

## Original Article

# Multidisciplinary radiographer-led review clinics – an example of implementation

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## Abstract

In recent years there has been a push to move away from traditional clinician led on treatment review of radiotherapy patients. Despite this impetus there has been little published work relating to how the new system can be implemented. This article describes how one department implemented a change in direction from the conventional and moved forward with radiographer-led review clinics. The Plan–Do–Check–Act cycle is used as a basis for evaluation with results of a small-scale patient audit and a comparison with other departments in the UK being presented. This method of implementation and evaluation proved successful and may serve as an early model for radiotherapy departments elsewhere.

## Keywords

Radiographer-led review clinics; radiographer role development; psychosocial support; pharmacology

## INTRODUCTION

Radiotherapy treatment review is commonplace in most radiotherapy departments. Traditionally the clinical oncologist, or a member of this team, has performed the review, with the purpose of monitoring the patient's clinical state and response to treatment.<sup>1</sup> Prior to September 2003, this had been the system in place at the Rosemere Cancer Centre in Preston. However, a number of issues were raised within the centre as to the efficiency of this process, mainly due to the large consultant workload, both within the radiotherapy department and at peripheral sites. Radiographers often reported difficulty in locating medical staff to review patients receiving radiotherapy who had

developed side effects. Occasionally this resulted in patients having long waits to see the clinician or even having to wait until the following day to be assessed. Pharmacological intervention by the clinician resulted in a long walk to pharmacy and often a long wait for the medication. As an additional consequence of clinician time restraints, psychosocial assessment of the patient was often neglected during the review. This raised the following questions:

*How could radiographer-led review clinics be best implemented to maximise individual patient care and establish a seamless pathway through their radiotherapy journey?*

This paper describes the implementation and subsequent evaluation of multidisciplinary review clinics within the Rosemere Cancer Centre in Preston.

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## BACKGROUND

### Past experience with radiographer-led reviews

There is little published work relating to radiotherapy treatment reviews and the potential role of a review radiographer within the radiotherapy treatment arena, although the role was discussed as early as 1997.<sup>2</sup> One published paper by Colyer attempts to describe and interpret the role of the review radiographer in the radiotherapy department, focussing mainly on role development.<sup>3</sup> Colyer concludes that radiographer review better addresses the needs of people having radiotherapy, but fails to question the consumers, interviewing only three review radiographers.

In a study of nurse-led radiotherapy reviews performed in one UK hospital it was found that the nursing staff were proficient at providing more effective care for patients, given appropriate medical support.<sup>4</sup> In this case, patients' beliefs were considered and only positive reactions to the nurse-led clinics were reported. The project also found that the nurse reviewers made more referrals to other healthcare professionals than previously made by the clinical oncologist.

### Multidisciplinary approaches

This multidisciplinary approach to care of the cancer patient undergoing radiotherapy is well-supported; in the NHS Cancer Plan<sup>5</sup> there was an explicit emphasis placed on seamless care of cancer patients, highlighting the need for patient care and advice being supplied by specialist teams. Evidence illustrates the existence of multidisciplinary teams providing cancer care, however, only one article was found indicating the reality of multidisciplinary clinics in the field of radiotherapy.<sup>6</sup> This clinic, run by a nurse and psychosexual counsellor, provided advice and information for women undergoing pelvic radiotherapy. An evaluation of the service, however, was not documented.

