

Smoking reduction and cessation
for people with schizophrenia

Guidelines

for general practitioners



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Endorsed by



The Royal Australian
College of General Practitioners



The Royal Australian and New Zealand
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1 Introduction

In Australia, tobacco smoking is the largest single preventable cause of death and disease (Ridolfo 2001). One in two lifetime smokers will die from diseases caused by tobacco, and half of these deaths will occur in middle age. Smoking cessation is the most cost-effective intervention a general practitioner can provide (Eddy 1992).

Smoking cessation programs have had some success in the general population but until recently smoking in people with schizophrenia has been a neglected area. People with schizophrenia are rarely encouraged to stop, or given support, in their efforts to quit (Addington 1998). Recent research has found that the majority of these people are interested in quitting (Addington 1997) and that stopping smoking is possible for people with schizophrenia, especially if the treatment is specifically designed for them (Addington 1998).

SANE Australia is an independent national organisation committed to improve the wellbeing of Australians seriously affected by mental illness. SANE Australia has developed The SANE SmokeFree Kit which includes a smoking reduction and cessation program for use by health workers that is designed to address the needs of people with a mental illness. Initial evaluation of this program has shown that the outcome is significantly enhanced when there is participation of the person's doctor.

This booklet aims to inform general practitioners regarding the extent of the problem, the nature of the problem and ways to assist people with schizophrenia cease or at least reduce their smoking. While intended to be used in conjunction with patient participation in a smoking reduction and cessation program, it may also be helpful in other situations.

2 Prevalence of smoking in schizophrenia

The prevalence of smoking in schizophrenia may be as high as 90% (Glassman 1993). This is in stark contrast to the prevalence in the general population, which is now just over 20% (1999). People with schizophrenia tend to smoke more cigarettes per day (average 40 cigarettes) and smoke brands of cigarettes which have high levels of nicotine and tar, which means they consume up to three times more nicotine than the average Australian smoker (Commonwealth Department of Human Services and Health 1994).

3 Effects of smoking in schizophrenia

3.1 Possible benefits

A Biological

1 *Improves cognition*

Nicotine increases alertness by stimulating the dopaminergic pathways to the prefrontal cortex. This enhances concentration, information processing and learning which is of benefit to people with schizophrenia, in whom cognitive dysfunction may be part of their illness or a side effect of antipsychotic medication (Levin 1996).

2 *Aids relaxation*

Nicotine is an unusual drug as it can cause both stimulation and relaxation. Nicotine can reduce anxiety, tension and other unpleasant emotions such as anger. People with schizophrenia may have particular difficulties dealing with stressful situations and negative feelings and nicotine may help with this.

3 *Possible antidepressant effect*

There is a strong association between smoking and depression, and depression can occur in many people with schizophrenia (estimates vary from 10% to 70%). Nicotine withdrawal can provoke the onset of major depression (Glassman 1993). Nicotine may have an antidepressant effect by its effect on various neurotransmitter systems.

4 *Modification of psychotic symptoms*

The negative (deficit) symptoms of schizophrenia, such as lack of motivation, lack of energy, and affective blunting, are thought to be due to decreased dopamine activity in the prefrontal cortex. Nicotine may reduce these negative symptoms by augmenting dopamine release in these areas (Glassman 1993).

Nicotine affects some processing of incoming sensory information (Adler 1993), which in schizophrenia may lead to a decrease in positive symptoms such as auditory hallucinations, at least in the short term.

5 *Modification of side-effects of antipsychotic medication*

There is some evidence to suggest that smoking is associated with a reduced incidence of antipsychotic induced Parkinsonism (Goff 1992).

B Psychosocial

1 *Relief of boredom*

Boredom can be a major problem for people suffering with schizophrenia. Smoking can help provide a framework for the day.

2 *Social currency*

Smoking can facilitate social interaction especially for people with negative symptoms. As one man with schizophrenia has said, 'Smoking is a language you can speak even when you are crazy' (Champ 1996).

3.2 *Definite Costs*

C Biological

1 Physical disease

People with schizophrenia have higher mortality rates than control populations even after taking suicide into account. In particular, rates of cardiovascular and respiratory disease are higher than those of age-matched controls (Allebeck 1986 & Ruschena 1998). Smoking is believed to be a major contributing factor to these elevated rates.

