65-69	37,569	9.27%
70-74	75,168	18.55%
75-79	80,287	19.82%
80-84	59,605	14.71%
85-89	36,659	9.05%
90+	16,315	4.03%
Total	**405,131**	**100%**

Table 3 shows that by the end of 2023, almost 25% of patients registered in the programme were under the age of 65.

Table 4: Chronic Disease Treatment Programme Uptake by Age Group

Age Group	No. in GMS Pop 2023	Estimated No. CD	No. Enrolled in Treatment Programme by December 2023	% Uptake
18 to 64	794,893	156,309	95,378	61%
65+	662,087	319,332	283,304	89%
18 +	1,456,979	475,641	378,682	80%

Table 4 shows the uptake rate for patients by age group up to the end of 2023.

The overall uptake for the Treatment Programme is estimated to be 80% of eligible people with chronic disease. The chronic disease prevalence rates have been estimated from TILDA and Q NHS surveys. Patients under 65 years of age have been eligible for a shorter time for the programme and hence show lower uptake rates at 61%. Older patients; 65 and over have an uptake rate of 89%. The overall uptake rate of 80% for the programme indicates a high level of engagement by patients and GPs, and has risen as time progresses.

PCRS data indicates that 96.9% of GPs who have GMS numbers, are engaged with the programme demonstrating almost full population availability.

Clinical Details

From the 1st January 2022 to 31st December 2023, 405,131 patients were enrolled in the Treatment Programme, the following table 5 shows the breakdown of the 615,378 diagnoses recorded for this cohort. These proportions are largely similar to those reported in the second report, which comprised an older cohort of patients, except that this cohort (which includes 25% of patients under 65 years) has slightly higher levels of diabetes, and asthma and lower levels of ischaemic heart disease, heart failure and atrial fibrillation, as might be expected.

Table 5: Number and proportion of each chronic disease

Diagnosis	No. Diagnosis	%
Diabetes	145,209	23.6%
Ischaemic Heart Disease	130,659	21.23%
Asthma	86,048	13.98%
Atrial Fibrillation	84,833	13.79%
COPD	74,612	12.12%
Heart Failure	39,559	6.43%
Cerebral Vascular Accident	28,728	4.67%
Transient Ischaemic Attack	25,724	4.18%
Total	**615,372**	**100%**

Table 6: Year of Diagnosis

Year of Diagnosis	Count	Proportion (%)
1940-1949	58	0.01%
1950-1959	202	0.03%
1960-1969	340	0.06%
1970-1979	654	0.11%
1980-1989	2,001	0.33%
1990-1999	9,081	1.48%
2000-2009	54,839	8.93%
2010-2019	233,816	38.06%
2020-2023	313,374	51.01%
Total	**614,365**	**100%**

Interestingly Table 6 shows that over 50% of the diagnoses were made since the commencement of the programme. In line with international evidence, the early detection and treatment of chronic disease is associated with reduced ED attendance and unplanned admissions. Globally, the COVID-19 pandemic also contributed late diagnosis and control of chronic diseases.

Results indicate that people with chronic disease(s) are now appropriately accessing services, enabling them to receive the necessary assessments for accurate diagnosis and effective treatment of their conditions. Early detection through the CDM Programme will prevent the need for more intensive hospital-based treatments.

Analysis by Age

Table 7: Summary of Age Statistics by Disease

Diagnosis	Min	IQR Lower	Median	Mean	IQR Upper	Max	Number Diagnosed
Heart Failure	18	74	80	78.7	86	104	39,559
Transient Ischaemic Attack	22	72	78	76.7	84	104	27,725
Atrial Fibrillation	21	74	79	78.5	85	108	84,834
Cerebral Vascular Accident	20	70	77	75.6	83	104	28,730
Ischaemic Heart Disease	19	71	76	75.6	82	105	130,659
COPD	19	67	74	72.9	80	103	74,613
Asthma	18	51	67	62.8	76	104	86,048
Diabetes	18	63	73	70.5	79	104	145,209

This table 7 shows the minimum age, maximum age, interquartile ranges (IQR) together with a median and mean age for the various diagnoses recorded for this cohort. It shows that patients with heart failure and atrial fibrillation tend to be older than patients with other diagnoses, and people with asthma and diabetes younger.

Chronic Disease and Multimorbidity

Analysis of the number of comorbidities that patients have, shows that the majority of patients (63.4%) are recorded with having 1 disease while the remaining 36.6% of patients are multimorbid i.e. have 2 diseases or more, with 12% having 3 diseases or more Table 8 shows the details.

Table 8: Number of comorbidities by patient

Number of Conditions	1	2	3	4	5	6	7	8
Number of Patients	256,822	99,882	37,275	9,105	1,778	230	35	4
Proportion of patients enrolled	63.39%	24.65%	9.2%	2.25%	0.44%	0.06%	0.01%	0.00%

As expected the proportion of patients with multiple morbidity increases with age as demonstrated by Table 9

Table 9: Number of Conditions by age grouping, n=(405131)

	1 Condition		2 Conditions		3 Conditions or more		Total
	n	%	n	%	n	%	
18-49	29,321	90.70%	2,694	8.33%	312	0.97%	32,327
50-64	50,240	74.76%	13,427	19.98%	3,534	5.26%	67,201
65-74	72,903	64.67%	28,263	25.07%	11,571	10.26%	112,737
75-79	47,214	58.81%	22,002	27.40%	11,073	13.79%	80,289
80-84	31,595	53.01%	17,310	29.04%	10,700	17.95%	59,605
85+	25,549	48.23%	16,186	30.56%	11,237	21.21%	52,972
Total	**256,822**	**63.39%**	**99,882**	**24.65%**	**48,427**	**11.95%**	**405,131**

The proportion of patients with 3 or more chronic diseases is slightly less (12%) than that recorded in the second report which was for an older cohort (14%).

Fig. 2: Multimorbidity Relationship

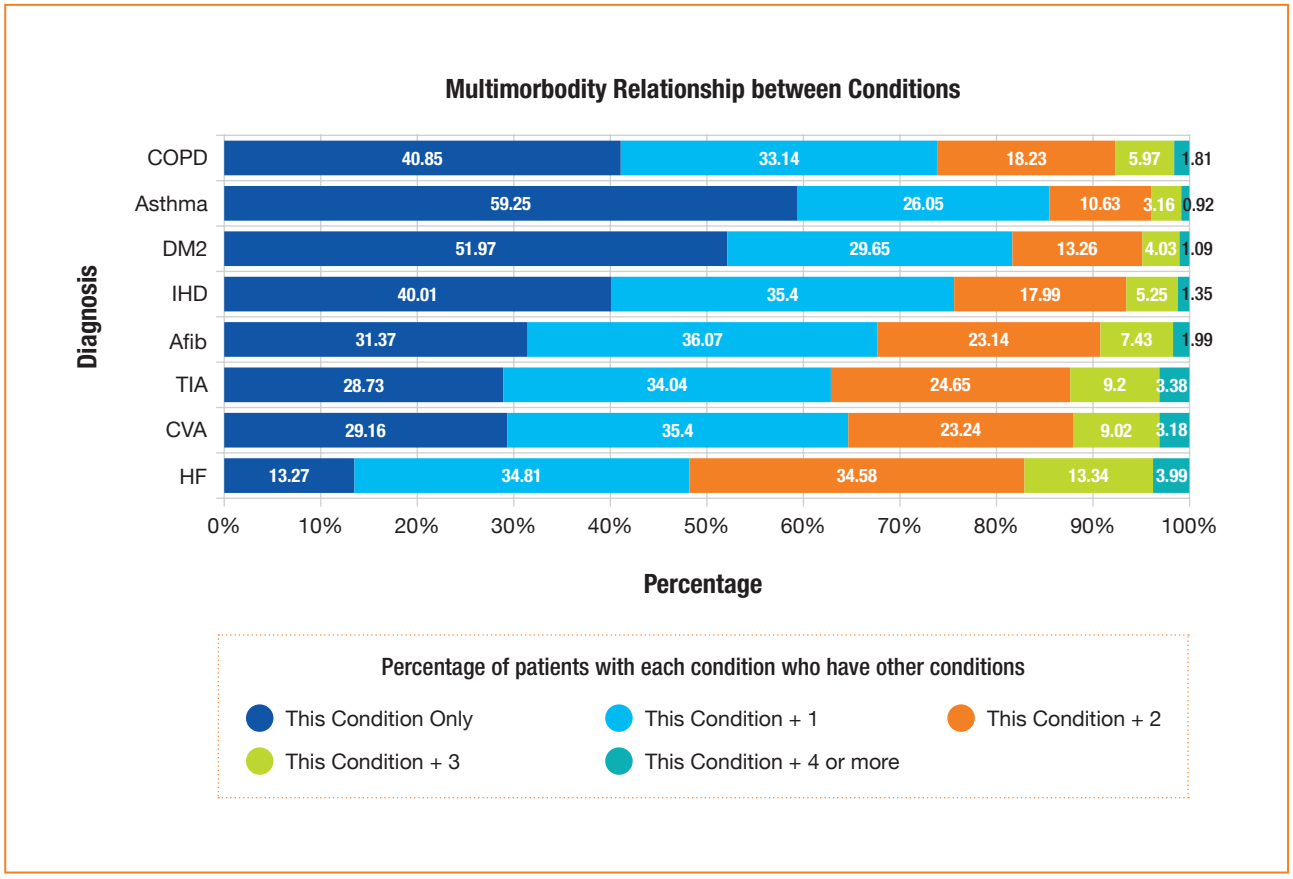


Fig. 2 shows the multimorbidity relationship between the selected conditions.

