An early detection and intervention system for untreated first episode psychosis

Reduction of duration of untreated psychosis (DUP), recruitment through early detection teams (DTs), and two-year course and outcome in first-episode psychosis patients (FEP).

Jan Olav Johannessen
Postboks 1163 Hillevåg
4095 Stavanger, Norway
jojo@sus.no

Department of Behavioural Sciences in Medicine, Institute of Basic Medicine, Faculty of Medicine, University of Oslo

Section of adult psychiatry, Ullevål University Hospital, Institute of Psychiatry, University of Oslo

Stavanger University Hospital, Division of Psychiatry
# Table of contents

Acknowledgements .................................................................................................................. 3  
List of papers .......................................................................................................................... 5  
List of abbreviations .............................................................................................................. 6  
1 Introduction .......................................................................................................................... 7  
1.1 What is this thesis about? ................................................................................................. 7  
1.2 Background ...................................................................................................................... 9  
1.2.1 Psychosis: Disorders that develop in stages ............................................................... 9  
1.2.2 Prevention of first-episode psychosis/schizophrenia ............................................... 10  
1.2.3 Rationale for early detection and treatment .............................................................. 11  
2 Ethical considerations ........................................................................................................ 18  
3 Service models for earlier intervention .......................................................................... 19  
3.1 Intervention in the prodromal phase. Program characteristics ..................................... 19  
3.2 Intervention in early psychosis. Program characteristics .............................................. 20  
4 Health promotion aspects/ Mental health literacy .............................................................. 21  
5 The early detection program: TIPS ................................................................................... 23  
5.1 The TIPS education program .......................................................................................... 23  
5.1.1 General Population ................................................................................................... 24  
5.1.2 Professional health workers ...................................................................................... 25  
5.1.3 Schools ..................................................................................................................... 26  
5.2 Early detection teams (DTs) .......................................................................................... 26  
5.3 Standard treatment protocol .......................................................................................... 29  
5.4 Costs ............................................................................................................................... 30  
6 Research questions, design, samples, methods and statistics .......................................... 31  
6.1 Research questions and hypothesis .............................................................................. 31  
6.2 Design ............................................................................................................................ 32  
6.3 Samples .......................................................................................................................... 33  
6.3.1 Inclusion and exclusion criteria ................................................................................. 33  
6.3.2 Samples, refusers and drop-outs .............................................................................. 33  
6.3.3 Refusers .................................................................................................................... 35  
6.3.4 Generalisation .......................................................................................................... 36  
6.4 Methods ......................................................................................................................... 36  
6.5 Reliability ........................................................................................................................ 37  
6.6 Assessment bias ............................................................................................................. 37  
6.7 Statistics ......................................................................................................................... 38  
7 Results ................................................................................................................................ 39  
7.1 Short summary of papers ............................................................................................... 39  
8 Discussion ............................................................................................................................ 42  
8.1 Reduced DUP (research question 1) .............................................................................. 42  
8.2 Patients’ characteristics in the ED sector at first presentation to treatment, compared with the HC sample (research question 2) ................................................................................. 43  
8.3 Pattern of help-seeking behaviour in the ED sector (research question 3) ..................... 44  
8.4 Patients’ characteristics at baseline, DT group versus not-DT group (research question 4) .................................................................................................................. 46  
8.5 Differences in course and outcome and health service consumption in DT group versus not-DT group (research questions 5-6) ...................................................................................... 48  
8.6 Information campaigns and Detection teams- do we need both to achieve early intervention? .................................................................................................................. 50  
8.6.1 The information programs: which parts work, and for whom? ................................ 50  
8.6.2 Health service characteristics for achieving early intervention in FEP: what do we know? ........................................................................................................ 54  
8.6.3 Future directions in early intervention in FEP ........................................................... 56  
9 Conclusions ........................................................................................................................ 59  
10 References ......................................................................................................................... 60  
11 Important papers published from the TIPS group (per 2006) ........................................... 67  
12 Appendix I .......................................................................................................................... 70  
13 Papers I-IV .......................................................................................................................... 72
Acknowledgements

I remember back in the early eighties, being a young doctor specialising in psychiatry, and attending a research meeting at Utstein Kloster, outside Stavanger. While we were waiting for the bus after the seminar had ended, I asked what I thought would be a simple question to one of the teachers at the seminar, Per Vaglum. The question was: "how many new cases of schizophrenia do we get on a yearly basis in for example Rogaland county, with 340000 inhabitants?" Per’s reply was short and precise: "I don’t know. Why don’t you find out’?

And so I did. The result was my first scientific publication, “The incidence of schizophrenia in a Norwegian county, Rogaland”. At the Department of psychiatry of what now is Stavanger university hospital we had a stimulating professional milieu, and both Jan Haslerud, head of the department, chief psychologist Thor Haaland and psychotherapy supervisor Eivind Haga, were great inspirators who challenged us younger colleagues throughout our educational period. I owe them all great thanks. One of my “contemporaries”, the late Gerd-Ragna Bloch Thorsen, my close friend and colleague since those days, shared the same devotion for helping people who suffer from serious psychiatric disorders, and I am proud of what she accomplished, both nationally and internationally.

Once it was clear to me that the yearly incidence of schizophrenia in Rogaland was low (5.5/100 000), and that I had suffered from what is called “the clinician’s illusion” (our department should only get 5-6 new case each year), it struck me that we, patients and therapists, would be better off concentrating on these new cases, and invest heavily in their therapy to hopefully prevent a chronic course.

So, in 1991 we got funding from the Norwegian Department of health and social affairs for our so-called “Schizophrenia competence centre”. The idea was to establish a strategy for early intervention in psychosis, with a thorough diagnostisation and long-term treatment programs, to inform professionals as well as users about psychosis, and to reduce stigma connected to psychiatry and psychiatric disorders. My good friend and colleague, Tor Ketil Larsen, took on the task to establish this centre. Without him, his intellect, steadiness, humour and friendship, the TIPS-project would not have surfaced. It has been fun, T.K. Another friend, Arvid Libak, helped us find the way to further funding from the Norwegian government of what was to become one of Norway’s largest research projects ever, in psychiatry, the TIPS-project. More than 50 persons from our hospital have been working in the TIPS-project during the last 10 years, and I would like to thank and name each one of them.

This thesis deals with only one part of the TIPS-project. The overall multi-centre research project is carried out by a research group with Per Vaglum and Thomas H. McGlashan as principle investigators; in addition to these two, the research group consists of Svein Friis, Ulrik Haahr, Ingrid Melle, Stein Opjordsmoen, Bjørn Rishovd Rund, Erik Simonsen, Tor K. Larsen, and myself. Svein has done, and still does, a formidable job in relation to reliability, research methodology and statistics. I want to thank all of you for the close and rewarding cooperation, from which I have learnt and benefitted a lot. I will also express a deeply felt thanks to them and the other co-authors of the articles that make the basis for this thesis.

I first heard Tom McGlashan speak at the so-called “Dikemark-seminaret” back in the eighties. I later followed his research and writing, and, inspired by his follow-up studies from Chestnut Lodge, I approached him in Stockholm in 1992 at the International symposium for the psychotherapy of schizophrenia (ISPS) with a manuscript for an article based on a seven-year follow-up of first-episode schizophrenia from Rogaland. That was the start of a friendship and co-operation that I hope will last for the rest of my life. His expertise has been invaluable for the work we have per-
formed together, and I hope he has managed to teach me some of his great wisdom. I should of course mention here that he goes back an even longer time with other colleagues from Norway, such as Per Vaglum, Svein Friis and Stein Opjordsmoen. Per, as my main supervisor, has put down a lot of work and energy in helping me, supporting me, encouraging me and guiding me from the very start of this work, and up to the final result that is presented here. So have Svein, co-supervisor, and TK. Without them and their wisdom, this thesis would never have seen light.
I want to express my deepest and warmest thank to them for this.

Through our work in the early intervention field, we have developed a broad network of professional alliances internationally, and my good friend Pat McGorry has been an inspiration and idea-maker to whom I owe a lot.

The psychiatric milieu in Rogaland has been blessed with interested, inspiring, intelligent, generous and flexible managing directors in my time. My present chief, Inger Karin Nerheim, has a genuine wish to establish our services as a real early intervention service, and that we should receive every new patient so that he or she really feels welcome when they seek our help. I share her vision, and thank her for her everlasting support. Catherine Noraas, my secretary, also deserves my warmest thanks for all the work she has put down in this thesis. Also my former chief, Jørg Eirik Waula, let me have the necessary “degree of freedom” to carry out my ideas.

Last, but not least, I want to thank my family for their support in my work. Kristin, my wife and best friend, with her invaluable optimism, good humour and interest in me and my work, and Lene and Sturla for their good companionship.

Finally: for me as a chief psychiatrist, the TIPS-project first and foremost has been a health-service development project. We have succeeded in implementing psychoeducational family work as standard treatment in our services, and early intervention strategies are implemented as part of our ordinary services, to give two important examples. I think such examples are the best proof of a successful research project.

And: I still wonder if Per Vaglum really didn’t know the answer to my question…
List of papers


# List of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>DUP</td>
<td>duration of untreated psychosis</td>
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<tr>
<td>DP</td>
<td>duration of psychosis</td>
</tr>
<tr>
<td>DUI</td>
<td>duration of untreated illness</td>
</tr>
<tr>
<td>DTP</td>
<td>duration of treated psychosis</td>
</tr>
<tr>
<td>PD</td>
<td>prodromal period</td>
</tr>
<tr>
<td>FEP</td>
<td>first episode psychosis</td>
</tr>
<tr>
<td>FES</td>
<td>first episode schizophrenia</td>
</tr>
<tr>
<td>DT</td>
<td>detection team</td>
</tr>
<tr>
<td>Not-DT</td>
<td>patients coming into treatment via ordinary channels (not via DT)</td>
</tr>
<tr>
<td>AT</td>
<td>assessment team</td>
</tr>
<tr>
<td>ED</td>
<td>early detection</td>
</tr>
<tr>
<td>ED sector</td>
<td>Rogaland county. Area with early intervention program</td>
</tr>
<tr>
<td>No-ED sector</td>
<td>comparison sites in total TIPS project (Ullevaal and Roskilde)</td>
</tr>
<tr>
<td>TIPS</td>
<td>early detection and intervention in first episode non-affective psychosis (Scandinavia)</td>
</tr>
<tr>
<td>TIPS-program</td>
<td>activities (information/low-threshold to treatment) to achieve early intervention in Rogaland county</td>
</tr>
<tr>
<td>TIPS research project</td>
<td>quasiexperimental comparative study beween ED sector and no-ED sector</td>
</tr>
<tr>
<td>TOPP</td>
<td>early detection of pre-psychosis (Norway)</td>
</tr>
<tr>
<td>EPPIC</td>
<td>early psychosis prevention and intervention centre (Australia)</td>
</tr>
<tr>
<td>PACE</td>
<td>personal assessment and crisis evaluation service (Australia)</td>
</tr>
<tr>
<td>HC</td>
<td>historical control</td>
</tr>
<tr>
<td>GP</td>
<td>general practitioner</td>
</tr>
<tr>
<td>DSM</td>
<td>diagnostic and statistical manual (American psychiatric association)</td>
</tr>
<tr>
<td>ICD</td>
<td>international classification of disorders (WHO)</td>
</tr>
<tr>
<td>PANSS</td>
<td>positive and negative symptom scale</td>
</tr>
<tr>
<td>GAF</td>
<td>global assessment of functioning scale</td>
</tr>
<tr>
<td>SCID</td>
<td>structured clinical interview of DSM</td>
</tr>
<tr>
<td>RCT</td>
<td>randomised control trial</td>
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1 Introduction

1.1 What is this thesis about?

Although early intervention in first-episode psychosis (FEP) is not a new idea, the two last decades have brought about a renewed and increased interest in the early phases of illness development in psychotic disorders in general, and in schizophrenia in special. From a clinical perspective, the underlying thought is that it must be beneficial for the patient if appropriate treatment is provided early in the illness development. And, unfortunately, we have reason to believe that there is a significant delay between start of the psychosis and start of the treatment for these disorders, and other psychiatric disorders (1), both in Norway and internationally. This period from start of psychosis until initial adequate treatment is called Duration of untreated psychosis (DUP).

To investigate whether it was possible to reduce this treatment delay, and to see if this had an impact on the course and outcome of first episode psychosis patients, we established in 1997 a so-called Early detection and intervention program (ED) in the county of Rogaland, Norway, the TIPS program (1997-2000). TIPS is an acronym for early detection and treatment in psychosis. The program included low threshold detection teams (DTs), education of health personnel and schoolteachers, and massive public information campaigns using mass media of all sorts. Prior to this, in 1993/94, we had investigated how long DUP was in our part of Norway, and found that it was about 114 weeks, in mean. This study serves as the historical control (HC) in the present study.

The TIPS program was one of the first attempts in the world to try to reduce DUP in a systematic way, and it was important to study the TIPS program also in a prospective, longitudinal research project. The papers of this thesis are coming from a part of this multi-center international quasi-experimental study. The total TIPS research project is a prospective, multi-site clinical trial, with three participating centers: Rogaland county, Norway (370 000 inhabitants), Ullevala sector, Oslo, Norway (180 000 inhabitants) and Roskilde county in Denmark (100 000 inhabitants). The sectors are comparable on all major demographic variables, and in the experimental sector Rogaland there has also been demographic stability in the period between the historical control (1993-1994) and the actual time period (1997-2000) for this study.

The main purpose of the total TIPS research project as described above, is to test the effect of timing of treatment in first-episode psychosis. The study compare early detected patients in Rogaland (experimental sector) with the patients detected “as usual” in the other sectors (comparison sites). Patients were included over a four year period, and all were given a standardised treatment for two years and followed up for an additional three years.
Rogaland county has served as the experimental county, and the Ullevala health care sector, Oslo County and the midsector, Roskilde County, have served as control, or comparison, sectors, with similar treatment protocols, but without an early detection system.

The study was approved by the Regional ethical research committee.

The six main aims of the total TIPS-project were:

1. To explore whether it is possible to reduce Duration of untreated psychosis (DUP) within a geographical sector (Rogaland, Norway).
2. To test in a multi-center trial whether reducing DUP in one geographical area will improve the prognosis or long term course and outcome of First episode psychosis (FEP) in that area com-
pared to an area without a program for reducing DUP (Ullevål, Oslo, Norway and Roskilde, Denmark).
3. To describe the clinical problems of patients referred to the detection teams (DTs) in the ED sector.
4. To explore the short and long-term outcome (5 years) when such FEP patients are offered an optimal treatment program of two years’ duration, including psychotherapy, medication and a psychoeducational family program.
5. To study whether public knowledge and opinion about psychosis and early signs of psychosis can be changed via educational campaigns.
6. To explore what problems the psychiatric health services will meet on trying to establish an optimal treatment program for patients with FEP, and what modifications are necessary when this presumptive optimal treatment is offered to patients with very short DUP.

Concerning the early detection and intervention (treatment) program (ED program) which was established in Rogaland, there were several important questions that should be answered, but without using data from the comparison sites.

*These questions, that concern what happened in the Early Detection County (Rogaland) only, are the focus of this thesis.*

The main aims of this thesis are to answer three sets of questions:

1. The first group of questions concerns the basic question whether one would really manage to reduce DUP substantially in Rogaland. Would the length of DUP be shorter for the patients coming to treatment when the new ED program was established, than in a historical control group from the same area (1993-1994). Would there be other clinical differences (sociodemographic, premorbid condition, symptoms, substance abuse etc, between these two patient groups? And, would the sources of referral (family, patients themselves, GPs, schools etc) be different, when the patients themselves, their families, friends, school-teachers etc, could now contact the specialised psychiatric health services directly through the DTs? (Prior to this, all referrals had to come from the GPs (so-called “ordinary channels of referral”)).

2. The second group of questions concerns the possibility that there might be important clinical differences between patients depending on which of the two recruitment channels they came through: either through the low threshold detection teams (DTs), or through the ordinary health service system (GPs, emergency services etc) (not-DT). Would there be any differences between the DT group and the not-DT group at admittance and after one and two years? What would be the pre- and baseline predictors of the course and outcome in the DT group and the not-DT group? And, regarding health service consumption, would there be clear differences between the two groups?

3. The third set of questions focuses on which of the two factors listed below in the early detection program that was most important for changing DUP, as the ultimate expression for changed help-seeking behaviour. DUP was sought to be reduced in Rogaland through i) extensive targeted education and information programs designed to increase knowledge, and ii) through establishing low-threshold, active outreach, early detection teams (DTs) which actively sought out FEP cases, thus changing the population’s help-seeking behaviour.
1.2 Background

Schizophrenia spectrum disorders are probably the most costly group of disorders among as well the serious psychiatric disorders as for the larger somatic diseases such as cancer, and vascular diseases (2, 3, 4, 5), although the mean world-wide incidence is relatively low (0.5-1.0 per 10000 inhabitants per year) (6, 7). The disorders’ lifetime prevalence is high because these disorders often strike in young age and result in chronic deficits in mental functioning. Patients and their families experience serious problems throughout long periods of life, a suffering that is beyond measurement.