2 Increased doses of antipsychotic medication

Hydrocarbons of tar in cigarettes induce liver enzymes, which increase the metabolism of some antipsychotics (Lohr 1992), resulting in higher doses being required to achieve clinical results in people who smoke.

3 Increased side-effects of antipsychotic medication

Some studies have shown an increase prevalence of dyskinetic movements in smokers, including the restlessness of akathisia and the slower involuntary movements of tardive dyskinesia (Goff 1992).

4 Risk of additional substance abuse

Abuse of one drug class may reinforce abuse of other agents, such as caffeine, alcohol and cannabis (Buckley 1998).

D Psychosocial

1 Financial

People with schizophrenia often have limited incomes. Smokers can spend one third or more of their money on cigarettes (a packet of 25 cigarettes costs approximately \$9). This leaves little for basic items such as food and accommodation, and even less for recreational activities.

2 Restriction of activities

Most venues now have smoking bans which means heavy smokers find it difficult to participate in various activities, including recreation (for example, going to the cinema), education (for example, attending vocational courses) and work.

3 Physical appearance

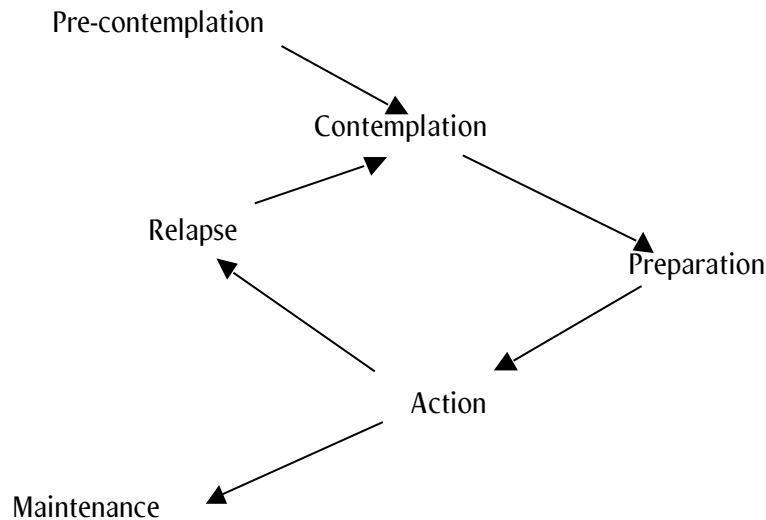
Heavy smoking adversely affects appearance, for example stained fingers and teeth, smoking odour and lined skin. These factors increase barriers to socialising or getting work.

4 Readiness to quit

Changing habits, especially where there is physical addiction involved, is notoriously difficult. This is at least as true for people with schizophrenia who smoke, as it is for the rest of us. Prochaska and DiClemente's stage of change model (Prochaska and DiClemente 1983) illustrated below is useful in that it recognises that nicotine dependence is a chronic relapsing disorder, with most smokers requiring five to seven attempts before they finally quit for good. Many patients do not realise it usually takes several attempts to stop smoking, and they will need to be re-motivated to attempt to quit if they have been unsuccessful in the past. It is useful to think of smoking cessation as a process rather than an event.

Once a person has been identified as a smoker, his or her state of readiness to quit can be determined. This is important because smokers who are not considering quitting appear to need different interventions than those who are ambivalent about stopping or those presently interested in stopping (APA 1996).

Smokers in the pre-contemplation stage (not considering quitting) can be helped to move to contemplation of quitting. This can be done by considering the negative consequences of smoking for them, barriers to quitting and the advantages of smoking cessation for that individual (the information needs to be personalised). It is worthwhile to actively encourage quitting and offer support and treatment, as well as conveying the message that having a psychiatric illness such as schizophrenia is not a reason not to make a quit attempt.



5 Management of smoking cessation

5.1 *Identify smokers*

Regular inquiry regarding smoking status is important.

5.2 *Assess readiness to quit*

Ascertain the patient's level of motivation to quit by seeing where they are along the stage of change model. With the patient, determine the costs and the benefits of smoking for that person.