As expected heart failure continues to be the condition with the most multimorbidity i.e. only 13.3% of patients with heart failure have no other co-morbidity, and over 50% of them have 3 co-morbidities.

The Treatment Programme dataset allows GPs to record a selection of additional co-morbidities that are outside of the 8 conditions included in the CDM Programme. Approximately 32% of patients had at least 1 other diagnoses, with 59% of these patients reporting hypertension and 11% of them reporting chronic kidney disease. This emphasises the importance of including additional high risk conditions in the CDM Programme.

Service Utilisation

An additional analysis was carried out on patients who had attend their GP between 1st January 2024 and 1st July 2024 on variables relating to hospital attendance and COPD/ Asthma exacerbations that had been added to the data set during 2023. This cohort comprised 270,221 individuals.

Table 10: ED attendances related to chronic disease in last six months by month

Month	Total Observations	No. seen in ED	%
January	36,027	2,854	7.92%
February	48,063	3,785	7.88%
March	49,235	3,834	7.79%
April	54,042	3,979	7.36%
May	51,743	3,792	7.33%
June	31,112	2,286	7.35%
January-June 2024	**270,222**	**20,530**	**7.60%**

As table 10 shows over 270,000 patients were reviewed by their GP in the first 6 months of 2024 as part of the Treatment Programme, this varied between 31,000 a month and 54,000 a month. Overall 20,530 patients were recorded at their GP visit as having attended ED in the previous 6 months. This equates to 7.6% of the cohort, this proportion varies slightly between the months involved with a higher proportion (7.92%) having attended in January, compared to 7.35% who attended in June.

Of the 20,530 patients who had attended ED in the 6 months the vast majority (84%) had only attended on 1 occasion and less than 12% had attended on 2 occasions, hence only 4% of this group of people with Chronic disease had attended ED on more than 2 occasions in the last 6 months.

This shows very low attendance rate considering that many of these patients are old and have multimorbidity, in contrast the Healthy Ireland survey 2023 showed that 16% of the general population surveyed had attended ED in the last year.

Similarly with unscheduled admissions related to chronic disease in the last 6 months;

Table 11: Unscheduled admissions related to chronic disease in last six months by month

Month	Total Observations	Unscheduled admissions	%
January	36,027	2,695	7.48%
February	48,063	3,748	7.80%
March	49,235	3,912	7.95%
April	54,042	4,061	7.51%
May	51,743	3,876	7.49%
June	31,112	2,300	7.39%
January-June	**270,222**	**20,592**	**7.62%**

Table 11 above shows that of the approximately 270,000 patients seen by GP's for their scheduled reviews between January and June 2024, only 7.62% of them have been admitted in the previous 6 months. This compares very favourably to the Healthy Ireland 2023 data which shows for the whole population that 12% of patients are admitted annually.

Of the 20,592 patients who had been admitted in the 6 months, 79% were admitted on only 1 occasion and an additional 13% were admitted on 2 occasions, hence in total 92% were admitted on 2 occasions or less.

The data was analysed on patients with COPD or Asthma who had been reviewed by their GP in the first 6 months of 2024.

Table 12: Exacerbations requiring antibiotics and/or steroids in last six months by month

Month	Total Observations	Exacerbations	%
January	13,478	4,333	32.15%
February	18,259	5,750	31.49%
March	18,706	5,974	31.94%
April	20,441	6,515	31.87%
May	19,533	6,043	30.94%
June	12,171	3,679	30.23%
January-June	**102,588**	**32,294**	**31.48%**

The above Table 12 shows 31% of patients with COPD or Asthma had an exacerbation requiring antibiotics or steroids in the last 6 months, 63% of these patients who are given an antibiotic or steroid only had this on 1 occasion, and a further 23% had it on 2 occasions. Hence 14% of patients required treatment on 3 or more occasions in the last 6 months. This shows that the majority of patients in the CDM Programme with COPD and Asthma (86%) are now being managed with few exacerbations requiring drug treatment, however there are a small number of patients who have brittle disease and require ongoing careful monitoring and treatment.

Lifestyle Risk Factors

Smoking

Proportions of the cohort reported as current smokers has increased to 14.2%, compared to the 9.3% in the second report. This is likely to be due to the inclusion of people under 65 years in the current cohort, as shown in Table 13.

Table 13: Smoking Status

Smoking Status	No. Patients	%
Current Smoker	57,584	14.21%
Ex-Smoker	150,239	37.08%
Never	196,339	48.46%
Unknown/ Not asked	969	0.24%
Total	**405,131**	**100%**

Table 14: Smoking Status by age grouping

-	Current Smoker		Ex-Smoker		Never		Unknown/ Not asked		-
Age Group	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**Total**
18-24	455	14.16%	287	8.93%	2,468	76.79%	4	0.12%	3,214
25-34	1,429	26.48%	1,039	19.25%	2,928	54.25%	1	0.02%	5,397
35-44	3,464	27.99%	2,905	23.47%	6,005	48.52%	3	0.02%	12,377
45-54	8,136	28.59%	8,038	28.25%	12,278	43.15%	5	0.02%	28,457
55-64	13,592	27.14%	17,673	35.29%	18,800	37.54%	18	0.04%	50,083
65+	30,508	9.98%	120,297	39.36%	153,860	50.35%	938	0.31%	305,603
Total	**57,584**	**14.21%**	**150,239**	**37.08%**	**196,339**	**48.46%**	**969**	**0.24%**	**405,131**

Table 14 shows the smoking status by age group, which demonstrates that patients over 65 years tend to have lower smoking rates.

Table 15: Vaping Status

Smoking Status	No. Patients	%
Current Smoker	12,306	3.46%
Ex-Smoker	6,387	1.80%
Never	336,512	94.74%
Total	**355,205**	**100%**

Vaping status was recorded from phase 2 of the programme onwards.

Table 15 shows that 3.4% of the cohort are current vapers, and table 16 shows that this is clearly associated with younger age groups.

Table 16: Vaping Status by age grouping

-	Current		Ex-User		Never		-
Age Group	**n**	**%**	**n**	**%**	**n**	**%**	**Total**
18-24	414	13.66%	111	3.66%	2,505	82.67%	3,030
25-34	562	11.07%	189	3.72%	4,326	85.21%	5,077
35-44	932	7.97%	382	3.27%	10,381	88.76%	11,695
45-54	2,029	7.52%	783	2.90%	24,187	89.58%	26,999
55-64	3,314	6.97%	1,369	2.88%	42,860	90.15%	47,543
65+	5,055	1.94%	3,553	1.36%	252,253	96.70%	260,861
Total	**12,306**	**3.46%**	**6,387**	**1.80%**	**336,512**	**94.74%**	**355,205**

Table 17: Smoking status at 1st and 3rd visit

Smoking Status at first visit	Smoking Status at third Visit	Number of patients	% of patients
Current Smoker	Current Smoker	24,732	85.8%
Current Smoker	Ex-Smoker	4,082	14.2%
Total		**28,814**	**100%**

Table 17 shows the reduction in smoking between first and third visit. Of the cohort of patients who attended the Treatment Programme for review at least 3 times (n = 236,441), 28,814 were current smokers at their first visit. Table 17 shows that 4,082 of these (14.2% were ex-smokers by their third visit).

