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Analysis of laboratory test ordering patterns in relation to costs at Brits District Hospital.

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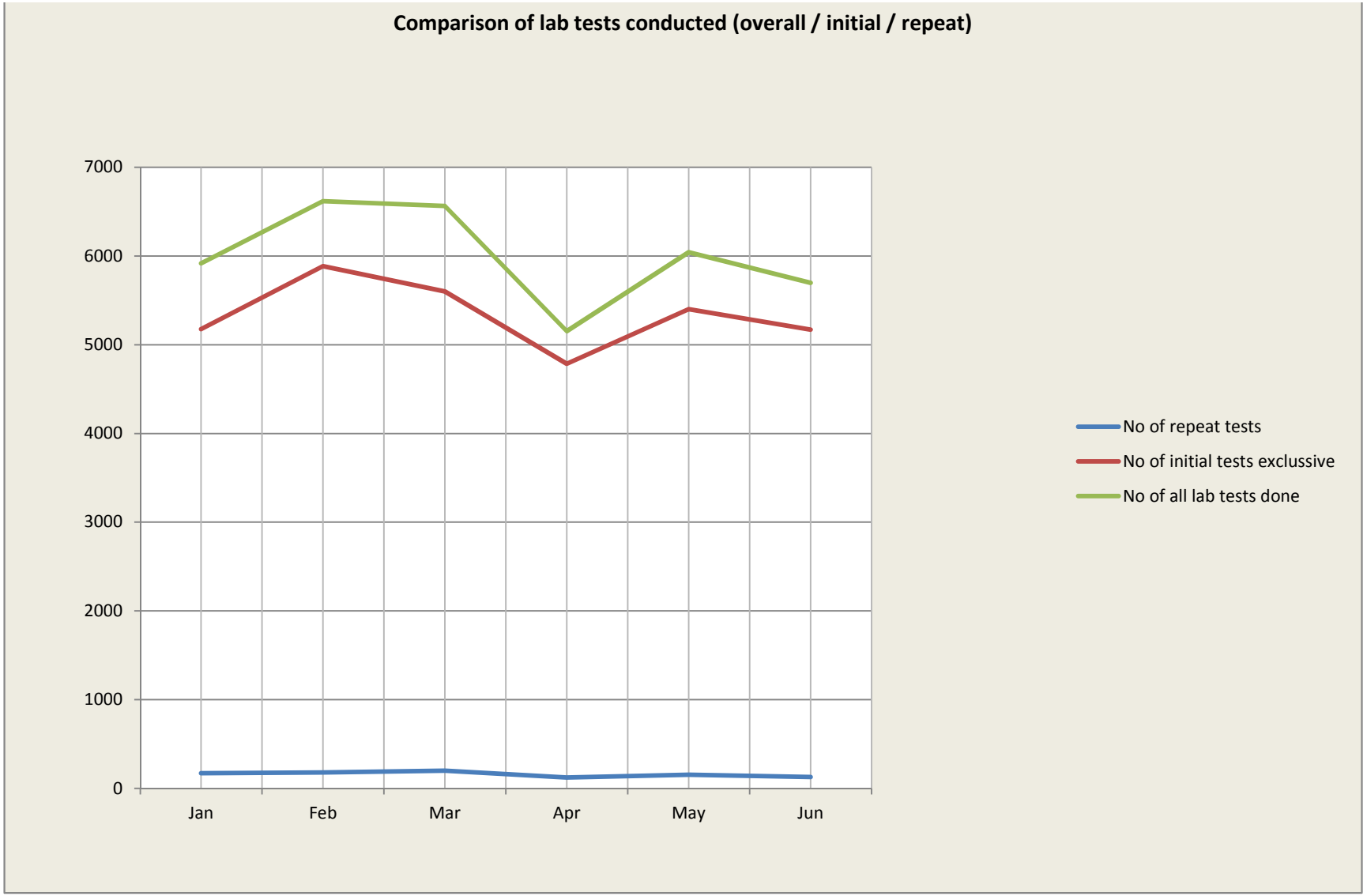
Month		No of subjects tested initially tested	No subjects exposed to repeat tests	Costs of all lab tests	Costs of initial tests	Cost of repeat tests	No of all lab tests done	No of initial tests exclussive	No repeat tests	No of spoilt tests
Jan	2375	590	117	221281	190537	30744	5918	5175	179	-564
Feb	2344	680	131	261889	228990	32899	6619	5885	178	-556
Mar	2537	645	128	240322	200076	40246	6565	5602	199	-764
Apr	2308	643	98	207876	188906	18970	5153	4786	122	-245
May	2549	637	106	240495	212020	28475	6042	5402	152	-488
Jun	2243	604	95	224867	198159	26708	5697	5170	128	-399
	14356	3799	675	1396730	1218688	178042			0.727966	
	2392.666667	633.1666667	112.5	0		0				
	0	2.4911E-09								
	1.68808E-07	3.36633E-12		0.937561	0.364288		0.968772	0.7279665		
	0.216188384		0.732659196	0.937561	0.364288		0.968772	0.7279665		