A smoking history needs to be obtained, including number of cigarettes smoked currently, and past usage. Up to 80% of smokers have tried to stop previously. The patient's experience about these attempts needs to be assessed including:

- Reasons for quitting
- Any change in psychiatric functioning when he or she tried to stop
- Cause of relapse (for example, due to withdrawal symptoms or exacerbation of psychiatric disorder)
- How long he or she remained abstinent
- Prior treatment in terms of type, adequacy (dose, duration), compliance and patient's perception of effectiveness
- Expectations about future treatments.

5.3 *Assess risks of smoking cessation*

Psychotic relapse

Smoking cessation may be associated with a risk of relapse of schizophrenia (Dalack 1996), so it is important to be aware of the usual signs of relapse in that patient – for example, becoming increasingly paranoid or behaving inappropriately.

Depression

Smoking cessation also carries the risk of precipitating a depressive disorder (Glassman 1993). Current depressive illness needs to be recognised (for example, by using a screening instrument such as the CES-D: see appendix 1) and, if present, treated before smoking cessation is attempted. Any family history or past history of depressive illness and the subsequent treatment needs to be noted. Bupropion (Zyban) is an antidepressant that is now used for smoking cessation in the general population but is unsuitable for routine use in people with schizophrenia as it may precipitate or exacerbate psychosis.

Change in medication effects

The tar in cigarette smoke induces certain liver enzymes (CYP 1A2) resulting in increased metabolism of some antipsychotics. Smokers thus require larger doses of these antipsychotics for treatment. When their smoking status changes, this may affect the dose of antipsychotic required. It is important to document the current psychiatric medication and the presence of any side effects prior to smoking cessation. The side effects include sedation and movement abnormalities (extrapyramidal signs, akathisia).

Antipsychotic medications whose metabolism is definitely affected by smoking include:

- Clozapine (Clozaril)
- Fluphenazine (Modecate)
- Haloperidol (Serenace, Haldol)
- Olanzapine (Zyprexa)

Antipsychotic medications whose metabolism appears not to be affected by smoking include:

- Risperidone (Risperdal)
- Quetiapine (Seroquel)

5.4 *Write an individual plan*

Smoking reduction or cessation is best attempted when the person is psychiatrically stable. People with schizophrenia may have cognitive deficits, so it is very important to write a plan, which they can take with them and refer to frequently.

5.5 *Use nicotine replacement*

Most established smokers are nicotine dependent and thus will experience withdrawal symptoms following smoking cessation. Nicotine withdrawal symptoms, such as anxiety, depression, insomnia, irritability, restlessness and weight gain, can be confused with, or exacerbate, the symptoms of schizophrenia. The use of nicotine replacement therapy (NRT) can substantially reduce but not eliminate these symptoms (Ziedonis 1997).

Nicotine replacement therapy (NRT) has been shown to increase quit rates and is considered by some (Ziedonis 1997) to be an essential ingredient in smoking cessation programs for people with schizophrenia. There are few contraindications to its use, as it has little abuse potential and is not a cardiovascular risk as originally thought (Benowitz 1997). The role of NRT needs to be discussed with the patient as many smokers do not realise that they are physically dependent on nicotine.

Nicotine patches are usually the NRT of choice, however there may be reasons to choose the gum. Some studies have shown increased quit rates with the addition of ad-lib 2mg nicotine gum (APA 1996). If nicotine gum is used, education about proper use of the gum is important. The recommended total duration of NRT is six to twelve weeks. Further information regarding choice of NRT is contained in appendix 2.

Research and development of non-nicotine pharmacotherapy for smoking cessation continues as there are a significant number of people who continue to smoke despite NRT. Bupropion (Zyban) is a selective noradrenergic and dopaminergic reuptake inhibitor that has recently become available as a smoking cessation aid. The use of this medication is, however, complicated in the case of people with schizophrenia. There are pharmacodynamic reasons to believe it could precipitate or exacerbate psychosis, and many neuropsychiatric side-effects do occur with the drug. Additionally there are pharmacokinetic interactions with antipsychotics,

and a potential additive effect with other medications that could increase the risk of seizures. Bupropion should only be used with care and caution in people with schizophrenia, with the patient and prescriber both being aware of these potential problems, and with appropriate monitoring.