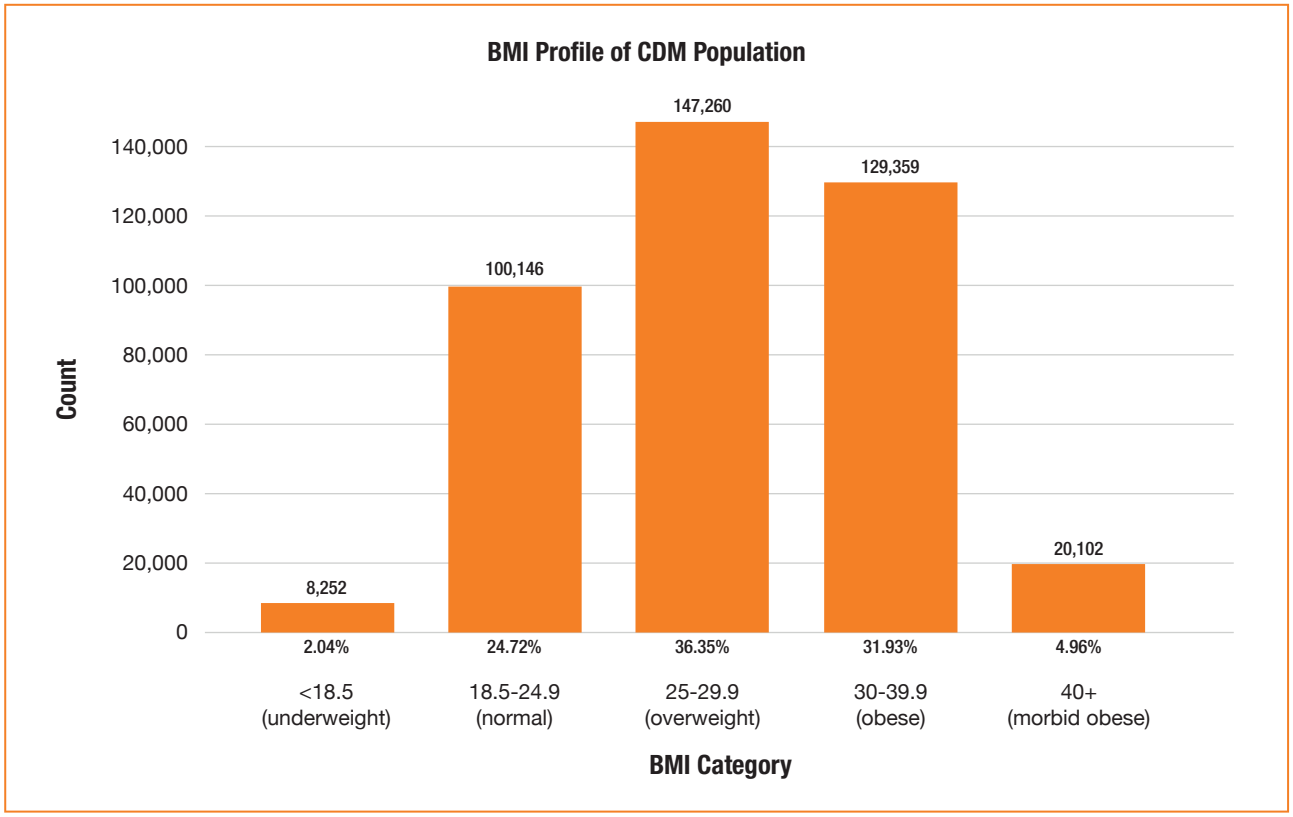
This shows a similar proportion of patients giving up smoking by their third visit as reported in the second report for a much smaller and older cohort. The analysis on this larger cohort of over 236,441 patients confirms the positive effect of the programme.

Analysis of the cohort who have had 6 consultations shows that an additional 12% of patients who were still smoking at that third visit had given up smoking by their sixth visit, demonstrating the importance of repeated implementation of “Making Every Contact Count”.

Weight, BMI and Waist Circumference

The body mass index (BMI profile) is shown in Fig. 3 below. Approximately 25% of patients had a normal BMI, 2% were underweight, 36% were overweight, 32% were obese and 5% were morbidly obese.

Figure 3: BMI Profile of CDM Population



For those patients who were obese at their first visit, 86%, continued to be in the obese BMI category at their third visit but 14% had reduced their weight to the overweight or normal category by their third visit.

The mean weight for patients who had attended three times was 81.7 Kg at their first visit and this had reduced to 80.9 kg by their third visit.

The mean BMI for patients who had attended three times was 30.1 at their first visit and this had dropped to 29.0 by their third visit.

Of the 90,830 who were obese at their first visit, 14% were no longer obese at their third visit. This is similar to the figures in the second report. In addition over 16,000 patients who were obese at their first visit had six visits to their GP, in this group 11% were in the non-obese category by their sixth visit. Obesity is a risk factor which tends to vary over time in individual patients as people lose and gain weight sporadically, this demonstrates the importance of the ongoing need for follow up in patients with obesity.

Waist circumference is a measure which indicates cardiovascular risk and the risk categories of low, high and very high risk have different maximum measurements for both males and females.

Table 18: waist circumference males

Waist Circum Risk Profile	Male	No. Patients	%
Low Risk	<94cm	49,316	23.26%
High Risk	94-102cm	58,947	27.81%
Very High Risk	>102cm	101,325	47.80%
Not Recorded	-	2,407	1.14%
Total	**-**	**211,995**	**100%**

Table 19: waist circumference females

Waist Circum Risk Profile	Female	No. Patients	%
Low Risk	<80cm	24,422	12.66%
High Risk	80-188cm	30,056	15.58%
Very High Risk	>88cm	136,073	70.54%
Not Recorded	-	2,349	1.22%
Total	**-**	**192,900**	**100%**

As seen from the above two tables 48% of men are at very high risk given their waist circumferences but almost 71% of females are at very high risk.

Physical Activity

Physical activity is recorded in the CDM database in 2 ways;
The GP returns data on;

The number of days in the week on which the patient does 30 minutes or more physical activity, this is categorised into 4 days or less per week which in inadequate and 5 days or more per week which is adequate. Those with inadequate physical activity are subsequently assessed as to whether they achieve either 150 minutes of moderate activity or 75 minutes of vigorous activity per week. If a patient achieves either of these targets they are then categorised as having “adequate “activity per week.

The following summary table 20 shows the result of the combined score;

Table 20: Summary of Physical Activity

Summary	Number of patients	% of patients
Adequate	242,051	59.75%
Inadequate	93,879	23.17%
Invalid Entry	297	0.07%
No information available	13,838	3.42%
Unable to be physically active	55,066	13.59%
Total	**405,131**	**100%**

The above table 20 shows that almost 60% of patients in the whole cohort were considered to have adequate physical activity levels per week. Of the 82,221 patients who were deemed to have inadequate physical activity at their first visit, and who subsequently had a third visit, 48% of these continued to have inadequate physical activity by their third visit, however 35% had adequate physical activity by their third visit. This has increased from 30% reported in the second report, some of this is due to higher levels of adequate activity being achieved by the third visit by younger patients, a higher proportion of which is included in this cohort.

Of the 82,221 patients who had inadequate physical activity at their first visit, there were 21,847 who had 6 consultations, and additional 3,806 of these (17.4%) who were still inadequate at their third visit had now achieved adequate physical activity by their sixth visit.

Alcohol

Alcohol risk scores were available for 355,206 patients in phase 2 of the programme as shown in the following table.

Table 21: Alcohol Groups Including Non-Drinkers

Alcohol Group	No. Patients	%
Non-drinker	168,660	47.48%
Lower Risk	178,183	50.16%
Increasing Risk	6,534	1.84%
Higher Risk	757	0.21%
Possible Dependence	1,072	0.30%
Total	**355,206**	**100%**

As seen above, the vast majority (97%) of patients in the programme had a low alcohol risk score. Over 47% are non-drinkers and 50% have a low risk score.

Table 22: Combined Comparison on patients with increased risk, high risk and harmful at first attendance, vs third attendance for alcohol consumption

Alcohol Status at First Visit	Alcohol Status at third Visit	No. Patients	%
Increased Risk or High Risk or Harmful	Increased Risk or High Risk or Harmful	5,187	35.18%
Increased Risk or High Risk or Harmful	Low Risk	8,384	56.86%
Increased Risk or High Risk or Harmful	Non-Drinker	1,173	7.96%
Total	**-**	**14,744**	**100%**

Table 22 shows that for patients who were categorised as having an alcohol status of “increased risk, or high risk or harmful” at their first visit and had three visits to their Doctor, 64.8% of them had reduced their risk to a low risk or become non-drinkers by their third visit.

Physical Examination

Blood Pressure

The Treatment Programme requires GPs to carry out a number of specified physical examinations and clinical measurements at each visit, Fig. 4 shows the profile of blood pressure measurements.