Reports of psychological effects of radiotherapy are relatively rare and draw mixed conclusions. Earlier studies<sup>7,8</sup> identified psychological consequences from radiotherapy, which included somatic symptoms, depression and anxiety including sleep disturbances, with the latter study even

noting more psychological distress as a result of radiotherapy than physical symptoms. Both emotional and physical manifestations of distress in a further study were demonstrated to being reduced in a group receiving psychotherapy compared to a controlled group.<sup>9</sup> However, a larger and later study in 2004, which reviewed over 45 articles, found some global trends such as improvement in longitudinal psychological factors but a great variability in symptoms of anxiety and depression prior to, during and after radiotherapy.<sup>10</sup> A more recent study,<sup>11</sup> collected data on 94 patients who were about to receive radiotherapy and found the incidence of mental disorders to be about 20%. The most common radiotherapy related anxiety was due to side effects, predominantly in palliative patients and those patients living alone. These studies, alongside the recommendations of the NICE Supportive and Palliative Care Guidelines 2004,<sup>12</sup> reinforce the importance of providing a truly holistic service to patients receiving radiotherapy, with potential for identifying those patients is considered to be "at risk", for example, patients living alone.

The Royal College of Radiologists (RCR) has published guidelines on skills mix in Oncology<sup>13</sup> and state that nurses and therapeutic radiographers are well suited to monitor the severity of treatment reactions. This document does, however, imply that certain "patient groups" are not suitable for this form of review. It does not, however, state which groups it is not suitable for, citing "common radical and palliative radiotherapy schedules" as suitable. Complex side effects and information needs of patients suffering from head and neck cancers have been documented in the literature,<sup>14–16</sup> although the most suitable personnel to provide this information appear not to have been investigated.

### Pharmacological intervention

An area of development, within the role of the review radiographer, is prescribing. In a review of prescribing, supply and administration of medicines chaired by June Crown for the Department of Health,<sup>17</sup> it was acknowledged that extension of prescribing to other professional groups would yield benefit to patient care, improving patient convenience and enhance team working between

professionals. The report also claims that there is an expectation from patients to receive seamless care involving a minimum number of contacts from different health professionals, this is supported by the NHS Cancer Plan.<sup>5</sup> It would seem, therefore, that therapy radiographers would be in an optimum position to prescribe medicines to patients receiving radiotherapy as they interact with these patients on a daily basis. Supplementary prescribing for Allied Health Professionals was introduced in April 2005,<sup>18</sup> allowing professionals to work under a Clinical Management Plan after an initial diagnosis has been made. Prior to this, radiographers were limited to supplying drugs under patient group directives (PGDs), which are written instructions for the administration or supply of medicines to group of patients identified before they present for treatment, i.e., the PGDs are drug specific, not specific for individual patients. The Crown Review recommends that supplementary prescribers or dependent prescribers as they are termed in the report, undergo specific training programmes for their speciality, including a period of supervised practice. There is no specific training needed before a professional is able to work under a PGD, as PGDs are not focused on an individual case.<sup>19</sup>

In the context of the literature it was decided that a review clinic, led by radiographers, would be set up at the Rosemere Cancer Centre in Preston. The new clinic, would not only provide easier access for pharmacological intervention, psychosocial support and advice for patients, but also provide role development for the health professionals involved.

## METHOD

It is commonly understood that the appraisal of a new development is a circular process, beginning and ending with value judgements.<sup>20</sup> The Plan–Do–Check–Act (PDCA) cycle,<sup>21</sup> shown in Figure 1, was used as a model to establish radiographer-led review clinics within the department.

### Plan

The first stage of the cycle was to identify the problem with the existing system and provide

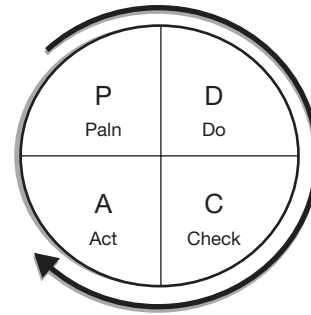


Figure 1. Plan–Do–Check–Act cycle.<sup>21</sup>

ideas for solving the problem. As the main problem was the time restraints of the clinician the most favoured concept was to transfer the routine treatment reviews from the clinician to a named group of radiographers. It was envisaged that the development of a multidisciplinary review clinic would provide a means of improving pharmacological support and early holistic assessment, with the aim of ensuring specialist referrals were being carried out in a timely fashion. Informal multidisciplinary liaison was to be transformed into formalised, efficient referral pathways to other members of the extending multidisciplinary team, including a clinical psychologist, social workers, specialist nurses and dieticians and including those within the community setting.