5.6 *Recommend group support*

The effectiveness of all forms of NRT is enhanced when accompanied by problem solving/skills training. Participation in a quit group is a useful way of people learning cognitive-behavioural techniques that will aid smoking reduction and cessation maintenance. As people with schizophrenia may have associated cognitive, affective and social difficulties, a specially designed program, such as the SANE SmokeFree Program, is preferable.

The SANE SmokeFree Program contains 10 group sessions and is run by two trained facilitators. The content of the sessions include:

<i>Session 1</i>	Introduction to the Program Reasons to quit
<i>Session 2</i>	Benefits of quitting
<i>Session 3</i>	Understanding why we smoke Ways of quitting
<i>Session 4</i>	Withdrawal symptoms Social support
<i>Session 5</i>	Dealing with stress and anxiety
<i>Session 6</i>	Coping with depression
<i>Session 7</i>	Assertiveness training
<i>Session 8</i>	Anger management
<i>Session 9</i>	A smoke free lifestyle
<i>Session 10</i>	Dealing with high risk situations

5.7 *Monitor frequently*

When a management plan for smoking cessation has been formulated by the general practitioner and the patient, a quit day should be planned. The patient should be seen one to three days after smoking cessation to monitor withdrawal symptoms and any other difficulties, as well as providing encouragement and support. Waiting a week to see a patient is unsatisfactory, as 65% of patients will have relapsed by then (Hughes 1995).

After initial monitoring, it is recommended that patients be monitored weekly for the first four weeks to watch for signs of psychotic relapse, onset of depressive illness and need to change medication levels (for example, lower antipsychotic medication if increased side effects apparent). Thereafter, monthly review is suggested for approximately six months.

5.8 *Congratulate on any progress*

As mentioned earlier, nicotine dependence is a chronic relapsing disorder. People need to be encouraged to value any progress in their efforts to stop smoking, and be supported in future attempts. People with schizophrenia report enormous sense of satisfaction after they have successfully quit, as illustrated by this statement, 'I have experienced a wonderful freedom since quitting. I now feel more in control of my life and as a result have been able to make other lifestyle changes' (Champ 1996).

A summary of these management guidelines can be found in appendix 3 and an initial assessment and review form in Appendix 4.

6 Conclusion

Smoking is extremely common among people with schizophrenia and causes significant health and lifestyle problems. People with schizophrenia often find it very difficult to quit. As well as the usual problems with nicotine dependence, nicotine may alleviate some of their psychiatric symptoms and side effects of medication. If they do stop smoking, the effect of smoking cessation on their psychiatric illness and medication, as well as the risk of depression, needs to be monitored. Despite these problems, recent research suggests that, with the use of nicotine replacement therapy and specially designed cognitive-behavioural based group support, people with schizophrenia can effectively be helped to become more motivated towards smoking reduction and progress towards smoking reduction and even cessation.

7 Other resources

SANE Australia

SANE Smokefree Project Coordinator
(03) 9682 5933

QUIT Victoria

Ms Pat Kee, Services Manager

or

Ms Linda Steel, Services Project Coordinator
(03) 9663 7777

8 References and appendices

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CES - D

Depression Rating Scale

Checklist for depressive symptoms

Circle the score (0, 1, 2, or 3) for each statement that best describes how often you felt this way during the past week.

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4days)	Most or all of the time (5-7 days)
During the past week . . .				
1 I was bothered by things that usually don't bother me	0	1	2	3
2 I did not feel like eating; my appetite was poor	0	1	2	3
3 I felt that I could not shake off the blues even with help from my family and friends	0	1	2	3
4 I felt that I was just as good as other people	3	2	1	0
5 I had trouble keeping my mind on what I was doing	0	1	2	3
6 I felt depressed	0	1	2	3
7 I felt that everything I did was an effort	0	1	2	3
8 I felt hopeful about the future	3	2	1	0
9 I thought my life had been a failure	0	1	2	3
10 I felt fearful	0	1	2	3
11 My sleep was restless	0	1	2	3
12 I was happy	3	2	1	0
13 I talked less than usual	0	1	2	3
14 I felt lonely	0	1	2	3
15 People were unfriendly	0	1	2	3
16 I enjoyed life	3	2	1	0
17 I had crying spells	0	1	2	3
18 I felt sad	0	1	2	3
19 I felt that people disliked me	0	1	2	3
20 I could not 'get going'	0	1	2	3

Scoring

- 0 - 9 suggests an individual is not depressed
- 10 - 15 suggests mild depression
- 16 - 24 moderate depression
- > 24 severe depression

For GP: Note reverse scoring for items 4, 8, 12 and 16

TOTAL SCORE

Diagnostic decisions need to be backed up by clinical interview.