Figure 4: Blood Pressure Measurements

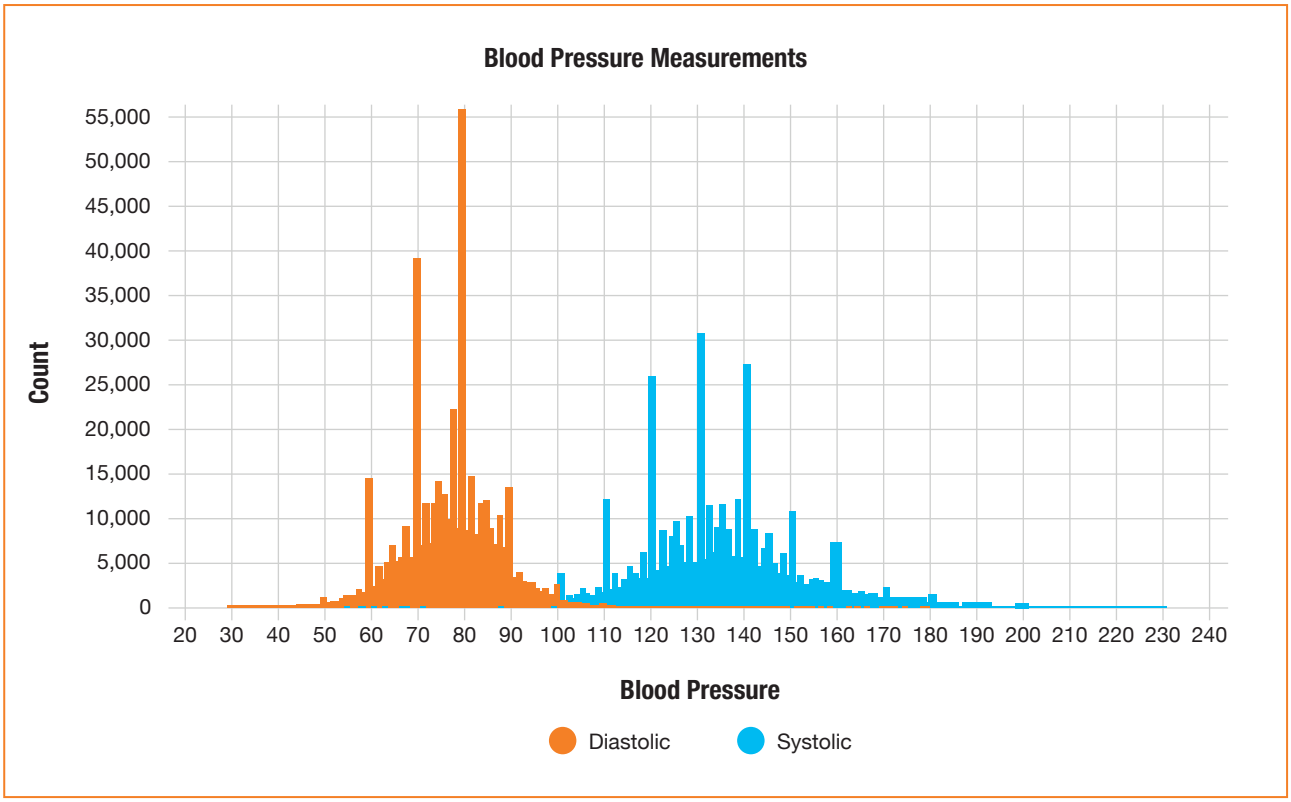


Table 23 shows a summary of the distribution of diastolic and systolic blood pressure readings at patients' most recent attendance, by gender.

Table 23: Summary of Diastolic and Systolic BP Values by Gender

Summary					Systolic/Diastolic by Gender				
Type	**Min**	**Max**	**Mean**	**Median**	**Gender**	**Min Gender**	**Max Gender**	**Mean Gender**	**Median Gender**
Diastolic	30	180	77.4	78	Female	30	180	77.5	78
					Male	30	180	77.3	78
					Other	40	113	78.3	79
Systolic	50	250	134.2	133	Female	50	249	134.2	133
					Male	50	250	134.2	133
					Other	88	195	136.3	135

As shown above the figures for blood pressure do not differ markedly between the genders.

Table 24: Summary of Diastolic and Systolic BP Values by Age Group

	Summary				
Type	**Age group**	**Min**	**Max**	**Mean**	**Median**
Diastolic	18 – 64	30	180	80.4	80
	65+	30	180	76.4	78
Systolic	18 – 64	60	245	130.5	130
	65+	50	250	135.4	135

Table 24 shows that average diastolic blood pressure was slightly lower in the older age group, when comparing to those aged 65 plus to those aged 18 to 64 years, while average systolic blood pressure higher in the 65 + year age group.

Table 25: Summary Blood Pressure for patients with three visits

Type	Min	Mean	Median	Max	Valid Entries
Systolic at First Visit	45	136.7	135	250	229,283
Systolic at Third Visit	50	135.5	135	249	235,374
Diastolic at First Visit	30	78.2	80	180	229,283
Diastolic at Third Visit	30	77.3	78	180	235,374

There were 235,374 patients who had a blood pressure measured and who had at least 3 consultations as shown in table 25.

This shows that mean blood pressure fell from 136.7 mm/hg at the first visit to 135.5 mm/hg by the third visit i.e. a drop of 1.2 mm/hg. Diastolic blood pressure fell by 0.9 mm/hg between the first and third visit.

Approximately 56,000 patients had their blood pressure measured and had 6 or more consultations. These patients tended to be older and had a higher systolic blood pressure at first visit i.e. a mean of 138.0 mm/hg, this had fallen to 137.2 mm/hg at their second visit and had fallen further to 135.5 mm/hg by their sixth visit, a total of 2.5 mm/hg. Reductions in their diastolic blood pressure also occurred from 77.6 mm/hg at their first visit to 76.7 mm/hg at their third visit and to 75.7 by their sixth visit, as shown in table 26.

Table 26: Summary Blood Pressure for Patients with six visits

Type	Min	Mean	Median	Max	Valid Entries
Systolic at First Visit	69	138.0	137	250	55,827
Systolic at Third Visit	50	137.2	136	247	57,290
Systolic at Sixth Visit	60	135.5	135	240	57,604
Diastolic at First Visit	30	77.6	78	170	55,827
Diastolic at Third Visit	30	76.7	78	170	57,290
Diastolic at Sixth Visit	30	75.7	76	166	57,604

Patients were categorised as having hypertension if they had a blood pressure ≥ 140 systolic or diastolic blood pressure of ≥ 90 mm/hg.

Table 27: Those that had BP >= 140 or >=90 systolic/diastolic at 1st Visit vs 3rd Visit

At first Visit	At third Visit	No. Patients	%
Abnormal BP	Abnormal BP	55,882	55.11%
Abnormal BP	Normal BP	45,517	44.89%
Total	**-**	**101,399**	**100%**

Table 27 shows that of the 101,399 patients who were classified as hypertensive at their first visit and had 3 visits, 44.9% of them had become normotensive by their third visit. Of those who had six visits and were still hypertensive at their third visit, a further 23.6% of these were normotensive by their sixth visit. This demonstrates the benefit of ongoing reviews.

Diabetes Assessment

Retinal Screening

113,497 patients had had retinal screening in the last 13 months since their last review, this comprises 78% of the population in the cohort with diabetes. It should be noted that for some groups the screening interval is now at 24 months.

Diabetic Foot Examination

The programme requires GPs to examine their diabetic patients feet recording the results of six tests; for 10g monofilament testing, dorsalis pedis and posterior tibial pulses, vibration testing, foot deformity and foot ulceration. Any of these tests giving abnormal results classifies the foot examination as “abnormal”.

GPs achieved a high uptake of foot examinations among diabetics with 98% of diabetics having had their feet examined.

Table 28: Foot Physical Examination results for Diabetes Patients

Diagnosis	Status	Number of patients	% of patients
Diabetes mellitus	Abnormal Result	17,919	12.34%
	Normal Result	126,614	97.19%
	Not Recorded	675	0.46%
Total	**-**	**145,208**	**100%**

As seen in table 28 above, 12.3% of the diabetic patients in the cohort had an abnormal test. This increased with age where 14% of patients over 65 had an abnormal test compared to 7.8% of patients under 65. As time progresses and new patients enrolled in the programme experience better diabetic control this proportion of patients with abnormal foot exams should decrease.

Clinical Measurements

Electrocardiography (ECG)

Table 29: CDM patients with ECG recorded since last review

ECG Record	Count	%
No	287,495	70.96%
Yes	117,635	29.04%
Not Available	1	0%
Total	**405,131**	**100%**

Table 29 shows that 29% of the cohort had an ECG since their last review. This was 15.6% in those aged 18 to 64 years and 33.4% in those aged over 65 years.

Table 30: ECG findings for the CDM Patients with ECG Recorded at last review

ECG Findings	Count	%
Sinus Rhythm	88,918	76.07%
Atrial Fibrillation	21,649	18.52%
Other Abnormal Rhythm	4,950	4.23%
Pacemaker	1,375	1.18%
Total	**116,892**	**100%**

Notes* Difference of 743 not categorized or not recorded

Table 31: ECG findings for CDM Patients with ECG Recorded at last review by age group

ECG Findings	No 18 - 64	% 18 - 64	No. 65+	%65+	No. All ages	% All ages
Atrial Fibrillation	568	3.68%	21,081	20.77%	21,649	18.52%
Other Abnormal Rhythm	379	2.46%	4,571	4.5%	4,950	4.28%
Pacemaker	32	0.21%	1,343	1.32%	1,375	1.18%
Sinus Rhythm	14,440	93.65%	74,478	73.4%	88,918	76.07%
Total	**15,419**	**100%**	**101,473**	**100%**	**116,892**	**100%**

Table 30 shows results of the ECG exam recorded at patient's last review. Three quarters of patients had a normal sinus rhythm, however abnormalities were more common in those aged over 65 years. Atrial Fibrillation was present in 20.8% of ECGs in patients over 65 years compared to 3.7% of those aged 18 to 64 years, as shown in Table 31.