It was identified that specialist training and the development of clinical protocols should be completed in preparation before the implementation of the proposed system. Initially, one radiographer completed master's level training in pharmacological management of treatment related toxicities. This training included:

- the review and assessment of radiotherapy related toxicities,
- commonly used drugs,
- medico legal considerations,
- the use of PGDs.

Working under the legislation at the time, PGDs were developed and submitted for approval by the drug and therapeutic committee within the trust.

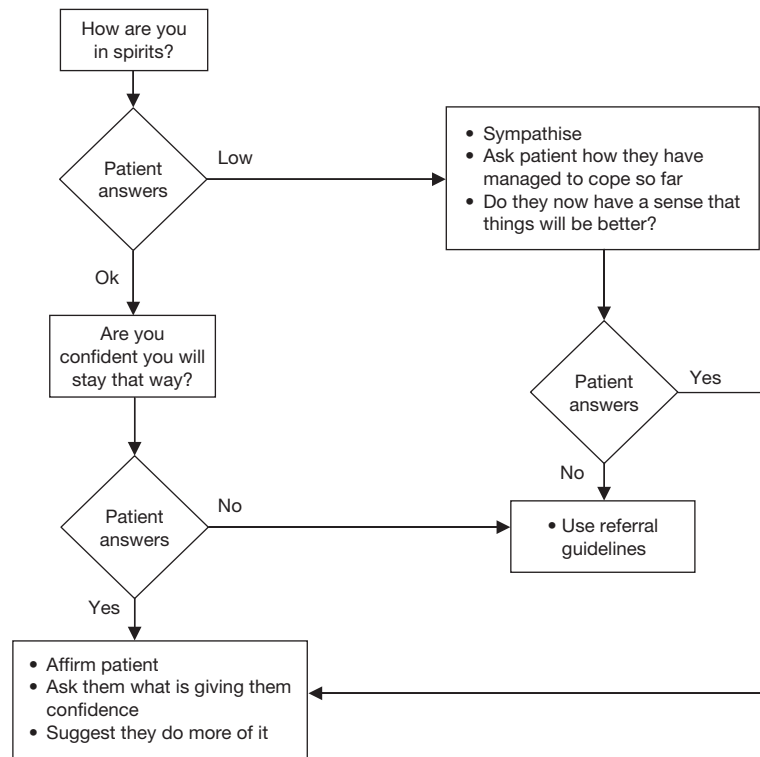


Figure 2. Flow diagram to identify patients potentially referable to clinical psychology.

## Do

The next stage of the PDCA cycle is to implement changes to solve the problems on an experimental scale in order to minimise disruption within the department. Hence, the review clinic commenced as a pilot study in September 2003. The trained review radiographer initially ran it for 1 day a week, reviewing consultant-specific patients.

A joint radiographer and clinical psychologist clinic was then held for approximately 5 weeks and for approximately 3 of these weeks, a social worker also attended the clinic, with the aim of “arming” the review radiographer with basic skills in the psychological and social assessment of patients. This multidisciplinary working provided essential training in appropriate referrals and a clarification of roles.

Typically, the consultation began with an enquiry into the patients physical symptoms following the radiotherapy received to date. The patients’ response often required either advice or

pharmacological intervention by the review radiographer. Information, reiteration and reassurance was commonly required during this initial stage of the interview and interestingly often led towards the evaluation of the psychological and social status of the patient without specific questioning. This assessment was initially carried out by the clinical psychologist and social worker respectively, as a demonstration to the review radiographer in preparation for carrying out this assessment on patients in future clinics.

The model on which the psychological input to the review clinic was based on a *solution-focused* one. Solution-focused approaches<sup>22</sup> encourage individuals to talk about their strengths and to identify their agendas for change and they are explicitly cited in the NICE Supportive and Palliative Care Guidelines 2004.<sup>12</sup> Flow diagrams (Figs 2 and 3) were devised as a quick reference to ensure appropriate referrals.