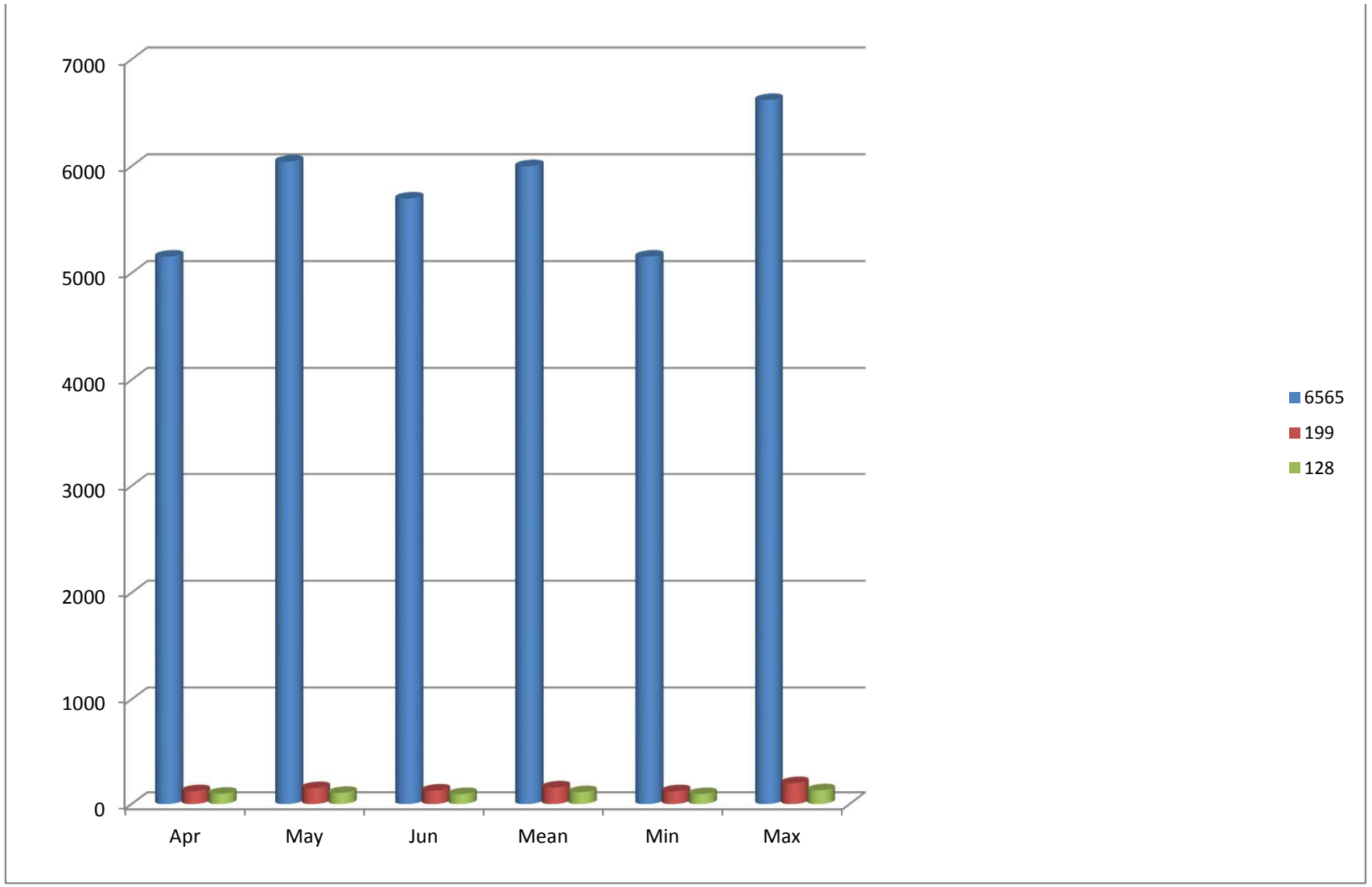
Month	**No of subjects exposed to initial testing**	**No subjects exposed to repeat testing**	**% of subjects exposed to repeat testing**
Jan	**590**	**117**	**19.8**
Feb	**680**	**131**	**19.3**
Mar	**645**	**128**	**19.8**
Apr	**643**	**98**	**15.2**
May	**637**	**106**	**16.6**
Jun	**604**	**95**	**15.7**
Mean	**633.2**	**112.5**	**17.8**
	3799.0	**675.0**	
Min	590	95	
Max	680	131	
IQR			
Correl	0.489612709		