Table 32: Heart Failure Patients with ECG Recorded at last review

ECG Record	Count	%
No	23,562	59.56%
Yes	15,997	40.44%
Total	**39,559**	**100%**

Table 32 shows that 40% of patients with heart failure had an ECG since the previous review.

Table 33: ECG Results for Heart Failure Patients by Age

ECG Findings	No. Patients Age 18 - 64	% Patients Age 18 - 64	No. Patients Age 65+	% Patients Age 65 +	No. All Ages	% All Ages
Atrial Fibrillation	133	14.33%	8,094	35.5%	8,227	34.68%
Other Abnormal Rhythm	53	5.71%	1,525	6.69%	1,578	6.65%
Pacemaker	12	1.29%	798	3.5%	810	3.41%
Sinus Rhythm	730	78.66%	12,381	54.31%	13,111	55.26%
Total	**928**	**100%**	**22,798**	**100%**	**23,726**	**100%**

Table 33: Shows that again in heart failure patients atrial fibrillation and other arrhythmias are more common in patients over 65 years than younger patients e.g. 36% of heart failure patients over 65 had atrial fibrillation compared to 12% of those 18 to 64 years.

Table 34: CDM patients with ECHO recorded ever

Echocardiography Recorded	Count	%
No	357,644	88.28%
Not Available	26,683	6.59%
Yes	20,804	5.14%
Total	**405,131**	**100%**

The above table 34 shows that only 5% of patients have had an echocardiogram, the vast majority of these had it for atrial fibrillation or heart failure

Table 35: Heart Failure patients with Echo recorded ever

Echocardiography Recorded	Count	%
No	36,846	71.74%
Yes	14,514	28.26%
Total	**51,360**	**100%**

Table 35 above shows 28% of patients with heart failure have had an echo, however this is a low proportion of these patients and is something that needs to be addressed as a priority through the community hubs, as currently only a small minority of hubs have echo available.

Table 36: Heart Failure patients' Echo recorded ever findings

Echo Result	Count	%
(EF>50%) Normal	5,254	34.25%
(EF 40-49%) Mildly Reduced	4,771	31.10%
(EF 30-39%) Moderately Reduced	3,181	20.73%
(EF <30%) Severely Reduced	1,933	12.60%
(EF >70%) Hyperdynamic	203	1.32%
Total	**15,342**	**100%**

*more than 1 echo

The above Table 36 shows that of those heart failure patients who did have an echo only 34% had a normal result.

Table 37: Atrial Fibrillation patients with echo recorded ever

Echocardiography Recorded	Count	%
No	81,643	80.70%
Yes	19,527	19.30%
Total	**101,170**	**100%**

The above Table 37 shows that 19% of those with atrial fibrillation have had an echo. Again this is a low proportion of these patients, which should be improved with greater echo accessibility through the community hubs.

Table 38: Atrial Fibrillation patients with Echo recorded ever findings

Echo Result	Count	%
(EF>50%) Normal	11,728	58.69%
(EF 40-49%) Mildly Reduced	4,491	22.48%
(EF 30-39%) Moderately Reduced	2,275	11.39%
(EF <30%) Severely Reduced	1,120	5.61%
(EF >70%) Hyperdynamic	368	1.84%
Total	**19,982**	**100%**

Of those who have had an echo for atrial fibrillation, 59% had a normal result, however over 19% of patients had moderately or severely reduced ejection fraction, as shown in Table 38.

Spirometry

There were 74,611 patients diagnosed with COPD in the Programme. The following table 25 shows the number and % who had spirometry testing.

Table 39: COPD patients who had spirometry

Spirometry recorded for COPD patients	Number of patients	% of patients
No	60,854	81.56%
Yes	13,757	18.44%
Total	**74,611**	**100%**

Table 39 shows that only 18.4% of patients with COPD had spirometry. In addition only 9.2% of the 78,101 patients with a diagnosis of asthma had had spirometry. This is an area which requires improvement and should improve as spirometry is made more available through the Chronic Disease Ambulatory Hubs as part of the Enhanced Community Care Programme.

Figure 5: mMRC Dyspnoea Score for patients with COPD (Chronic Obstructive Pulmonary Disease)

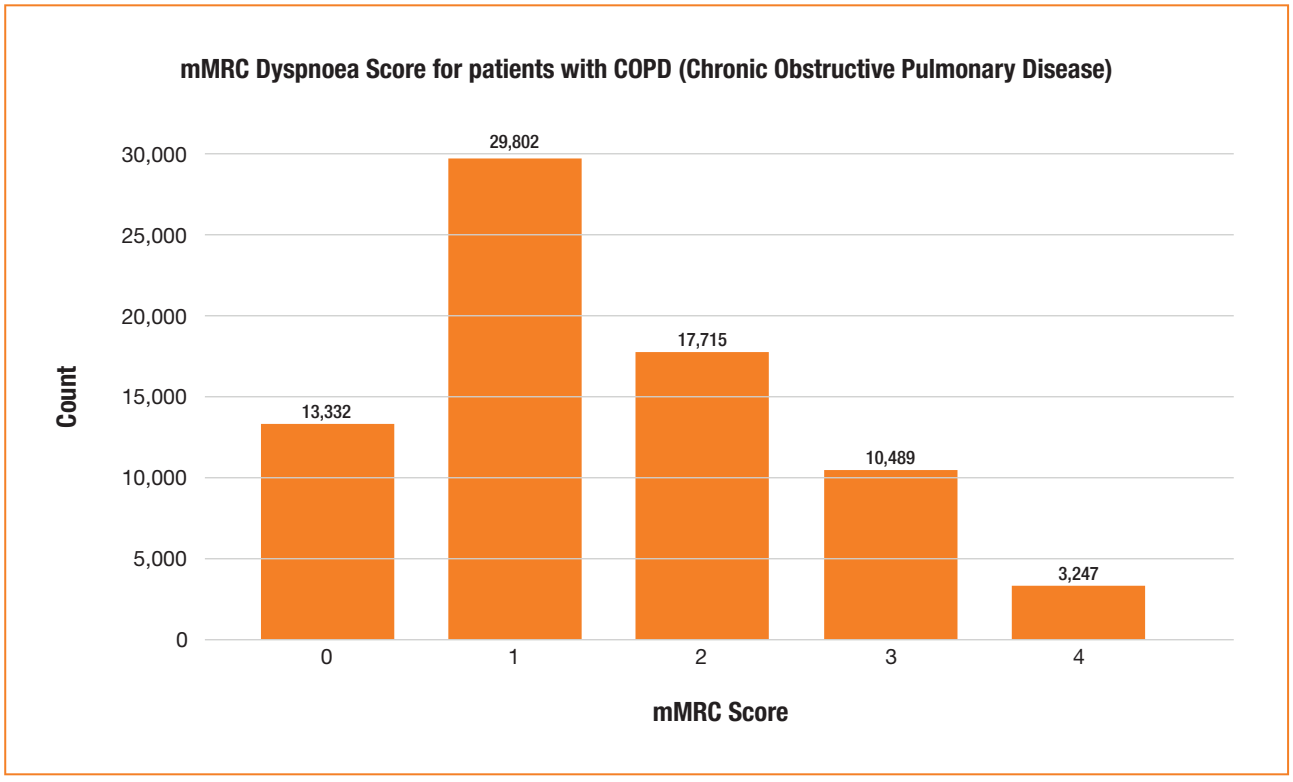


Figure 5 shows the mMRC dyspnoea score for patients with COPD, categories 2,3 and 4 of patients on the score require pulmonary rehabilitation.

Table 40: Patients with COPD with mMRC recorded

mMRC Recorded COPD	n	%
Yes	74,585	99.97%
No	26	0.03%
Total	**74,611**	**100%**

Table 40 shows that almost 100% of COPD patients had their mMRC score recorded by their GPs.

Blood Test Results

Haemoglobin

Table 41: Males with Hb. of less than 13 g/dl

Hb <13 gms/dl	Count	%
No	54,342	77.32%
Yes	15,944	22.68%
Total	**70,286**	**100%**

The above table 41 shows that almost 23% of males in the programme had a haemoglobin of less than 3g/dl.

Table 42: Males with Hb of less than 13 g/dl by age group

Hb <13 gms/dl	18-64	%	65-74	%	75+	%
No	14,975	92.87%	16,509	83.90%	22,858	66.28%
Yes	1,150	7.13%	3,167	16.10%	11,627	33.72%
Total	**16,125**	**100%**	**19,676**	**100%**	**34,485**	**100%**

The above table 42 shows that a reduced haemoglobin of less than 13g/dl rises with age i.e. 7% of those aged 18 to 64 years, 16% of those aged 65 to 74 years and almost 34% of those aged over 75 years had a haemoglobin of less than 13g/dl.

Table 43: Females with Hb of less than 12 g/dl

Hb <13 gms/dl	Count	%
No	47,906	80.16%
Yes	11,855	19.84%
Total	**59,761**	**100%**

The above table 43 shows that almost 20% of females in the programme had a haemoglobin of less than 12 g/dl. Again this rose with age with 10% of those aged 18 to 64 years, 15% of those aged 65 to 74 years and 27% of those aged 75 years having a haemoglobin of less than 12 g/dl.