Although contemporary treatments as antipsychotic medication, family psychoeducation, some selected forms of psychotherapy, and assertive continuity of care has demonstrated efficacy in clinical trials (8), these treatments are essentially palliative. Antipsychotics must in most cases apparently be provided indefinitely because discontinuation leads to clinical deterioration. Kraepelin stated that if no essential improvement intervenes, in at most two or three years after the appearance of the more striking morbid phenomena, a state of weak-mindedness will be developed which usually changes only slowly and insignificantly (9).

This often downward course of schizophrenia and schizophrenia spectrum disorders, has led clinicians and researchers to look for as well better treatments, as possibilities for prevention. The idea of early intervention as a preventive effort is not new; Sullivan (10) wrote that the psychiatrist sees to many end states and deals professionally with too few of the prepsychotic. Cameron (11) and Meares (12) developed the idea further; however, it was not until recently, with the work of Falloon (13) and McGorry (14) that the idea again won momentum.

1.2.1 Psychosis: Disorders that develop in stages

Schizophrenia and related psychotic disorders can be seen as disorders developing through different stages or phases. The early course of schizophrenia is considered to have three phases: the premorbid phase, the prodromal phase and the acute psychotic phase (15). As we can see from figure 1, we define the premorbid phase as the time period before first signs of illness. The illness onset is defined as the time when the patient first experiences prodromal symptoms. The onset of psychotic symptoms is called episode onset. The acute psychosis phase is divided in the active untreated phase, and the active treated phase. After the remission phase, where psychotic symptoms have disappeared, the course will vary. Some patients go into a stable remitted phase; some will have residual symptoms and be in a residual phase. A great proportion of patients will enter a relapse phase after going through a period with so-called relapse prodromal signs, or warning-signs.

Duration of untreated psychosis (DUP) has been defined as the time-period between onset of psychosis, and the start of adequate treatment. Duration of psychosis (DP) is the time between start of psychosis and remission, while Duration of active illness (DAI) is defined as the time from first prodromal symptoms to remission. Duration of untreated illness (DUI) is the time from first prodromal symptoms to first treatment. Models for illustrating these different phases is outlined in figure 1 and 2.

The findings of van Os et al (16) that there is a continuity between subclinical psychotic experiences in the general population and manifest psychotic disorders that come to treatment, lends support to the theory of the so-called “Einheitspsychosen “ (17, 18). This implies that one looks at the psychotic disorders as dimensions (19), and not as separate categorical entities. This could then imply a gradual development from “less serious” psychiatric disorders (a subclinical level), over to what is generally regarded as more serious, i.e. psychotic disorders, with time. Early intervention could mean intervention in the prodromal phase or in the psychotic phase; the term is also used in remitted cases in relation to first signs of relapse, so-called “warning signs”.

9
In this thesis the term “early intervention” is used for intervention in the first psychotic episode.

1.2.2 Prevention of first-episode psychosis/schizophrenia

There are three possible levels of prevention: primary, secondary and tertiary (20). In connection to the psychotic disorders, primary prevention means intervention in the premorbid phase. Primary prevention is thus equivalent to a reduction in the incidence of schizophrenia, as one would expect from somatic medicine through non-specific (general) forms of intervention such as better child bearing conditions, improvements in general standards of hygiene and so on (21). Secondary prevention means intervention in the early stages of illness development, i.e. the prodromal and first psychotic phase. Tertiary prevention aims at reducing the morbidity of the disorder, that is to make the long-term prognosis better, by offering more effective treatment. These preventive efforts are indicated or general. They are indicated if they target a specific subgroup, general if they target a whole population. For details, see figure 1.

Considering psychosis, in practice we have three levels of prevention:

- Intervention in the prodromal phase (pre-psychotic intervention) (primary)
- Intervention in the psychotic phase, i.e. reduction of duration of untreated psychosis (DUP) (secondary)
- Phase specific intervention in established first episode psychosis (tertiary)

Early intervention in the prodromal phase should lead to a decrease in the incidence of the disorder. The most general form of primary prevention is strategies aimed at the total population (universal prevention, e.g. immunisations, the use of seatbelts, reduction of influenza during pregnancy, improving child rearing conditions etc). Identifying and treating symptoms that are precursors to a more serious disease is indicated prevention.

Indicated prevention means prevention strategies aimed at high-risk subgroups (e.g. mammography in women with a family history of breast-cancer, targeted interventions towards children of parents with schizophrenia etc).

Early intervention after the onset of psychosis means that treatment is given as soon as possible after the psychosis is present, and is secondary when the timing in itself prevents a more serious illness development, and tertiary when active treatment prevents further deterioration. The TIPS program aims at secondary prevention.
1.2.3 Rationale for early detection and treatment

1.2.3.1 DUP and morbidity, treatment response and outcome

As part of the preparatory work for the TIPS program, we explored the rationale for early detection and intervention in FEP/schizophrenia; this was published in a review article in 1996 (22). I will here summarise the most important studies, and also point to some more recent studies that make up part of the rationale for early intervention in FEP. Clinical research over the last several decades provides indications that early treatments for schizophrenia may improve prognosis or the natural course of disorder, thus implying the possibility of tertiary prevention in schizophrenia. Wyatt (23) has done an extensive review of the earlier studies that compared patients treated with neuroleptics with those who developed their illness before chlorpromazine was introduced. Patients, who received neuroleptic drugs earlier in the course of their disorder, did better in the long term. Structured long-term psychosocial interventions, such as family treatment, supportive psychotherapy and the monitoring of early symptoms of relapse, can improve the long-term outcome (24). Studies by Huber et al (25), Opjordsmoen (26) and Rosenbaum et al (27) suggest that treatments we use can make a difference in the natural course of schizophrenia if they are applied early.
Many other studies provide indirect evidence that longer duration of untreated psychosis (DUP) is associated with a poorer prognosis in schizophrenia. Lo and Lo (28), in a retrospective 10 year follow-up of 133 schizophrenia patients in China, find that outcome was positively correlated with shorter duration of illness before the first treatment. Similar results were found in studies from Iceland (29), Japan (30), England (31), and by Haas et al (32). Haas and colleagues show that if the timing of first antipsychotic medication was delayed for 2 years or longer, patients demonstrated delayed treatment response, more severe positive and negative symptoms, and more functional impairment at discharge. These findings were not attributable to premorbid functioning. Lieberman et al (33) and Wyatt (23) have postulated a morbid process of neuron loss during periods of acute symptoms, that, if not counteracted, could produce lasting impairments. Active psychosis may be neurobiologically toxic and accelerate or add to the primary deficit neurobiological processes that lead initially to onset. McGlashan and Johannessen (22) suggest that applying existing schizophrenia treatment as soon as possible in the course of the disorder may slow or stop this deterioration.

Lieberman and Fenton (34) discusses the theory that untreated psychosis may result in neurotoxicity in the form of deterioration and treatment resistance. This hypothesis has not been confirmed. On the contrary, there is some evidence that indicates that there is no such connection (35). Lieberman and Fenton state that these results should be interpreted with care, and that more research is needed before one can conclude in either direction. In a recent study, Norman et al (36) find support for the hypothesis that long DUP may lead to reduced social support for those suffering from schizophrenia spectrum disorders, and thus be what they call “socially toxic”.

Another indication concerning the importance of the timing of the intervention is given by Moscarelli et al (37), who found that the costs of treatment for patients with a DUP greater than 6 months were twice the costs of those with a DUP shorter than 6 months.

Johnstone et al (38), in a study from 1986, define DUP as the time from onset to admission. In a sample of first-episode psychotic patients, they found that DUP varied from less than 2 months to more than 1 year. Relapse rates over the following 2 years were significantly predicted by DUP. Crow et al (39) find that DUP is a stronger predictor of relapse than maintenance medication status when they did a randomised placebo-controlled trial of maintenance antipsychotic medication in 120 first-episode patients. In their study from 1986, Rabiner et al (40) assessed 1-year outcome in first episode hospitalised patients with schizophrenia (n = 36) or affective disorder (n=19), as determined by the Research Diagnostic Criteria (41). They define Duration of Illness (DUI) as the time from first signs of noticeable change in behaviour to time of baseline behaviour. For the schizophrenia group DUI was 14,5 months, and 3,6 months for the affective group. DUI was significantly associated with outcome within the schizophrenia group.

Loebel et al (42) from the Hillside Hospital, New York, studied 70 first-episode schizophrenia and schizoaffective patients and found that DUP was 51,9 weeks (mean), and a mean DUI of 151 weeks. At 2-year follow-up DUP was significantly associated with both time to remission and degree of recovery. This study demonstrates a significant and relatively strong relationship between DUP/DUI and treatment response. Haefner et al, in a study from Germany (43), found a similar DUP of about 2,1 years as reported by the patients, underlining that patients reported first psychotic symptoms 12 months earlier than noticed by relatives or documented by case records. Haas and Sweeney (31) report a DUP of 156 weeks (mean), while Beiser et al (44) find a DUP of 56,1 weeks. Beiser et al also calculated the mean duration of prodromal symptoms as defined by Diagnostic and Statistic Manual of American Psychiatric Association, DSM 3R (45), of 112,8 weeks (mean).

Newer research confirms these findings, and the association between DUP and outcome has been analysed in several recent studies. Bottlender et al (46), Keshavan et al (47) and Addington et al (48) are all able to demonstrate a correlation between DUP and outcome. Marshall et al (49) did a
systematic review of the association between DUP and outcome in cohorts of first episode patients. They conclude that “most data were correlational in nature, and showed a significant association between DUP and a range of outcomes at 6 and 12 months (including total symptoms, depression/anxiety, negative symptoms, overall functioning, positive functioning and social functioning). The long versus short duration data showed an association between longer DUP and worse outcome at 6 months in terms of total symptoms, overall functioning, positive symptoms and quality of life. Patients with long DUP were significantly less likely to achieve remission. The observed association between DUP and outcome was not explained by premorbid adjustment.” (p.3)

Marshall et al’s review brought forward what they call “convincing evidence of a modest association between DUP and outcome”. However, they underline the need for clinical trials that will establish beyond doubt whether shortening DUP improves prognosis, as the studies reviewed in this meta-analysis had some apparent limitations. First. The raters who rated outcome in most of the studies, were not blind to the DUP status. Second, there were insufficient data to permit a formal analysis of publication bias for any individual outcome.

There should, in principle, be no difference between relapse prevention (prodromes to relapse) and the prevention of the first outbreak of psychosis. Family psychoeducative approaches have documented that they can be reduce relapse rates from 80% to 20% within a two year follow-up period (50). The combination of low expressed emotion and family therapy, plus medication, can reduce relapse additionally (51).

Psychoeducative family programs include the possibility for crisis intervention on early warning signs: this is the principle one wants to implement for patients who have not yet experienced the psychotic breakthrough for the first time, i.e. in the prodromal period, via early intervention programs.

Birchwood’s concept “Critical period” refers to the important first psychotic episode. His and other clinical models have developed a system for detecting early signs of relapse, “relapse signature” (52, 53), to reduce the risk for relapse. It has been sufficiently proven that relapse rates can be significantly reduced through a systematised mapping of early warning signs. Most studies in this field fail to strictly define the different phases of the disorder, and also to see them in relation to another. For example, the total duration of psychosis (DP) is rarely if at all taken into consideration in relation to outcome. And, DT, DUP, prodromal period (PD) and the duration of treated psychosis (DTP) can all vary between cases, figure 2.
Due to the duration criterion in schizophrenia (6 months in DSM-IV and 1 month in ICD-10), intervention in the prodromal period must focus on the more general syndrome of psychosis and its possible precursors. For those syndromes that could be pre-stages to schizophrenia, i.e. non-affective psychosis, Haefner et al. (54) have shown that deficits in social functioning are primarily established during the prepsychotic phase. This is in accordance with other work showing that people with subsequent schizophrenia are only very subtle if at all different from their peers (55). Based on studies of the British birth cohort of 5362 individuals born in the week March 3rd-9th 1946, Jones (56) have shown that the number needed to treat, i.e. when using vulnerability markers such as language formation, cognition, motor systems and social behaviour as predictors of imminent psychosis, is 21. The number needed to treat means the number necessary to treat to find and treat one case of psychosis. Haefner’s work also indicates that the more global concept of duration of untreated illness (DUI) which includes both the prodromal period and the actual period of duration of untreated psychosis (DUP), is even more critical for prevention and could be shown to be a more useful concept.
1.2.3.2 The plasticity of psychosis. Variance in incidence.

The logic of early intervention is based on several other factors related to these disorders, factors that demonstrate the plasticity of these disorder, and hence offer arguments that it should be possible to alter the course and outcome by the timing and the content of the treatment offered. First, there is a significant variance in the incidence of schizophrenia in different parts of the world, and in single countries. Recent research, especially from the last decade, demonstrates these differences. In psychiatry, apparently small numeric differences in new cases between sectors have been interpreted as evidence for an even distribution during different times and countries. This is contrary to epidemiological research in for example the diabetes-field, where such small numeric differences are interpreted as real, and direct future research regarding preventive and treatment strategies. For example will a variance in the yearly incidence from 5 per 100 000 to 10 per 100 000 per year mean a real difference in incidence of 100%. Johannessen (57) indicates that lifetime prevalence of schizophrenia and related disorders is about 5,5 per 1000, but with a significant variation between regions. McGrath (58) states that “the beliefs that i) the incidence of schizophrenia does not vary between sites, and ii) males and females are equally affected, may have persisted because of an unspoken deeper belief that schizophrenia is an egalitarian and exceptional disorder. Beliefs not supported by data should be identified and relabelled as myths” (p.4). Kirkbride et al, in a three-city study from UK, find “significant and independent variation in the incidence of schizophrenia and other psychosis in terms of gender and age, and also notably for ethnicity and study centre after adjustment for confounders” (39).

Secondly, it is now recognised as a fact that the incidence of schizophrenia is higher in urban than in rural areas. This finding has been replicated in a number of studies from different countries, and this difference is not caused by a drift towards inner cities, as previously believed (60). Van Os et al (61) have named what they call “The schizophrenia envirome”, and state that “several synergetic mechanisms involving proxy measures of genes and proxy measures of environment, such as gene-cannabis, gene- urbanicity and gene- stress interactions, offer concrete avenues to pursue research that stands a good chance of elucidating at least some of the causes of schizophrenia (p 141)”.

Weiser et al (62), in a study from Israel, state that “the association between urbanicity, measured as population density, and increased risk for psychotic disorders is probably not caused by higher threshold for aberrant behaviour in rural areas leading to lower rates of hospitalisation in rural areas, nor by social isolation or migrant status in cities. Thus, other social or biological causes must be investigated (p. 243)”. To this time, one has not established a certain association between the incidence of schizophrenia and social class. However, the prognosis seems to be poorer for patients from social class. Mulvany et al (63) indicates that this is an effect of the fact that patients from lower social class have a longer delay between onset of psychosis and treatment.

Thirdly, research from England, Sweden and the Netherlands has also early demonstrated an increased incidence of psychotic disorders in general, and schizophrenia in special, in second generation immigrants (64, 65,66,67).

Whether the incidence is stable, increasing or decreasing is disputed. Suvisaari et al (68) have demonstrated a falling incidence in Finland, from 79/100000/year for males born in the mid 1950’s, till 33/100 000/year for males born in the mid 1960’s. Similar findings come from Canada (69) and Sweden (70), while the opposite has been demonstrated in Italy (71).

Overall, the yearly incidence of schizophrenia is low, and in the range of 5-20 new cases per 100 000/year (72). The incidence for males is highest in the age interval 15-19 years, gradually decreasing towards zero after 40, while for females we have the opposite tendency.
This low yearly incidence provides some of the rationale for early intervention strategies, as the course and outcome in most cases varies: ca 25 % have one illness period, 25 % will have a chronic, life long course, and 50 % will have a course and outcome in between the two extremes. 4-13 % of those who get a schizophrenia diagnosis commits suicide. The risk is highest the first year after first episode of psychosis (73). Palmer et al (74) find in a re-examination of existing literature that 4.9 % of schizophrenia patients will commit suicide during their lifetime, usually near illness onset. Clarke et al (75) found that suicide attempts prior to presentation were associated with a longer DUP.

1.2.3.3 Treatment delay, pathways to care and possible strategies to influence help-seeking behaviour

As outlined in the previous, most studies of first-episode psychosis demonstrate that the mean duration of untreated psychosis in most western countries is 1 year or more. In addition, the duration of untreated prodromal symptoms is between 1 year and 3 years, in mean (median in the range of 26 weeks, or half a year). In practice this means that many patients developing a very serious psychiatric disorder as schizophrenia will go without effective treatment for one year, often longer. This represents a major public health problem in itself; even if one presume that it made no difference as to the long term prognosis whether one intervene early or late in development of a schizophrenic disorder, it represents an additional and in most cases almost intolerable extra burden to be psychotic without getting effective treatment. People in active psychosis constitutes a major public health problem because they are vulnerable to initiating irrational, unpredictable, and often permanently damaging behaviours, both for themselves and others. Early intervention in psychotic disorders is seen as having the potential to better the prognosis for schizophrenia and other as serious functional psychiatric disorders, disorders which usually surface in adolescence or early adulthood. McGorry (14, 76) lists four principal foundations that the rationale for early intervention rests on:

1. "Delays in initiating treatment are often prolonged and are associated with substantial functional decline, treatment resistance and increased subsequent rates of relapse. Many of the variables associated with better outcome may be mediated via reduced duration of untreated psychosis ."
2. "Intensive and sophisticated intervention during the early phase of the illness could minimise iatrogenic damage and more effectively promote recovery."
3. "Targeting failure of initial remission or early treatment resistance with recently developed enhanced drug and psychosocial interventions, could result in a lower rate of prolonged treatment resistance, relapse and disability."
4. "Maintaining remission and preventing or limiting relapse, by reducing the total duration of active psychosis and its deleterious consequences is a post-psychotic analogue of reducing DUP."