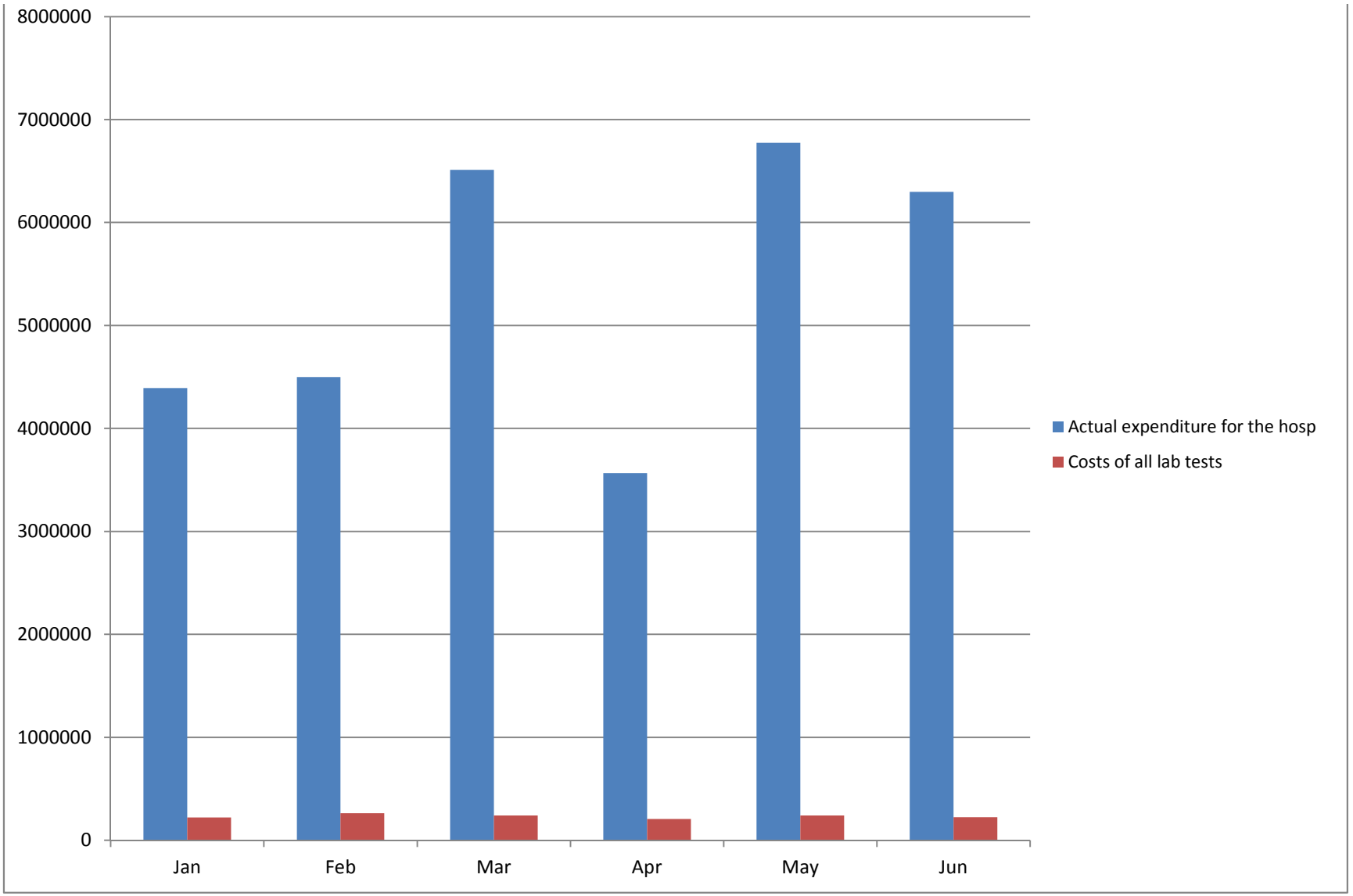
Month	Actual expenditure for the hosp	Costs of all lab tests	% of the expenditure of lab tests	Costs of initial tests	Cost of repeat tests	% Cost of repeat tests
Jan	4391739	221281	5.038573558	190537	30744	13.8
Feb	4499208	261889	5.820780013	228990	32899	12.5
Mar	6511767	240322	3.690580452	200076	40246	16.7
Apr	3565794	207876	5.829725441	188906	18970	9.1
May	6773376	240495	3.550592792	212020	28475	11.8
Jun	6297060	224867	3.570983919	198159	26708	11.8
	5339824	232788.3333	4.583539363			
	0.33752708		-0.06622891			