When this was looked at by diagnoses, two diagnoses atrial fibrillation and heart failure, had higher rates both in males and females of a low haemoglobin.

eGFR

Table 44: Number and proportion of patients with an eGFR in the following categories

eGFR range	n	%
<15	3,172	1.52%
15-29	7,649	3.66%
30-44	24,254	11.62%
45-59	45,151	21.63%
>=60	128,548	61.57%
Total	**208,774**	**100%**

The above table 44 shows that approximately 5% of patients in the programme have an eGFR of less than 30 and a further 33% have an eGFR of between 30 and 59. This indicates a significant number of patients currently in the chronic disease programme have impaired kidney function and the extension of the programme to include those with chronic kidney failure is important.

LDL Cholesterol

Table 45: For patients who had 6 visits at their first, third and sixth visits (mmol/l)

Type	Min	Q1	Mean	Median	Q3	Max	Total Valid
LDL Cholesterol at First Visit	0.00	1.6	2.221	2.10	2.7	10.0	48,387
LDL Cholesterol at Third Visit	0.00	1.6	2.241	2.09	2.7	9.9	47,056
LDL Cholesterol at Sixth Visit	0.02	1.46	2.081	1.90	2.5	9.77	26,945

The Average LDL cholesterol level reduced with repeat visits as shown in table 45

Figure 6: LDL Cholesterol for Patient Cohort

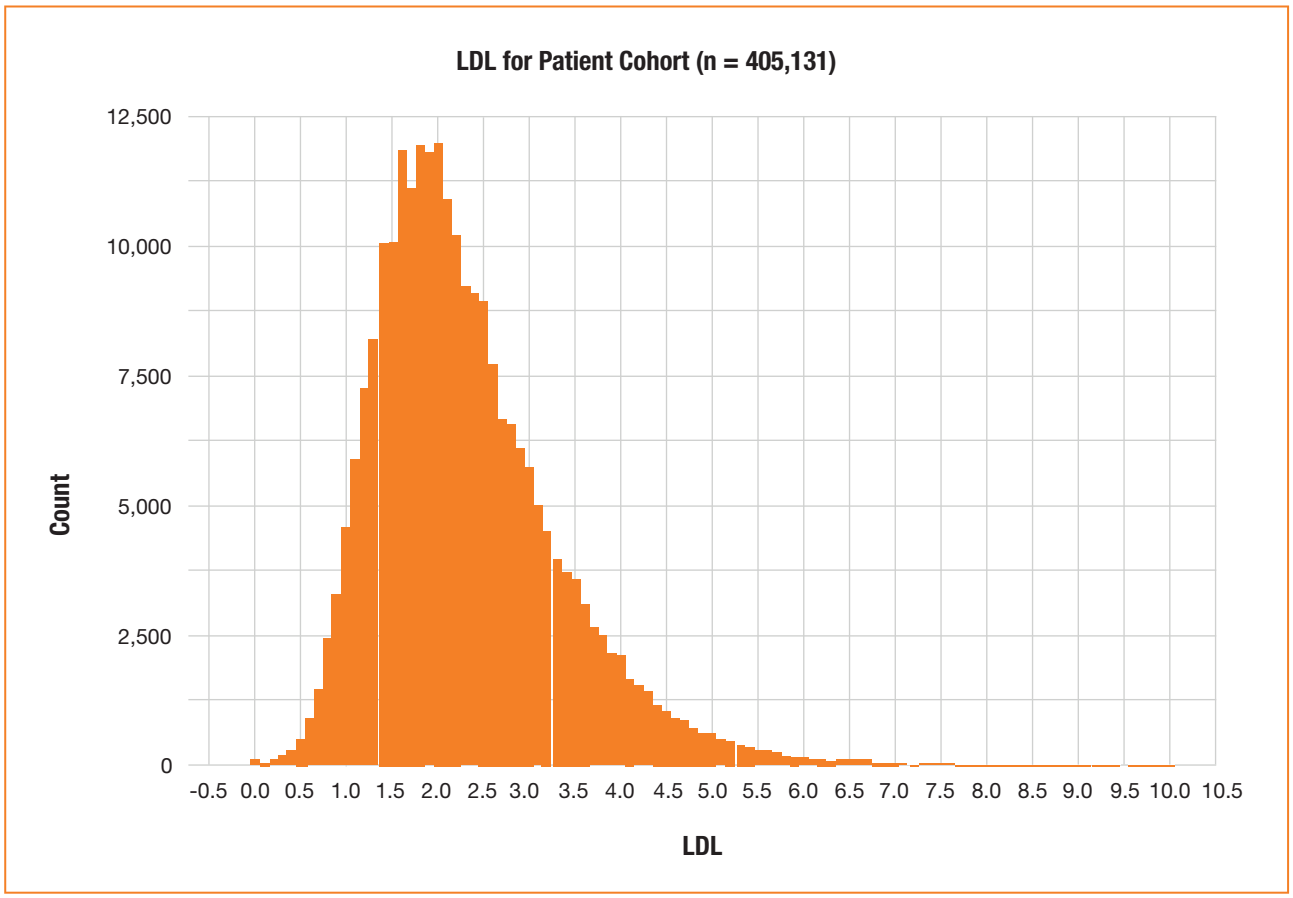


Fig. 6 gives the distribution of LDL cholesterol for all patients (n = 405,131) given their most recent result, which demonstrates good control in this high risk population.

LDL Cholesterol in patients with Diabetes T2 only

Table 46: LDL Range for Diabetic Patients excluding those with Ischaemic Heart Disease (mmol/l)

LDL Range DM2	Number of patients	% of patients
Above or equal to 2.6	32,879	33.04%
Below	66,631	66.96%
Total	**99,510**	**100%**

The above table 46 shows that 33% of diabetic patients without ischaemic heart disease exceeded their target of 2.6 mmol/l. Interestingly this target is exceeded by a higher proportion (45.2%) of those aged 18 to 64 compared to those aged over 65 (27.4%).

Table 47: Diabetic Type 2 Patients who have had 3 visits with LDL Cholesterol≥ 2.6 at first visit (mmol/l)

LDL at First Visit	LDL at Third Visit	n	%
>/= 2.6	>/= 2.6	16,321	65.47%
>/= 2.6	< 2.6	8,442	33.86%
>/= 2.6	Not recorded/ invalid entry	166	0.67%
Total	**-**	**24,929**	**100%**

For all diabetic patients who had 3 visits and exceeded their LDL target of ≥ 2.6 at their first visit, the above table 47 shows that 33.9% who exceeded this target at their first visit had come within the target range by their 3rd visit. Again the over 65 year old age group did better in this regard with 35.2% coming within the target range by their 3rd visit compared to the younger age group of 18 to 64 year olds of whom 31.4% came within target by their 3rd visit.

For those diabetic patients who had had 6 visits (n = 4,557) and who had LDL cholesterol ≥ 2.6 both at their first and third visits an additional 21% had achieved the target by their sixth visit.

LDL in patients with Diabetes T2 and Ischaemic Heart Disease

There is a more stringent target of 1.8 mmol/l LDL cholesterol for patients with diabetes who also have ischaemic heart disease. The following table 48 shows that 50% of patients with diabetes and IHD exceed this target.

Table 48: LDL Range for patients with DM T2 and IHD (mmol/l)

LDL Range DM2 & IHD	n	%
Below 1.8	14,744	50.05%
Above 1.8	14,716	49.95%
Total	**29,460**	**100%**

For the over 65 year olds 49% exceed the target, while 55.8% of the 18 to 64 year olds exceed the target.

Table 49: Diabetic T2 and IHD Patients who have had 3 visits with LDL ≥ 1.8 at first visit (mmol/l)

LDL at First Visit	LDL at Third Visit	n	%
>/= 1.8	>/= 1.8	8,008	76.41%
>/= 1.8	< 1.8	2,375	22.66%
>/= 1.8	Not recorded/ invalid entry	97	0.93%
Total	**-**	**10,480**	**100%**

For those patients who had 3 visits and exceeded their LDL cholesterol target of ≥ 1.8 at their first visit the above table 49 shows that 22.7% of them had achieved this target by their third visit. This is a similar result to that found with a much smaller older cohort reported in the Second Report and confirms the beneficial outcomes of the programme.

For those diabetic patients who had six visits and had exceeded their LDL cholesterol target of 1.8 at their first visit and at their third visit and additional 15% had achieved their target by their sixth visit.

Table 50: Diabetic Type 2 and IHD Patients who have had 3 visits with LDL Cholesterol ≥ 1.4 at first visit (mmol/l)

LDL at First Visit	LDL at Third Visit	n	%
>/= 1.4	>/= 1.4	12,846	87.31%
>/= 1.4	< 1.4	1,739	11.82%
>/= 1.4	Not recorded/ invalid entry	128	0.87%
Total	**-**	**14,713**	**100%**

A lower target of 1.4 mmol/l is often recommended for diabetic patients with ischaemic heart disease, 11.8% of the patients who exceeded the target of 1.4 mmol/l at their first visit now had achieved their target by their third visit, as shown in table 50.