The reasons for the treatment delay as reflected in the long DUP, reported from numerous researchers throughout the world, are varied. Lincoln et al (77) have studied the pathways to psychiatric care, and find that they were highly individual and vary from person to person. In their study of 62 people suffering from first-episode psychosis, aged 16-30 years, who had recently accessed a specialist mental health service in Melbourne, Australia, they conclude that a multi-level, multi-layered response or strategy is required, so that the knowledge, attitudes and skills of professionals and the broader community can be enhanced. They suggest that the delays in the early phase of illness partly stem from a lack of community knowledge about mental health, and how the services available to them operate. A major task therefore exists to raise the general level of awareness in the community about mental illness and psychosis. It will be a major goal to reduce the stigma connected to mental disorders, as quality services alone will not reduce treatment delays. Hence, these
are the reasons why the TIPS program focuses on community campaigns, in combination with more specific and targeted information work.

The general practitioners play a crucial role, as 36% of people experiencing a first psychotic episode initially contact the GPs. Olin and Mednick (55), as have others researchers, have shown that teachers in the high schools are, in many cases, the first to notice a psychotic development in young people. Evidence from Lincoln’s study suggests that we may need to target in a different manner the broad range of professionals whom young people approach for assistance. Health workers can easily miss the signs and symptoms of developing serious psychiatric disorders, and it will be a special challenge to offer education and training in especially illness recognition.

In the historical control study (HC), we looked into the early course of illness in first episode schizophrenia (FES), with special emphasis on the duration of untreated psychosis and pathways to care (78). We identified a group of mostly males with schizophrenia, with long DUP, deteriorating premorbid course, weak social network, active social avoidance and more negative symptoms at hospitalisation.

We were able to identify 4 major reasons for treatment delay:

1. The problem of motivation for accepting and subsequently receiving treatment, was related to the person’s understanding of being ill and needing help.
2. The attitude of the relatives towards the person’s symptoms and the psychiatric health services were an important factor. It was often the family members who first recognised prodromal signs of psychosis, but they neglected or did not understand what was happening.
3. Many cases of schizophrenia were seen by general practitioners, or even the psychiatric health services, without being diagnosed as having a serious mental disorder. Lack of skills in recognising these conditions at primary and secondary health service level, were partly responsible for delayed detection and treatment.
4. In the long DUP cases we found that withdrawal and poor social network were the main barriers against entering treatment.

These and other aspects of these disorders, point to the fact that it is meaningful to intervene as early as possible in the illness process. Education given to sufferers and their relatives can have a significant effect on the course of schizophrenia. Education given in the early phase of the illness can increase the motivation to seek treatment and acceptance of the undergoing of assessment procedures.

Of the above mentioned points, 1 and 2 were addressed by our general information campaigns, including information of early signs of psychosis and available help/low-threshold to treatment. Point 3 and 4 was addressed through our information towards general practitioners and the specialised psychiatric services, and by our active case seeking strategies as demonstrated by the detection teams (DTs) and the lowered threshold to treatment.

The above factors indicate that there is a possibility of amending the course of FEP by intervening earlier, showing that the development of FEP/schizophrenia rests to some degree on environmental factors.
2 Ethical considerations

When discussing the ethical questions connected to early intervention, there has been a tendency not to discriminate between prodromal phases, and FEP. The most difficult ethical questions in this relate to prodromal cases. However, the ethical questions that arise if we label patients as “could become a case of FEP or “maybe suffering from schizophrenia” are important and difficult to handle. This has been discussed in detail in a special issue on “Ethics of early treatment intervention in schizophrenia” in Schizophrenia Research (79). The major issue has been whether it is advisable to include administration of antipsychotic drugs to patients who are not psychotic, or in a very early stage of psychosis development. This has been a problem in the US, where “treatment” very often is synonymous with medication. Another issue, also especially discussed in the US, has been whether it is ethical to institute a treatment, and then terminate it when the project period is over, from economic reasons. In most European countries neither of these two issues would be pertinent.

The danger of stigmatising young people by giving them a “maybe psychosis”, or “maybe schizophrenia” diagnoses should be taken seriously. Larsen and Opjordsmoen (80) discuss some of these aspects and conclude that (p. 378) concepts such as “pre- or early schizophrenia” should be avoided”. A system that aims at catching FEP cases, and throws a net with small masks, is at the risk of including non-psychosis cases in the assessment. Those patients that were contacted by our DTs, and where we did not establish a definite psychosis diagnosis, were referred to the ordinary treatment systems and treated according to their presenting symptom. In our information strategies we never talked about our program as a “schizophrenia project”, but talked about “serious psychiatric illness in young people”. We should not in such cases talk about “prodromal cases”, but address and treat the presenting symptom, that being depression, anxiety, phobia etc. To diagnose patients as “prodromal cases” is problematic also due to the low specificity of the prodomial symptoms, and to the fact that prodrome in this context is a retrospective concept.

McGorry et al (81) claims that “the ethical issues are essentially identical to those arising in early intervention research in mainstream medicine”. I would underline that the ethical issues in relation to prodromal research and clinical practice are different from, and more difficult to solve, than in relation to strategies for reducing DUP, i.e. intervening in established FEP, and should be handled separately. However, in our project we were met with the question whether it was ethical to inform the public on a general basis on the symptoms of early psychosis. Some were afraid that this could “induce” psychosis in some individuals, and frighten others. We have no indications whatsoever that this is correct. After more than a decade of active early intervention work in our sector, including massive marketing of signs of early psychosis, we have not registered one single case where this have been a topic.

It would, however, be clearly unethical to inform the public of the importance of seeking help early, without at the same time, providing immediate and efficient treatment for those responding to this information.

As stated earlier, the study was approved by the regional ethical committee.
3 Service models for earlier intervention

When we started the TIPS-program, with the aims of changing patients’ help-seeking behaviour, and thus reducing DUP, there was only a very limited experience and research, nationally and internationally, of how to organise the specialised psychiatric health services to accomplish the goal of earlier intervention in FEP. So, to some degree, the TIPS program has been a pioneering project. Hence, we had a strong obligation to evaluate our service amendments.

However, there were some projects that had developed, and to some extent, tried out, services especially designed for providing early help in FEP, and in the prodromal phase. The characteristics of these programs are basically independent of whether they primarily address FEP or prodromes of FEP, although the target groups differ to some extent. In the following we outline the main characteristics of the most important early intervention programs that existed prior to the TIPS-project, and that we to some degree, built on:

3.1 Intervention in the prodromal phase. Program characteristics

These are projects that aim at primary prevention. The prodromal symptoms being unspecific in their nature and with questionable predictive value, makes it difficult to establish specific programs for intervention in this phase.

Falloon and coworkers (82) designed a public health initiative to detect and treat psychosis in the prodromal phase in Buckingham County, England, between 1984 and 1989. In close co-operation with the primary health services, potential psychosis (possible prodromal cases) was detected and assessed by a mental health team. 16 such patients were detected during a four-year period. Only one of these cases developed a schizophrenia, and compared with an earlier study in the same area, this represented a reduction in the incidence of schizophrenia from the expected 7,40 per 100,000 per year, to 0,75 per 100,000. Due to low population numbers, these results are only indicative. The most important feature of this project was the close co-operation between GPs and psychiatrists. They worked in the same building, in the same corridor, and could discuss cases immediately. The sector was also limited, and everybody had a good overview over the health situation in the community. Regarding the design of the study, it had some apparent weaknesses. These are discussed in detail in Larsen et al (83). For example, no first-episode cases with long DUP were identified, while most other studies of FEP report that about 50% of the patients have been psychotic a long time (in the range of 26 weeks, median) before inclusion.

“PACE” is (an acronym for “The personal assessment and crisis evaluation service”) a clinical service established in Melbourne, Australia, in connection with “EPPIC” (“The early psychosis prevention and intervention centre “ (84)), both now part of “ORYGIN youth health”. PACE is located at a generalist outpatient service and health promotion centre for adolescents in Melbourne, Australia, and aims at identifying individuals running a high risk of becoming psychotic in the short term, and preventing the transition into psychosis through providing treatment as needed (81,84). All patients are help-seeking, aged between 15 and 30, with one or more of the predefined prodromal states present, monitored by monthly ratings of psychopathology.

The main service feature of the PACE clinic is that it is low-threshold, situated in a non-stigmatising location, together with other services for young people such as job-centre etc. The main principles of the health service structure in the two most important prodromal projects, the Buckingham project and PACE, are outlined in table 1.
3.2 Intervention in early psychosis. Program characteristics

The pioneering program for early detection and intervention in established first-episode psychosis cases originated in Melbourne, Australia (EPPIC) (76). The program has emphasis on easy access, and have been able to demonstrate a significant improvement in symptomatic and functional outcome, but have not been able to demonstrate a correlation between improved outcome and lower DUP. One study evaluated the effect of a new, more comprehensive treatment program with emphasis on early intervention in the psychotic phase (1993, n= 51), compared to a historical control (1989-1992, n = 52). There was however no significant statistical difference in DUP between the two samples, the mean DUP being reduced from 237 days in the historical control, to 191 days in the 1993 sample (85). They conclude that the improved short-term outcome was a result of the more phase-specific and intensive treatment, and not correlated to DUP. However, DUP was relatively short in the historical control compared to what has been demonstrated in other studies. It may reflect that it is difficult to bring DUP down below this level.

The main characteristics of EPPIC are outlined in table 1.

Table 1.

Main health service characteristics of some early intervention programmes

<table>
<thead>
<tr>
<th>Buckingham</th>
<th>PACE</th>
<th>EPPIC</th>
<th>TIPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Catchment area, 35000 population</td>
<td>No defined catchment area.</td>
<td>Catchment area, 800,000 population</td>
<td>Catchment area, 400,000</td>
</tr>
<tr>
<td>2. No community education/information</td>
<td>No community information</td>
<td>Limited community information</td>
<td>Extensive community education/information program</td>
</tr>
<tr>
<td>3. Primary health care and psychiatric specialists located together</td>
<td>Services situated at health promotion centre for adolescents</td>
<td>Ordinary psychiatric services, community oriented, ambulatory teams</td>
<td>Ordinary outpatient unit, detection team, community oriented</td>
</tr>
<tr>
<td>4. Immediate access to treatment, home based</td>
<td>No referral from primary care needed (i.e. direct access)</td>
<td>Direct access to services for users 7 days a week, 24 hours</td>
<td>Direct access to services for users 5 days a week, 9-5</td>
</tr>
<tr>
<td>5. Comprehensive treatment focussed on presenting problems</td>
<td>Psychosocial and medication-based treatment</td>
<td>Comprehensive treatment programmes</td>
<td>Comprehensive treatment programmes</td>
</tr>
<tr>
<td>6. Focus on prodromal/early psychosis, preventing conversion into psychosis</td>
<td>Focus on prodromal period, preventing conversion into psychosis</td>
<td>Focus on early, first episode, psychosis; reducing DUP</td>
<td>Focus on early, first episode, psychosis; reducing DUP</td>
</tr>
</tbody>
</table>

Falloon et al (82), Edwards et al (86) and others have underlined the importance of accessibility. Easy access and a low threshold are thought to be absolute prerequisites for early detection and intervention, and render some crucial demands on how we organise our help delivery systems. In contrast to the three other examples shown here, in the TIPS program the easy-access, low-threshold DTs only performed the initial screening and assessment, while treatment was offered from the ordinary in- and outpatient units. The rationale for this, and more details of how the TIPS program was organised, is outlined in chapter 5.
4 Health promotion aspects/ Mental health literacy

Mental health promotion is both any action to enhance the mental well-being of individuals, families, organisations and communities, and a set of principles which recognise that how people feel has a significant influence on health. As opposed to illness preventing efforts, which focuses on removing or reducing risk factors for illness, health promoting efforts aim at improving the health among people (salutogenesis). Focus is mainly on positive resources for health. Central concepts and principles within health promoting work are empowerment, and user-cooperation. Empowerment addresses the aspect of the individual’s and the community’s impact and control over conditions that influence health, while user-cooperation tries to create an improved self-esteem and identity, with the final goal of changing people’s behavior in a direction that improves their health-condition.

It is well established in modern health promotion research and preventive strategies that effective health promotion and prevention programs should incorporate multi-level strategies, including individuals, families, neighbourhoods, schools, work places, and communities. It has also been shown that these strategies work best when they use multiple access points, i.e. media, health services and schools (87, 88).

There is however a shortage of research concerning health promotion aspects in relation to serious psychiatric disorders, including help seeking behavior. Søgard and Fønnebo (89) have shown that mental health campaigns can change knowledge about and attitudes towards mental health problems in a general population. Jorm et al (90) has introduced the concept of “mental health literacy”. He defines this as (p.396) “knowledge and beliefs about mental disorders which aid their recognition, management and prevention”. He further states that mental health literacy consists of several components, including: a) the ability to recognise specific disorders or different types of psychological distress; b) knowledge and beliefs about self-help interventions; c) knowledge and beliefs about risk factors and causes; d) knowledge and beliefs about professional help available; e) attitudes which facilitate recognition and appropriate help-seeking; and f) knowledge of how to seek mental health information. These are the underlying principles in the TIPS information work towards the general public, and also to some extent towards the other target groups, to be described later in detail. Young people, maybe especially adolescents, are believed to be rather ignorant of early signs of serious psychiatric disorders, so to raise their mental health literacy has been addressed with extra effort.

I would also add that this implies antistigma work. Stigma connected to psychiatric disorders, psychiatric patients, the system, and people working in psychiatry represents a major obstacle in the work of achieving early intervention. This relation to help-seeking behavior is illustrated in figure 3.
Figure 3

Health promotion and mental health literacy; help-seeking behaviour.
5 The early detection program: TIPS

Based on what has been outlined above, in the following I will describe the TIPS-program for early treatment and identification of psychosis. I will describe in detail this program developed to decrease DUP in Rogaland county, Norway, and focus on the strategies for educating the public, health professionals, schools (teachers and pupils) about early signs of psychosis. I will also describe the health care system amendments necessary to provide an early detection and intervention service to the users, as part of a strategy to reduce treatment delay in Rogaland County. The main health service characteristics of TIPS are outlined in table 1. This thesis then explores this program with regard to the referral patterns (help-seeking behaviour) and course and outcome within Rogaland county 1997-2000 of these first episode psychosis patients accessing treatment via the detection teams (DTs), versus those coming into treatment via ordinary channels (not-DT), during a two year follow-up period.

Studies reviewed above document that the average time between onset of psychotic symptoms and first effective treatment is often one year or longer, and that to shorten this delay it was necessary to intervene on different levels; community awareness, help delivery systems and the help-seeking behaviour of families and the individual. In the TIPS program we therefore established a comprehensive, multi-leveled and multi-targeted information and education program, with the intention to reduce DUP. This program was started on January 1st 1997, and was followed in this study for four years. The TIPS program in Rogaland had two major elements:

- A comprehensive education program both towards the public, and the schools and professional health personnel
- Low threshold, easy accessed detection teams (DT)

The program has been described in details elsewhere (91,92)
After the project period, the basic features of this program have been incorporated in the ordinary structures in the psychiatric health services in Rogaland County.

5.1 The TIPS education program

The major target groups for information and education were the general public, families and friends, schools (teachers and students), and health professionals. The public information campaigns aimed at: i) to raise the public’s awareness of signs and symptoms of psychiatric disorders, especially psychosis, and to reduce stigma connected to psychiatric disorders in general an to psychosis and psychiatric services in special (to change the public’s attitudes) ii), raising the public awareness of the early signs of serious psychiatric disorder (mental health literacy) and of the importance of seeking help early, especially among young people, and iii) to inform repeatedly about the available help, and especially about the low threshold detection teams (DTs). We knew from the work of Rutz et al (93) that the information and education had to be repeated on a regular basis throughout the whole period to be effective.

We co-operated with a public relations company, and have used the most modern marketing methods available. Our information campaigns were repeated regularly, at least biannually during the project period.
5.1.1 General Population

At the start of the campaign all households in the county received a 12-page brochure with general information about the project. The main message was: "Psychiatric disorders have at least one thing in common with other disorders; the chance of getting well is better when treatment is started as soon as possible". This was repeated biannually, and included information on both signs and symptoms, as well as information about where to get help. The DTs were introduced with names, titles etc, and emphasis put on how to get in touch with them.

This general information also reached our other target groups, such as teachers, doctors, etc, and thus the total program probably had a "double" impact on these groups. And, some of these more general advertisements in the newspapers were intentionally targeted towards key persons within these different target milieus, without this being said explicitly.

