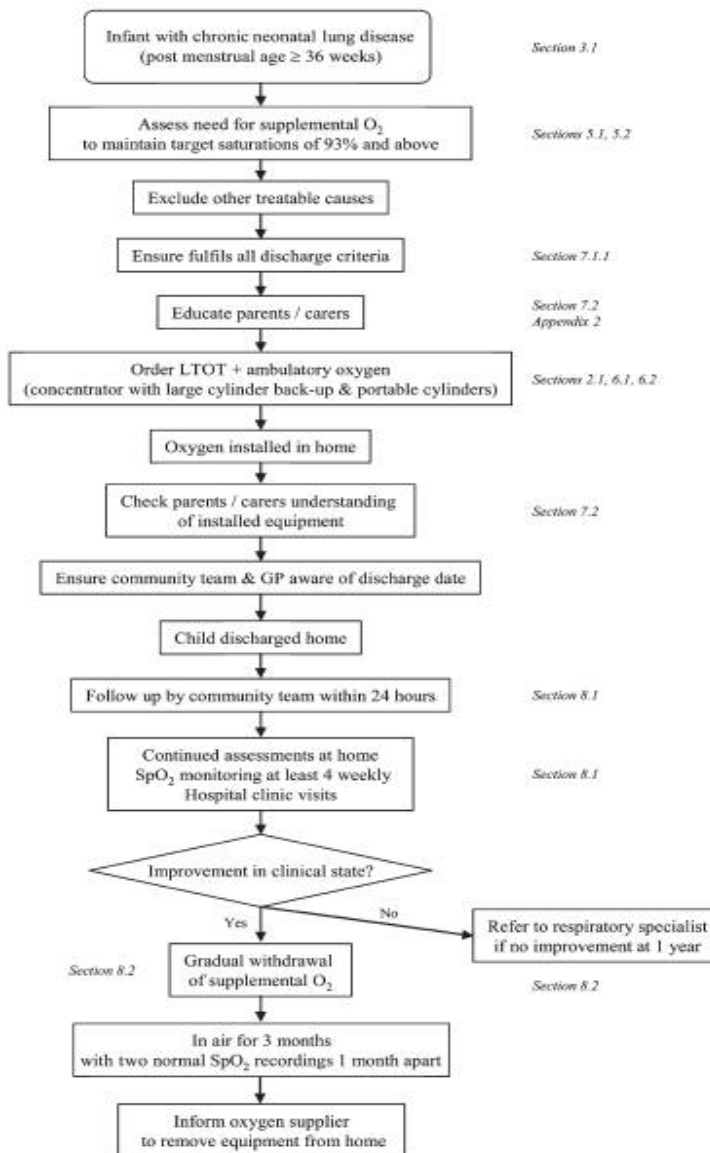


**Figure 1** Long-term oxygen therapy (LTOT) pathway for an infant with chronic neonatal lung disease. SpO<sub>2</sub> oxygen saturation measured by pulse oximetry.



Neonatal  
Unit  
Hospital

Home

# Twin 1

- Male
- 0.98kg
- Gestation 27 weeks
- Chronic Lung Disease of Prematurity
- Discharged home from Neonatal Unit 4 months later
- On home oxygen
  - Flow rate 0.1

# Twin 1

WEEK	0	1	2	3	4	5	6	7	8
O2 LEVEL	0.1	0.1	Air	Air	Air	Air	Air	Air	Air
TRACE DONE	X	X	X		X				X

WEEK	9	10	11	12	13	14	15	16	17
O2 LEVEL	Air	Air	Air	Air	Air	Air	Air		
TRACE DONE		X					X		

WEEK	18	19	20	21	22	23	24	25	26
O2 LEVEL									
TRACE DONE									

WEEK	27	28	29	30	31	32	33	34	35
O2 LEVEL									
TRACE DONE									

WEEK	36	37	38	39	40	41	42	43	44
O2 LEVEL									
TRACE DONE									

WEEK	45	46	47	48	49	50	51	52	53
O2 LEVEL									
TRACE DONE									

WEEK	54	55	56	57	58	59	60	61	62
O2 LEVEL									
TRACE DONE									

# Twin 1

- 7 SpO2 saturation traces at home in 15 weeks
- 1 successful attempt to go into air
- No respiratory illnesses since hospital discharge
- Discharged from SCH clinic 4 months after hospital discharge