LDL Cholesterol for Patients with Ischaemic Heart Disease Only

Patients with ischaemic heart disease but who do not have diabetes mellitus often are given the target of maintaining their LDL cholesterol at < 2.6 mmol/l. The following table 51 gives the range for patients who have ischaemic heart disease, but do not have diabetes.

Table 51: LDL range for patients with IHD who do not have diabetes mellitus (mmol/l)

LDL range for Patients with IHD who do not have diabetes mellitus	Number of patients	% of patients
1.8 – 2.5	19,052	35.92%
> =2.6	14,835	27.97%
1.5 – 1.7	10,805	20.37%
< 1.4	8,351	15.74%
Total	**53,043**	**100%**

This table 51 shows that 28% of patients with IHD but without diabetes, exceed the target of of 2.6 mmol/l, 36% of them are within the 1.8 mmol/l to 2.5 mmol/l range, and 20% of them within the 1.5 – 1.7 range and 16% are within the stringent < 1.4 mmol/l range. This varies again with age, the over 65 year old age group doing better with 26.7 % exceeding the target of 2.6 mmol/l while 38% of those aged 18 to 64 exceeded this target.

Table 52: IHD Patients excluding Diabetics Type 2 who have had 3 visits with LDL >=2.6 at first visit (mmol/l)

LDL at First Visit	LDL at Third Visit	n	%
>/= 2.6	>/= 2.6	9,651	59.89%
>/= 2.6	< 2.6	4,746	29.45%
>/= 2.6	Not recorded/ invalid entry	1,718	10.66%
Total	**-**	**16,115**	**100%**

Of those who had three visits and exceeded the target of 2.6 mmol/l at their first visit the above table 52 shows that 29.5% of this cohort had achieved their target of < 2.6 mmol/l by their third visit.

The above confirms the findings of the second report, showing improved results for LDL cholesterol targets for all risk groups by their third visit to their GP.

HbA1c for Diabetes Patients

Figure 7: HbA1C in patients with Diabetes Mellitus (mmol/mol)

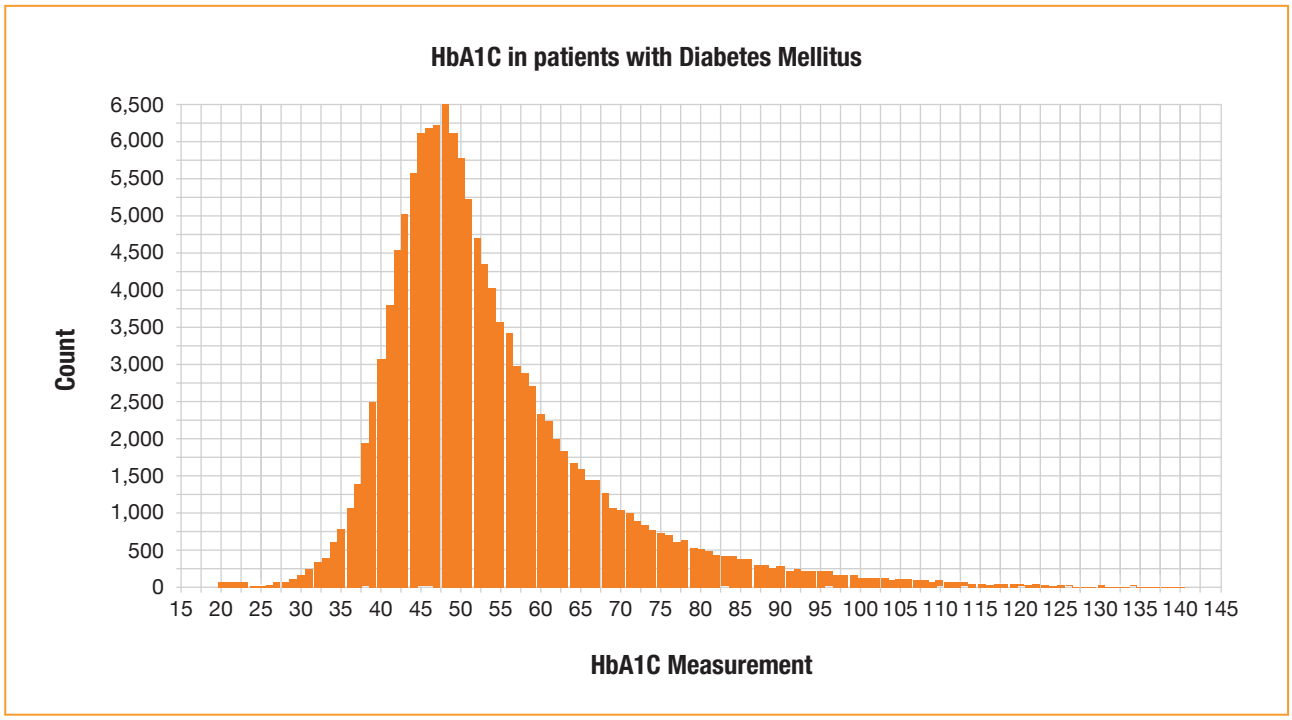


Fig. 7 shows the distribution of HbA1c in patients with diabetes mellitus. This shows good control for the whole population cohort.

Table 53: Summary HbA1C for Diabetes Patients (mmol/mol)

Min	Q1	Mean	Median	Q3	Max
20	45	53.77683	50	59	140

The mean HbA1c in diabetes patients was 53.8 mmol/mol, and 16.6% exceeded the target of 64 mmol/mol, as shown in Tables 53 and 54.

Table 54: HbA1C for patients with Diabetes Mellitus (mmol/mol)

HbA1C at Range DM	n	%
<= 53	83,010	57.17%
54-63	27,938	19.24%
>=64	24,136	16.62%
Not recorded	10,125	6.97%
Total	**145,209**	**100%**

Table 55 shows that diabetic patients who had at least three visits (14256) and who at their first visit exceeded the target of 64 mmol/mol, 44% had achieved their target by their third visit.

Table 55: HbA1C for patients with Diabetes (mmol/mol)

HBA1C at First	HbA1C at Third	n	%
>=64	>=64	7,540	52.89%
>=64	54-63	3,505	24.59%
>=64	<=53	2,696	18.91%
>=64	Not recorded	515	3.61%
Total	**-**	**14,256**	**100%**

Of the 2624 patients who had at least six visits and exceeded their target at their third visit, approximately 37% had achieved the target by their sixth visit.

The above data on diabetes control shows improved control with repeated GP visits.

Vaccinations

Table 56 shows that 98% of patients had flu vaccine within the previous 12 months, as recorded at their last annual review.

Table 56: Flu vaccine within the last 12 months, recorded at most recent annual review

Recorded	n	%
Had Flu Vaccine within 12 months	184,587	97.80%
No Flu Vaccine within 12 months	4,126	2.19%
Not Recorded at last review	33	0.02%
Total	**188,746***	**100%**

* flu vaccine only recorded at an annual review

Table 57 shows that 66% of chronic disease patients have had a pneumococcal vaccination, this is considerable higher than the general population of over 65 year olds.

Table 57: Proportion of CDM patients ever had Pneumococcal vaccination

Recorded	n	%
Yes	250,882	61.93%
No	113,183	27.94%
Declined by patient	24,177	5.97%
Given elsewhere	15,649	3.86%
NA (Not recorded)	1,240	0.31%
Total	**405,131**	**100%**

Table 58: Proportion of CDM patients ever had Pneumococcal vaccination by age group

Recorded	No. 18-64	% 18-64	No. 65+	% 65+
Declined by patient	10,953	11%	13,224	4.33%
Given elsewhere	2,115	2.13%	13,534	4.43%
NA (Not recorded)	491	0.49%	749	0.25%
No	49,577	49.81%	63,606	20.81%
Yes	36,392	36.56%	214,490	70.19%
Total	**99,528**	**100%**	**305,603**	**100%**

The above table 58 shows that patients with chronic disease who are also over aged 65 have a considerably higher uptake of pneumococcal vaccine, than those who are aged under 65, only 39% of patients between 18 and 64 years with chronic disease had had this vaccine, this is an area for targeting by GPs.

Care Plan

Table 59: Care Plan Recorded

Care Plan Recorded	No.	%
No	107,860	26.62%
Yes	297,049	73.32%
NA	222	0.05%
Total	**405,131**	**100%**

Table 59 shows that 73% of patients have had a care plan recorded. Of those who have had 3 visits and who did not have a care plan recorded at their first visit an additional 14954 had one recorded by their third visit.

Hospital Attendance for Routine Care

Table 60 shows that 91.47% of patients do not attend hospital for their routine care of their chronic disease.