The other main elements in the information campaign towards the public were:

a. General information through mass media (local radio, television, newspapers). This included both free editorial coverage as well as commercials and other public relation strategies as cinema commercials, free postcards in restaurants, flyers, car stickers, t-shirts, other brochures etc.

b. On a regular basis we had public meetings (at least biannually), including free lectures, and in co-operation with a publishing company specialising on literature on psychiatric topics, we have issued a lot of educational booklets on such themes as " what is psychosis", "brief on Psychosis", "what is schizophrenia" etc. Stickers, free post-cards, smaller information brochures etc, were distributed in places were young people meet continually throughout the project period.

c. In the newspapers we had whole-page advertisements on a regular basis, approximately monthly, covering the counties whole population. Initially we addressed the myths regarding psychiatric services, and used scenes from "One flew over the cuckoo's nest" (myth) opposed to non- frightening, non-stigmatising pictures, as pictures of people working in the DT (today's reality), or young people seeing a GP at the GP's office (today's reality). All these different elements were co-ordinated in content and time, and repeated.
5.1.2 Professional health workers

The need for specific information of both the importance of recognising early signs of psychosis and early help in developing psychosis in both primary health care, social offices and the specialised psychiatric health care systems was addressed. Specially developed educational programs for GPs, psychiatric nurses and other professionals working within the general health system and psychiatry have been introduced, and a checklist and a rating manual based on the DSM-III-R prodromal symptoms and the PANSS (47) have been used together with videos demonstrating a patient experiencing vague psychotic symptoms in a 3-4 hour training seminar for these groups (see appendix 1). Included in these seminars was a clinical discussion of cases. The GP’s also received a letter twice a year with an update on the forthcoming results of the study, and with an appeal to refer patients as soon as possible when they suspected a possible serious psychiatric disorder in young people.

Regarding the specialised psychiatric health services, we organised educational programs along the same lines. We were aware that not all psychiatrists, or psychologists, were ready to accept the idea of early intervention, and give the necessary priority to these disorders in the busy everyday practice of hospitals and outpatient. Through these efforts, we tried to lower the threshold to treatment also for those FEP patients being referred via the ordinary channels, such as GPs.
5.1.3 Schools

As shown by several researchers, especially Mednick and Olin (94), teachers are usually the first to notice that “something is not quite right”. In close co-operation with the local school authorities, we established specifically designed education programs for teachers in the high schools, and for the students. These included obligatory courses for all teachers in high-schools, specifically designed public information campaigns directed at student, counsellors and school administrators. These were repeated twice each year, and every student got this information through a co-operation with the single school. The DT also visited each school on a regular basis, giving information and discussing and assessing cases.

5.2 Early detection teams (DTs)

Easy access was thought to be an absolute prerequisite for doing early intervention work. Low threshold for referrals from the different sources of referral, including a possibility for self-referral, was established. In the TIPS program, emphasis was put on integrating the early detection work, or structures, into the ordinary health service structures, to not establish a parallel independent system which would disintegrate the service provided and thus create discontinuity. Such easy-access system bears no meaning if unaccompanied by a guarantee for rapid and comprehensive provision of treatment, as outlined.

Based on the experiences of Falloon and McGorry we established two detection teams (DT) as integrated parts of our ordinary outpatient units, one in each geographical sector of the area. The DTs consisted of psychiatrists, psychologists, psychiatric nurses and social workers. They were on call from 8 am till 4 p.m., Monday to Friday. Outside these hours there was an answering machine, and in addition the doctor on call at the psychiatric hospital would take over the detection functioning in weekends, assessing emergency cases. As mentioned earlier, we chose to let the DTs do the initial screening and part of the assessments, while the standard treatment was offered by our ordinary services, in- and outpatient. The reason for not letting the DTs take responsibility also for the treatment, as opposed to for example EPPIC, was that they should concentrate on the detection work, and could easily be overwhelmed by treatment tasks after some time. Experience from some other projects around the world also show that FEP teams have to discontinue treatment after a limited period of time, due to the obligation of taking on new cases, and thus contributing to unnecessary discontinuity in the treatment.

A flow-chart demonstrating the pathways from first contact to final inclusion in the study is described in figure 4.
The availability of the DT was introduced to all households and the general public repeatedly, including an open telephone number for self-referral. The public could access the DTs directly via telephone, and an e-mail address was also provided. In practice all referrals came via telephone, and the e-mail address was only used in a few cases.

First, the DT made an initial assessment over the telephone, and decided whether there was a psychiatric problem or not. This decision was made from a clinical judgement only, based on a semi-structured interview guide (appendix 1) that included prodromal signs according to DSM III-R, and PANSS. If Yes, the possible further conclusions were: Drug abuse only, Life-crises, depression, prodromal case/TOPP, not psychosis but definitely psychiatry, psychosis, or other. The DTs’ attitude was inclusive, not defensive or exclusive. One cannot, however, rule out the possibility that some cases could slip their attention. We find this to be highly unlikely, the people working in the DTs being skilled, experienced clinicians, with the very focus of not letting anybody with a possible
psychosis “slip through”. And, since all contacts originated from the referring person’s own initiative, it was not probable that he or she should “hide” information.

Second, if it were a possible psychiatric case, the DTs would meet the patient or/and the referring persons wherever was convenient: at home, in a GP’s office, at school, or at the DTs’ office. The teams were very mobile, and worked with an active outreach attitude. Easy access was accomplished through a “24-hour guarantee of assessment”, which meant that the patient would be met by the DT within maximum 24 hours after first contact. In most cases the assessment was carried out within only a few hours, see figure 4. The DT carried out a preliminary evaluation using PANSS and a GAF assessment. All DT members were trained raters in these manuals.

Third, when the DT had established that a psychosis case could not be ruled out, the patient was referred to a more comprehensive, scientifically based, evaluation by the Assessment Team (AT). The AT consisted of scientifically trained psychiatrists or the equivalent, and they would decide, through an extensive assessment including SCID, whether or not the patient was suffering from a first psychotic episode. Where a diagnosis of psychosis was established, we guaranteed that treatment would be provided within a maximum of one week. Patients meeting the inclusion criteria entered the study and received the standard treatment protocol, after having given informed consent. Patients that did not fulfill the criteria for a psychotic disorder, was referred to treatment based on their presenting symptoms and needs.

Figure 5
Assessment
Also those FEP patients who refused to enter the TIPS research project were offered the standard treatment protocol through the ordinary clinical systems.

5.3 Standard treatment protocol

A standard treatment protocol was used. It was the same as in the study populations in the two other sites of the total TIPS project (95). The treatment offered was evidence-based (96), and consisted of the following elements:

- active outreach supportive psychotherapy
- low-dose medication
- multifamily groups ad modum McFarlane

The choice of these three elements was based on the evaluation performed by the PORT task force, a task force appointed by the American Psychiatric Association. On a strict scientific basis, PORT evaluated the literature on available treatments offered to patients with a schizophrenic disorder, and categorised the different treatment modalities after their proven effect. The treatments were categorised to either A, B or C level, A being the best.

The above three treatment modalities were the only three that qualified on an A level. In addition to these three evidence based core elements, each patient was offered a need-specific treatment according to individual needs, in accordance with Scandinavian standard (97). Continuity of care was a basic element of the treatment, and was secured by a team within the ordinary psychiatric services (the patient’s individual psychotherapist and primary nurse), that was supposed to work with the patient for a minimum of two years. The psychotherapist was responsible for all aspects of the treatment, and acted like a case-manager.

- Active outreach supportive psychotherapy
  The standard treatment protocol guaranteed a minimum of one psychotherapeutically oriented contact per week with an experienced therapist, where the main focus was supportive, active outreach therapy, with the therapist as an active co-ordinator of the different therapy elements. The duration of the sessions should be at least 30 minutes.

- Low dose medication
  The first year in the project period, Perphenazine (Norway)/Zuclopentixol(Denmark) was the first choice. After that, Olanzapine was first choice, Risperidone second and Perphenazine third. Maximum dosage of Olanzapine was 20 mg per day, with recommended dosage 10 mg. For Risperidone the recommended dosage was 1-4 mg per day, with a maximum of 6 mg. Perphenazine maximum dose was 16 mg per day, and was mainly chosen due to its availability in intramuscular form. The main reason for the change in the standard protocol after one year, was that the new generation of antipsychotics rapidly gained terrain in clinical practice, and were preferred both by therapists and patients.

- Family work
  The psychoeducational family work consisted of three elements; a whole days workshop for new patients and families, with general information of psychiatric health services, psychosis, possible outcome, treatment and coping, stress vulnerability model etc; single family sessions (a minimum of three) where the family met the individual therapist, and multifamily groups for at least two years, which met regularly, for two hours sessions, every fortnight during the project period. (98, 99, 100, 101):
5.4 Costs

Total costs for the DT-work and the information strategies summed up to approximately 2 million NOK per year, for two detection teams, and all information material and information work. The costs for the DTs and for the information strategies equalled at ca 1 million NOK for each part. This covered a population of about 400 000 people.
6 Research questions, design, samples, methods and statistics

6.1 Research questions and hypothesis

A main focus of this thesis has been to explore whether it was possible to change help-seeking behavior for FEP patients by using the TIPS program. The ultimate measure of changed help-seeking behaviour would be a clinically significant reduction of DUP among FEP patients.

By having a closer look also at the characteristics of FEP patients coming into treatment in the ED sector, we also wanted to get a better understanding of the help-seeking behaviour of possible subgroups of such patients, as represented by the subgroup coming to treatment through the detection teams (DT group) and the subgroup accessing treatment via the ordinary channels (not-DT group). From our findings in the HC study, where we examined 34 consecutive FEP cases in detail (78), and from our findings at baseline in the present study, we came to expect the DT patients to have a different health consumption pattern than the DT groups, as they were expected to be younger, with a less dramatic symptom-picture, and a more gradual downward course at start of illness as illustrated by longer DUP. By following these two patient subgroups for two years (and later on, five years), we hoped to be able to further tap information that could be useful in developing an even more tailor-made detection and treatment system for subgroups of FEP patients, thus improving our the treatment for this very important patient group.

The part of the TIPS-study that is the focus of this thesis refers especially to research questions 1, 3, 4, 5 and 6 in the overall TIPS-study, and aims 1-3 for this part of the study, as listed in the introduction, page 2.

This thesis covers the following research questions:

1. Could the TIPS program in a geographical sector, Rogaland, alter the help-seeking behaviour of FEP patients (as ultimately measured by reduced DUP), compared with the historical control sample (HC) that was treated in the same geographical area prior to the TIPS-program? By introducing the TIPS program, we expected the DUP to be reduced. (Paper 1)

2. What are the characteristics and clinical problems of the patients coming into treatment in the ED period, compared with the HC period? We expected them to be younger, more often males, and have shorter DUP. (Paper 1)

3. What characterises the pattern of help-seeking behaviour of FEP patients in the ED sector as measured by sources of referral? We expected more patients to access treatment from other sources of referral than the GPs, like family, patients themselves etc. (Paper 2,3)

4. What are the differences between patients coming via the co-called Detection teams (DT), versus those coming into treatment via ordinary channels (not-DT)? We expected the DT patients to be more often male, younger, to have longer DUP, and be less symptomatic at presentation. (Paper 2, 3)

5. Do the patients recruited via the DTs have a different course and outcome during the first two years of treatment compared to the not-DT group? After having examined these two groups at admission (paper 3), we expected the DT patients to have a more protracted course, and a worse outcome, due to the poor prognostic factors characterising this part of the sample at presentation. (Paper 3,4)
6 Do the DT patients have a different health service consumption from the not-DT group during the first two years of treatment? We expected the DT sample to be more often treated on an outpatient basis. (Paper 4)

6.2 Design

The present study included different designs:

In paper 1, we used a quasiexperimental historical control design. We ultimately compared two samples of FEP from the same catchment area, Rogaland. The patients included were consecutively admitted patients in the same catchment area, the HC sample was from 1993/94, and the ED sample from 1997/1998, the two first years of the ED sector FEP patients. Details about the samples are given in 6.3, below.

In paper 2, we did a descriptive, prospective study of consecutively admitted FEP patients in the catchment area during all four years, 1997-2000.

In paper 3 and 4, the DT versus not-DT study, we used a prospective, longitudinal, quasiexperimental paralell comparison study design, in which patients coming via the DTs were compared with patients coming into treatment via ordinary pathways. Also these patients were consecutively included in the years 1997-2000.

The ideal design to examine the effect of an ED program would be a randomised controlled study (RCT) assigning a group of the population to one type of pathway to care, and another group to another pathway, to prevent key measures between samples from being significantly different. In practice this would not be a possible strategy. First, it would not be possible to randomise patients to different detection systems, and second, due to the information strategies, it would not be possible to “shelter” one part of Rogaland from this information. A RCT would also have major ethical difficulties. It would not be judged ethically correct to deliberately assign FEP patients to a planned delay in accessing treatment.

There are, however, some important weaknesses to be considered regarding a quasiexperimental design. In contrast to a RCT design, one can not be sure that the two samples in a quasiexperimetal design are identical on the different prognostic factors. The most apparent weaknesses with this design is connected to i) assessment, ii) treatment and iii) population factors:

i) To minimise assessment confounders, the assessment teams across sites have to be trained to satisfactory interrater reliability. In this part of the study, assessments were performed by the same assessors within a geographical sector, except for the HC sample, where the assessment team were to some degree different from the team in the ED sector. In the HC study, only baseline data were examined, and assessment was performed by one of the persons that later performed the assessment in the DT versus not-DT study

ii) Also treatment variance can seriously confound outcome. The best control against treatment variance is that two sectors in a quasieperimental study use the same treatment teams. The second best is that the teams across sites use a common treatment protocol. This is, however, no guarantee against treatment differences. Common training of the different treatment teams across sites could minimise such a difference. This was what we did in the total TIPS
project. In the DT versus not-DT study in this thesis, treatment was given by the same treatment teams to all patients, and the patients were randomly assigned to the treatment teams. In the HC study only baseline characteristics were recorded. Hence, no treatment confounders were present in this particular part of the present study.

iii) The most apparent weakness in both a quasiexperimental parallel controlled study, and a historical controlled study, relates to population variance and sample comparison across sites. Both types of design have their disadvantages. Sociodemographic factors could change in the time period between samples. However, there were no abrupt population changes in Rogaland County these years, to our knowledge. And for the DT versus not-DT comparison, the population factors were the same, as the samples were recruited from the same sector in the same time period. However, the DT sample and the not DT-sample were of course not recruited on random. The factors influencing the pathway to care, i.e. which pathway patients should enter by, is in fact one of the questions we wanted to look into in this study.

6.3 Samples

6.3.1 Inclusion and exclusion criteria
The criteria for inclusion were:
1) a first episode of a non-affective psychosis i.e. schizophrenia, schizophreniform, schizoaffective and delusional disorder, brief psychosis, affective disorder with mood incongruent delusions and psychosis NOS;
2) living in the catchment area;
3) age 15 (18, sample 1 and 2) to 65 years;
4) IQ > 70; 5) suffering from a first episode of psychosis.

The exclusion criteria were a history of an earlier treated first psychosis, receiving adequate prior neuroleptic treatment, inability to speak the native country language, and organic or substance induced psychosis. Written informed consent was obtained from all subjects.

6.3.2 Samples, refusers and drop-outs
In the four papers, we have used five different samples (fig 6):
1. The HC sample
The historical control sample consisted of 43 FEP patients recruited 1993-1994. They were consecutively admitted FEP patients (DSM-III-R, schizophrenia spectrum disorders) from the central and southern parts of Rogaland county, a catchment area with a population of ca 260,000. Patients meeting screening criteria for a first psychotic episode completed a diagnostic interview (SCID, see below). Only one patient refused to participate.
We have no complete overview over whether, or to what extent, some FEP patients during the recruitment period were treated exclusively on an outpatient basis, and thus escaped our attention. It is therefore impossible to be sure in what direction this could influence our results concerning for example DUP. However, when we compared only hospitalised patients in the HC sample with the 1997-1998 ED subsamples to try to control for this, we found the same results for all major variables. (Paper 1)

2. The total ED sample
In the inclusion period 1997-2000, 1921 persons contacted the Detection Teams. From the initial contact (by telephone or letter) with the DTs, 986 persons were deemed to have a possible first episode psychosis, and a PANSS screening interview (see below) was performed on 802 patients. 107 patients had a FEP, 78 of these were study-appropriate patients (fulfilled the inclusion criteria), but 22 refused to be included in the study. The DT subsample thus finally comprised 56 patients.
In the ED sector, a total of 203 patients met the study criteria during the years 1997-2000, and 161 of these were finally included in the total TIPS project 105 FEP patients were recruited to the project via ordinary pathways to care, i.e. GPs, below referred to as the not-DT sample. These two samples, the DT sample (56 patients) and the not-DT sample (105 patients), together make out the ED sample (161 patients). (Paper 2, 3 and 4)

Patients that refused to participate in the total TIPS-study (1997-2000) had significantly longer DUPs than patients who agreed to participate. No other significant differences between patients who did and did not enter the study were found. The selective loss of long DUP patients could represent a limitation to the validity of the results presented here, in the direction that the influence/importance of longer DUP was underestimated.

Regarding the inclusion via DTs in the ED sample, the screening procedures had some apparent weaknesses.