The role of the treatment review radiographer has been described as professionally and emotionally

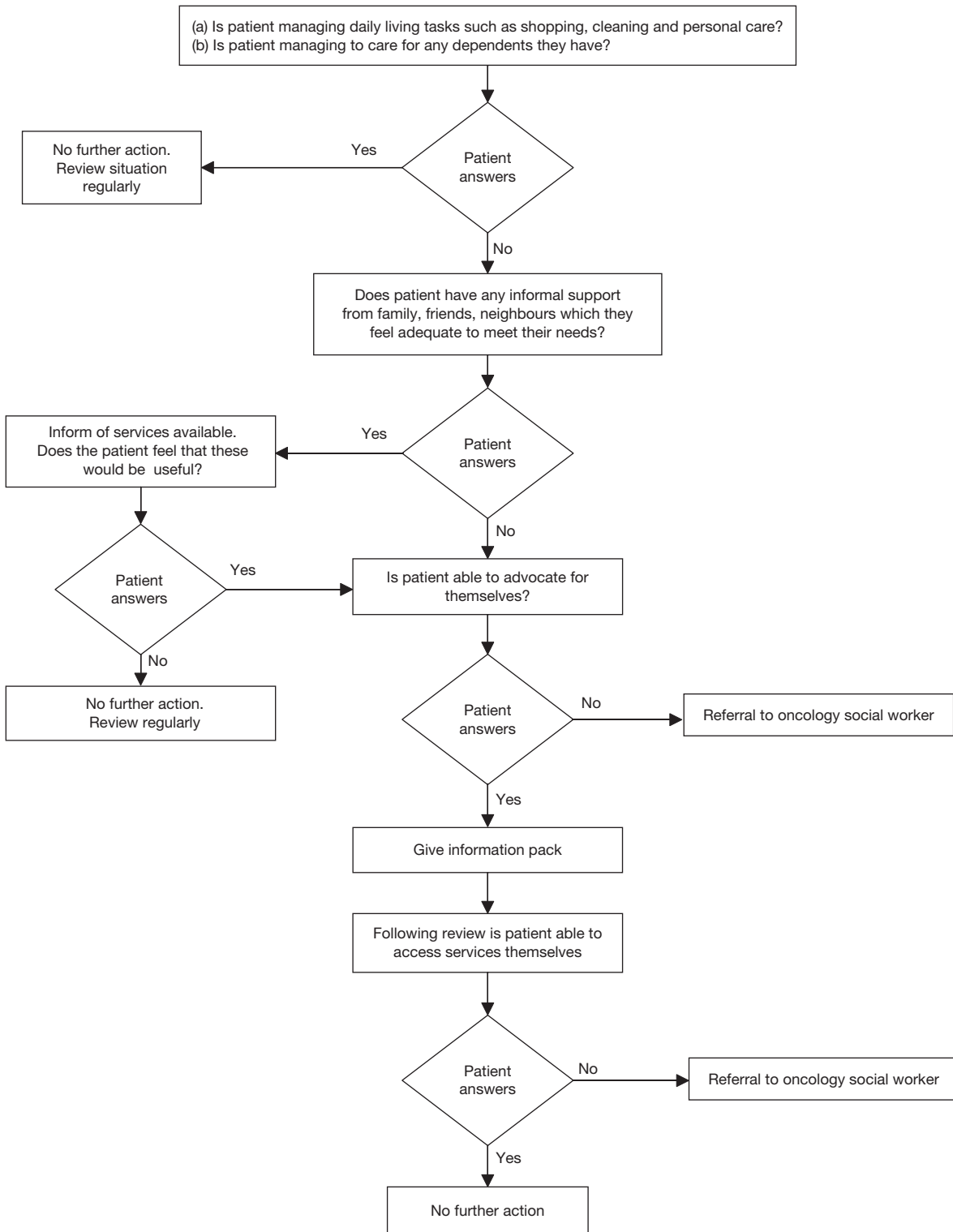


Figure 3. Flow diagram to identify patients referable to the social worker.