Month	No of all lab tests done	No of initial tests exclussive	No of repeat tests	Nopt subjects exposed to repeat tests	
Jan	5918	5175	170	117	2.26087
Feb	6619	5885	178	131	2.225998
Mar	6565	5602	199	128	2.284898
Apr	5153	4786	122	98	2.047639
May	6042	5402	152	106	1.962236
Jun	5697	5170	128	95	1.837524
Mean	5999	5336.666667	158.1667	112.5	2.103194
Min	5153	4786	122	95	1.837524
Max	6619	5885	199	131	2.284898
SDEV	551.3775476	382.7498748	29.85576	15.24139	0.18248
Sum			949	675	
Correlation	0.968772284	0.775990336	0.942987		

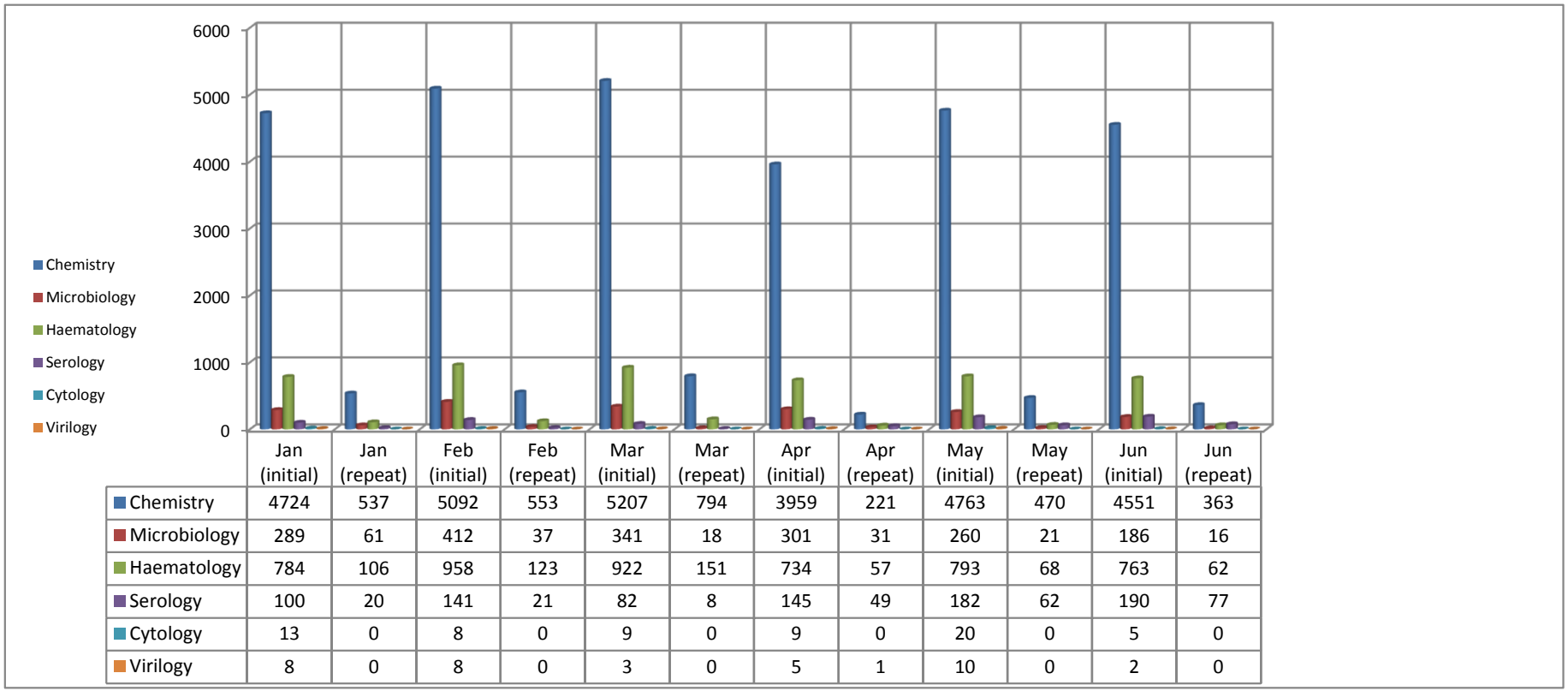
Month	No of all lab tests done	No of initial tests exclussive	No of repeat tests	Nopf subjects exposed to repeat tests	% repeat tests measured against no of initial tests
Jan	5918	5175	170	117	2.26087
Feb	**6619**	**5885**	178	**131**	2.225998
Mar	6565	5602	**199**	128	**2.284898**
Apr	5153	4786	122	98	2.047639
May	6042	5402	152	106	1.962236
Jun	5697	5170	128	95	1.837524
Mean	**5999**	**5336.666667**	**158.1667**	**112.5**	**2.103194**
Min	5153	4786	122	95	1.837524
Max	6619	5885	199	131	2.284898
SDEV	551.3775476	382.7498748	29.85576	15.24139	0.18248
	0.968772284	0.775990336	0.942987		