Nicotine replacement therapy

Patch

NRT TYPE	PROS	CONS
24-hour Patch	<ul style="list-style-type: none"> • Fewer compliance problems due to ease of use. • Less clinical time required to train patients in its effective use. • Prevents morning cravings. • Allows a full nights sleep for heavy smokers .(who may have been woken by cravings). • Cuts down smoking in bed by heavy smokers (and therefore fire risk). 	<ul style="list-style-type: none"> • One of the side effects is vivid dreams and nightmares-this may be especially disturbing for people with psychotic illness. • Does not assist with the behavioural aspect of cravings.
<i>Recommendation</i> Preferred form of NRT for patients who do not experience side effects.		
16 hour Patch No evidence comparing effectiveness by patch type (ie 16 vs 24 hour Patch)	<ul style="list-style-type: none"> • Easy to use. • Avoids the vivid dream side effect of the 24 hour Patch. • Less costly. 	<ul style="list-style-type: none"> • Does not help with overnight and morning cravings. • Does not assist with the behavioural component of smoking.
<i>Recommendation</i> Good for moderately heavy smokers (>20/7) who cannot tolerate 24-hour patch side-effects.		

Gum

4mg gum	<ul style="list-style-type: none"> • Allows patient to regulate nicotine dose. • Offers a behavioural intervention. 	<ul style="list-style-type: none"> • No acidic food or drinks to be consumed 15 minutes before or after using gum (need alkaline pH for nicotine to be absorbed in buccal mucosa). This can be a problem when patients consume a lot of caffeine (eg. in coffee or coca-cola).
<i>Recommendation</i> Recommended for patients who can manage instructions for use, and for patients who need to mimic the nicotine 'highs and lows' of smoking.		
2mg gum	<ul style="list-style-type: none"> • Allows patient to regulate nicotine dose. • Offers a behavioural intervention. 	<ul style="list-style-type: none"> • As above.
<i>Recommendation</i> Recommended for patients weaning off 4mg gum.		

Further options

Combination therapy (gum and patches) More effective than patch alone	<ul style="list-style-type: none"> • Allows for higher nicotine dosing for heavily dependent smokers. • Overcomes the lack of 'behavioural' aspects of patch alone. 	<ul style="list-style-type: none"> • As above. • More expensive.
<i>Recommendation</i> Recommended for patients who can manage instructions for use and cost.		
Nicotine inhaler	<ul style="list-style-type: none"> • Allows patient to regulate nicotine dose. • Involves a behavioural component similar to smoking. 	<ul style="list-style-type: none"> • Initial adverse effects include coughing and mouth and throat irritation, which diminish over time. • Requires instructions for use.
<i>Recommendation</i> Recommended for patients who require additional behavioural interventions.		

Management guide summary

1	Identify smokers	Congratulate if not a smoker!
2	Assess readiness to quit	If not ready, find a personalised reason to quit. Take a smoking history.
3	Assess risks of smoking cessation	Psychotic relapse. Know usual signs for this patient. Depression. Know if past history or family history. Change in medication effects. Know patient's current side effects, if any.
4	Write an individual plan	If psychiatrically stable, a written plan is important as cognitive deficits may be present.
5	Use nicotine replacement	Significantly increases quit rates and minimises withdrawal symptoms.
6	Recommend group support	Aids relapse prevention.
7	Monitor frequently	See 1-3 days after quitting: deal with any problems. See weekly for one month: assess for psychotic relapse and/or depression, and medication effects. See monthly for six months: continue to monitor mental state and medication.
8	Congratulate on any progress	

Smoking cessation and schizophrenia

Assessment form

Use in conjunction with the Management Guide Summary

Patient details

Surname

Forename

Address

Date of Birth

Psychiatrist

Initial assessment

Date

1 Assess readiness to quit (circle)

Precontemplation

Contemplation

Action

Smoking history

Number of cigarettes currently smoked per day

Any past attempts to quit?