demanding<sup>3</sup> and therefore often requires some kind of formal clinical support or supervision. The College of Radiographers<sup>23</sup> states that clinical supervision “enables radiographers to accept full responsibility and accountability of their own practice and to subsequently feel empowered and confident that transmittance and procedures are being practised”. The presence of the clinical psychologist and social worker at the pilot clinics provided formal clinical supervision for the review radiographer embarking on a newly developed role.

### Check

The third stage of the cycle is to evaluate or check the process. Therefore after an initial four-month pilot, a research radiographer conducted twelve interviews with patients who had undergone radiographer review. The aim of this research was to guide future developments of the review clinic; the research questions were thus, informed by Solution-Focused principles, as follows:

- During your treatment you will have seen the review radiographer. If you could think of a scale from 0 to 10, with 0 being of no value and 10 being as valuable as they could be, how useful do you think these sessions were? What makes them that score?
- What do you feel could have made the sessions one point higher for you?
- What particular element of the session did you find most beneficial for you?
- Would you have preferred to see your consultant, instead of the review radiographer in these sessions? Why?
- Is there anything else you would like to say about the weekly radiographer sessions?

Recognising the potential for patients to allot a high “score” to the service because of a desire to please and to follow a qualitative approach, the interviewer also discussed with the patients the reason behind that score.

Patients who had seen the review radiographer more than once were identified and asked to participate in a semi-structured interview. The interviews then took place on the penultimate or last day of their treatment. With the patients’ permission, the interviews were recorded and full

transcripts were made, which were later analysed using theme analysis.

As the evaluation was deemed audit by the researchers, full ethical approval was not obtained, however as there was to be patient involvement, the chairperson of the ethics committee was sent copies of all patient information and interview scripts relating to the study.

*Usefulness of sessions/most beneficial element/anything else to say. . . .*

For the 11 respondents, the range of responses on the *valuable* scale was 8–10. When analysed the reasons for these scores were best represented by the theme *reassurance/affirmation* (cited by 9 out of the 11 as a first response and by a further 2 when prompted to explain why they thought they could be useful for other people). *Information-giving*, especially concerning the possibilities for further help, was the next most popular (cited by 5 out of the 11 as a first response and by a further 1 when prompted as above), the third theme was *appreciating the time given* (cited by 2 out of the 11 as a first response and by a further 1 when prompted as above).

*One point higher. . .*

None of the 11 respondents were able to nominate anything that would have made the sessions one point more useful for them, even those that did not spontaneously rate them as 10 on a scale of 10 for usefulness. A typical response from those respondents when questioned was “Well actually, to be fair, nothing really [would have made them one point higher]”.

*Prefer Consultant. . . .*

All but one respondent replied in the negative. Responses included “Not necessarily as long as she’s [the radiographer] able to answer the questions that I ask then that’s fine by me”, also “. . . somebody, when they are dealing with people everyday in a different capacity; it’s a bit like having a baby, the midwife is often more use than the doctor, if it makes sense”. The one respondent who differed had in fact not seen their consultant at all (presumably a more junior doctor) which was their cause for dissatisfaction.

**Table 1.** Personnel involved in on-treatment reviews

Profession	Departments	
	Number	Percentage
Consultants* only	7	36.8
Radiographers and consultants	7	36.8
Nurses and consultants*	2	10.5
Radiographers only	1	5.3
Radiographers, nurses and consultants*	1	5.3
Radiographers and nurses	1	5.3
Total	19	100

\*It is assumed that under consultant reviews specialist registrars would also be performing reviews.