# Twin 2

- Female
- 0.56kg
- Gestation 27 weeks
- Chronic Lung Disease of Prematurity
- Discharged from Neonatal Unit 4 months later
- On home oxygen
  - Flow rate 0.1

# Twin 2

WEEK	0	1	2	3	4	5	6	7	8
O2 LEVEL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TRACE DONE	X	X						X	

WEEK	9	10	11	12	13	14	15	16	17
O2 LEVEL	0.1	0.1	0.1	0.1	Air	Air	0.1	0.1	0.1
TRACE DONE	X		X		X	X		X	

WEEK	18	19	20	21	22	23	24	25	26
O2 LEVEL	0.1	0.1	0.1/Air	0.1	0.1	0.1	0.1	0.1	0.1
TRACE DONE			X	X		X			

WEEK	27	28	29	30	31	32	33	34	35
O2 LEVEL	Air	Air	Air	Air	Air	0.1	Air	Air	0.1
TRACE DONE	X	X	X			X	X	X	X

WEEK	36	37	38	39	40	41	42	43	44
O2 LEVEL	0.1	0.1	0.1	0.1	0.1	Air	Air	Air	Air
TRACE DONE			X			X	X	X	X

WEEK	45	46	47	48	49	50	51	52	53
O2 LEVEL	Air	Air	Air	Air	Air	Air	Air	Air	Air
TRACE DONE				X	X	X			X

WEEK	54	55	56	57	58	59	60	61	62
O2 LEVEL	Air	Air	Air						
TRACE DONE			X						

# Twin 2

- 28 SpO2 saturation traces at home in 56 weeks
- 4 attempts to get into air
- Infection post successful weaning into air – requiring a hospital admission and oxygen. Oxygen also required back at home for 2 days
- Discharged from SCH clinic 24 months after initial Neonatal Unit discharge.

### HOME SATURATION RECORDING

Please make a note if you change the flow rate, and note the time and new flow rate.

Please write down any other happenings such as times feeds started and stopped, the cannulas coming out, or baby being sick!

**Name:**

**Childrens Hospital Number:**

**Date of Recording:**

**Date of Birth:**

Starting flow rate: ..... Litres/min

Time	Event

For the use of the Action Lab only

Instruction to Parents

O<sub>2</sub> flow rate \_\_\_\_\_ L/min      given by: \_\_\_\_\_      date: \_\_\_\_\_

Signed off: \_\_\_\_\_      date: \_\_\_\_\_



# Twin 2

WEEK	0	1	2	3	4	5	6	7	8
O2 LEVEL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TRACE DONE	X	X						X	