First contact was either by telephone or letter; the DT decided whom to meet on an impression from that. Some possible FEP cases could have slipped through the DTs net this way. Together these factors could give a somewhat lower incidence of FEP than the real incidence. The overall incidence in the ED sector was however, not lower than would be expected from earlier incidence studies in Norway and internationally, a finding that contradicts the above assumption.

3. The DT sample
The DT sample (n=56) was collected via the DT team in the ED sector, see above. (Paper 3 and 4). For details about refusers etc, see below.

4. The not-DT sample
The not-DT sample had 105 patients. These 105 FEP patients came into treatment via “ordinary channels”, that is, not via DTs. (Paper 3 and 4)

5. The 1997-1998 ED sample
The comparison sample for the HC sample comprised 66 FEP patients. The HC sample was recruited from only one of the sectors in Rogaland county. Thus, we had to use an ED comparison sample from the same sector. A subgroup of consecutively admitted patients from the same catchment area as the HC sample, were diagnosed with the same assessment instruments as in 1993/94. The group was collected in 1997/98, and was FEP patients from the first two years of the TIPS project in the ED sector (except Haugesund). As this study was a comparison of baseline characteristics, the question of treatment attrition rate is not adequate. (Paper 1)

6.3.3 Refusers
42 out of 203 ED FEP patients refused to participate in the research project. The proportion of refusers was significantly higher in the DT subgroup (28.2 % versus 16.0 %, p=0.005). The refusers in the DT group were also significantly younger than the not-DT group (24.3 years versus 30.0, p=0.0028), thus demonstrating the same relationship regarding this factor as for those included in the study. No difference between the two groups of refusers on gender was found. Regarding diagnosis, the numbers in each category are small, and therefore difficult to interpret. When collapsed into core versus not-core schizophrenia, there seems to be a trend towards more schizophrenia spectrum among the not-DT refusers (chi square= 9.35, df=1; p< 0.005). Overall, these characteristics of refusers in the total ED sample does not seem to have biased the research samples in a direction that should have substantial influence on the results, as DUP and age would be changed in the same direction in both groups if they were included. Gender was identical, and diagnosis pretty much the same.
During the two-year follow-up period, the total attrition rate was less than 10%, and did not differ between the DT and not-DT samples. This loss of patients was relatively low, and should not threaten the validity of the follow-up results. Regarding the persons that contacted the DT, and were deemed appropriate for further examination by PANSS (986 persons), only 802 agreed to participate in this screening procedure. We do not have a good overview of the remaining 182, some were anonymous. We can not exclude the possibility of having lost some FEP cases in this group.

6.3.4 Generalisation

As for generalisation of our findings regarding FEP patients, the 5 samples above was deemed to be representative for an average Scandinavian population. The average age of the samples, including the DT and not-DT samples, was comparable to other FEP studies (102f). Prior to the start of the total TIPS project (1997/2000), we compared Rogaland on the most common sociodemographic factors (age, gender, rural versus non-rural, degree of industrialisation etc) with the mean structure of Norway, as well as with that of Oslo and Roskilde (103). We did not notice any major differences that were judged to be of any influence of the results presented in this thesis, so the ED sector and the no-ED-sectors were comparable on the most important sociodemographic variables. The sociodemographic structure and composition of Rogaland was also similar to other Scandinavian counties, including as well rural as urban areas.

Incidence figures of FEP from Oslo and Rogaland prior to this study were also comparable (7).

6.4 Methods

1. Symptom levels were measured by the Positive and Negative Syndrome Scale (PANSS) (104). The PANSS interview is based upon the idea that some schizophrenic patients have a positive and others a more negative symptom picture. In PANSS 30 items are organised as positive (7), negative (7) and general (16). The items are rated after a semistructured interview with the patient, and all available information from relatives, staff, and others is taken into consideration.

The PANSS was used by the DTs as a screening instrument for psychosis. Patients that were considered to be possible FEP cases were then assessed with a full PANSS by the ATs (assessment teams). The PANSS was used as a measure of actual level of psychotic symptoms at inclusion (by the assessment teams), and at the various follow-up sessions during the project period.

2. The structured clinical interview for the DSM-IV (SCID) (105) was used for diagnostic purposes. DSM-IV is considered to be the diagnostic systems, with the best operationalised criteria. The SCID is a semi-structured clinical interview where the interviewer goes through questions that lead up to a DSM-III-R/ DSM-IV diagnosis. Additional information from relatives, main therapists etc, is considered.

3. Global functioning was measured by the Global Assessment of Functioning Scale (GAF, axis 5 in DSM-III-R and DSM-IV) (45), the scores were split into symptom scores (GAFs) and function scores (GAFf) to improve psychometric properties. The scale varies from 0 (lowest) to 100 (highest).

4. DUP was measured as the time from the first onset of positive psychotic symptoms (onset of psychosis defined as the first week with PANSS score of four or more on Positive scale items one,
three, five, six or General scale item nine) to the start of first adequate treatment of psychosis (i.e. admission to the study). Multiple sources, including personal interviews with patients and relatives, were used to ascertain the length of this period. Adequate treatment was defined as the start of structured treatment with antipsychotic medications or the start of hospitalisation in highly staffed psychiatric wards organised to manage disturbing psychotic symptoms. In rare cases of previous short, self-remitting psychotic episodes, the lengths of these episodes were added to the DUP.

5. Premorbid functioning was measured by the Premorbid Assessment of Functioning Scale (PAS) (106). The PAS includes 36 items, and describes levels of functioning in four major areas in different periods of a subject’s life (social accessibility, peer relationships, ability to function outside nuclear family, sexual relationships) before the onset of schizophrenia, in four periods in life (childhood, early adolescence, late adolescence, adulthood). The rating is based on interviews with the patient, and/or his/her family.

6. Drug and alcohol abuse was measured by the Clinician rating scale (107), which measures abuse on a scale from 1-5. 1 = no use, 2 = use without impairment, 3 = abuse, 4 = dependence and 5 = dependence with institutionalisation.

7. Social functioning (number of friends) was measured with the Strauss-Carpenter scale. The item was rated on a scale from 0-4 (108).

6.5 Reliability

All raters were trained in the use of study instruments by rating pre-prepared case notes and audio/videotapes before entering the study assessment teams. The rating of essential variables such as diagnosis and DUP was made by consensus with experienced clinical researchers. Reliability for the PANSS scores was measured by the rating of videotaped interviews of first-episode patients by all raters. Reliability for diagnosis, GAF and DUP was measured by the rating of actual case notes by blind raters with long clinical research experience. Baseline interrater reliability was fair to good for all the above measures (DUP 0.99; GAFs score 0.63; GAFF score 0.75; PANSS positive sum score 0.88; PANSS negative sum score 0.76; PANSS general sum score 0.56 (all intraclass correlations (ICC), 1.1); for diagnostic categories kappa=0.76)(109).

Reliability at follow-up was assessed by rating thirty-one randomly selected vignettes from 1 and 2 year follow-up. These were rated by two experienced psychiatrists on the following variables: diagnosis, GAF symptoms, GAF function, alcohol and drug scores. For all dimensions the reliability was clearly satisfactory. For diagnosis: kappa=0.81, for the other dimensions ICC (1.1) were: GAFf 0.86; GAFs 0.91; Alcohol 0.75; Drugs 0.86.

6.6 Assessment bias

A possible assessment bias could stem from the fact that the evaluation of the patients was not blind in the DT versus not-DT study, in the ED versus HC study, and at follow-up. One could assume that the assessors from the ED sector, who knew the results from the HC study, would be biased in the direction that they would tend to rate the DUP shorter in the 1997-1998 ED sample, and in the DT sample. However, this aspect was controlled for by the intersite reliability tests between ED sector and no-ED sectors in the total TIPS project.
6.7 Statistics

Analyses were made with the statistical package SPSS (version 11/12.01). Mean values are reported with standard deviations in subsequent brackets, and median values are reported for skewed variables. T-test are used for comparison between groups, with dichotomised data the Chi-square test and the Fischer’s exact test was used. Non-parametric tests are used for data without normal distribution. All tests are two-tailed. As noted in several other studies, DUP is not normally distributed, while its natural logarithm has a normal distribution. All analyses that include DUP are thus non-parametric when possible. In parametric analysis, the DUP has been transformed to its natural logarithm.
7 Results

7.1 Short summary of papers


Aims: In this paper we examined whether DUP can be shortened in patients with first episode of DSM IV schizophrenia spectrum disorders in FEP patients, and whether shorter duration altered patient appearance at first treatment from the first two years of inclusion (1997-98), compared with the 1993-94 historical control sample. Methods: Two study groups were ascertained in the same Norwegian health care sector: one from 1993 to 1994 where usual detection methods were used, and one from 1997 to 1998 where early detection strategies that included education about psychosis, in addition to ordinary pathways to care.

Results: Patients recruited in the early detection period (1997-98) had a shorter median DUP by 21.5 weeks than patients in the usual detection period (1993-94) (patients with usual detection median 26 weeks, patients with early detection median 4.5 weeks). The total number with psychosis was greater in the early detection group; the proportion with schizophrenia was less. Early detection patients had more substance abuse and were younger (males, mean 3.5 years ED versus HC, p=0.04), better adjusted premorbidly, and less ill as measured by PANSS. No differences in gender distribution, age at onset, or marital status.

Conclusion: Early detection seems to shorten duration of untreated psychosis and help more patients when they are less severely ill. Given the devastation of psychosis, we judge this to be a significant and important treatment advance. A shorter DUP thus mirrored a fundamental change in the help-seeking behaviour in the experimental sector, as compared to the pre-TIPS period.

2. Early detection strategies for untreated first-episode psychosis. (Schizophrenia Research 2001; 51: 39-46)

Aims: This paper addressed the following questions: 1) Was it possible to establish a working ED system based on a) information programs directed towards the general population, health professionals and b) easy-access detection teams, 2) Was this reflected through a change in the population’s help-seeking behaviour as measured by the referral pattern, 3) Did this eventually reduce DUP?

Methods: The health service amendments that found the basis of the TIPS-project’s early intervention strategies were described. The two major components were i) a comprehensive, multi-level, multi-targeted information and information system, intending to raise community awareness, increase knowledge about services-systems and psychiatric disorders among patients, families, schools and health professionals, and ii) establish a low-threshold, easy access to care system for FEP patients. Emphasis was put on integrating the DT work and its structures into the ordinary health service system.

Results: This paper presents first results from the full four-year inclusion period (1997-2000), including targeted information towards the general public, health professionals and schools, and Detection teams (DTs) to recruit appropriate patients into treatment as soon as possible. This plus easy access to psychiatric services via DTs teams systematically changed referral patterns of first-episode psychosis. Contacts to the referral teams equilibrated to one call per day. In contrast to before the TIPS-project, when all referrals had to come via a GP, ca 50 % were referred by family, friends and schools. Most of the referrals were relevant to psychiatry (90 %), and this relevance seemed to increase from 1997 (53 %) to 1998 (63 %). The age distribution showed that 40 % of the
referrals were aged 20 years or younger, while 90% were below 35 years. 64% were males. Ca 50% of the total referrals, including the anonymous calls, were deemed to be possible first-episode psychosis. Ca 40% was screened by a PANSS interview, and more than a 100 FEP patients were connected to treatment via the DT.

DUP was reduced by 1.5 years (mean) from before the time the ED system was instituted (to 0.5 years).

ED strategies appeared to be effective and they influenced the community’s help-seeking behaviour.

The yearly costs associated with the ED initiative totaled about 390 000 USD, expenses divided roughly in half between the DTs and the education campaign.

**Conclusion:** The detection strategies appeared to reach the target groups, as ca 15% of possible first episode patients recruited by the DTs were confirmed to have a first episode psychosis.

3. **Pathways to care for first-episode psychosis in an early detection healthcare sector.** (Br J Psychiatry 2005; 187 (suppl. 48): 24-28)

**Aims:** To determine whether patients with FEP in an early detection healthcare area coming into treatment via ordinary channels (not-DT patients) differed from those that accessed care via detection teams (DT patients), regarding baseline sociodemographic characteristics and clinical problems.

**Method:** Those with FEP recruited via DTs were compared with those accessing treatment via ordinary referral channels, at baseline and after three months of acute treatment.

**Results:** Of an overall 203 study appropriate FEP patients identified in the ED sector during 1997-2000, 78 (38%) made their contact via the DTs. Patients recruited via DTs were younger, more often males, with a longer DUP, a less dramatic symptom picture, better functioning at start of treatment, a more diffuse diagnostic distribution (i.e. more Psychosis NOS, a trend towards less affective disorders). They recovered more slowly, and had more symptoms at three-month follow-up. They were also more frequently treated on an outpatient basis initially.

**Conclusion:** After establishing low-threshold active-case-seeking detection teams, we found clear differences between those patients entering treatment via the DTs versus those obtaining treatment via the usual channels. Our findings suggest that early intervention systems that include outreach case-seeking with easy access to treatment (DTs) will recruit a younger but maybe more chronically disordered subgroup of patients with first-episode psychosis. This is an important but often difficult group to reach. This impression was reinforced by the fact that FEP patients contacted by a detection team were more reluctant to join the TIPS program, with its comprehensive treatment program. However, all FEP patients were offered the same, comprehensive treatment, regardless of whether they participated in the research program or not.

4. **First episode psychosis patients recruited into treatment via early detection teams vs. ordinary pathways in an early detection healthcare sector: a two-year follow-up study.** (Accepted october 2006)

**Aims:** To investigate whether there were differences between patients coming into the treatment system via the DTs versus patients achieving help via ordinary referral channels (not-DT), regarding course and outcome during first two years of treatment. We wanted specifically to investigate: 1) Were the DT patients in fact more chronically disordered, with a more protracted recovery process and severe outcome after two years, compared to the not-DT patients, 2) Did the DT patients have a different health service consumption from the not-DT group during the first two years of treatment?
Method: Longitudinal study of a consecutive sample using SCID, PANSS, GAF and PAS. We describe and compare the one and two-year course and outcome of first episode psychosis (FEP) patients coming into treatment in a healthcare system specially designed for early detection (ED).

Results: We had previously reported that the DT group did better at baseline, but that this was reversed at three months follow-up, the not-DT group doing better on GAFs, PANNS general symptoms and PANSS total symptoms. At one year these differences were no longer statistically significant, and at two years they had completely disappeared. LnDUP had a significant interaction with time for PANSS positive symptoms and GAF symptoms and function. This interaction between group (DT group/ not-DT group) and GAF function disappeared, indicating that it was mediated through DUP. The DT group still had more drug abuse at both one and two year follow-up. The proportion that remitted was similar in the two groups (70 %), as was time to first remission (11.3 vs 8.8 weeks). The most striking finding is that the DT groups gradually developed a more serious diagnostic pattern, with more cases of schizophrenia at two years.

The DT patients were more frequently treated on an outpatient basis only, started taking antipsychotic medication up to one week later than the not-DT group, had fewer admissions, shorter time in hospital and a more stable relationship to their therapist.

Conclusion: At two years the DT-patients did as well as the not-DT patients, even if they had what is commonly judged to be a set of poorer prognostic features. The DTs seem to recruit more chronic, but less symptomatic patients. They recover more slowly, but given sufficient time and adequate therapy, they reach the same level of functioning and symptom reduction as the not-DT group.
8 Discussion

8.1 Reduced DUP (research question 1)

A main finding in this study was the reduction of DUP in the ED sector. Median DUP in Rogaland was reduced to ca 5 weeks, compared to 26 weeks in the same sector prior to the TIPS program, in the historical control sample.

To our knowledge, a median DUP of 5 weeks is among the shortest DUPS that has been reported. In two extensive review articles (110, 49), only one study is reported to have a shorter median DUP. This reduction in DUP in Rogaland has later been confirmed by Melle et al (111), who compared DUP in Rogaland with the two sites Ulleval and Roskilde, in the total TIPS project (1997-2000).

As mentioned earlier, a historical control study has some apparent weaknesses. The most important are assessment, treatment, and population factors. To minimise the influence of these confounders we used the same assessment instruments, and the raters were trained to reliability. One of the assessors performed all assessments in the HC, and this person was also the co-ordinating assessor for the assessments in the 1997-1998 ED sample. Treatment factors should not influence this part (HC) of the study, as assessments were performed at baseline only. A weakness with the HC sample is that it was an in-patient sample only. We compared the in-patients in the two samples, and found no differences in our results. The fact that there was a higher incidence of FEP in 1997-1998 sample, than in the HC sample could also be explained by the lack of the outpatients in the HC sample. We do not know, however, if this increase in incidence is a result of a different and more active recruitment of patients in the ED period. When lowering the threshold to treatment, as in the TIPS program, we might include patients that would otherwise not have been recruited into treatment at this stage of illness development. We do not know whether these would be long- or short DUP patients. One can speculate whether a group of brief, self-limited psychosis (who under other circumstances would not have sought treatment) is included. A previous undetected long DUP subgroup could also be detected and included in an area where an intensive early detection program is started, thus resulting in an initial “paradoxical” longer DUP, as hypothesised by McGorry (112). On comparing the DUP distribution curves from the HC sample with the total ED-sample, we found a clear shift to the left (except for one extreme outlier with DUP 23 years). Incidence figures from the parallel control study in the total TIPS study also contradicts this, as incidence figures were equal in ED and the comparison sectors.