Comparison of lab tests conducted (overall / initial / repeat)
7000
6000
5000
4000
3000
2000
1000
0
Jan
Feb
Mar
Apr
May
Jun
No of repeat tests
No of initial tests exclussive
No of all lab tests done


7000
6000
5000
4000
3000
2000
1000
0
Apr
May
Jun
Mean
Min
Max
6565
199
128


8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
Jan
Feb
Mar
Apr
May
Jun
Actual expenditure for the hosp
Costs of all lab tests

Test category	Jan (initial)	Jan (repeat)	Feb (initial)	Feb (repeat)	Mar (initial)	Mar (repeat)	Apr (initial)	Apr (repeat)	May (initial)	May (repeat)	Jun (initial)	Jun (repeat)	TOTAL
Chemistry	4724	537	5092	553	5207	794	3959	221	4763	470	4551	363	2938
Microbiology	289	61	412	37	341	18	301	31	260	21	186	16	184
Haematology	784	106	958	123	922	151	734	57	793	68	763	62	567
Serology	100	20	141	21	82	8	145	49	182	62	190	77	237
Cytology	13	0	8	0	9	0	9	0	20	0	5	0	0
Virilogy	8	0	8	0	3	0	5	1	10	0	2	0	1

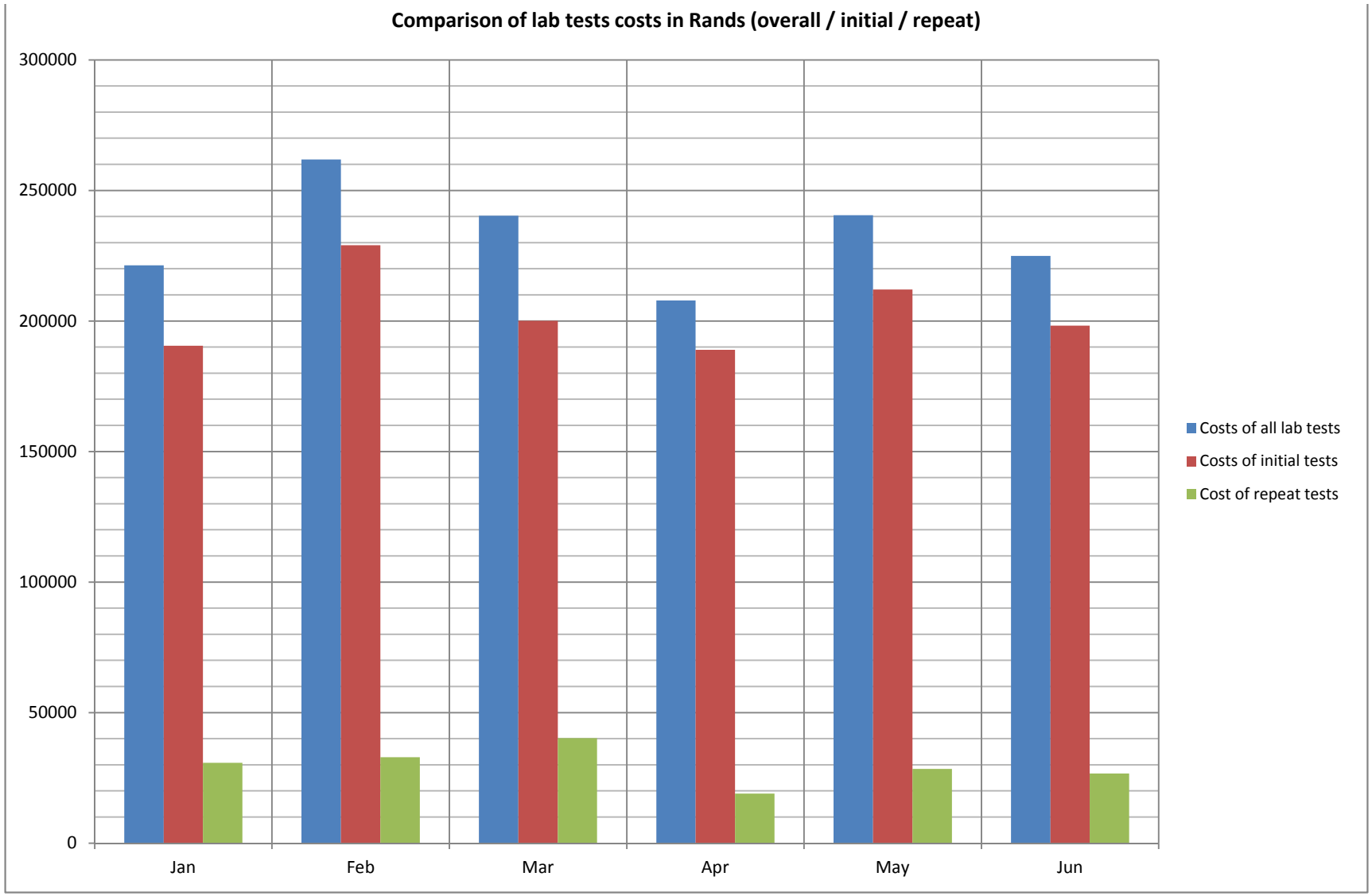


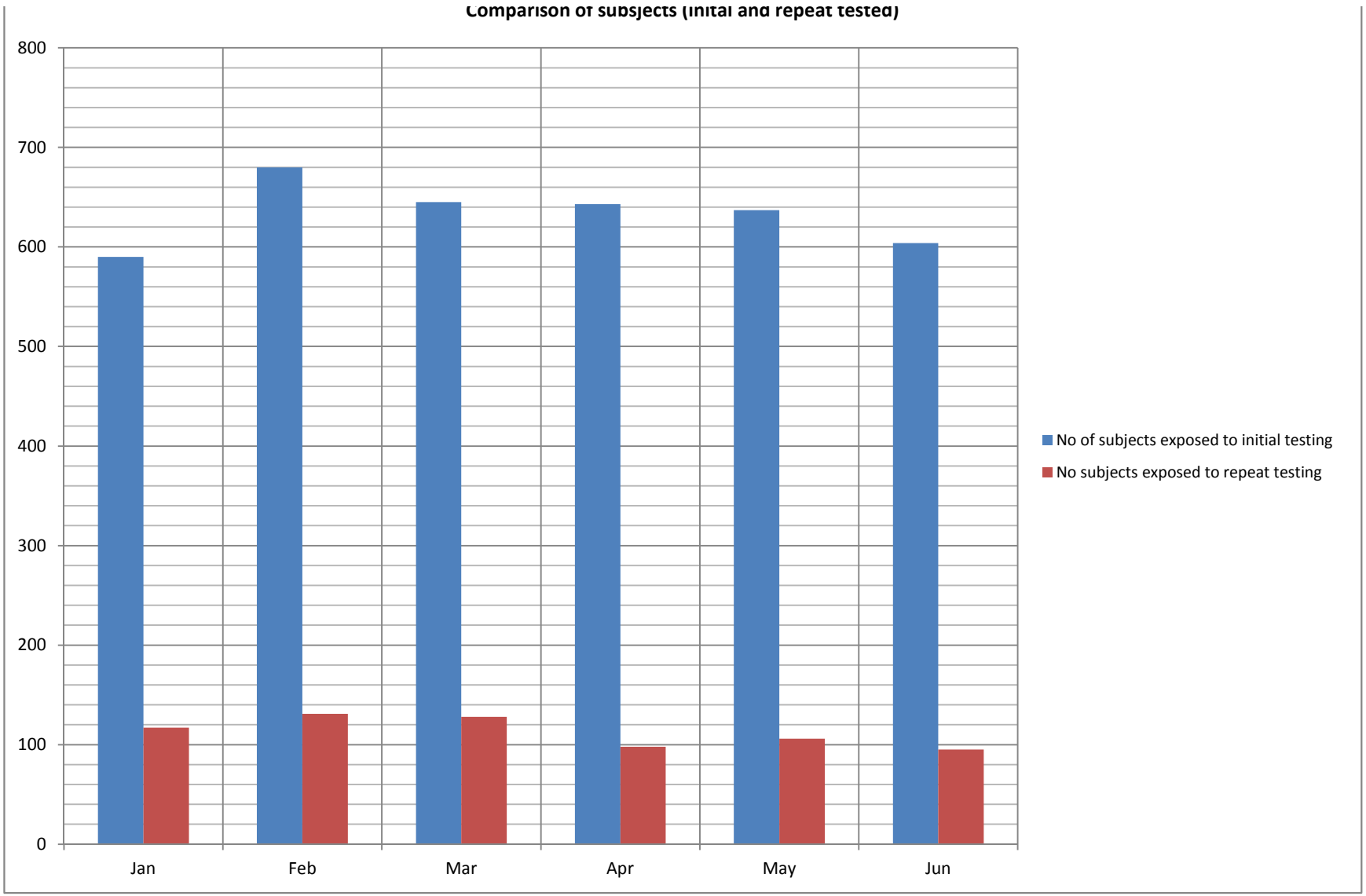
	Jan (initial)	Jan (repeat)	Feb (initial)	Feb (repeat)	Mar (initial)	Mar (repeat)	Apr (initial)	Apr (repeat)	May (initial)	May (repeat)	Jun (initial)	Jun (repeat)
Chemistry	4724	537	5092	553	5207	794	3959	221	4763	470	4551	363
Microbiology	289	61	412	37	341	18	301	31	260	21	186	16
Haematology	784	106	958	123	922	151	734	57	793	68	763	62
Serology	100	20	141	21	82	8	145	49	182	62	190	77
Cytology	13	0	8	0	9	0	9	0	20	0	5	0
Virilogy	8	0	8	0	3	0	5	1	10	0	2	0