Table 60: Attending Hospital by Age for routine care of their chronic condition

Age Group	No. Patients	No. Patients Attending Hosp	% Attending Hospital
18-24	3,214	61	1.9%
25-54	46,232	2,074	4.49%
55-64	50,082	2,994	5.98%
65-69	37,568	2,722	7.25%
70-74	75,169	6,888	9.16%
75-79	80,288	8,242	10.27%
80-84	59,601	6,279	10.54%
85-89	36,661	3,800	10.37%
90+	16,316	1,479	9.06%
Total	**405,131**	**34,539**	**8.53%**

When this is looked at by age group, the above table 60 shows that while overall 8.53% of patients attend hospital as well as their GP for the routine care of their chronic disease this varies by age, with only 1.9% of 18 to 24 year olds attending hospital while over 10% of patients over 75 years attend hospital as well as their GP four the routine care of their chronic disease.

Table 61: Attending Hospital by Diagnosis

Diagnosis	Attending Hosp Yes	Attending Hosp No	Total	% Attending Hospital Yes
Ischaemic Heart Disease	14,099	116,561	130,660	10.79%
Transient Ischaemic Attack	1,829	23,896	25,725	7.11%
Atrial Fibrillation	8,519	76,315	84,834	10.04%
Diabetes Type 2	7,285	137,927	145,212	5.02%
Heart Failure	4,906	34,653	39,559	12.40%
Asthma	3,007	83,041	86,048	3.49%
COPD	4,669	69,944	74,613	6.26%
Cerebral Vascular Accident	2,540	26,189	28,729	8.84%
Total	**46,854**	**568,526**	**615,380**	**7.61%**

*some patients had several conditions.

Table 61 shows the proportion of patients by diagnoses which attend hospital for their routine care as well as their GP. As would be expected patients with heart failure (12.4%) attend hospital for routine care more frequently than patients with asthma (3.49%). Again this would be expected as patients with heart failure tend to be older than patients with some of the other conditions. Patients with 1 chronic disease only, attend hospital less (6.45%) than patients with 2 chronic diseases (11%) or those with 3 chronic conditions (14%). It's not surprising that older patients with multimorbidity attend hospital for routine care slightly more than younger patients, in conjunction with the care that they receive from GPs. It is remarkable however that this is such a low proportion (8.5%).

Discussion of Clinical Results

In the CDM Treatment Programme GPs record year of diagnoses of the various conditions that the patients suffer from. It is interesting that at the end of 2023 over 51% of patients in the programme had been diagnosed since the beginning of the programme in 2020 with conditions that they suffered from.

The report provides figures on alcohol consumption, 47% of the cohort are non-drinkers, which is slightly higher than the national figures for over 65 year olds given by the HRB and Healthy Ireland reports (41%). However, the CDM data suggests very low levels of harmful or high risk drinking behaviour compared to other national reports of the whole population. This is something that can be explored in future reports.

For the cohort of patients who had had 3 visits to their Doctor, their mean systolic blood pressure had dropped by 1.2 m between their first and third visit. Their mean diastolic blood pressure had dropped by 0.9 mm by the third visit.

For the cohort of patients who had had six visits to their GP, their mean systolic blood pressure and their diastolic blood pressure had reduced by 2.1 mm/hg

Harding Et Al (JAMA 2017) showed that in the US Atherosclerosis Risk in Communities Longitudinal Study, that in caucasians a 1 mm drop in blood pressure in a cohort resulted in 13.3 less heart failure cases, 9 less CHD cases and 4.8 less strokes per 100,000 person years. Grossman et al (Diabetes Care 2011), and Emberson et al (EUR Heart Journal 2004) showed that a 10% reduction in mean blood pressure or a 10% reduction in cholesterol resulted in 45% reduction in cardiovascular disease events in 10 years. Hence it can be seen that reductions in the proportion of people who suffer from hypertension or exceed LDL targets and a reduction in mm mean blood pressure of the population cohort involved have very significant implications for cardiovascular events and hence hospitalisations for large numbers of people.

Data from the CDM Treatment Programme for the first 4 years of operation show significant improvements in lifestyle risk factors and in biometric risk factors. The CDM cohort shows good results compared to the whole population figures in the Healthy Ireland Survey for risk factors. In addition the comparable indicators in the UK QoF figures for blood pressure, LDL cholesterol, HbA1c levels together with diabetic foot exam, MRC scoring and provision of Care Plans show the performance achieved in the CDM Programme are all at the higher end of target thresholds in the UK QoF system.

In other countries similar chronic disease prevention and managements programmes in General Practice have demonstrated excellent results, Cheng and Fontana (Euro Heart Journal 2024) describe a 51% annual reduction in hospital admissions in a similar GP provided CDM Programme, supported by a patient activation programme. This programme similarly showed high proportions of patients reaching their cholesterol, HbA1c and blood pressure targets, together with lifestyle improvement targets. The programme estimated a 6:1 return on investment.

Conclusion

- The results of the Third Report replicate the results of the second report in the reduction in both lifestyle risk factor and biometric risk factors that were achieved by patients by their third or subsequent visits to the GP, however this was now demonstrated in a much larger cohort in the third report.
- The programme is popular with both GPs with an uptake of 96.9% and with patients showing an uptake of 80% for all patients, this was 61% in those aged 18 to 64 years and 89% in those 65 years and older. It is likely that the younger age groups will increase their uptake as their time being eligible for the programme continues.
- The programme demonstrated a significant shift left whereby over 91% of patients received all their routine care now in the community for their chronic disease.
- The report demonstrates a high level of mutimorbidity among this cohort, 36.6% of patients in the Treatment Programme had 2 or more chronic diseases, of the 8 selected diseases.
- Figure 6 in the report shows the range of LDL cholesterol results for the whole cohort, demonstrating good control in this high risk population.
- Figure 7 shows the distribution for HbA1c levels among diabetic patients in the programme and a mean HbA1c is 53.7 mmol/mol and the upper interquartile range gives a value of 59 mmol/mol. This shows excellent control in the whole population of diabetic patients.
- Table 35 shows a low % of heart failure patients receiving echocardiography, this technology needs to be made more widely available in the CD Hubs.
- Diabetes foot exams were carried out on 98% of patients. This is an exceptionally high proportion, as this has been found to be an area that often has low uptake in other similar programmes. The diabetic foot exam requires the GP to carry out six individual tests on the feet of their diabetic patients and record whether they are normal or abnormal. Any one of the six tests being abnormal gives an overall abnormal score. In the Treatment Programme cohort, 12.3% of patients had an abnormal result. As time progresses and new diabetics are recruited into the programme and undergo better control, it would be expected that this proportion would reduce.

- Over 97% of patients in the Treatment Programme were recorded by the GP as having flu vaccination in the last 12 months at their last annual review, this compares favourably with the over 65 years population uptake of 75.7%. Uptake of pneumococcal vaccine by the whole cohort was 66%. This compares well to the overall population uptake of 36% among 65 year olds. In the Chronic Disease Treatment Programme cohort those over 65 years had an uptake of over 70%, compared to those with chronic disease under 65 years who had a 39% uptake. This is an area which could be improved with focus by General Practice on the younger age groups with chronic disease in the future.

- Results from ICGP audits show a reduction in admissions and in ED attendance for patients in the Chronic Disease Treatment Programme for their chronic conditions, following their enrolment. HIPE data for chronic disease shows sustained reduction of 15% in admissions in 2023 versus 2019. The ICGP audit shows that patients enrolled in the Treatment Programme had 30% less ED attendances, 26% less hospital admissions and 33% less GP out of hours attendances than they had prior to entering the programme.

- Overall the CDM data to date suggests an effective programme which is well supported by GPs and patients and achieves good lifestyle behaviour and clinical results. Analysis from HIPE and from the ICGP audit indicates a reduction in health service usage for this cohort after a period in the CDM Programme, similar programmes elsewhere have shown these risk factor reductions and health service utilisation and reductions also. Significant return on investments have been calculated for these types of programmes.

- Data from the CDM has aided in planning the necessary extensions to the programme. The suite of CDM programmes was extended to include gestational diabetes, pre-eclampsia and stage 1 hypertension in 2023, and will include chronic kidney disease, familial hypercholesterolemia, direct access into the Prevention Programme for the agreed conditions from age 18 onwards, peripheral arterial disease and moderate/severe valvular disease from July 2025. These are very welcome additions and will greatly improve the cardiovascular risk profile of these high risk sub populations. In addition consideration should be given to covering the whole population of patients with chronic disease and extending it beyond the current GMS/DVC population. There is a growing body of evidence that shows that our cardiovascular health experienced in the decades past 60 is determined in a large part by cardiovascular health in the decades between 30 and 60. Hence including the whole population aged 18 to 69 years in the programme would improve a large number of people's health, who will all subsequently be eligible for GMS coverage at age 70. Most hospital admissions, and health service expenditure occurs on those aged over 70 and is often due to emergency admissions of patients with chronic disease into public hospitals through the ED. Extension of the programme to this cohort would significantly reduce this requirement in the upcoming decades.

Notes

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