WEEK	9	10	11	12	13	14	15	16	17
O2 LEVEL	0.1	0.1	0.1	0.1	Air	Air	0.1	0.1	0.1
TRACE DONE	X		X		X	X		X	

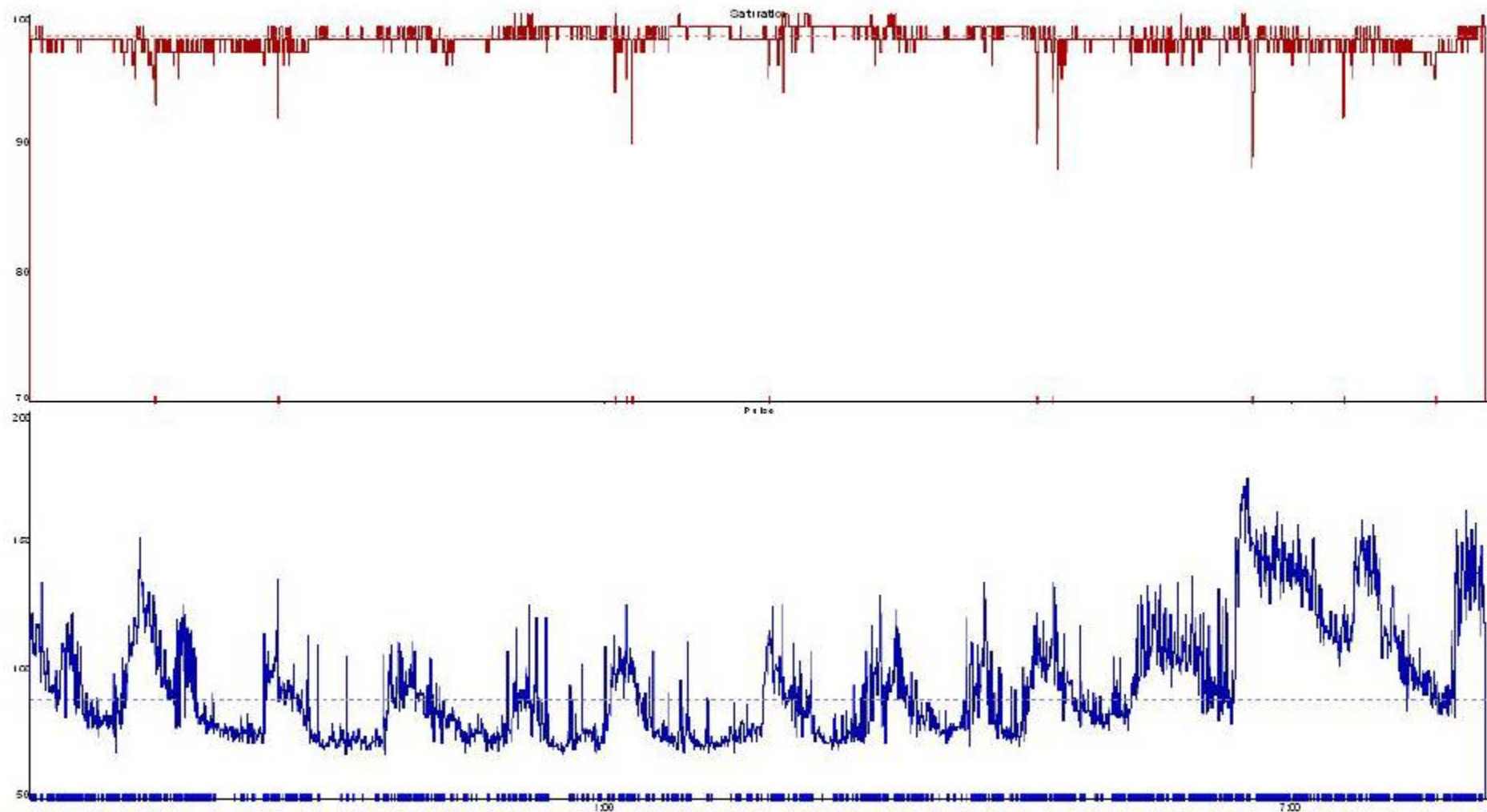
WEEK	18	19	20	21	22	23	24	25	26
O2 LEVEL	0.1	0.1	0.1/Air	0.1	0.1	0.1	0.1	0.1	0.1
TRACE DONE			X	X		X			

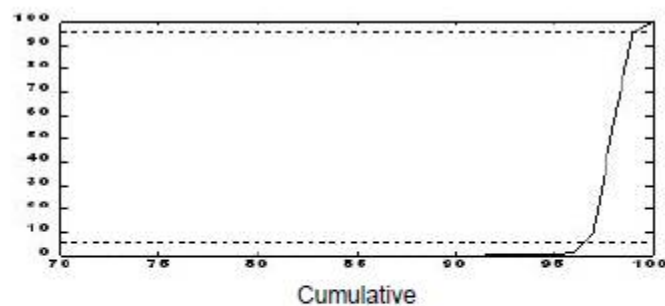
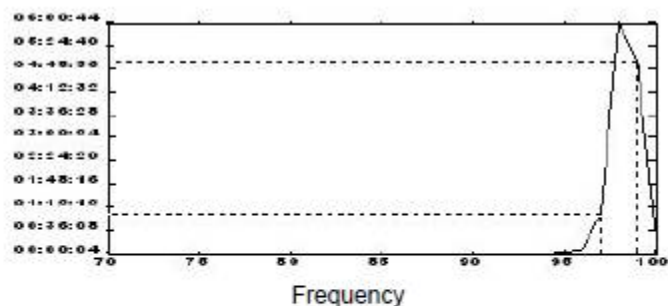
WEEK	27	28	29	30	31	32	33	34	35
O2 LEVEL	Air	Air	Air	Air	Air	0.1	Air	Air	0.1
TRACE DONE	X	X	X			X	X	X	X