YES

NO

If YES, were there any problems?

2 Assess current state

Is psychiatric state stable?

YES

NO

If NO, defer smoking cessation.

3 Assess risks of smoking cessation

i *Psychotic relapse* (know usual signs of relapse in this patient)

ii *Risk of depression*

Family history of depression

YES

NO

Past history of depression

YES

NO

Current depression

YES

NO

Current CES-D score
(see Appendix 1)

If YES to Current depression, treat depression prior to smoking cessation.

Appendix 4

iii Risk of change in medication levels and effectiveness

Review current medication and consider pharmacology of current prescribed and other medication.

iv Risk of worsening medication side-effects.

Consider 3iii (above) and current side-effects such as sedation, akathisia, parkinsonism.

4 Use nicotine replacement therapy (NRT)

Discuss pros and cons of different NRT
(see Appendix 2)

YES

NO

5 Recommend group support

Is the patient a participant in a
SANE SmokeFree Program

YES

NO

6 Comments

Signature

Date

Appendix 4

Smoking cessation and schizophrenia

Review form I first month

Surname _____

Forename _____

Date of Birth _____

Appointment 1 (Three days after quit date)	Date
Withdrawal symptoms?	NO <input type="checkbox"/> YES <input type="checkbox"/>
Problem with NRT?	NO <input type="checkbox"/> YES <input type="checkbox"/>
Smoked any cigarettes?	NO <input type="checkbox"/> YES <input type="checkbox"/> If YES, how many?
Signs of psychotic relapse?	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of depression?	NO <input type="checkbox"/> YES <input type="checkbox"/>
Increased side effects of medication?	NO <input type="checkbox"/> YES <input type="checkbox"/>

Make subsequent appointments every week for four weeks.

Use the table below to record key information, as well as making any clinical notes indicated in your standard format.

Appointment 2	Date
Smoked any cigarettes?	NO <input type="checkbox"/> YES <input type="checkbox"/> If YES, how many?
Use of NRT	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of psychotic relapse	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of depression	NO <input type="checkbox"/> YES <input type="checkbox"/>
Increased side effects of medication	NO <input type="checkbox"/> YES <input type="checkbox"/>
Identified problems	NO <input type="checkbox"/> YES <input type="checkbox"/>
Action	Date next review Initials

Appointment 3	Date
Smoked any cigarettes?	NO <input type="checkbox"/> YES <input type="checkbox"/> If YES, how many?
Use of NRT	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of psychotic relapse	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of depression	NO <input type="checkbox"/> YES <input type="checkbox"/>
Increased side effects of medication	NO <input type="checkbox"/> YES <input type="checkbox"/>
Identified problems	NO <input type="checkbox"/> YES <input type="checkbox"/>
Action	Date next review Initials

Appendix 4

Appointment 4	Date
Smoked any cigarettes?	NO <input type="checkbox"/> YES <input type="checkbox"/> If YES, how many?
Use of NRT	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of psychotic relapse	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of depression	NO <input type="checkbox"/> YES <input type="checkbox"/>
Increased side effects of medication	NO <input type="checkbox"/> YES <input type="checkbox"/>
Identified problems	NO <input type="checkbox"/> YES <input type="checkbox"/>
Action	Date next review Initials

Appointment 5	Date
Smoked any cigarettes?	NO <input type="checkbox"/> YES <input type="checkbox"/> If YES, how many?
Use of NRT	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of psychotic relapse	NO <input type="checkbox"/> YES <input type="checkbox"/>
Signs of depression	NO <input type="checkbox"/> YES <input type="checkbox"/>
Increased side effects of medication	NO <input type="checkbox"/> YES <input type="checkbox"/>
Identified problems	NO <input type="checkbox"/> YES <input type="checkbox"/>
Action	Date next review Initials

Congratulate on any success

If not successful, consider reasons for relapse.

Comments

Signature

Date