Sociodemographic, or population differences between the HC and the ED samples can not be ruled out. For example, in all of Norway there was an increase in drug abuse in the younger populations during the time period between the two samples (113). There was, however, no significant change in the composition of the population in Rogaland during these years. Neither was the health service system changed in this period. A major strength of the study is that there was not any information programs in the time period of the HC sample. Another strength of the study, indicating that we managed to collect an epidemiological sample, was that all FEP patients were treated within the public health care system, as the private sector is practically non-existent.

In conclusion, our finding of a reduced DUP in Rogaland during 1997/98 seems to be a real finding, the finding being strengthened by the fact that the difference was so large. Our hypothesis was not refuted. It seems like we were able to change the population’s help-seeking behaviour, as measured by reduced DUP, through multileveled, targeted community psychoeducation, in principle directed at the general public, health professionals and schools. Together with minor, but distinct changes in
the health service systems regarding accessibility and a lowered threshold, people were able to seek and get help for serious psychiatric conditions at an earlier stage of illness development.

8.2 Patients' characteristics in the ED sector at first presentation to treatment, compared with the HC sample (research question 2)

The patients recruited in the ED program period had shorter DUP, were younger (males by 3.5 years mean), less ill at presentation, had better premorbid functioning, and more often misused alcohol or other drugs, compared to patients that came to treatment in the HC period. Overall, it appeared that persons in the ED sector were identified when symptom levels reached a lower threshold. This is also indicated by the finding that the TIPS program recruited psychotic patients with more schizophreniform disorders and brief psychosis, and less schizophrenia and schizoaffective disorder.

This difference in diagnostic distribution between the two samples reflects differences in DUP, and is expected to level out, as the schizophreniform/brief psychosis cases may convert into schizophrenia, when they fulfill the duration criterion in DSM-III-R. The duration criterion in DSM-III-R requires that the symptoms persist for more than six months to qualify for a schizophrenia diagnosis. After two years, a diagnostic change in the direction of schizophrenia happened within all diagnostic groups, most apparent in the schizophreniform group, were 85 % converted to schizophrenia, thus reducing this difference in diagnosis between HC and ED patients (schizophrenia HC 74 %, ED 51 %) (114).

The finding that ED patients had better PANSS symptom profiles at baseline underlines the finding that the diagnosis in this group were “less severe”. This is in accordance with our hypothesis that the shortening of DUP should bring psychosis patients into treatment when they were less ill. However, the same limitations which are outlined in 6.1. above, come into question, especially regarding the danger of collecting a biased sample. The findings here would also be in accordance with the ED sample having recruited more “hidden” short DUP cases (brief, self-limited FEP patients) into treatment. The finding that the ED group’s premorbid adjustment scores were significantly better than those of the HC sample, could be an indication of the same.

We found no differences on the GAF scores, most probably reflecting the effects of an active psychotic state at admission in both samples. This was, however, somewhat unexpected, since the ED sample included also outpatient cases. There is also the possibility for this being a systematic difference in the scoring on GAF, with a tendency to give higher scores in the HC period.

The finding that the ED sample had more drug-abuse is difficult to interpret. Usually drug abuse is associated with a more serious course and outcome. We are not aware of any studies indicating what proportion of FEP patients that should be expected to have a drug-abuse. The finding could explain some of the difference in incidence, as cannabis-use is found to elicit psychosis in vulnerable individuals (115). Once again, this speculation is somewhat contradicted by the finding in the total TIPS study (116). The ED sector patients had more drug abuse than the control sectors, while the incidence figures were equal.

As for the age distribution, there was no difference between the two groups regarding age at onset of psychosis. The DUP counted for the difference in age at inclusion, the ED patients being somewhat younger. There was also a significant age difference between the ED sample and the HC sample for males. This indicates that the TIPS program had a special impact on young FEP patients of male gender, as we had hoped for from our findings in the HC study. The reasons for this remain obscure, and will be discussed more in detail below.
One possible implication of the ED program thus could be that the earlier detected, less symptomatic, FEP patients would comply better with the treatment offered, as they get in contact with the treatment system when they are less disturbed by their disorder. This is discussed in more detail below, under 8.5.

A possible drawback for this part of the study was its historical control design. The limitations regarding methodology and sampling are discussed under 6.2 and 6.3., above.

8.3 Pattern of help-seeking behaviour in the ED sector (research question 3)

The referral rates during the project period reflected a significant shift in the referral sources from what was the situation prior to the project. The total number of referrals to the detection teams (DT) for 1997-2000 was 1921. The number of referrals were fairly evenly distributed between the four years. We noticed a rise in referral rate in connection with intensive marketing campaigns; the highest number of referrals in one month was the very first month, January 1997. This initial response was clearly a result of the first marketing campaigns, which took place late autumn 1996. The last year of the project period also saw an increase in the number of referrals. On average throughout the project period, the rate of contacts to the DT equalled at 1 referral per day. This variation in referrals could be i) a coincidence, ii) a cumulative effect, or iii) the result of a variation in the intensity of the information campaigns. The campaigns were, however, not unevenly distributed in time or intensity. Our data do not allow us to draw firm conclusions on this subject.

The pattern of referrals was significantly changed, thus reflecting a change in the population’s help-seeking behaviour. While in the HC sample all patients were referred via the general practitioners, the patients themselves, close family and friends referred near to 50 % of the patients in the ED sample. We know that the reasons for delay in achieving treatment for FEP patients lay on four levels: i) the patients themselves, ii) the families, iii) the primary health services, and iv) the specialised health services. By making it possible for patients and families to access specialised treatment directly, we thus achieved a significant change in referral pattern, and as illustrated above (8.1.), ultimately reduced this treatment delay as measured by DUP. So it seems fair to conclude that the strategies composing the TIPS program managed to influence patients and their relatives, in some cases, to contact the specialised services directly and thus bypass the GPs. It is thus likely that some of the delay caused by the patient and family was reduced, as was the possible delay caused by the previous obligatory routing of referrals via the GPs. However, which of the four above-mentioned factors (i-iv) that were mostly influenced by the early detection program, is not possible to tell from our design.

Most of the contacts to the DTs were relevant to the psychiatry (90 %). The age distribution show that 40 % of the referrals were aged 20 years or under, while 90 % were below 35 years. 64 % were males. Ca 50 % of the total referrals, including the anonymous calls, were deemed to be possible first-episode psychosis. Ca 40 % was screened by a PANSS interview, and more than 100 FEP patients were connected to treatment via the DT. One can speculate whether a proportion of the 10 % that were deemed to be possible FEP, but did not show up for a PANSS screening, had in fact a psychosis, or a near psychotic condition. One hypothesis is that some of these contacts actually were frightened by the thought that they might have a psychotic disorder (as illustrated in the information campaigns), and thus kept away.

About 40 percent of the patients with a psychosis entered treatment via the DT, the remaining 60 per cent via the ordinary structures, in contrast to the historical control sample, when only referrals from GPs were accepted. For the not-DT group, almost all referrals also in the project period came via the GPs. For the DT group we have no indications that a significant number of referrals origi-
nated in other referral sources than those listed above. I.e., the low referral rate from GPs is not a result of GPs asking patients or families to contact the DTs. It is also important to notice that also the threshold to treatment for those patients referred by the ordinary channels, such as GPs, were lowered during the project period, with a resulting reduction in DUP for this group.

To what extent the DT group had had previous contact with GPs before contacting the DTs was not recorded in this study. Norman et al (117) did an interesting observation in studying the pathways to care in 110 FEP patients in the Prevention and Early Intervention Program for Psychosis in London, Canada. They found that individuals with younger age at onset or who had initial contact with professional helpers before the onset of psychosis and were being seen on an ongoing basis at the time of onset of psychosis, had longer delays to initiation of adequate treatment. They concluded that interventions to reduce treatment delay should increase the public’s awareness, but of equal importance was the education of service providers to recognise such illnesses. In the TIPS program, this was exactly what we did.

In our DT sample the GPs proportion of total referrals are relatively low, about 8 percent, while the proportion of referrals via the DT from the GPs proven to be true psychotic disorders and included in the study was about 20 percent. In the EPPIC- sample, which is based upon a similar model for referral as in the TIPS-study, the GPs referred only ca 5 percent of the patients. Probably a combination of these models will be the ideal future approach; however, models must be adapted locally in accordance with existing structures. The major goal is to establish a system with easy access, low threshold and comprehensive treatment.

Oliver et al (118) did a survey on help-seeking behaviour in men and women with common mental health problems. They found that only 28 % of people with extremely high GHQ-12 scores (>8) had sought help from their general practitioner. Males, young people and people living in affluent areas were the least likely to seek help. This seems to be in accordance with our experiences, and reflected to some degree what the DTs in the TIPS program accomplished. The findings of Oliver et al indicates that the problems regarding help-seeking, especially the pattern for young males, are general problems related to all serious psychiatric disorders, and not restricted to FEP patients only. Simon et al (119) did a survey in Switzerland on GPs’ knowledge about FEP/schizophrenia. There the GPs expressed a wish for specialised, low-threshold referral services. It has been a general complaint among GPs also in Norway that the threshold to treatment in psychiatry has been to high, and to difficult to pass. In the TIPS-program, the threshold was lowered both for those FEP patients referred by the GPs, and for those coming via the DTs, or bypassing the GPs. Those FEP patients referred by the GPs was accepted and given priority by our specialised system, even if their symptomatology was undramatic. This was in contrast to before the TIPS program, when the FEP patients was not given such priority within the system unless they were acute suicidal or dangerous to themselves or others.

The significance of this reduced threshold between the GPs and the specialised psychiatric health services is in accordance with the experience from the system developed by Falloon et al. In Falloon’s study, the psychiatrists shared offices in community-based health centres with the local GPs, and the referral system was built upon the GPs. For the GPs, there was no threshold at all for contacting the psychiatrists.

The role of the GPs is also somewhat controversial in this connection. National health authorities would like the GPs to play a central role in the treatment and long-term follow-up of these patients. So, lowering the threshold to treatment by making it possible to “bypass” the GPs by allowing patient, families, teachers etc to access initial specialised treatment services directly, and without a referral note from their GP, has caused some worry. It is therefore important to underline that the GPs will have a very important role to play in the identification and treatment of FEP patients also in the
future, and that this role must be secured by a establishing contact to the GP in every case, after the patient has accessed the psychiatric services.

The notion that the specialist health services will be overwhelmed by referrals if the threshold is lowered seems unwarranted. As mentioned above, in a population of somewhat under 400 000, the referral rate, including self-referrals, stabilised at a level of ca one referral per day. This is important knowledge in relation to what dimension of services is necessary, or cost-effective, when establishing an early intervention service. And, from this rate of contacts to the DTs, approximately 100 FEP cases were detected during four years. It will always be a question whether a screening procedure like this is cost-effective. Out of 1921 contacts to the DTs, more than 800 of these were mostly young people with serious distress from other, non-psychotic psychiatric disorders, and thus in need of, and motivated for treatment. The topic will be discussed in more detail later in this chapter.

We concluded that we managed to change the help-seeking behaviour in the direction we had hoped for.

8.4 Patients' characteristics at baseline, DT group versus not-DT group (research question 4)

There were some distinct differences between those patients recruited into treatment via the DTs, and those coming into treatment via ordinary channels. The overall picture was that the users of DTs were younger, more often male gender, had longer DUP, a more diffuse diagnostic picture at baseline, with a less dramatic symptom-picture and better functioning. They also had more drug abuse. It thus seems that the DTs to some extent served as an alternative channel into treatment for these young patients, and one can speculate whether it is within this group that the reduction in DUP lies, although the mean DUP was long for this part of the ED-sample. It does not seem unlikely that patients with a symptom picture like that presented by the DT sample at baseline, had it not been for the low-threshold, active outreach system represented by the DTs, would have had even longer DUP in a system not designed for early detection. Unfortunately, in this study we have no certain registration or information of the motivation for contacting the DTs among those who did so. In an ongoing study, we try to answer this question.

The clinical picture of the DT sample at baseline is somewhat confusing. The group had some clinical features that usually are associated with a poorer prognosis, such as younger age, male gender, a more diffuse and gradual illness development (longer DUP), and more drug abuse. However, the fact that the DT group had a better degree of functioning at admittance, could point in the opposite direction, and hopefully lead to a better outcome.

From our previous studies we knew that patients with long DUP (> 1 year) were young males with a poor social network, social withdrawal and a more deteriorating course, compared with patients with a short DUP (< 1 year) (paper 1). So it seemed that the DTs “caught” this very group of patients earlier, as we intended.

To our knowledge, this was the first study from an ED sector that described a FEP sample in such detail. We do not know from other studies what to expect regarding the presenting, or baseline, clinical picture of ED-patients, and subgroups among these, such as our DT and not-DT samples. Consequently, our findings need replication.

There seems to be an interesting pattern unfolding regarding the relationship between age and DUP.
First, the ED patients were younger than the no-ED patients by 4.9 years (31.1 vs 26.2), the no-ED patients having approximately the same age distribution as for example other areas, as in the Danish OPUS project (120). Between ED and no-ED, age was reduced more than the corresponding reduction in DUP.

Secondly, in the DT versus not-DT comparison, the DT groups were younger by 3.8 years (26.3 vs 22.5), and again, the difference in age was longer than the corresponding difference in reduction in DUP, for both groups. However, here the difference in DUP was inversed, so that the youngest group had the longest DUP.

The mean age is the same in the ED sample as in other early-detected samples like Barnes et al (121). They find a shorter DUP in the younger part of their sample, however. Malla et al (100) also found shorter DUP among younger males. Barnes' and Malla's studies have not discriminated between samples comparable to DT and not-DT.

The HC group were older than the ED 1997/1998 group by 3.5 years (males), with a median DUP difference of 70 weeks. This finding, that the reduction in age was greater than the corresponding reduction in DUP, is also in accordance with findings from some other, similar projects (122).

This picture is somewhat puzzling and difficult to explain. First, what could be the reasons for DUP being more reduced than age? One possible explanation could be that for some reason we have included a group of younger patients that were not included previously. But, as stated above, this speculation is contradicted by the fact that the incidence figures in ED and no-ED sectors remain the same. Another possible explanation could be that there were differences in the age distribution in the different populations.

Then remains the question of the part played by drug abuse. Some studies (123) indicate that drug abuse (cannabis) elicits FEP at younger age in vulnerable individuals.

The finding that the younger DT group had a longer DUP could reflect the fact that the DTs identified a more chronic and gradually developing psychosis group. Arendt et al (124) found that 44.5 % of FEP cannabis-induced psychosis patients later developed a schizophrenia-spectrum disorder, with a more than 1 year delay for 47.1 % of the patients, and 17.2 % developing such conditions more than three years after index admission for first cannabis-induced psychotic episode.

Why do the TIPS program reach more, younger males, with a longer DUP? A stated above (8.3.), Oliver et al's findings suggest that it is a general problem in relation to serious psychiatric disorders to engage young males in treatment. The threshold for getting treatment is lowered, so these less symptomatic young males could, before the TIPS program, be deemed able to cope without treatment. But this is not a special feature for young males. Could it have something to do with the male role in our society, or male character? Could it be that young males with developing psychosis, with the inherent tendency to social isolation, were brought to treatment via relatives and teachers that noticed the TIPS information campaigns? It is also a fact that the incidence of FEP in males and females differ, as do the debut age, males being younger, and carrying a greater risk for developing schizophrenia (58), which could explain this finding.

Future studies are needed to outline in more detail the specific features of better defined subgroups of FEP ED-patients, like for example younger males with long DUP versus short DUP, young females etc.
8.5 Differences in course and outcome and health service consumption in DT group versus not-DT group (research questions 5-6)

To some extent the health service consumption reflects the course of the disorder, and research question 5 and 6 are hence discussed together.

The fact that the two groups reached the same level of functioning at two year follow-up, in spite of the DT group having more serious prognostic features (young age, schizophrenia diagnosis, drug abuse, males), could indicate that this group benefited from coming into treatment relatively early, or earlier than what should have been expected. See figure 7b. Both groups showed a significant degree of improvement during the first two years; most of this improvement took place within first three months, especially for the not-DT group. There was a fairly strong main effect of time for negative symptoms and a very strong effect for all other variables. LnDUP had a significant interaction with time for PANSS positive symptoms and GAF symptoms and function. This interaction between group (DT group/ not-DT group) and GAF function disappeared, indicating that it, at least to a large extent, was mediated through DUP. Our data indicated less improvement over time for the patients with DUP > 26 weeks, especially among the not-DT patients.

The overall degree of improvement was better, and more rapid, in the not-DT group, possibly as a consequence of their lower degree of functioning and higher degree of symptoms, at baseline, with a higher “potential” for improvement.

The apparent finding (trend level only) that the relative proportion of those being “continuously psychotic” the first year was higher in the DT group, while this trend disappeared at two years also illustrates the protracted recovery among DT-patients. It seems like they drift more slowly into psychosis, and need longer time to remit (figure 7a and 7b). It is a possible explanation that reductions in DUP, as a measure for earlier detection, results in reductions in the seriousness of each presenting case, i.e. when lowering the thresholds to treatment systems we reach patients at an earlier stage. The degree of disturbance necessary to warrant treatment is reduced, and the DT-group seems to have benefited the most from this mechanism. This could be taken as another indication of the importance of selective strategies towards young people, especially young males.