WEEK	36	37	38	39	40	41	42	43	44
O2 LEVEL	0.1	0.1	0.1	0.1	0.1	Air	Air	Air	Air
TRACE DONE			X			X	X	X	X

WEEK	45	46	47	48	49	50	51	52	53
O2 LEVEL	Air	Air	Air	Air	Air	Air	Air	Air	Air
TRACE DONE				X	X	X			X

WEEK	54	55	56	57	58	59	60	61	62
O2 LEVEL	Air	Air	Air						
TRACE DONE			X						





Mean:	98.35		
Median:	98.00		
Mode:	98.00		
5th/95th Percentile:	97.00/99.00		
	> 4%	> 3%	> 2%
Dips: (0 < Duration < 180)	16	30	79
Dips/Hr:	1.26	2.36	6.21
Mean Nadir:	92.81	94.23	95.78
Min Dip SpO2:	88.00 at 04:58:00	23/04/2014	
Delta Index 12s / 2s:	0.36 / 0.71		
Rapid Resaturation Index:	2.12		
Rapid Desaturation Index:	1.26		
Time spent SpO2 < 95%	00:02:56 ( 0.38%)		
Duration of Recording:	12:46:40		
Marker Mode:	Full Study		
Analysis Interval:	12:46:40		
Total Time Analysed:	12:43:52		
Total Time Missed:	00:02:48		
< 25%:	00:02:48		
Events Rejected:	00:00:00		

Time Spent	% of analysis Interval		Time Spent	% of analysis Interval	
<98%	01:10:48	09.27	<78%	00:00:00	00.00
<96%	00:04:30	00.59	<76%	00:00:00	00.00
<94%	00:02:10	00.28	<74%	00:00:00	00.00
<92%	00:01:12	00.16	<72%	00:00:00	00.00
<90%	00:00:28	00.06	<70%	00:00:00	00.00
<88%	00:00:00	00.00	<68%	00:00:00	00.00
<86%	00:00:00	00.00	<66%	00:00:00	00.00
<84%	00:00:00	00.00	<64%	00:00:00	00.00
<82%	00:00:00	00.00	<62%	00:00:00	00.00
<80%	00:00:00	00.00	<60%	00:00:00	00.00

SpO2 Minima					
01 - 88.00	at	04:58:00	23/04/14	06 - 92.00	at 07:27:46 23/04/14
02 - 88.00	at	06:40:16	23/04/14	07 - 93.00	at 21:04:56 22/04/14
03 - 90.00	at	01:14:36	23/04/14	08 - 94.00	at 01:05:44 23/04/14
04 - 90.00	at	04:47:00	23/04/14	09 - 94.00	at 02:34:32 23/04/14
05 - 92.00	at	22:08:46	22/04/14	10 - 94.00	at 04:55:20 23/04/14

# Twin 2

WEEK	0	1	2	3	4	5	6	7	8
O2 LEVEL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TRACE DONE	X	X						X	