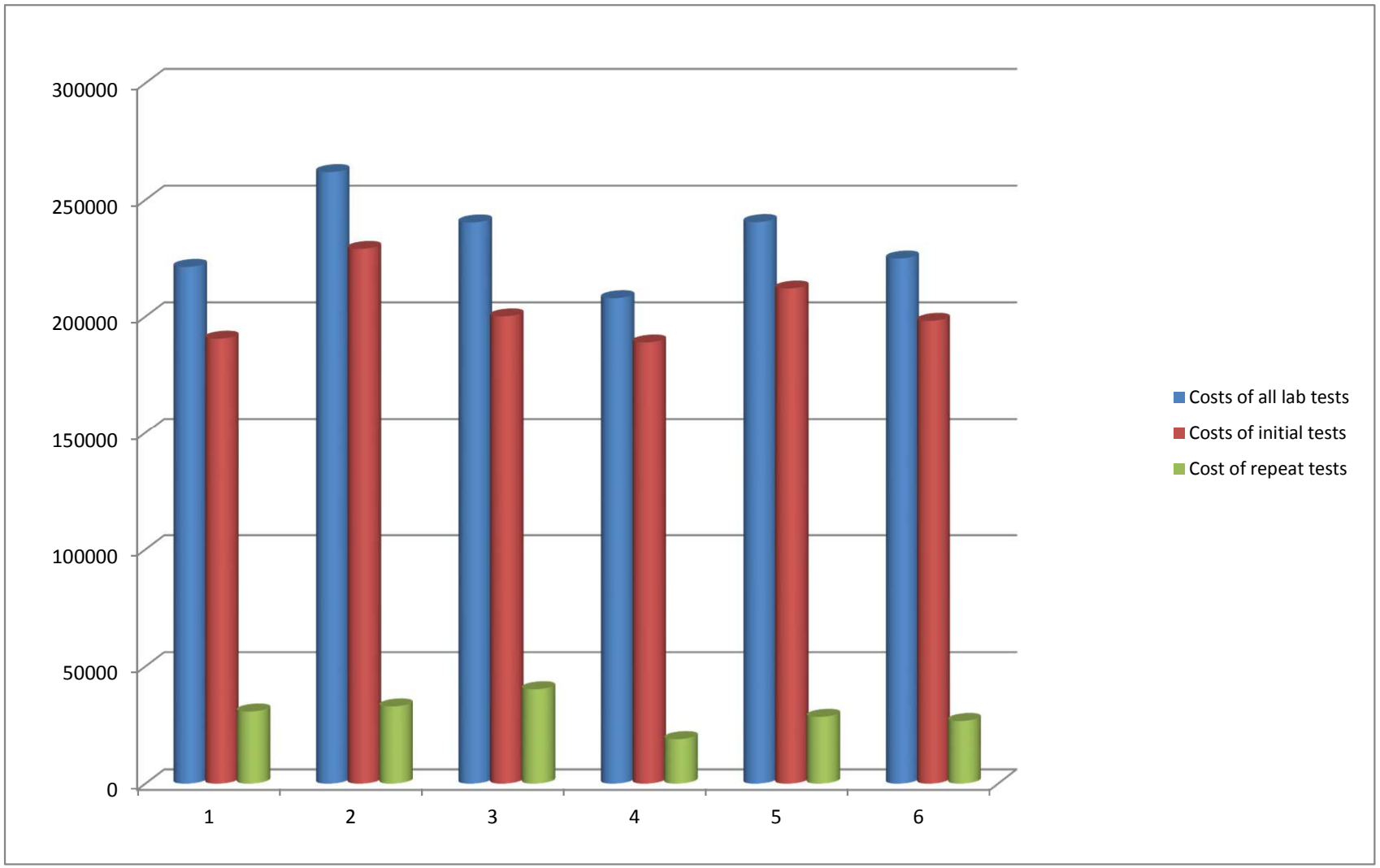
	100	100	100	75	50
	167	167	157	120	90
	199	199	199	150	100
	567	567	567	400	260
	342	342	340	270	170
Sum	1375	1375	1363	1015	670
Correlatic	1	1	0.99975	0.99615	0.997774
	987	987	970	750	480