Figure 7a
Reducing DUP and dysfunction by early detection - illustration
Figure 7b
The development of symptoms over time for DT and Not-DT patients*

*DT= Detection team, DUP= duration of untreated psychosis, GAF= global assessment of functioning. GAF < 40 is indicative of psychotic functioning, and is here used as illustrating start of psychosis (DUP).

The DT-group was more often treated on an outpatient basis, had fewer admissions, shorter total time in hospital, and a longer time period before they started medication. This probably reflects the more insidious and less dramatic symptom-picture in this group at start of treatment. It is possible that we would have seen a development in a more dramatic direction at admission, had it not been for the low threshold to treatment, in this group. Our study design does not allow us to draw firm conclusions on this matter, as we do not know for sure what would have been the natural course of the DT-group without this low threshold strategy.

The DT-group seemed to have a more stable relation to their therapists, i.e., a better compliance with treatment. This is a promising finding, that could be connected to the lower degree of symptoms at admittance. However, again our study design does not allow us to draw conclusions regarding cause-effect.

The importance of the finding that a significant higher part of patients recruited into treatment via the DTs were treated on an outpatient basis only, is difficult to estimate at this point. If it is a result of the early detection strategies, and implies that these patients would otherwise have been admitted to inpatient treatment a later stage, the importance for both patients and society are vast, both in relation to the individual’s suffering, and to the costs connected to treatment. It could also be argued that perhaps some of these patients would not have entered treatment, had it not been for the DT program. Given the clinical picture presented by these patients we find that to be unlikely. In any circumstance, their symptom-picture indicated a need for treatment, also reflected by the fact that they or their relatives actively sought help.

Only a few other studies have reported what proportion of a FEP-population should be expected to be treated on an outpatient basis only. Norman et al (112) reported that in their FEP (PEPP) study in
Canada, 50 of 110 FEP patients “had treatment initiated without hospital admission”. They do not report on the proportion treated on an outpatient basis only during first two years. Wade et al (125) found that 76.9 % of FEP patients were admitted to an inpatient unit during the first 3 months of treatment. Inpatient admission was associated with a diagnosis of affective psychosis and more severe behavioural and functional disturbance but not positive symptoms. The authors claim that the substantial proportion of young patients with FEP being admitted to hospital emphasises the need for youth-friendly treatment environments and practices. In a study from Nottingham, UK, 19.3 % of FEP patients were never admitted during the 3 years of follow-up; negative symptoms and a longer DUP predicted an increased risk of late admission (126).

8.6 Information campaigns and Detection teams- do we need both to achieve early intervention?

This study has demonstrated that the TIPS program reached one of our primary goals, that is, to change the population’s help-seeking behaviour as measured by a changed referral pattern and reduced DUP. So, from our experiences, is it advisable to establish and/or continue to develop and run such programs? In that case, what modifications are to be done? What was the influence of the two main elements of the TIPS program: information/education campaigns and the establishment of the DTs, i.e. health service (accessibility) measures and strategies on the reduced treatment delay, in a healthcare sector? Is it possible, from our findings in this study, to say something about the relative contribution of the two main elements of the TIPS program?

In the following, I will discuss this question by looking at the two main components of our program, separately, and by comparing them to other programs, programs that have some features in common with the TIPS program but differ on other. In doing this, we will discuss whether the literature supports both parts of the program, versus only one part. Finally, we will try to filter out what parts of such programs are essential for early intervention services, and what parts, if any, that could be taken out of such programs.

We hope to contribute to a more effective resource utilisation in the specialised psychiatric health service, and also to contribute to other service providers nationally and internationally that are about to establish, or already run, service systems for FEP patients.

8.6.1 The information programs: which parts work, and for whom?

As outlined in 5.1., our information campaigns consisted of two major elements: i) general information aimed at the public, and ii) information aimed at health workers (mainly GPs), and schools (mainly teachers and councillors).

The purpose of the general educational work and the general information campaigns were three-fold: First, one wanted to establish a “general awareness” of signs and symptoms of serious psychiatric disorders in the population as a whole, and influence the population’s attitudes towards psychiatric disorders in a positive, non-stigma, direction. Secondly, we wanted to inform specifically about early signs of FEP. Thirdly, we wanted to inform about available help, the pathways to care, and our low-threshold DTs. Regarding ii), emphasis was on the new low-threshold DTs, although our information towards teachers and GPs also aimed at raising the awareness and knowledge about FEP.
Our information strategies were built upon available research-based knowledge, mainly from the health promotion field. Experiences from health promotion campaigns told us that information and education towards what we defined as our “target-groups” had to be both general and specialised. And, to communicate with a whole population, the information had to be repeated, and multileveled. Regarding the general population we made use of newspaper and household brochures, in addition to some marketing via radio and cinema advertisements. The two latter were addressed mostly at young people. We knew that we usually do not notice information before we are in need of it; we have a tendency to filter out what is deemed to be unnecessary information. This general awareness was especially important to establish in families with young people and in the young people themselves. So, in addition to larger campaigns twice a year, we ran smaller advertisements on a more regular interval, ca twice a week. The general information was also “targeted” in the sense that we in one campaign-period addressed for example teachers or school counsellors, in the next general practitioners, and so on. And, one must remember that also the regularly repeated general information in newspapers etc, was read by the GPs, teachers and other sources of referral.

First, what role was played by the general information strategies? Was it possible to enhance the public’s knowledge about serious psychiatric disorders through educational efforts via the mass media and strategies as outlined earlier, in a well defined, limited population of ca 370 000 inhabitants? And, was it possible to influence the public’s attitudes towards psychiatric disorders and psychiatry, and thus change the help-seeking behaviour through reducing stigma?

To help to try to answer these questions, we arranged for an opinion poll in co-operation with a well-known and very experienced opinion poll company. Preliminary data have been presented earlier (91, 92). The final data presented below did not differ from the results presented there. The first data collection, which was prior to the information campaigns started (December 1996) in three counties: Rogaland, Oslo (Uleval sector), and Telemark county. Telemark was chosen because it is situated between Oslo and Rogaland geographically (not a neighbor county), and because it had a similar demographic distribution as the two project sectors, but was not involved in the project.

The Opinion polls were performed by a professional poll company (Opinion AS). The subjects interviewed were randomly picked from the telephone catalogue; 400 persons at each site were interviewed. Given a confidence interval of 95 %, the margins will vary from 3,0 percent-points at 10/90 distribution, till 5,0 percent-points on a 50/50 percent distribution of answers. The poll was repeated annually in Rogaland (December 1996, January 1998 and 1999, December 2000), while in the two other counties only at the start of the project period (December 1996) and at the end (December 2000).

The general knowledge of psychosis went up from 42 % to 75 % in the county of Rogaland during the project period (p<0.05). There were no differences between Rogaland and the two other sites regarding knowledge neither at the start of the project period, nor at the end of the project period. The sites were also equal regarding reported stigmatic attitudes towards psychiatric disorders and actual knowledge, at both times. The degree of negative attitudes was deemed to be low all three places, and there was no change in “positive” direction during the project period. Stigma, reflected in the reported attitudes towards psychiatric patients and psychiatric disorders, seemed less apparent than we expected. For example, ca 90 % of the population disagreed with the statement ”Psychiatric patients should be isolated from society”. The attitudes towards psychiatric disorders in general and psychosis and schizophrenia were reported to be as tolerant as for major somatic diseases such as myocardial infarction. More than 80 % disagreed with the statement that “those who have developed a psychiatric disorder have themselves to blame”. Approximately 1/3 agreed that ”those who develop schizophrenia will never get well”, 1/3 opposed to it, and 1/3 did not know. The sources of information that was reported to be most effective seemed to be mass media (newspapers, maga-
zines or TV) in the poll that was taken after the information campaign, while friends, family and “know someone with a psychiatric disorder” were the major sources of information before the campaign started.

People’s attitudes towards psychiatric illness in general, and psychosis and schizophrenia in special, as indicated by the opinion polls, were tolerant, on the same level as for serious somatic illness. It is difficult to evaluate the impact of stigma on help-seeking behaviour (127). In this study, reported stigma and negative attitudes did not seem to be very prevalent in any of the sectors. Compared to the findings of Pescolido et al (128) where 61% of Americans indicated a preference for maintaining social distance from people with schizophrenia, our data suggest that there was a marked more tolerant and inclusive attitude here. One could hypothesise that the reason for this relative tolerance could be that this part of Norway (Rogaland) had, for some years before the TIPS-project, been the subject for some public information on especially schizophrenia. However, these attitudes of low stigma were equal in Rogaland and in the two comparison sites in Norway, where there had not been information prior to the project. And, it is important in this connection to point to the fact that there had been a general interest for informing about psychiatric disorders in Norway before and during these years. The government established the so-called “National plan for increased funding of mental health services” in 1996. In 1992 the national yearly-television campaign to raise money to a good case, was dedicated to mental health. During these years a few notabilities, politicians and actors, came forward with their mental illness. All this may have contributed to raised general awareness and antistigma.

It is difficult to estimate the validity of the opinion poll. There is no international validated “poll-standard”, and stigma in relation to for example schizophrenia and patients with schizophrenia is mostly measured around questions of fear of violence. This bears little relevance to FEP. In summary, we saw an increase in knowledge about psychiatric disorders from 1996 to 2000, in all sites of the opinion poll. We considered the negative attitudes to be modest, both in relation to treatment and stigma in general. We saw no significant changes in attitudes during the project period.

Our data from the opinion poll do not support that the general campaigns had a specific impact on the general knowledge in Rogaland. This finding could be due to the fact that the questions were too unspecific, and did not measure the level of knowledge necessary to seek early help for a relative with FEP. We have no data except for anecdotal material giving us indications that this general information had an impact on the help-seeking behaviour, although one should expect so from previous research in the health promotion field.

The second question to be answered here is what was the role of the more specific information on early signs of psychosis, and of low-threshold available help in the form of DTs. In addition to providing general information of FEP, and specific information of early signs, the campaigns stressed the importance of getting help early. It is undoubtful that there was a response to our general campaigns in Rogaland. This was demonstrated by the simple fact that the groups at which the information had been aimed responded, and helped us detect patients earlier. It thus seems that in addition to providing general information about psychiatric disorders, such information campaigns has to inform about the available help, and how to find this when you are in need of it. Given that we had almost 2000 referrals to the TIPS-telephone, the people contacting the telephone most probably got the information from the campaigns. It is difficult to see any other explanation, as some 50% of the referrals to the DTs came from the patients themselves, or close family. Actually, one can speculate whether information on early signs and available help is the crucial factor in the general information part.

The third aspect of the information work is the more specific and targeted information and education directed at schools and GPs. Concerning referrals to the DTs, school teachers counted for 5%
(ca 100 referrals) and 8% (ca 160 referrals). The fact that teachers in high schools referred ca 100 students to the DTs shows that this targeted information had an effect. The reduced DUP in the not-DT sample compared with the HC sample, is a strong indication that the information also had a significant impact on the GPs’ referral practice. The FEP patients were referred earlier in the illness course, while the sources of referral and pathways to care in the HC sample were identical to the not-DT sample. Morrison (129) and Power et al (130), from England, have reported that GP education alone may have limited impact on reducing overall DUP.

Krstev et al (131) have described a program that differed from the TIPS program by not having a general information program. They showed that adding information to schools and GPs, and having a form of DTs in two Australian counties, did not clearly reduce DUP, except for when some outliers with very long DUP (9 cases with DUP>1000 days) was removed from the sample. The main difference compared to the information strategies in the TIPS project was that the Australian project lasted shorter, and as mentioned above, did not include general information through mass media, including information on early signs and where to get help. They concluded that efforts to achieve early intervention may have two effects, not one. First, a different sample of cases is treated through the detection of hidden “long DUP” cases that otherwise may have remained untreated. Second, the DUP for the remainder may be reduced. Thus, the effect of the different elements in the early intervention program as monitored by DUP, could be “hidden”. Our findings lend some support to the theory that DTs recruit a different sample, although we have no indications that these cases would otherwise be “hidden”. The fact that the main difference from the TIPS program was the lack of general public information campaigns including information on early signs and where to get help, could point to the possible conclusion that although such campaigns are not sufficient in themselves, they seem to be a necessary element in early intervention programs.

Also in Australia, Wright et al (132) developed and evaluated a youth mental health community awareness campaign, the so-called Compass strategy. This strategy had many of the information elements in common with TIPS. The project was able to demonstrate that a comprehensive health promotion program achieved its aims, increased mental health literacy, despite a relatively short duration and moderate intensity of the campaign. The program was judged to have an impact on awareness, self-identified depression, a reduction in perceived barriers to help-seeking. However, changes in service utilisation, duration of untreated illness and number of contacts in pathways to care were not examined, due to difficulties in gathering data over the whole intervention period.

Etheridge et al (133) did a survey of the experiences of service users and their carers at the time when signs of psychosis were first noted, in Rotherham, UK. Both service users and carers recognised early signs of psychosis, but were often frustrated in their attempts to find help. Lack of knowledge of whom to approach, unhelpful responses from professionals, young age at onset, associated drug abuse and lack of appropriate treatment were the main factors connected to delay in treatment. Their findings are an indication that the information should be targeting several groups, and that the message must be broad and cover both early signs and symptoms, as well as information on pathways to care and available help.

In conclusion we can state that our information programs accomplished what we intended. From the fact that DUP was shorter in Rogaland than in the two comparison sectors in the total TIPS project, while the general knowledge about psychiatric disorders and the attitudes towards such disorders were equal, we can deduce that it must have been something else than the general information on psychiatric disorders in our campaigns that worked. These elements most probable are the information on early signs of FEP, and on the DTs. It is indicated from our data that the impact of each information round was limited, and had to be repeated at regular intervals. This was in accordance with the experiences of for example Rutz (90). There seemed to be a direct co-variation between
intensive public information and rate of referral, as discussed above (8.3.). The overall findings regarding the impact of the TIPS information strategies have recently been replicated in a study from Singapore (122).

It is not possible to filter out the most "effective" part of the information strategies within our study. In accordance with previous research from the health promotion field, we suggest that information strategies has to be multileveled, multi-targeted, and repeated regularly. In future studies the effect of the different components of the information strategies should be examined. As for the effect of removing the information part in total from the program, this is under examination in a study of FEP patients admitted in Rogaland county during 2001-2004.

8.6.2 Health service characteristics for achieving early intervention in FEP: what do we know?

As outlined above, we have strong indications that the information campaigns contributed to a change in the populations’ help-seeking behaviour. The other "leg" of our strategy to accomplish early detection, i.e. reduce DUP, was established to change the characteristics of the specialised psychiatric health service system; to lower the threshold for achieving treatment through making it possible for the users to access the system directly via ordinary channels (mainly GPs), and through establishing active case-seeking DTs.

One important question then remains: is it possible to achieve early intervention in FEP patients without a low threshold to treatment, or DTs, and only by the information strategies? Only a few studies have examined the effects of different ways of organising the health services for early psychosis, so the literature on this subject is scarce. We are not aware of any projects or programs that have established a system for early detection, without any information component at all. This complicates the evaluation of the effect of the different elements in such programs. Our own program can not answer this question.

In the OPUS study in Copenhagen and Aarhus (Denmark) a FEP study was carried out in 1998 and 1999 (134). Denmark traditionally has a low-threshold policy, and patients themselves can access the emergency rooms without going via a GP. The study compared sectors from both cities after having given specific information to most GPs and to some schools in one area, and no such information in the other area. No general information was provided for the public. In the OPUS study they did not accomplish a reduction in DUP, although they had a low threshold to treatment and some targeted information towards mainly GPs. From the OPUS construct one could hypothesise that adding DTs (low threshold) is not sufficient to achieve early intervention, and neither is DTs plus some limited information to GPs. Again, this supports our previous conclusion that some form of general information is a necessary prerequisite for achieving early detection. The OPUS project illustrates another important aspect of health service development aimed at providing better services for FEP patients, namely the importance of need-adapted treatment, or the adequate staging of treatment, demonstrating that such specially adapted treatment are superior to treatment as usual (120, 135). This is also illustrated from the findings of Gråwe et al (136).

In Canada several early intervention efforts have been introduced as part of the ordinary public health services. The Prevention and early intervention program for psychosis (PEPP) (137) in Ontario (population 400000) has an outpatient service and a 16-bed inpatient unit. Screening is provided within 24-48 hours of referral, and, if psychosis is indicated, a full assessment is undertaken within 1 week. PEPP has also, in contrast to most other early intervention initiatives, a large-scale
program for community case detection, using brochures, posters, local radio etc. At the end of a 2-year program most patients are referred to "medical management" and continue to be seen by their psychiatrist within the program. If deemed necessary, they continue in the full program for an additional year (www.pepp.ca). Within the PEPP program, Scholten et al (138) have examined the relationship between referral source and changes in DUP after introduction of an early case identification initiative. Treatment delay and referral source data from 129 cases of FEP identified over three years were examined. The initiative included opening up referrals to all potential sources (like the TIPS program), a quick response system for all referrals, and initial assessment within maximum 48 hours. Brochures were sent to all identified referral sources in the community to advertise the services, including four schools and two post-secondary institutions. The general education program (posters, local radio etc) directed towards the public seems to be more limited than the TIPS information campaigns. Initially, DUP was significantly lower in cases referred from acute/hospital based sources compared with community-based health services and non-health service related sources. During the project period this changed, so that in the third year of the program, this difference disappeared, as DUP dropped in both the latter categories, particularly in cases from non-health service sources (DUP 8.6 weeks, median). They concluded that "these reductions are most likely facilitated through removal of system barriers associated with traditional pathways to care for those not requiring immediate admission to hospital". This program indicates an effect of two components: easy access (low threshold) and information towards different sources of referral. The impact of the program seemed to increase each year, and reached a maximum after three years.