WEEK	9	10	11	12	13	14	15	16	17
O2 LEVEL	0.1	0.1	0.1	0.1	Air	Air	0.1	0.1	0.1
TRACE DONE	X		X		X	X		X	

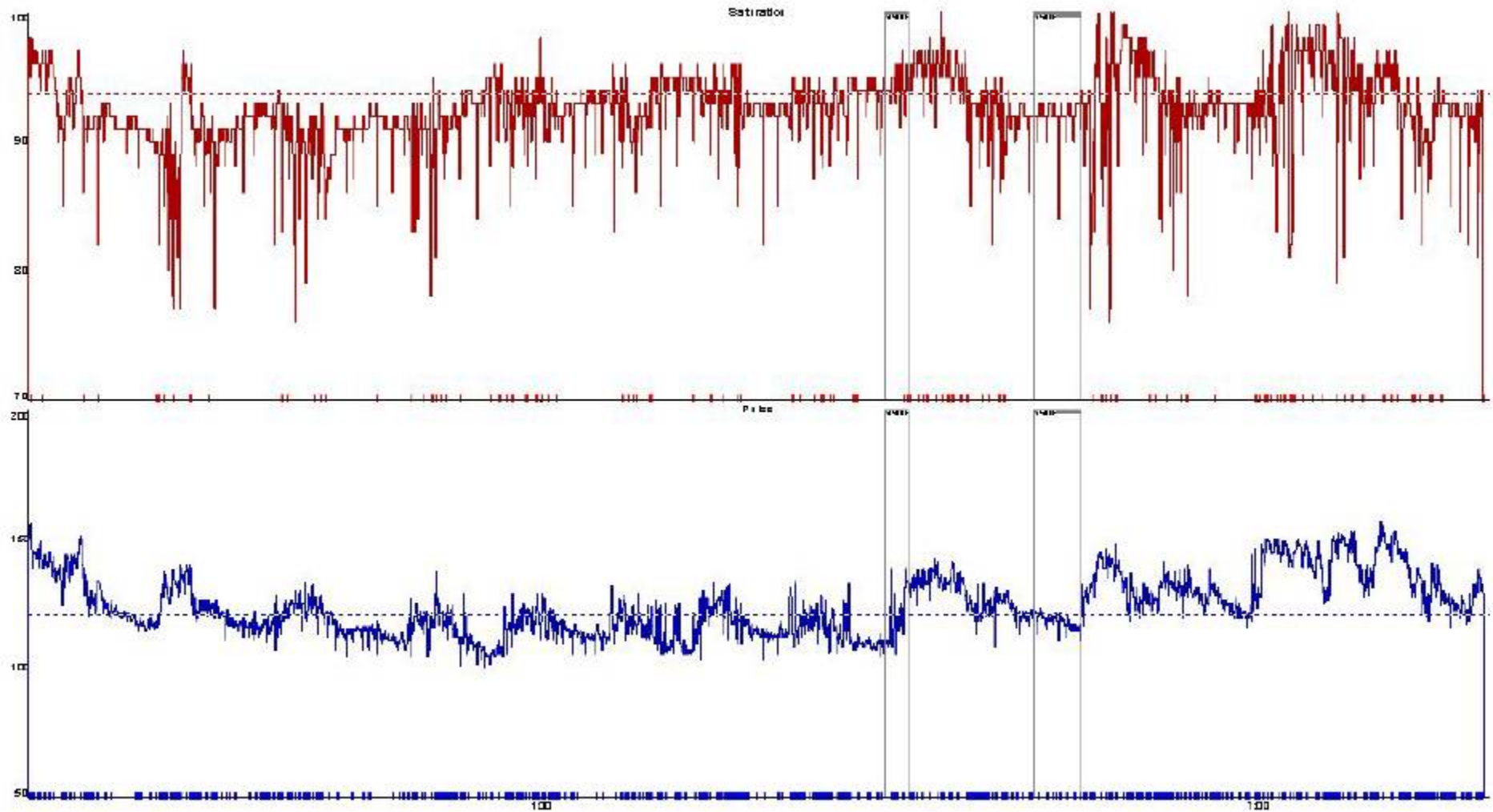
WEEK	18	19	20	21	22	23	24	25	26
O2 LEVEL	0.1	0.1	0.1/Air	0.1	0.1	0.1	0.1	0.1	0.1
TRACE DONE			X	X		X			

WEEK	27	28	29	30	31	32	33	34	35
O2 LEVEL	Air	Air	Air	Air	Air	0.1	Air	Air	0.1
TRACE DONE	X	X	X			X	X	X	X