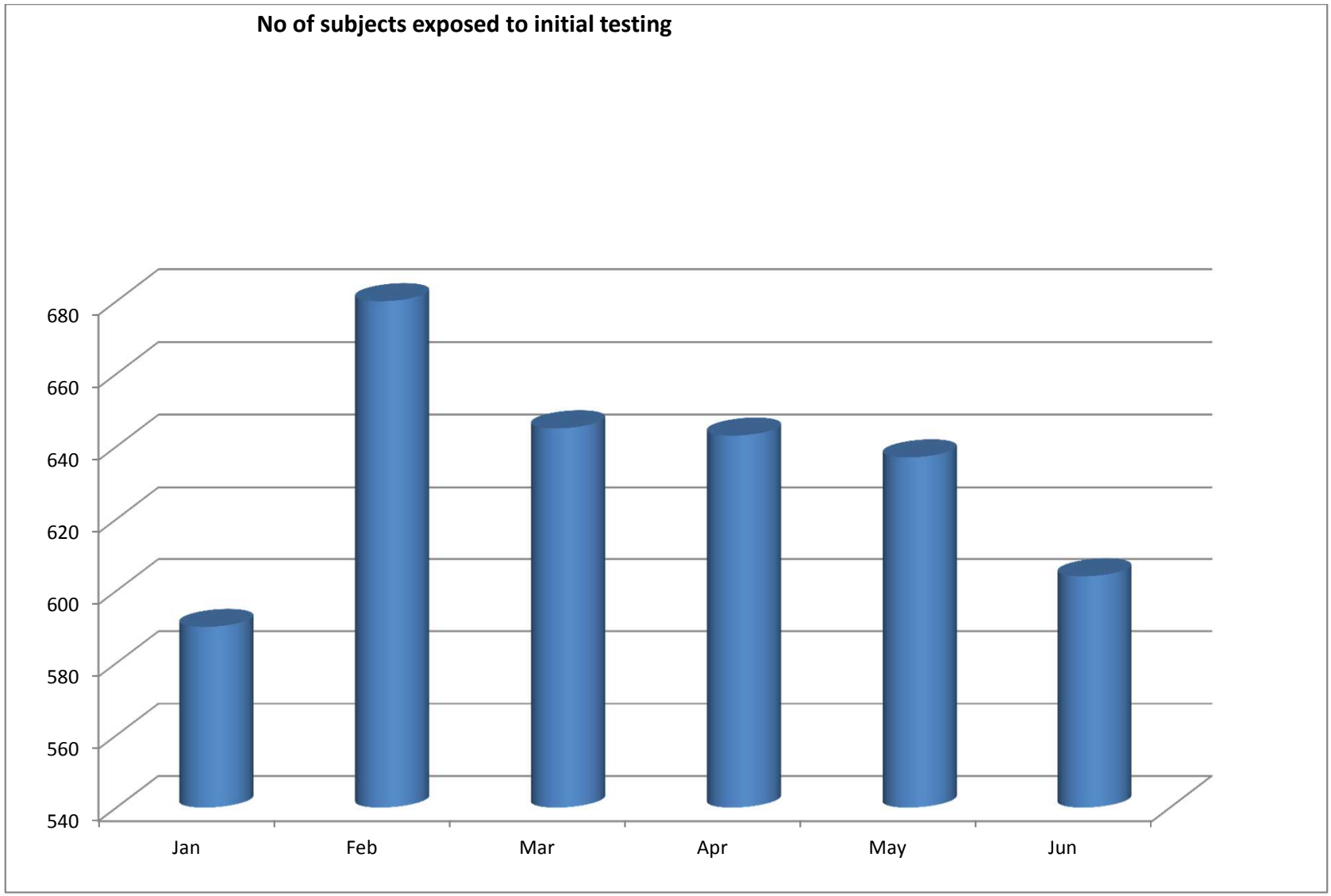
		No of repeat tests	No of initial tests exclussive	No of all lab tests done
	Jan	170	5175	5918
	Feb	178	**5885**	**6619**
	Mar	**199**	5602	6565
	Apr	122	4786	5153
	May	152	5402	6042
	Jun	128	5170	5697
	SUM	949	32020	35994

	Jan	Feb	Mar	Apr	May	Jun	
No of repeat tests	170	178	199	122	152	128	949
No of initial tests exclussive	5175	5885	5602	4786	5402	5170	
No of all lab tests done	5918	6619	6565	5153	6042	5697	


Comparison of lab tests costs in Rands (overall / initial / repeat)
300000
250000
200000
150000
100000
50000
0
Jan
Feb
Mar
Apr
May
Jun
Costs of all lab tests
Costs of initial tests
Cost of repeat tests


Comparison of subjects (inital and repeat tested)
800
700
600
500
400
300
200
100
0
Jan
Feb
Mar
Apr
May
Jun
No of subjects exposed to initial testing
No subjects exposed to repeat testing


300000
250000
200000
150000
100000
50000
0
1
2
3
4
5
6
Costs of all lab tests
Costs of initial tests
Cost of repeat tests


No of subjects exposed to initial testing
680
660
640
620
600
580
560
540
Jan
Feb
Mar
Apr
May
Jun