In addition to evaluating the system from a user perspective it was also decided that, due to the insufficient evidence base, a small-scale review should be performed to ascertain how review clinics were run in radiotherapy departments across the UK. Brief telephone interviews were therefore conducted with 19 radiotherapy departments. The main findings were that within each department there were a wide range of professionals involved in the review of patients undergoing radiotherapy, depending on consultant preference and tumour site, see Table 1.

Reviewers had varying amounts of training with 3 (25%) of the departments with non-medical review (n = 12) seeing patients with no training. Four departments (33%) were running multidisciplinary review clinics involving specialist nurses or dieticians while other departments had referral systems to such professionals and others. Table 2 summarises the results from the telephone interviews.

Non-medics were supplying medicines either within or outside of the review clinic setting. Out of the 19 departments questioned 12 (64%) did not have non-medical staff supplying medication for radiotherapy patients. Five (42%) of those departments intended sending staff on a course, 2 (17%) stated they were working towards non-medical supply of medicines and 3 (25%) did not state this was a future plan for their department. Four (33%) of these departments stated they were trying to move this forward but were encountering barriers from their trusts.

**Table 2.** Summary of findings from telephone interviews

	Yes	No
Do the non-medical reviewers in your department (n = 12) receive any formal training?	9 (75%)	3 (25%)
Do the non-medical reviewers in your department (n = 12) have a structured clinic?	10 (83%)	2 (17%)
Do non-medical reviewers in your department (n = 12) work under written protocols?	7 (58%)	5 (42%)
Are the non-medical reviews in your department (n = 12) multidisciplinary?	4 (33%)	8 (67%)
Are non-medics in your department (n = 19) involved in the supply of drugs to patients?	7 (37%)	12 (63%)

## Act

The next stage of the cycle was to act and implement changes on a larger scale in order to get the greatest benefit from the new system. Due to the small number of departments and patients questioned in both studies it would be inappropriate to draw specific conclusions. However, the evaluations were useful to determine where the system devised by the Rosemere Cancer Centre was placed in relation to more established systems.

After the evaluations more radiographers were encouraged to undertake the training to expand the service, therefore enabling a more diagnosis specific rather than consultant specific inclusion criteria. Further PGDs were submitted to increase the number of medications available for supply by radiographers increasing the scope of management of treatment related toxicities.

## CONCLUSION

After the initial implementation of the radiographer led review clinic all staff concerned were pleased with its success. The user interviews provided sufficient evidence to suggest that continuing with the scheme would be of benefit to them. However, as patients had not gone through the conventional system of patient reviews it was problematic to ask for comparisons of the two services with a possible flaw in the evaluation being not interviewing patients passing through the conventional system. By the time this was

realised, however, the system had changed and only complex, rare or private patient groups were being seen in the traditional method, making it impractical to compare what would have been previously classed as the control group.

Non-medic review has been implemented successfully in a number of departments in the UK. Issues to be considered when employing the system are: training, time, space and frequency of medic input. There are a complex variety of formats and personnel involved in the review of patients undergoing radiotherapy across the UK. When deciding which profession is best suited for this task all issues should be considered, not simply role expansion or time but the professional who can best serve the needs of the patient. In many cases, this has been shown to be more than simply one professional group. Multidisciplinary review involving medics, radiographers, dieticians, psychologists, specialist nurses and quite simply any professional who can enhance the patients care should definitely be considered. Those involved with non-medic review of patients undergoing radiotherapy believe moving away from traditional reviews frees up clinician time and provides patients with more detailed review during their treatment.

Rosemere Cancer Centre has decided that the review of head and neck patients should remain with the medical staff, for now, partly due to the complexity of side effects for these patients but also due to the availability of local support and services by the head and neck cancer nurse specialists.

Whilst obviously based on small numbers, and with tentative lessons only, this form of radiographer-led activity may serve as an early model for radiotherapy departments elsewhere. Furthermore, those responsible for oncology services more generally may wish to review their own psychosocial provision to patients receiving treatment and consider whether it's not simply physical aspects that go to make a valued and patient-useful form of treatment review.

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