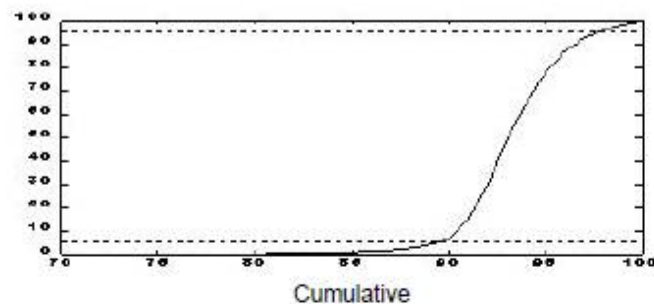
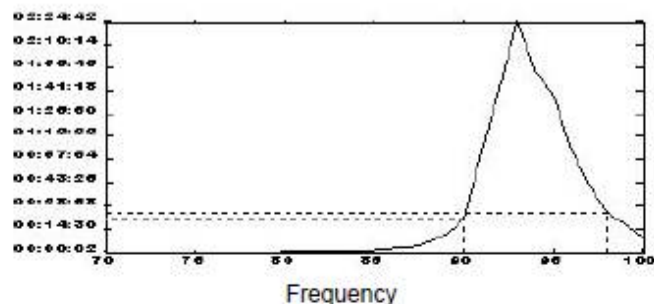
WEEK	36	37	38	39	40	41	42	43	44
O2 LEVEL	0.1	0.1	0.1	0.1	0.1	Air	Air	Air	Air
TRACE DONE			X			X	X	X	X

WEEK	45	46	47	48	49	50	51	52	53
O2 LEVEL	Air	Air	Air	Air	Air	Air	Air	Air	Air
TRACE DONE				X	X	X			X

WEEK	54	55	56	57	58	59	60	61	62
O2 LEVEL	Air	Air	Air						
TRACE DONE			X						







Mean:	93.69		
Median:	94.00		
Mode:	93.00		
5th/95th Percentile:	90.00/98.00		
	> 4%	> 3%	> 2%
Dips: (0 < Duration < 180)	342	490	752
Dips/Hr:	28.10	40.26	61.78
Mean Nadir:	88.63	89.82	90.84
Min Dip SpO2:	76.00 at 22:57:14 13/06/2013		
Max SpO2:	100.00 at 20:44:02 13/06/2013		
Delta Index 12s / 2s:	1.28 / 2.88		
Rapid Resaturation Index:	47.16		
Rapid Desaturation Index:	32.78		
Time spent SpO2 < 95%	07:52:50 (64.74%)		
Duration of Recording:	12:13:20		
Marker Mode:	Full Study		
Analysis Interval:	12:13:20		
Total Time Analysed:	12:10:20		
Total Time Missed:	00:03:00		
< 25%:	00:03:00		
Events Rejected:	00:00:00		

Time Spent	% of analysis Interval	Time Spent	% of analysis Interval
<98%	11:18:06 92.85	<78%	00:00:30 00.07
<96%	09:31:18 78.22	<76%	00:00:10 00.02
<94%	05:59:22 49.21	<74%	00:00:10 00.02
<92%	01:51:40 15.29	<72%	00:00:00 00.00
<90%	00:28:54 03.96	<70%	00:00:00 00.00
<88%	00:11:44 01.61	<68%	00:00:00 00.00
<86%	00:06:10 00.84	<66%	00:00:00 00.00
<84%	00:03:42 00.51	<64%	00:00:00 00.00
<82%	00:01:54 00.26	<62%	00:00:00 00.00
<80%	00:01:00 00.14	<60%	00:00:00 00.00

## SpO2 Minima

01 - 76.00 at 22:57:14 13/06/13	06 - 77.00 at 22:57:30 13/06/13
02 - 76.00 at 05:46:00 14/06/13	07 - 77.00 at 05:35:40 14/06/13
03 - 77.00 at 21:56:06 13/06/13	08 - 78.00 at 21:55:42 13/06/13
04 - 77.00 at 21:59:08 13/06/13	09 - 78.00 at 00:05:24 14/06/13
05 - 77.00 at 22:16:48 13/06/13	10 - 78.00 at 06:24:40 14/06/13