The category "non-health related sources" are not distinctly defined, but it is likely that it refers to teachers, and not to family and friends, as the two latter were not targeted with the information given. That, and a more limited general information program, is the major difference to the TIPS-program.

PEPP was able to change the referral pattern in much the same direction as the TIPS program, and they also obtained a reduced DUP. Their initiatives seem to be especially effective in relation to non-health service related sources of referral. Again, this raises the question about the effectiveness of the general information campaigns in the TIPS program, and supports the notion that it could be the part with information on available help that is the most important feature of this information package.

In another project from the same group (139), the ECIP (Early case identification program), they introduced a community mental health information program, but did not achieve a reduction in DUP. DUP was 21.9 weeks median before the program started, and 24.3 weeks during the active information period of two years. This project accepted referrals from all sources, including self-referral, but did not have an active case-seeking DT.

The Early psychosis program (EPP) (140) in Calgary (population ca 1 million) is based on much the same factors as PEPP, but lacks the community education part. It is not possible to draw any conclusions on the effectiveness of the relative influence on DUP of the different components in that program yet.

Other projects and clinical services focusing on the prodromal period can be found in Germany (The Bonn early intervention study), USA, Canada (The PRIME clinic (Prevention through risk identification, management and education)), Finland (The DEEP project (Detection of early psychosis)), Norway (TOPP (early treatment of prepsychosis). These (76, 85, 141, 142) are all basically research projects, with the same features and results as PACE regarding the recruitment and conversion rates of new patients.
So far these projects give us little additional information about how to organise our services to achieve detection of FEP patients and/or possible prodromal cases within ordinary services.

Craig et al (143), via The Lambeth early onset (LEO) team, investigated whether a specialist team could achieve better outcomes for people with early non-affective psychotic disorders than existing services. This was a randomised controlled trial, and it demonstrated that such a team delivering specialised care for patients with early psychosis is superior to standard care for maintaining contact with professionals and for reducing re-admissions to hospital. The focus of the LEO team was not on reducing DUP, but on outcome related to a specialised treatment system for FEP patients. The relevance of the LEO to the TIPS program is connected to health service consumption. Our DTs were different from the Lambeth early onset teams in the aspect that they did not provide treatment. We have no indications that the DTs reduce re-admissions once contact with the treatment system is established; the continuity of care as measured by number of therapists per patient per year (1.33) seems to comply with the finding from the Lambeth study. It is not clear whether this is due to the early onset team or some characteristic with the patients being recruited into treatment via this route.

Overall, the very limited literature does not support a strategy with low-threshold only. Some information seems to be a necessary additional prerequisite. One can of course not rule out the possibility of achieving early intervention in FEP without an information component. However, knowledge about the low threshold system must be made available to referral sources somehow, so what is needed in the future is a further discussion about the content, intensity and the extent of such programs.

8.6.3 Future directions in early intervention in FEP.

Although it has been demonstrated through the TIPS program, and other programs, that it is possible to achieve earlier intervention in FEP patients than what is common practice today, most psychiatric health service systems in Norway and the rest of the Western world has not yet implemented such strategies. And, one could argue that a mean DUP of 26 weeks (median < 5 weeks) as in Rogaland County in the TIPS period, although short compared to other services, still is much too long for most cases.

However, early psychosis service initiatives are developing in many parts of the world. Major projects are underway in Hong Kong and Singapore, South Africa, Spain, Brazil and Russia, to mention some. Some of the best projects are found in Canada and United Kingdom, and will be briefly reviewed here, with focus on health service characteristics. The National Health Service in UK has decided to establish 50 Early intervention teams throughout Great Britain, based upon the experiences from the TIPS program, and other early intervention programs around the world, and in the UK.

A pioneering service in the UK, the Early intervention service (EIS) (144) in Birmingham, UK, has since 1995 developed into a service exclusively for people experiencing FEP, with the aim of reducing DUP, accelerate remission, prevent relapse, and sustain engagement within a single service over a 3-year period. The core component of EIS is an assertive outreach team, operating 7 days per week and staffed with 10 case managers. The EIS intake team screens and assesses new referrals, and each client is assigned a key worker who is responsible for the co-ordination of care. Intake age is 16-30, and catchment area is 1 million. EIS participates as one of five centres in a European commission joint research venture on medicosocial health care systems, the European prediction of psychosis study (EPOS) (145). The objectives of EPOS is to describe and compare pathways to care
for persons at risk of psychosis, to provide a systematic multi-level assessment of indicators for the risk of psychosis, to evaluate the predictive validity of these indicators, to assess disabilities in prodromal states, and to achieve preliminary development of therapeutic and preventive interventions.

Is it possible to obtain even shorter mean DUP than we achieved in the TIPS program? Davidson and Weiser (146) suggest that we screen large populations of children and adolescents, while Verdoux and Gougnard (147) state that “from a public health perspective, the adequacy of screening tests, the target population, and the risks and benefits of early intervention for the target population are also unclear” (p.175). It is difficult to see how screenings in schools etc could work regarding the patients coming via DT. Screening in schools offer some apparent practical and ethical problems. The validity of such screening instruments has yet to be established, and so far this low validity would carry a risk for identifying false positives and negatives. And, should the results be anonymous to teachers? We think it must be a priority to reduce DUP even further, but the screening methods do not seem convincing as the tool to achieve this goal. With a mean DUP of 26 weeks, and a median of 4-5 weeks, we know that a lot of FEP patients still have very long DUPS, even within a health care system with an active early intervention strategy (148). What is a reasonable goal for the future? This is, of course, unploughed field. We have some indications from the TIPS-study that reduced DUP could influence 1-year prognosis, measured by negative symptoms (111). We know that the negative symptoms are especially linked to poor functional long-term outcome. If this finding is a true finding, a further reduction of DUP should be a future priority for health administrators. Some limitations of the DUP concept as a predictor for long-term outcome have been clearly demonstrated, especially in relation to positive symptoms. However, DUP is so far the only practical way of measuring untreated psychosis, or the treatment delay. Several projects around the world are now trying to refine the DUP concept, and to break it up in “sub-concepts” (149)

This view is supported by the finding that is seems within reach to achieve secondary prevention by reducing DUP/establishing early detection and intervention. Our results from other parts of the TIPS project give some support to this (45). At one-year and two year follow-up early-detected patients have less negative symptoms, more drug-abuse and better scores on some aspects of Quality of life (150).

We also found significantly less suicidal ideation, plans and attempts in the early detection detection sector in first-episode psychosis (151), thus indicating a possible secondary preventive effect on suicides in FEP, via early detection and intervention.

The lifetime costs of one case of established schizophrenia is about 50 million NOK, or 6,7 million USD. The one year cost per case is about 1 million NOK, or 130 000 USD. This last figure, 130 000 USD is the cost of the information campaign in the experimental sector per year, in the project period. Total costs for the DT-work and the information strategies summed up to approximately 2 million NOK per year. This covered a population of about 400 000 people. This included development costs for marketing purposes. The information/education costs after the pioneering period has been reduced. We estimate that, if this work is co-ordinated on a national basis, to cover all of Norway (population ca 4,5 million), the cost for information should not exceed 2 million NOK per year, or one half NOK per capita. A detection team of 3 persons should be able to cover a population of about 400 000 people, depending on geographical conditions. With that amount of recourses, the DT should also be able to carry out targeted information and education work for GPs, schools and social offices etc. Regarding the question of opening hours for the DTs, we do not see any strong arguments for the DTs being available outside ordinary office hours. Outside these hours, more acute cases contact the psychiatric health services via GPs on call, reflected in the characteristics of the not-DT group in this study.
The total costs for an early detection and intervention initiative for a population of about 400 000 (Rogaland county) thus equals the costs of a half to one year of schizophrenia for one patient. We have calculated that the early intervention work in Rogaland in the period 1997-2000 reduced DUP for a total of ca 200 patients with all in all 340 years. On the basis of our findings we will recommend that all Health trusts in Norway establish FEP services, as a cost-effective service, that reduces the suffering of young people that are struck by serious and life-threatening disorders like FEP.

As stated previously, we assumed that two elements were necessary to achieve this change in help-seeking behaviour. And, we know from the health promotion literature, to change this behaviour is complicated, and require action on a multiplicity of arenas. The societal- and health service measures and strategies necessary to reduce DUP in a healthcare sector still is unclear and probably varied. We have demonstrated that it is possible to reduce DUP in a healthcare sector, but which elements in our multileveled strategies that contribute to this, and the relative contribution of each of the factors we are able to identify, still is somewhat unclear. As outlined earlier, this is an area where further research is needed; to clarify the relative contribution of the factors described in this thesis. One such study is going on in Rogaland during 2001-2004, where the low threshold early detection system was preserved, while all information campaigns were stopped.

So, to achieve even earlier detection, at this point we see no other option than to continue developing more targeted information strategies towards families, school counsellors and teachers, GPs, other psychosocial institutions, and the public, in combination with low threshold to treatment strategies. Our tentative conclusion is that all these elements are important features of effective early intervention programs. Such programs must be adapted in accordance with local conditions.
9 Conclusions

1. The TIPS program reduced duration of untreated psychosis (DUP) in Rogaland south sector from 114 weeks to 25 weeks (mean) (median 26 weeks versus 5 weeks).

2. Patients recruited in the early detection period (1997-1998) were more numerous, younger, had better premorbid adjustment, less severe psychosis, and more frequent drug abuse, compared to patients in the historical control sample from the same sector with detection as usual (1993-1994).

3. Help-seeking behaviour as characterised by sources of referral changed significantly when early detection was established in Rogaland
   • major sources of referral to early detection teams (DTs) were patients themselves, families and school teachers
   • referrals still were adequate to psychiatry, as 50 % of those who contacted the detection teams were suspected to have first episode psychosis, by first screening.
   • GPs also seem to have referred patients at an earlier illness stage

4. The relative contribution of the two main elements of our early intervention FEP service, the information campaign and the early detection teams (DTs), is not clear, but both elements seem necessary. General information of early signs of psychosis with emphasis on available low threshold help seems to be especially important.

5. The notion that the specialist health services will be overwhelmed by referrals if the threshold is lowered, seems unwarranted

6. The patients recruited through the detection teams were younger, more often males, with longer DUP, but with less symptoms and better degree of functioning, compared to the patients recruited into treatment via ordinary channels (not-DT). The DT-group had a profile of more serious prognostic factors (younger age, male gender, longer DUP, more drug abuse).

7. After two years, patients recruited via DTs developed a more serious diagnostic pattern (more schizophrenia). Patients recruited via DTs had a slower recovery process during the first two years, but improved to the same level of functioning and symptom-load as the not-DT group, in spite of having more serious prognostic features at baseline. DT patients were more often treated as outpatients only, had fewer admissions, and shorter total length of hospitalisation than not-DT patients.

8. It is possible to change the help-seeking behaviour of first episode psychosis (FEP) patients through multileveled, targeted, community psychoeducation towards the general public, health professionals, and schools.

9. The TIPS early detection and intervention program was cost-effective. Such programs should be part of the standard specialised psychiatric health services.

"Bringing treatment more rapidly to a person who has become psychotic is in itself enough to justify early detection efforts". McGlashan and Johannessen, Schizophrenia Bulletin, 22(2): 201-222, 1996.
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11 Important papers published from the TIPS group (per 2006)


**12 Appendix 1**

**DETECTION TEAM (DT) REGISTRATION FORM**

<table>
<thead>
<tr>
<th>GEOGRAPHICAL SECTOR:</th>
<th>GENDER:</th>
<th>ANONYMOUS:</th>
<th>TYPE OF REFERRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 RPS sector</td>
<td>0.00 Male</td>
<td>1.00 Yes</td>
<td>1.00 telephone</td>
</tr>
<tr>
<td>2.00 JDS sector</td>
<td>1.00 Female</td>
<td>2.00 No</td>
<td>2.00 letter</td>
</tr>
<tr>
<td>3.00 Other</td>
<td></td>
<td></td>
<td>3.00 personal application</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.00 e-mail</td>
</tr>
</tbody>
</table>

**DT REGISTRATION NUMBER:** ___________________________  **ATNR:** ___________________________

**NAME:** ____________________________________________

**DATE OF BIRTH:** ____________________________

**ADDRESS:** ____________________________

________________________________________

**CP:** ____________________________

<table>
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<th>REFERRED FROM:</th>
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</thead>
<tbody>
<tr>
<td>1.00 ___ pat</td>
</tr>
<tr>
<td>2.00 ___ mother</td>
</tr>
<tr>
<td>3.00 ___ father</td>
</tr>
<tr>
<td>4.00 ___ partner/co-habitee</td>
</tr>
<tr>
<td>5.00 ___ other family</td>
</tr>
<tr>
<td>6.00 ___ friends</td>
</tr>
<tr>
<td>7.00 ___ school</td>
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<tr>
<td>8.00 ___ CP</td>
</tr>
<tr>
<td>9.00 ___ privpsycho/psychiatr</td>
</tr>
<tr>
<td>10.00 ___ school conc.</td>
</tr>
<tr>
<td>11.00 ___ other primary care</td>
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<tr>
<td>12.00 ___ drug unit</td>
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<tr>
<td>13.00 ___ outpatient unit</td>
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<td>14.00 ___ social security office</td>
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<tr>
<td>15.00 ___ other spec. services</td>
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<tr>
<td>16.00 ___ other</td>
</tr>
<tr>
<td>17.00 ___ casualty clinic</td>
</tr>
<tr>
<td>18.00 ___ the military</td>
</tr>
<tr>
<td>19.00 ___ inpatient unit</td>
</tr>
<tr>
<td>20.00 ___ prison</td>
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21.00 ___ emergency room
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<tr>
<th>PSYCH. DISORDER IN FAMILY</th>
<th>PREVIOUS PSYCHIATRIC TREATMENT</th>
<th>IF DT was contacted directly, where did you get to know DT:</th>
</tr>
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<tbody>
<tr>
<td>1.00  Yes</td>
<td>1.00  Yes</td>
<td>1.00  Newspaper ad</td>
</tr>
<tr>
<td>2.00  No</td>
<td>2.00  No</td>
<td>2.00  Phone book</td>
</tr>
<tr>
<td>3.00  Unknown</td>
<td>3.00  Unknown</td>
<td>3.00  Internet</td>
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<tr>
<td></td>
<td></td>
<td>4.00  Via fam./friends/acquaintances</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.00  Brochure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.00  TV/radio/advertising</td>
</tr>
</tbody>
</table>

**PRODROMAL SIGNS**

1. Social isolation/withdrawal  
   ___ yes (2) ___  

2. Decline in social roles  
   (2) ___  

3. Strange behaviour  
   ___ yes (2) ___  

4. Shortage of personal hygiene  
   (2) ___  

5. Unusual emotional affect  
   (2) ___  

6. Vague/circumstantial or reduced speaking  
   ___ yes (2) ___  

7. Strange beliefs/magical thinking  
   (2) ___  

8. Unusual perceptual experiences  
   (2) ___  

9. Lack of initiative/interest or energy  
   ___ yes (2) ___  

**SCORE AFTER INTERVIEW**  

no (0) ___ uncertain (1) ___ yes  

no (0) ___ uncertain (1) ___ yes  

no (0) ___ uncertain (1) ___ yes  

no (0) ___ uncertain (1) ___ yes  

no (0) ___ uncertain (1) ___ yes  

no (0) ___ uncertain (1) ___ yes  

no (0) ___ uncertain (1) ___ yes  

no (0) ___ uncertain (1) ___ yes

**DT-ACTUAL?**  

1.00  Yes  
2.00  No  

**PT executed PANSS**  

1.00  Yes  
2.00  No  
3.00  Actual, but not appeared

**DT’S CONCLUSION**  

1.00  Psychosis  
2.00  Life crisis  
3.00  Intoxication  
4.00  Not psychosis but psychiatry  
5.00  Depression  
6.00  Other  
7.00  Almost psychosis/TOPP (prodrome)

**Time until PANSS (days)**  

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**WHAT DT DID AS RESULT OF THE CONTACT**  

1.00  referred AT (assessment team)  
2.00  referred GP  
3.00  referred outpatient unit  
4.00  admission to emergency ward  
5.00  Rogaland A-senter (alcohol clinic)  
6.00  referred school councillor  
7.00  no further referral  
8.00  other  
9.00  referred other primary care  
10.00  offered further treatment, but denies  
11.00  referred drug unit  
12.00  DT will take new contact  
13.00  continues treatment at psych. clinic, but not actual for further assessment  
14.00  referred GP for further referral to outpatient unit  
15.00  referred TOPP (prodromal clinic)